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Undergraduate Catalog

ONE-HUNDRED THIRTY-SEVENTH ANNUAL BULLETIN
Volume XCIV

2019-2020

Mississippi State University is a comprehensive, doctoral degree granting, land-grant university. It forms part of a cohesive community with the growing city of Starkville, population 25,000. Located in the eastern part of north-central Mississippi, the university is 125 miles northeast of Jackson, 165 miles southeast of Memphis, and 150 miles west of Birmingham. It is served by U.S. Highway 82, state highways 12 and 25, and by commercial air service through Golden Triangle Regional Airport, 14 miles east of campus.

Mississippi State University is accredited by the Southern Association of Colleges and Schools Commission on Colleges to award baccalaureate, masters, specialist, and doctoral degrees. Contact the Commission on Colleges at 1866 Southern Lane, Decatur, Georgia 30033-4097 or call (404) 679-4500 for questions about the accreditation of Mississippi State University.

Mississippi State University comprises the following academic units: the College of Agriculture and Life Sciences, including the School of Human Sciences; the College of Architecture, Art, and Design, including the School of Architecture; the College of Arts and Sciences; the College of Business, including the Richard C. Adkerson School of Accountancy; the James Worth Bagley College of Engineering, including the Swalm School of Chemical Engineering; the College of Forest Resources; the College of Veterinary Medicine; the College of Education; the Graduate School; the Judy and Bobby Shackouls Honors College; and the Center for Distance Education. Four regional research and extension centers representing both the Mississippi Agricultural and Forestry Experiment Station (MAFES) and the Mississippi State University Extension Service are located in different parts of the state. MAFES conducts research at 16 off-campus sites throughout the state. The Mississippi State University Extension Service offers programs and services in all 82 counties of Mississippi. Supporting the academic and educational programs of the total university are the Mitchell Memorial Library and branch libraries.

Mississippi State University operates off-campus sites with undergraduate and graduate programs in Meridian, Miss., as well as the School of Architecture's fifth-year program in Jackson, Miss.

Several centers and institutes perform specialized teaching, research or service activities. Among these are the Alliance for System Safety of UAS Through Research Excellence (ASSURE); Center for Cyber Innovation; Institute for Market Studies; Institute for Systems Engineering Research (ISER); Institute for Computational Research in Engineering and Science (ICRES); Center for Safety and Health; High Performance Computing Collaboratory; Mississippi State Chemical Lab (MSCL); National Strategic Planning and Analysis Research Center (nSPARC); Research and Curriculum Unit; Institute for Imaging and Analytical Technologies; Carl Small Town Center; Gulf Coast Community Design Studio; Biological and Physical Sciences Research Institute; Center for Computational Sciences; Cobb Institute of Archaeology; Institute for the Humanities; Stennis Institute of Government and Community Development; Center for Family Enterprise Research; Center for Entrepreneurship and Outreach; Center for Retail and Cotton Product Development; Center for Educational Partnerships; Early Childhood Institute; Mississippi Writing/Thinking Institute; National Research and Training Center on Blindness and Low Vision; T.K. Martin Center for Technology and Disability; Center for Advanced Vehicular Systems (CAVS) and CAVS Extension; Center for Computer Security Research (CCSR); High Voltage Laboratory; Institute for Clean Energy Technology (ICET); Raspet Flight Research Laboratory (RFRL); Forest and Wildlife Research Center; Franklin Furniture Institute; Extension Service; Center for Governmental and Community Development; Southern Rural Development Center; Center for Environmental Health Sciences; Energy Institute; Geosystems Research Institute (GRI); Institute for Genomics, Biocomputing and Biotechnology (IGBB); International Institute; Mississippi Water Resources Research Institute; Northern Gulf Institute (NGI); Social Science Research Center (SSRC); and Sustainable Energy Research Center (SERC).

The grounds of the University are comprised of about 4,200 acres, including farms, pastures, and woodlands. The net investment in buildings and grounds is approximately $1 billion.

The university began as the Agricultural and Mechanical College of the State of Mississippi, one of the national land-grant colleges established after Congress passed the Morrill Act in 1862. It was created by the Mississippi Legislature on February 28, 1878, to fulfill the mission of offering training in agriculture, horticulture and the mechanical arts . . . without excluding other scientific and classical studies, including military tactics. The College received its first students in the fall of 1880 in the presidency of Stephen D. Lee. In 1887, Congress passed the Hatch Act, which provided for the establishment of the Agricultural Experiment Station in 1888. Two other pieces of federal legislation provided funds for extending the mission of the College: in 1914, the Smith-Lever Act called for instruction in practical agriculture and home economics to persons not attendant or resident, thus creating the state-wide effort which led to Extension offices in every county in the State; and, in 1917, the Smith-Hughes Act provided for the training of teachers in vocational education.

By 1932, when the Legislature renamed the College as Mississippi State College, it consisted of the Agricultural Experiment Station (1887), the College of Engineering (1902), the College of Agriculture (1903), the School of Industrial Pedagogy (1909), the School of General Science (1911), the College of Business and Industry (1915), the Mississippi Agricultural Extension Service (1915), and the Division of Continuing Education (1919). Further, in 1926 the College had received its first accreditation by the Southern Association of Colleges and Schools. By 1958, when the Legislature again renamed the institution, as Mississippi State University, the Office of the Graduate School had been organized (1936), doctoral degree programs had begun (1951), the School of Forest Resources had been established (1954), and the College of Arts and Sciences had been created (1956). The College of Architecture admitted its first students in 1973. The College of Veterinary Medicine admitted its first class in 1977, and the School of Accountancy was established in 1979.

Past Presidents of the College/University

1. Stephen D. Lee (1880-1899)
2. John Marshall Stone (1899-1900)
3. John Crumpton Hardy (1900-1912)
4. George Robert Hightower (1912-1916)
5. William Hall Smith (1916-1920)
6. David Carlisle Hull (1920-1925)
7. Buz M. Walker (1925-1930)
8. Hugh Critz (1930-1934)

9. George Duke Humphrey (1934-1945)
10. Fred Tom Mitchell (1945-1953)
11. Benjamin F. Hilbun (1953-1960)
12. Dean W. Colvard (1960-1966)
13. William L. Giles (1966-1976)
14. James D. McComas (1976-1985)
15. Donald W. Zacharias (1985-1997)
16. Malcolm Portera (1998-2001)
17. J. Charles Lee (2001-2006)
18. Robert H. Foglesong (2006-2008)

Vision and Mission Statements

Vision

Mississippi State University will be a leading student-centric public research university that is globally involved, accessible, inclusive, community engaged, and responsive to the many constituencies it serves while fully integrated with the intellectual, social, and economic development of the state and beyond by delivering excellent programs of teaching, research, and service, and instilling in its community the timeless values of integrity, hard work, and respect.

Mission

Mississippi State University is a public research, land-grant university with a mission to provide access and opportunity to all sectors of Mississippi's diverse population, as well as other states and countries, and to offer excellent programs of teaching, research, and service.

Mississippi State University offers a comprehensive range of undergraduate, graduate, and professional programs across many disciplines.

The university embraces its role as a major contributor to the economic development of the state and beyond through targeted research and the transfer of ideas and technology to the public, supported by faculty, staff, students, and alumni relationships with industry, community organizations, and government entities.

Mississippi State University is committed to its tradition of instilling among its community ideals of diversity, citizenship, leadership, and service.

Building on its land-grant tradition, Mississippi State University strategically extends its resources and expertise for the benefit of Mississippi's citizens, the nation, and the world by offering access for working and place-bound learners through its on- and off-campus education and research sites, Extension, and distance education programs.

President's Cabinet / Officers of the University

Name	Title
MARK E. KEENUM, Ph.D.	President of the University
DAVID R. SHAW, Ph.D.	Provost and Executive Vice President
REUBEN MOORE, Ph.D.	Interim Vice President for Agriculture, Forestry, and Veterinary Medicine
REGINA Y. HYATT, Ph.D.	Vice President for Student Affairs
JOHN P. RUSH	Vice President for Development and Alumni
	Interim Vice President for Research and Economic Development
AMY B. TUCK	Vice President for Campus Services
DON A. ZANT	Vice President for Finance and Chief Financial Officer
JOAN L. LUCAS	General Counsel
RASHEDA BODDIE-FORBES	Assistant Vice President for Multicultural Affairs
JOHN COHEN	Director of Athletics

Academic Deans

Name	Title
DAVID R. SHAW, Ph.D.	Provost and Executive Vice President
RICHARD L. BLACKBOURN, Ph.D.	Dean of the College of Education
TERRY D. CRUSE, Ph.D.	Administrative Director and Head of Campus, MSU-Meridian
BRIEN HENRY, Ph.D.	Associate Dean of the Graduate School
FRANCES N. COLEMAN, M.L.S.	Dean of Libraries
RICKEY TRAVIS, Ph.D.	Dean of the College of Arts and Sciences
KENT H. HOBLET, D.V.M.	Dean of the College of Veterinary Medicine
GEORGE M. HOPPER, Ph.D.	Dean of the College of Forest Resources and Dean of the College of Agriculture and Life Sciences
JASON M KEITH, Ph.D.	Dean of the Bagley College of Engineering
SHARON L. OSWALD, Ph.D.	Dean of the College of Business
CHRISTOPHER A. SNYDER, Ph.D.	Dean of the Shackouls Honors College
ANGI BOURGEOIS, PhD	Dean of the College of Architecture, Art and Design

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State of Mississippi

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The Board maintains offices at 3825 Ridgewood Road, Jackson, Mississippi.

Admission Information

Disclaimer

Until further notice, the admission information contained in this Bulletin most accurately describes the admissions policies, regulations, requirements and procedures of the University and the Board of Trustees of Institutions of Higher Learning. The University reserves the right to delete, substitute, change or supplement any statement in this Bulletin without prior notice.

Recruiting

Recruiting

Admissions counselors visit high schools and community/junior colleges to assist students in making a smooth transition to Mississippi State University by answering questions about admissions, financial aid, scholarships, university student housing, academic programs, fees and expenses, new student orientation, cooperative education, extracurricular activities, ROTC, and other areas of concern. Prospective students and their parents are encouraged to visit the campus, to meet students and professors, and to get an overall view of what the campus is like. To schedule a campus visit, go to www.admissions.msstate.edu.

For additional information, write to the Office of Admissions and Scholarships, P.O. Box 6334, Mississippi State, MS 39762, or telephone (662) 325-2224. Find the Office of Admissions and Scholarships on the Internet at admissions.msstate.edu.

Orientation

All new students (freshmen and transfers) entering the university are encouraged to attend an orientation session. Orientation offers a variety of activities for both parents and students alike. Not only is orientation a time for students to register for classes, but it is also an opportunity for students and parents to become familiar with the institution, its activities and its academic programs. Students participate in interactive group sessions, register for classes and get to know other incoming students, all while becoming familiar with services and opportunities available at the university. Orientation is a celebration that welcomes all new students and their parents into the Bulldog family! Learn more at http://orientation.msstate.edu or email us at orientation@msstate.edu. (orientation@msstate.edu)

Applications

For consideration for admission for the fall term, freshmen and transfer applications should be received by August 1. Some departments may have early application deadlines. Contact the specific department for dates.

All applicants must submit a $40 non-refundable application fee. The application for admission cannot be processed until this fee is received.

Mississippi State University may void enrollment in the following situations: if an original transcript is not received; if a student is not eligible for readmission to any college formerly attended; or if any document is fraudulent or altered.

Applicants may meet general admission requirements to the University and not meet the requirements for a specific department. Applicants should contact the academic department to which they are applying for additional requirements.

The Office of Admissions and Scholarships is responsible for administering admission policies. For admission information or to inquire further about university admission requirements, contact the Office of Admissions and Scholarships, Mississippi State University, P.O. Box 6334, Mississippi State, MS 39762. Telephone: (662) 325-2224. Fax: (662) 325-1678 (1MSU). E-mail: admit@msstate.edu. Students may apply online by visiting www.admissions.msstate.edu. All applications may be submitted electronically.

Entrance Requirements

There are several paths applicants may take to admission. Students may enter as a freshman (p. 6), a transfer student (p. 8), or a special non-degree seeking student (p. 8). There are also additional admissions requirements for international students (p. 9), Teacher Education undergraduate students (p. 10), and graduate students (p. 10).

Freshman

Regular Admission.

1. Submit application for admission.
2. Submit a $40 non-refundable application fee.
3. Must have graduated from an approved secondary school.
4. Request that official ACT or SAT scores be sent to Mississippi State University directly from the testing agency. MSU's ACT code is 2220 and the SAT code is 1480. *(The writing test of the ACT and SAT are not considered for admission or scholarship awarding purposes.)*
5. Submit a six-semester high school transcript to Mississippi State University, as well as an official transcript upon graduation from high school. If the applicant has attended another college, he/she must request those transcripts be sent to the Office of Admissions and Scholarships. Faxed transcripts will not be accepted.
6. Must satisfactorily complete the following College Preparatory Curriculum (CPC) with an appropriate core grade-point average:

Subject	Units
English	4 Carnegie units - All must require substantial communication skills (i.e., reading, writing, listening, and speaking). Compensatory Reading and Writing may not be included.
Mathematics	3 Carnegie units - Algebra I or its equivalent, Math higher than Algebra I (2 units)
Science	3 Carnegie units - Biology I or its equivalent, Science higher than Biology I (2 units)
Social Science	3 Carnegie units - U.S. History, World History, U.S. Government (1/2 unit), Economics (1/2 unit), or Introduction to World Geography (1/2 unit)

Arts	1 Carnegie unit - Includes any one Carnegie unit (or two 1/2 units) of visual and performing arts course(s) meeting the requirements for high school graduation.
Advanced Electives	2 Carnegie units - Option 1: Foreign Language I and Foreign Language II; Option 2: Foreign Language I and Advanced World Geography; Option 3: Any combination of English, Mathematics higher than Algebra I, Science higher than Biology I, Advanced Elective category, any AP course, any IB course
Technology	1/2 Carnegie unit - A course that emphasizes the use of technology as a procuctivity tool. Instruction should include utilizing various forms of technology to create, collaborate, organize, and publish information. The application of technology as a productivity tool, rather than specific hardware and/or software packages should be the focus of the course.

Full admission to Mississippi State will be granted to high school graduates who complete the CPC with one of the following:

- A minimum 3.20 grade-point average (GPA) on the CPC.
- A minimum 2.50 GPA on the CPC and a composite score of 16 or higher on the ACT or the equivalent SAT score.
- A minimum 2.0 GPA on the CPC and a composite score of 18 or higher on the ACT or the equivalent SAT score.
- Standing in the top 50 percent of the class and a composite score of 16 or higher on the ACT or the equivalent SAT score.
- Satisfy the National Collegiate Athletic Association standards for student-athletes who are full qualifiers or academic redshirts under Division I guidelines.

Full admission to Mississippi State University for non-residents of Mississippi will be granted to high school graduates who complete the required high school courses with one of the following

- A minimum 2.50 grade-point average, composite score of 20 or higher on the ACT, or the equivalent SAT score; or
- Student-athletes who satisfy the National Collegiate Athletic Association standards and who are full qualifiers or academic redshirts under Division I guidelines are exempt from the above requirement.

Mississippi residents who apply and fail to meet full admission standards as listed above may, as a result of review, be admitted to the fall or summer term, provided that application materials are received prior to the first summer session. The review shall involve a consideration of high school performance, ACT/SAT scores, placement testing, and special interests and skills, as well as other non-academic factors.

Entering freshmen who have both a high school grade-point average of less than 2.5 on the college preparatory curriculum and a composite ACT score of less than 21 will be placed in the undecided major and will be advised by the University Academic Advising Center until 30 credit hours of core classes have been completed.

Students with an ACT English subscore of 17 or lower (or the equivalent SAT score) will be required to successfully complete EN 0103 Basic English before advancing to the English Composition sequence (EN 1103 and EN 1113). Students with an ACT Math subscore of 18 or lower (or the equivalent SAT score) will be required to take MA 0103 Intermediate Algebra before advancing on to math requirements within the chosen degree program.

A student-athlete must meet the requirements of the Southeastern Conference and the National Collegiate Athletic Association (NCAA).

Mississippi State University neither awards credit nor accepts transfer-college-credit based solely on ACT, SAT, or other comparable tests commonly administered to high school students primarily for college admissions purposes. Documents and other proof that students have met the University entrance requirements are kept on file in the Office of Admissions and Scholarships, Room 101, Montgomery Hall.

Admission with Deficiencies.

Mississippi residents who apply and have not demonstrated adequate readiness in English or Reading or Mathematics will be granted Full Admission with Academic Deficiencies to the Summer Developmental Program. This is an intensive program that concentrates on high school subject areas (English, Reading, and Mathematics) that are applicable to success in first-year college courses. These remedial courses neither count toward a degree nor are they computed in a student's grade point average. Students who successfully complete the summer program by passing English, developmental Mathematics, developmental Reading and the Learning Skills Laboratory courses will receive admission to the fall term with mandatory participation in the year-long Academic Support Program. Students who fail to successfully complete the Summer Developmental Program are not eligible for enrollment in the regular academic year and will be counseled to explore other post-secondary opportunities, including those offered by community colleges.

Home Schooled.

Home schooled applicants are required to meet the same requirements as other freshman applicants. Official ACT/SAT scores and transcripts (or portfolios) are required.

Special Program for Academically Talented Students (SPATS).

Academically talented students who (a) have finished at least their junior year in high school, as judged by their high school officials, (b) in the judgment of parents and high school administrators are mature enough to profit from college work, and (c) have a standard composite score of 24 on the American College Test, may apply for admission as a SPATS student to earn regular college credit.

SPATS students may take courses during the spring, summer, or fall term. Students are expected to return to high school and finish their senior year. The courses may not be substituted for high school credits to meet college admission requirements. Credit is reserved until the student has graduated from high school. Information concerning the program and application forms may be obtained at http://www.admissions.msstate.edu or by writing to: SPATS, Office of Admissions and Scholarships, P.O. Box 6334, Mississippi State, MS, 39762.

SPATS students who apply for admission as a full time student for term following their date of high school graduation will be granted a waiver of the admission application fee.

Admission by Examination.

An applicant who has not graduated from high school may substitute the state approved high school equivalency examination for the requirement of high school graduation. The approved high school equivalency exam will substitute for the requirement of high school graduation only, and not for the other requirements for freshman admission. Therefore, applicants who took an approved high school equivalency exam must submit an acceptable ACT/SAT score. Applicants who hold an approved high school equivalency exam and who do not meet other requirements for freshman admission may enroll at Mississippi State as transfers after meeting the normal requirements for transfer admission from another regionally accredited institution.

Admission to the College of Veterinary Medicine.

(See College of Veterinary Medicine section in Part II.)

Special Non-Degree Classification

An applicant who is at least twenty-one (21) years old and who does not meet the regular freshman admission requirements, may apply to the Office of Admissions and Scholarships for acceptance into the Special Non-Degree (SND) student category. Students in this category will be advised by and will schedule classes through the University Academic Advising Center. Applicants must demonstrate adequate preparation for the courses they plan to schedule. SND students may schedule a maximum of twelve (12) semester hours during a regular term and three (3) semester hours during a five-week summer term. To move from the SND status, students should satisfactorily complete twelve (12) semester hours with a C or better average in core courses that are applicable to a degree at MSU. Students wishing to gain reclassification to a traditional major should discuss this during their initial meeting with one of the professional advisors in the University Academic Advising Center. For students admitted to a degree program, a maximum of eighteen (18) semester hours of credit earned while in the SND classification may be counted toward a baccalaureate degree, pending approval by the dean of the college or school from which the degree is sought.

Degree-seeking adult applicants with previous college attendance must meet regular transfer student requirements and, therefore, may not apply for admission under the Special Non-Degree option.

Non-degree seeking adult applicants with previous college attendance who do not meet regular transfer requirements may be allowed to schedule courses for self improvement and/or job enhancement only. Applicants must file a letter of intent with the Director of Undergraduate Admissions, Office of Admissions and Scholarships, to enroll under this option.

Admission of Transfer Students

1. Submit application for admission.
2. Submit a $40 non-refundable application fee.
3. Submit a separate official final transcript from each college or university attended; faxed transcripts will not be accepted. An applicant may not ignore previous college attendance and must list all colleges attended on the application for admission. An applicant who misrepresents information or fails to provide information about prior college attendance will be subject to disciplinary action, including dismissal from the University.
4. Submit an official high school transcript and ACT or SAT scores if they seek admission under Option 1.
5. Be in good standing at the last college or university attended.

Admission Option 1:

1. Submit a high school transcript and ACT or SAT scores showing that the applicant qualified initially as a freshman enrollee (see Freshman Entrance Requirements), **and**
2. Earn an overall 2.0 GPA on all courses attempted (as computed by MSU) at a regionally accredited institution of higher learning.

Admission Option 2:

Any applicant who does not meet freshman requirements may attend a regionally accredited institution of higher learning and complete the core courses listed below **and** earn an overall 2.0 GPA on all hours attempted (as computed by MSU). **Official transcripts from each institution attended must be submitted; faxed transcripts will not be accepted.**

The applicant must attain a 'C' average (2.0 GPA on a 4.0 scale) on the following 30 semester hours of college work at a regionally accredited college:

- 6 semester hours English Composition
- 3 semester hours College Algebra, Quantitative Reasoning, or higher level mathematics
- 6 semester hours Natural Science
- 9 semester hours Humanities and Fine Arts
- 6 semester hours Social or Behavioral Sciences

Admission Option 3:

Any applicant who does not meet freshman requirements may attend a regionally accredited institution of higher learning and earn an A.A., B.S. or equivalent degree from the regionally accredited institution with a 2.0 GPA (as computed by Mississippi State University). Official transcripts from each institution attended must be submitted; faxed transcripts will not be accepted.

Although the transfer applicant may meet general admissions requirements to the University, he/she may not meet the requirements for a specific department. Applicants should contact the academic department for additional requirements.

Transfer work earned from a non-regionally-accredited institution is not acceptable at Mississippi State University and applicants from these institutions must meet the admission requirements as an entering freshman.

Transfer Credits. Credits transferred from regionally accredited institutions are reproduced on the permanent records of Mississippi State University. Credits earned at another institution while on disciplinary suspension or dismissal may never be transferred or posted to the Mississippi State University record. In the case of students receiving VA benefits, enrollment certificates submitted to the Veterans Administration will reflect proper credit for previous education and training. This is done as a convenience for the student in providing him or her with an accurate consolidated record of his or her entire college career. This action is

evidence that the credits are considered valid. Validity, however, is not to be confused with acceptability or applicability.

The Office of Admissions and Scholarships will accept academic transfer hours from other regionally accredited institutions. Depending on the course of study, technical credit may or may not be accepted. Remedial and Vocational credit will not be accepted. To meet graduation requirements, a transfer student must have an overall C (2.00) average, calculated by the method currently in use at Mississippi State University, on all hours scheduled and rescheduled at all institutions attended, including Mississippi State University. Excess quality points earned at other institutions cannot be used to offset any deficiencies at Mississippi State. Acceptance of junior or community college work is limited to one-half the total requirements for graduation in a given curriculum. The last half of the total hours applied toward graduation must be earned in a senior college.

Applicability of transfer work depends upon the equivalence of transfer credits with the requirements of a particular curriculum. Applicability varies from curriculum to curriculum, not only for transfer students from other institutions but for students transferring from one school or curriculum to another within Mississippi State University. In either case, the upper limit of the number of applicable credits is the number of accepted credits. Applicability is determined by the dean of the college or school to which one is admitted.

Non-traditional credits awarded by another college or university will be evaluated in terms of current policy at Mississippi State University. Unless the basis for awarding the credit is readily identifiable, no credit will be allowed until such time as the student, through the awarding institution, can establish the credibility of the work. Credits for ACT, SAT, CLEP General, or other comparable tests will not be accepted as transfer credit. Prior job/work experience cannot count for academic credit at Mississippi State University.

Admission of International Students

Undergraduate international students must submit the following documents in order to be considered for admission:

1. International application for admission
2. $40 non-refundable application fee
3. Secondary school credentials and college credits from non-U.S. institutions must be submitted through World Education Services for a course-by-course evaluation with grade point average calculation. The WES ICAP service must be requested by the student. Transcripts from U.S. institutions must be received officially from each institution. Mississippi State University may void enrollment if an official transcript is not received; if a student is not eligible for readmission to any college formerly attended; or if any document is fraudulent or altered.
4. Official American College Test (ACT) or Scholastic Aptitude Test (SAT) scores. (for scholarship and/or placement only)
5. Other required test scores (see below)

English Language Proficiency Requirement

International undergraduate students admitted to Mississippi State University must demonstrate English language proficiency to register for academic courses offered through the colleges. Any of the following scores are acceptable to demonstrate English language proficiency:

- International English Language Testing System (IELTS): minimum band score of 6.0.
- Test of English as a Foreign Language (TOEFL): minimum 525 for paper-based test, 197 for computer-based test, and 71 for Internet-based test
- English portion of the ACT: minimum 19.

Although applicants may meet general language requirements to the university, some departments have established higher English language proficiency requirements. For a complete listing, please visit the Web site www.admissions.msstate.edu.

Exemption from English Language Proficiency Requirement

Completion of intensive English training or English composition courses at a U.S. college does not waive the English language proficiency requirement. Only international students who list English as the primary language of instruction may be exempt from proficiency requirements.

Admission with English Language Deficiency

International students who are admitted and wish to enroll in academic courses, but fail to demonstrate English language proficiency using one of the approved methods will be required to enroll in English as a Second Language (ESL) courses. Students who successfully complete the English as a Second Language program will be considered to have demonstrated English language proficiency and allowed to register in academic courses offered through the colleges.

Freshman Admission Requirements

- Diploma from secondary school or secondary leaving examination
- Appropriate TOEFL score
- SAT or ACT scores (only if GPA is below 3.0 based on the evaluation of transcripts or if applying for scholarships)

Transfer Admission Requirements:

Option A: One year of successful study at a foreign university and appropriate TOEFL score.

Option B: Meet freshman admission requirements and maintain a quality point average of 2.00/4.00 or higher on all college level work attempted (as evaluated by Mississippi State University).

Option C: Thirty (30) semester hours of transferable credit from a regionally accredited U.S. college, with a grade-point average of 2.00 or higher on a 4.0 scale, as evaluated by Mississippi State University, including all of the following credits:

- 6 semester hours English Composition
- 3 semester hours College Algebra, Quantitative Reasoning, or higher level mathematics
- 6 semester hours Natural Science
- 9 semester hours Humanities and Fine Arts
- 6 semester hours Social or Behavioral Sciences

NOTE: Students who meet Option C requirements do not need to submit English language proficiency test scores.

English as a Second Language Course

Courses in English as a Second Language (ESL) are considered developmental and are not transferable. They may not be used to satisfy any of the requirements for admission listed above. English courses taken at universities in non-English-speaking countries are considered to be ESL courses unless specific documentation is provided that literature, rather than language acquisition, was the primary focus of the course.

Transfer Credit from Foreign Universities

The Office of Admissions and Scholarships certifies appropriate transfer credit from foreign universities. These courses are recorded on the Mississippi State University permanent record with the grade of S, rather than with letter grades. However, these courses are treated as graded courses (rather than pass-fail courses) in satisfying degree requirements. The student's dean has the discretion to apply this transfer credit toward degree requirements or to reject any or all of it, just as with domestic students. Students may be asked to supply course descriptions, syllabi, tests, or other documentation to the dean or department to justify the applicability of a transferred course toward a particular degree requirement. No transfer credit will be awarded for English composition courses completed in colleges or universities outside the United States.

Deadlines for Submission of Materials

International students who are already inside the United States should submit all required materials for admission at least two months prior to the date of expected enrollment. Students who are outside the United States should apply at least four months in advance of enrollment. Undergraduate international application forms, and additional information are available from the following address: Office of Admissions and Scholarships, P.O. Box 6334, Mississippi State, MS 39762 USA

Admission to Teacher Education

The College of Education is responsible for teacher education at Mississippi State University. All students who expect to qualify to teach must be formally admitted to the teacher education program. For specific information, see "Requirements for Teacher Education" in the College of Education section of the catalog.

Graduate Admissions

The Graduate School of Mississippi State University awards master's, educational specialist, and doctoral degrees through programs in the Colleges of Agriculture and Life Sciences; Arts and Sciences; Business; Education; Bagley College of Engineering; Forest Resources; and Veterinary Medicine. Prospective students should visit the Graduate School website at http://www.grad.msstate.edu for information and to access the Graduate catalog. Prospective applicants should also visit the website of the particular College of interest.

A prospective applicant who has researched admissions requirements of the Graduate School at Mississippi State University and requirements of the academic program of interest can access information and apply online at http://www.grad.msstate.edu. An applicant must submit a completed application form, a statement of purpose for graduate study, three letters of recommendation, records of previous academic achievements, and a non-refundable application fee (not required of full-time benefits-eligible employees). Some degree programs may require additional credentials, such as the Graduate Record Examination or another standardized test score. All admission applications and supporting documents become the property of Mississippi State University upon receipt and will not be released. Admission to MSU for graduate study is open to qualified students regardless of race, creed, color, natural origin, handicap, sex, or veteran status.

Legal Resident Status

Students are classified as in-state or out-of-state for the purpose of paying University fees. The Office of Admissions and Scholarships will make the initial classification at the time a student's application for admission is processed. The burden of proof for establishing residency resides with the applicant. If a student misrepresents his or her status, he or she shall be responsible for paying the fees he or she would have otherwise been required to pay and will be subject to disciplinary action or dismissal from school. The University Registrar is authorized to change a student's residence status upon receipt of evidence that the student is improperly classified.

The following Institutions of Higher Learning and Mississippi State University policies apply in determining the residential status of students for the purpose of enrolling and paying fees at a state-supported institution of higher learning:

- **Institutions of Higher Learning** http://www.ihl.state.ms.us/board/downloads/policiesandbylaws.pdf Paragraphs 610 and 611.
- **Mississippi State University** http://www.msstate.edu/dept/audit/3102.html Academic Operating Policy AOP 31.02 Legal Resident Status

Petition for Change of Residency Classification.

A person who enters the State of Mississippi from another state and enters an educational institution is considered a non-resident. Any person who has after attaining the age of twenty-one (21) and has since their twenty-first birthday established residency and resided within the State of Mississippi for twelve (12) consecutive months may: (1) upon sworn affidavit and other representation, and (2) who can prove financial independence, petition for a change in residency classification for the purposes of fees and tuition assessment.

Residency changes are not retroactive, and the following conditions apply:

1. The institution may make reasonable inquiry into the validity of the petitioner's claim.
2. A petition for change of residency must be received **prior to the last day** a student may register without penalty of the term for which the student is applying for residency.

Factors Regarding Residency.

Although domicile and residency for educational purposes are largely matters of intention, this intention is determined objectively from the facts and circumstances surrounding a claim of in-state residency. Some of the factors relevant to determining residency include:

- Actual physical residence of habitation
- Length of time at actual physical residence - Residence used for income tax, loan, banking and other purposes
- Voter registration

- Motor vehicle registration (Persons moving into the state on a permanent basis have 30 days to register vehicles.)
- Driver's license held (Persons moving into the state on a permanent basis have 60 days to acquire driver's licenses.)
- State to which personal income taxes or other taxes paid
- Status of income sources
- Location of bank, savings and other accounts

Responsibility for Reporting Change.

It is the individual student's responsibility to report immediately to the Registrar any change which will affect his or her residence status under these regulations.

Institutions of Higher Learning (College Board) and University Policies Concerning Nonresident Tuition.

In addition to state laws and regulations, the University has established certain IHL Board approved regulations concerning the payment of non-resident tuition. Mississippi State University (except the College of Veterinary Medicine) may waive a percentage of the non-resident tuition for the following groups of students:

1. Those who are currently awarded athletic scholarships.
2. Those who are currently awarded band scholarships.
3. Those who are currently awarded choral scholarships.
4. All graduate students holding assistantships. (Rules applicable to these awards may be found in the Graduate Studies Bulletin or in the Graduate Assistant Handbook. Both publications are available on the MSU Web: http://www.grad.msstate.edu/about/)
5. Children of Mississippi State University alumni. (Application deadline is April 1) (For this purpose, an alumnus or alumna is defined as one who has earned a minimum of 48 MSU undergraduate credit hours or 30 MSU graduate credit hours of course work or received a degree from Mississippi State University.) Graduate students must maintain a B (3.0) grade point average to continue eligibility for this award. STUDENT AFFAIRS OP 91.178: Policy on Out-of-State Tuition Waivers is available on the MSU Web: http://www.msstate.edu/dept/audit/PDF/91178.pdf.
6. Non-resident students who are certified participants in The Academic Common Market.

Academic Common Market.

Academic Common Market non-resident tuition remission (exemptions) are available for specific academic programs for students from certain states. Application must be made first with the awarding state. The student must be a legal resident of that state and approved for a specific major at MSU. Both undergraduate and graduate students are eligible to apply. The waiver is 100 percent of the non-resident tuition remission and will remain at this level unless the student's field of study changes, the student no longer has full-time status, or the student has fallen below an MSU and cumulative 2.5 GPA.

A qualified student must maintain full-time status, remain in academic good standing and comply with all the requirements of the degree program. If a student changes his/her major from the approved ACM certified major, then they must inform the Office of the Provost and Executive Vice President of the change of status. The student will be responsible for the non-resident tuition for the remaining semesters at Mississippi State University. To be eligible for the non-resident tuition remission during the first semester of enrollment, applications and resident verification must be submitted to and approved by the Office of the Provost and Executive Vice President prior to the first day of class.

For more information about submission and deadlines, please contact that office at 662-325-3742. Students seeking information on the Academic Common Market waiver should contact the Academic Common Market, Southern Regional Education Board, 592 10th Street NW, Atlanta, GA 30318-5790 or access the Web site at http://www.sreb.org/page/1304/academic_common_market.html

Tuition and Fees

With the exception of the College of Veterinary Medicine and Meridian campuses, stated hereafter, the following fees apply to students enrolled at Mississippi State University. Tuition and required fees are assessed on a per credit hour basis at the prevailing rates as determined by The Institution of Higher Learning, the governing board of the University. These rates are applicable at the time of publication and are subject to change without notice.

Starkville Campus

https://www.controller.msstate.edu/accountservices/tuition/

Distance Education

https://www.controller.msstate.edu/accountservices/tuition/

T&RF relative to Student Activities

All students, by payment of T&RF, are eligible for use of facilities, participation in intramural sports, admission to intercollegiate athletic events, student health services and other miscellaneous activities. However, an additional fee may be required for football admission or some activities because of less than full-time, academic enrollment. These required fees are applicable regardless of the method of course instruction (i.e., traditional, online, distance, etc.)

Course Participation Fees

Fees in addition to T&RF are associated with some courses which require the use of special equipment, facilities or materials. These fees, which vary by course, will be collected as part of registration.

Schedule Change Fees

Please see www.registrar.msstate.edu/Calendars/academiccal.html.

Student Account Management

https://www.controller.msstate.edu/accountservices/resources/

General Information

Billing, Payment Due Dates, and Service Fees

https://www.controller.msstate.edu/accountservices/billing/

Past Due Accounts

https://www.controller.msstate.edu/accountservices/payment/pastdue.php

Payments

https://www.controller.msstate.edu/accountservices/payment/

Employee Tuition Remission

For information regarding this program, please see Human Resources policy – HRM #60-225.

Senior Citizen Tuition Waivers

Legal residents of the State of Mississippi age 60 or older (senior citizens) may enroll tuition-free in a maximum of two (2) on-campus courses per semester (or combined summer term) at the Starkville or Meridian campuses or the Center for Distance Education (CDE). Refer to the Student Affairs policy – OP 91.179 for more information.

All Other University Sponsored Waivers – refer to Student Financial Aid, Section VIII

Refunds

https://www.controller.msstate.edu/accountservices/tuition/refunds/

Web Instructions to Access Your Account:

From the MSU main Web page, select myState; secure user access using your personal NetID and password; click on the Banner tab and enjoy the following services:

1. Change/update your billing address and/or E-mail address.
2. View your current or prior billing statement.
3. View your account detail history.
4. Make a payment by credit card or e-check.
5. Authorize another user to help manage or make payment to your account.
6. Access a remittance stub to make payment via U.S. mail
7. View your pending financial aid or scholarships

Helpful Phone Numbers:

Account Services (662) 325-2071
Sponsored Student Office (662) 325-8017
Internal Collections (662) 325-6619

Financial Aid

Many Mississippi State University students receive various types of financial aid to help pay the costs associated with attending college. The following information is provided to inform students and their families of the estimated costs of attending MSU, the types of financial aid available to help pay these costs, some of the general aid eligibility requirements, and the aid application procedures. The information contained in this section is accurate as this document went to print. Please visit our Web site at www.sfa.msstate.edu for further information and updates.

Student Expenses - The Cost of Attending MSU - 2018-2019

The following list of basic university expenses covers those for a full-time, undergraduate student living on or off campus for a nine month academic year. Note: These costs are average costs.

Starkville/Main Campus	Planned Expenses
Tuition and Fees	$8,650.00
Books and Supplies	$1,200.00
Room and Board	$10,090.00
Personal and Transportation	$5,290.00
Total (Mississippi Resident)	$25,230.00
Non-Resident Total	$39,830.00 (Additional fees - $14,600)

Sources of Financial Aid

Federal Sources of Financial Aid Programs are “need based” or “non need based” as determined by the federally mandated needs analysis formula.

A. Federal Sources of Financial Aid

1. Pell Grants - A federal student aid program designed to provide a foundation of gift aid to students who demonstrate financial need. All undergraduate students enrolled for their first undergraduate degree are eligible to apply for Pell Grants. Pell Grants awards for the 2018-2019 year ranged from $636 to a maximum of $6,195. Depending on Congressional allocations, Pell Grant amounts may change each year.
2. Federal Work-Study - A program of part-time employment for students who demonstrate financial need. Eligible students may work up to 16 hours per week during regular school sessions.
3. Stafford (subsidized and unsubsidized) Student Loans - Long-term loans provided by the U.S. Department of Education for students who need assistance in meeting educational expenses. Subsidized loans are based upon financial need. Unsubsidized loans are not based upon financial need.
4. Supplemental Educational Opportunity Grants - A federally sponsored program to provide gift aid for undergraduate students with exceptional financial need. Funds are limited. Apply early each year.
5. Federal Direct Plus Loans - Plus Loans are credit loans for parents of dependent students and for graduate/professional students. Eligible parents may borrow on behalf of their eligible dependent student and eligible graduate/professional students may borrow for themselves. Plus Loans are non-need based in that borrowers may request funds to cover the student's unmet cost of attendance.

B. Institutional Sources of Financial Aid

1. Mississippi State Promise - Mississippi State University offers the Mississippi State Promise program that provides institutional financial assistance for entering freshmen and community college transfer students from Mississippi who are from families that are Pell Grant eligible. Please refer to the Student Financial Aid Web site at www.sfa.msstate.edu for details.
2. Undergraduate Tuition Remission Policy for Children of Faculty and Staff - The partial tuition remission policy applies to all single dependent children of full time faculty and staff. See tuition remission policy for any restrictions that may apply.
3. Emergency Short-Term Loans - The University has available for students a means of borrowing small sums of money to meet emergency expenses during the academic year. Such loans are repayable during the same semester in which the loan is made. Application is made to the Dept. of Student Financial Aid.

C. Institutional Sources of Scholarships

Mississippi State University has a variety of academic scholarships including scholarships for National Merit and overall academic excellence. These scholarships require a competitive ACT/SAT score and an above average high school GPA. Leadership and Service Scholarships are also available to students who have excellent leadership and service activities.

Scholarship amounts are competitive and awarded on a funds-available basis.

Admission to the university is required for all scholarships. To be considered for competitive and private scholarships, a general scholarship application must be submitted.

1. Freshman Academic Excellence Scholarships – Mississippi State University has a variety of academic scholarships for National Merit finalists and semi-finalists, and overall academic excellence. These scholarships require at least a 3.0 scholarship GPA (9-11 grade) and minimum 20 ACT (SAT equivalent). Students must maintain continuous full time enrollment and at least a 3.0 overall GPA to renew scholarships.
2. Non-Resident Tuition Scholarships – Non-resident freshmen who have at least a 3.0 scholarship GPA (9-11 grade) and minimum 22 ACT (SAT equivalent). The non-Resident Tuition Scholarship may be combined with the Freshman Academic excellence Scholarship. Students must maintain continuous full time enrollment and at least a 3.0 overall GPA to renew scholarships.
3. Alumni Non-Resident Tuition Scholarships – Non-resident freshmen who are sons and daughters of alumni. The minimum qualification for alumni status is 48 semester hours of work completed at MSU. Student must have a minimum 3.0 scholarship GPA (9-11 grade). The Alumni Non-Resident Tuition Scholarship may be combined with the Freshman Academic Excellence Scholarship and the Non-Resident Tuition Scholarship for students with a minimum ACT of 22 (SAT equivalent). Students must maintain continuous full time enrollment and at least a 3.0 overall GPA to renew scholarships.
4. Level one Transfer Non-Resident Tuition Scholarship – This scholarship is awarded to non-resident students who have completed at least 48 transferable hours from the community/junior college and have at least a 3.0 cumulative GPA as computed by MSU.
5. Level two Transfer Non-Resident Tuition Scholarship – This scholarship is awarded to non-resident students who have completed 24-47 transferable hours from the community/junior college and have at least a 3.0 cumulative GPA as computed by MSU.
6. Leadership and Service Scholarships – MSU offers a variety of Leadership and Service Scholarships including Valedictorian, Salutatorian, Eagle Scout, Gold Award, Key Club, etc. Verification letters or other supporting documentation are required.
7. Departmental Scholarships – Colleges and Departments within the university offer scholarships designed to assist students majoring in a specific discipline. Most are competitively awarded and renewable. Students who have a chosen major are encouraged to contact the department in their major areas of study regarding scholarship opportunities.
8. Sumners Scholarships are available to permanent residents of Attala, Carroll, Choctaw, Montgomery and Webster counties in Mississippi. A Sumners Scholarship Application must be submitted by September 15.

D. State and Other Sources of Financial Aid

1. Army/Air Force ROTC Four-Year Scholarships - Scholarships available to students interested in commissions as officers in either the Army or the Air Force. Scholarships are based on ACT scores and high school grades, not financial need. Visit the following Web pages for further information. Army ROTC: http://armyrotc.msstate.edu. Air Force: www.msstate.edu/dept/afrotc.
2. The state of Mississippi provides several student aid programs for students who are residents of the state of Mississippi. These include, but are not limited to: Mississippi Resident Tuition Assistance Grant (MTAG), Mississippi Eminent Scholars Grant (MESG), William Winter Teacher Scholar (WWTS), Critical Needs Teacher Program (CNTP), Higher Education Legislative Plan (HELP) and Summer Developmental Program Grant (SDPG).

Information about these and other aid programs is available from the Mississippi Office of Student Financial Aid, 3825 Ridgewood Road, Jackson, MS 39211. Web: http://riseupms.com, Jackson-area phone 601-432-6647; toll free 1-800-327-2980.

How to Apply

The following forms MUST be completed by the student each year:

1. Federal Student Aid - (Federal Pell Grant, Federal SEOG, LEAP, TEACH, Federal Work Study, Federal Stafford Subsidized and Unsubsidized Student Loans and the Federal PLUS Loan). Applicants must complete the Free Application for Federal Student Aid (FAFSA) each year. The FAFSA can be submitted over the web at www.FAFSA.ed.gov (http://www.FAFSA.ed.gov) and should be submitted as soon as possible after October 1st each year for the coming school year. Any required verification or tax documents should be delivered to the Department of Student Financial Aid at MSU by April 1. Late applicants will be considered on a funds available basis. Mississippi State University's Federal School Code Number is 002423.
2. State Student Aid - Applications for student aid programs offered by the state of Mississippi should be submitted or updated as soon as possible after January 1 each year for the coming school year. Information and online applications are available at http://www.msfinancialaid.org.
3. Academic and/or Regional Scholarships - Submit an Application for Admission and General Scholarships and an online resume. Please refer to www.admissions.msstate.edu for additional information and applicable priority dates.
4. Sumners Scholarships - Students should submit the Sumners Scholarship application to MSU via the Web at www.admissions.msstate.edu by the September 15 priority deadline.

Policies

1. **Scholarship Criteria:**
   a. All academic scholarships are made in accordance with guidelines established by the Executive Enrollment Management Committee.
   b. Students currently enrolled at MSU are evaluated on the basis of a overall grade point average and the General Scholarship Application.
   c. Transfer students are evaluated on the basis of cumulative grade point average transferable community college hours.

d. Entering freshmen are evaluated on the basis of their ACT/SAT composite score and overall high school grade point average.

e. Students for Attala, Carroll, Choctaw, Montgomery and Webster counties in Mississippi may be eligible to apply for the Sumners Scholarship. Permanent residency in one of these five counties for 12 continuous months prior to the award period is the primary basis of eligibility. Recipients of the Sumners Scholarship must maintain Satisfactory Academic Progress (Section C). Application must be submitted each year by September 15.

f. All students have the right to appeal their scholarship status. Exceptions may be made in cases of mitigating circumstances such as: death in immediate family, personal injury, illness, etc., as determined by the Office of Admissions and Scholarships and the University Scholarship Appeals Committee. Appeals Forms are available in the Office of Admissions and Scholarships. The University Scholarship Appeals Committee has authority over all appeals and its decisions are final.

2. **Federal and State Programs of Financial Aid**

a. All Federal student-aid funds are awarded on the basis of criteria established by the United States Congress and the Department of Education, as required by Title IV of the Higher Education Act of 1965, as amended.

b. Priority in the awarding of some need-based aid is given to students with the greatest financial need first, within the availability of funds. Funds that are limited are awarded until depleted. Applicants are encouraged to apply early each year.

c. The family of a student is expected to make a maximum effort to assist the student with college expenses. Financial assistance from the University and other sources should be viewed only as supplementary to the efforts of the family. In determining the extent of a student's financial need, the University will take into account the financial support which may be expected from income, assets, and other resources of the parents and of the students as required by Federal Regulations.

d. Students themselves are also expected to use all available resources for their college expenses. This includes savings accounts, trust funds, etc.

e. The total amount of financial assistance offered by the University and other sources must not exceed the amount of the student's cost of attendance as specified in federal regulations. If need-based financial aid is awarded, the total need-based award and educational resources cannot exceed the amount of financial need as determined by the federal need formula. The student is responsible for notifying the Department of Student Financial Aid at Mississippi State University upon learning that additional educational resources/benefits (scholarships, tuition waivers, etc.) have been awarded or received.

f. Because the amount of financial assistance awarded usually reflects the financial situation of the student's family, the University does not make a public announcement of the amount of financial aid awarded.

g. The University will clearly state the total yearly cost of attendance. (See costs listed under "Students Expenses" or visit our Web site at www.sfa.msstate.edu.)

h. All financial assistance is awarded on an annual basis and no award implies automatic renewal from year to year. A new FAFSA and MTAG/MESG application must be submitted each year. Other applications may also be required. Always check with the granting agency to determine application procedures and deadline dates.

3. **Satisfactory Academic Progress for Purposes of Student Financial Aid**

Purpose: To define reasonable standards for measuring academic progress in order for students to remain eligible for financial aid under Title IV.

Policy: Mississippi State University, as required by federal law, defines and enforces minimum standards for Satisfactory Academic Progress. Students receiving federal and institutional financial aid and Sumners funds must conform to these minimum standards of Satisfactory Academic Progress. Students receiving federal financial assistance and Sumners funds must enroll in courses leading to, and earning credit toward, a degree. These satisfactory academic progress standards will include an evaluation of each student's progress in terms of quality and quantity of progress toward the degree. Students who are not successfully completing appropriate courses will not be considered to be making satisfactory academic progress and will not be eligible for further federal financial aid. These satisfactory academic progress standards supersede any award letter that the student might have received. This policy applies to all Title IV federal and institutional Financial Aid programs at Mississippi State University and the Sumners Scholarship Program

For details regarding this satisfactory academic progress policy, including the appeals process, and other consumer information, visit our Web site at www.sfa.msstate.edu.

4. **Withdrawal from School**

Treatment of Student Aid Funds when a Student Withdraws from School:

Students who choose to withdraw from the University prior to the end of an enrollment period (semester) should follow the University's guidelines for withdrawing from school. An Official Withdrawal Form must be completed and submitted to the proper office before a student can be considered officially withdrawn. Information concerning the details of withdrawal procedures can be found in the MSU Bulletin or by contacting the Registrar.

Federal student aid recipients who begin attending classes during a semester and who cease attending or performing academic activities prior to the end of the semester, and never complete an Official Withdrawal Form are considered by the federal government to have unofficially withdrawn. If University records indicate that a student did begin attending classes but subsequently unofficially withdrew, the University will consider the Unofficial Withdrawal date to be the midpoint of the semester (unless documentation exists of an earlier or later date of academic activity by the student).

When a federal student aid recipient withdraws, officially or unofficially, after attending at least the first class day, the University will return, and the student aid recipient will be required to repay, a prorated portion of funds received based upon a federally required calculation.

If University records show a federal student aid recipient never attended a class and/or never performed an academically related activity for a semester or term, then the recipient never established eligibility for any aid funds that may have been disbursed for that semester or term. In addition, any student aid recipient who drops all classes prior to the first day of class or whose schedule is voided for a semester or term, did not establish eligibility for any aid funds that may have disbursed for that semester or term, and must repay the entire amount of aid disbursed for that semester or term.

If a student did not receive any federal student aid but did receive other types of aid funds, and subsequently officially withdraws, refunds and repayments will be based upon the University's refund schedule.

For more information regarding return and repayment of Title IV (federal) funds, see the Return of Title IV Funds section of "withdrawal from school" on the Web site at www.sfa.msstate.edu under Policies/Consumer Right to Know.

**Note: The information contained in this section is accurate as of the date of publication but is subject to change, without notice, in order to comply with federal, state, or university requirements. Updates are posted on the MSU Web site.

Colleges and Degree Programs

Student Responsibility Disclaimer

Each student is responsible for understanding and completing all requirements established for his or her degree by the University, college and department. A student's advisor or counselor may not assume that responsibility. Any substitution, waiver, or exemption from established degree requirements may be accomplished only with the approval of the student's dean. Exceptions to University requirements, including the General Education requirements, will be authorized only with the approval of the student's dean and the Office of Academic Affairs.

This Bulletin presents information which, at the time of preparation for printing, most accurately described the courses, curricula, degrees, policies, procedures, regulations and requirements of the University. No contractual relationships, however, can be established between students and the University upon the information contained herein. The University reserves the right to delete, substitute for, change, or supplement any statement in this Bulletin without prior notice.

Mississippi State University does not discriminate on the basis of race, color, religion, national origin, sex, age, disability, sexual orientation, group affiliation, or veteran status.

College of Agriculture & Life Sciences

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General Information

The College of Agriculture and Life Sciences (CALS) at Mississippi State University is one of the leading colleges of agriculture, life sciences, and human ecology in the southeast. Student enrollment, degree offerings, and student placement have increased steadily each year.

As a land-grant institution, Mississippi State's College of Agriculture and Life Sciences offers excellent academic programs related to basic life sciences, environmental issues, agricultural production, food and fiber processing, agribusiness, agricultural information science, and the conservative and sustainable use of natural resources. With the establishment of MSU's Institute for Genomics, Biocomputing and Biotechnology (IGBB), the College will continue to enhance the study of the life sciences, including biotechnological applications that will have a tremendous impact on education, agricultural production, food, fibers, human and animal health, the environment, and bio-based industrial products.

Students may choose from 17 undergraduate curricula in the College of Agriculture and Life Sciences. Each degree program will prepare students for career opportunities in the multi-billion dollar agricultural and life sciences' industry. These programs will also prepare students for graduate and/or professional school study.

Organization: The College of Agriculture and Life Sciences is one of five major units of the Division of Agriculture, Forestry and Veterinary Medicine. The others are the Mississippi Agricultural and Forestry Experiment Station (MAFES), Mississippi State University Extension Service (MSU-ES), the College of Forest Resources (CFR), the Forest and Wildlife Research Center (FWRC), and the College of Veterinary Medicine (CVM).

Faculty and Facilities: The level of education of the faculty of the College of Agriculture and Life Sciences, as measured by advanced degrees and by the diversity of the institutions from which these degrees were earned, is exceptionally high. The teaching faculty includes resident staff of the MAFES and MSU-ES, which offer valuable opportunities for students on the undergraduate and graduate (See MSU Graduate Bulletin) levels. The sharing of faculty and facilities between the College of Agriculture and Life Sciences, MAFES, and MSU-ES keeps the instructional program current and meaningful to students.

Policies

Graduation Requirements: The minimum requirements for graduation with a Bachelor of Science degree in the College of Agriculture and Life Sciences include the following:

1. Fulfillment of all university academic requirements as published in this Bulletin.
2. Completion of the General Education requirements as published in this Bulletin. (See Listing of Approved General Education Courses)
3. Completion of all program requirements in the major of choice with an average of "C" or better (2.00 on a 4.00 scale).
4. Completion of sufficient upper level credit hours to satisfy the university requirement of twenty-five percent of degree hours in upper level courses.

All students should consult with their assigned departmental advisor who will review and approve course schedules and provide information and answer questions regarding progress toward degree, career opportunities, and campus resources.

Computer Requirements: The College of Agriculture and Life Sciences requires all entering freshmen and transfer students to own or lease a personal computer. This college-wide requirement is a proactive measure to insure that students will develop the computer skills necessary for success in agriculture and life sciences professions. CALS requirements match the requirements for MSU (http://www.its.msstate.edu/support/desktop/specsstudent/) except for Landscape Architecture students and Human Sciences students. Please see departmental websites for specific requirements for those programs.

Pre-Professional Programs: The College of Agriculture and Life Sciences offers a number of programs of study that lead to professional and graduate degree programs including:

- Pre-Veterinary Medicine
- Pre-Law
- Pre-Medicine
- Pre-MBA
- Pre-Pharmacy
- Pre-Dental
- Pre-Optometry

Pre-professional programs of study within CALS enable students to have completed all requirements necessary for admission to the graduate and professional programs of their choice. See listed majors for the specific requirements for each of these areas and contact departmental representatives for additional information.

Degree Programs

Students may choose from the following degree programs and concentrations in the College of Agriculture and Life Sciences:

- Agribusiness
  - Management
  - Policy and Law
  - Production
- Agricultural Engineering Technology and Business
  - Enterprise Management
  - Natural Resources and Environmental Management
  - Precision Agriculture
  - Surveying and Geomatics
- Agricultural Education, Leadership, and Communications

- Agricultural Education
- Agricultural Leadership
- Agricultural Communications

- Agricultural Science

- Agronomy
  - Agricultural and Environmental Soil Sciences
  - Golf and Sports Turf Management
  - Integrated Crop Management
  - Integrated Pest Management
- Animal and Dairy Sciences
  - Business and Industry
  - Production Management
  - Pre-Veterinary/Science
- Biochemistry
  - Bioinformatics
  - Entomology
  - Forensic Sciences
  - Plant Pathology
  - Pre-Dental
  - Pre-MBA
  - Pre-Medicine
  - Pre-Optometry
  - Pre-Pharmacy
  - Pre-Veterinary Medicine
  - Science
- Culinology

- Fashion Design and Merchandising
  - Design and Product Development
  - Merchandising
- Environmental Economics and Management

- Envrionmental Science in Agricultural Systems

- Food Science, Nutrition and Health Promotion
  - Pre-Health
  - Food Safety
  - Food and Nutrition
  - Food Processing/Business
  - Food Science
- Horticulture
  - Floral Management
  - Floriculture and Ornamental Horticulture
  - Fruit and Vegetable Production
- Human Development and Family Science
  - Child Development
  - Child Life
  - Youth Development
  - Family and Consumer Sciences Teacher Education
  - Family Science
  - Gerontology Certificate
- Landscape Architecture
- Landscape Contracting and Management

- Poultry Science
  - Applied Poultry Management
  - Science and Pre-Vet Science

Minors are available in a number of these programs. See the appropriate degree program in this Bulletin for additional information or call departmental representatives.

Five-Year, Two-Degree Curricula in Agriculture and Business and in Agriculture and Liberal Arts

Five-year, two-degree curricula leading to Bachelor of Science degrees in both Agriculture and Business and Agriculture and Liberal Arts are available. Such curricula may be designed with a major in any field of agriculture or human sciences combined with a major in any field of business or liberal arts. These programs must meet the minimum requirements of 124 semester hours with a C average or better for a degree in Agriculture including

1. a minimum of 54 semester hours with a C average or better in business approved by the College of Business and Industry, or
2. a minimum of 48 hours with a C average or better in the liberal arts field approved by the College of Arts and Sciences.

Students desiring to follow a five-year, two-degree curriculum will develop a detailed program by consultation with advisors in the College of Agriculture and Life Sciences and the College of Business and Industry or the College of Arts and Sciences. The two degrees are conferred simultaneously at the end of the fifth year. Students should declare their intentions of pursuing the two-degree program as early as possible, generally not later than the end of the sophomore year.

Pre-Veterinary Medicine

The College of Agriculture and Life Sciences does not offer a degree in Pre-Veterinary Medicine; therefore, students should select a major that includes Pre-Veterinary courses. These requirements are included in the following degree programs: Animal and Dairy Sciences; Poultry Science; Food Science, Nutrition and Health Promotion; Biochemistry and Molecular Biology; Microbiology; and Biological Sciences (the latter two degree programs are located in the College of Arts and Sciences). Each of the four degree programs within the College of Agriculture and Life Sciences (CALS) allows the student to complete the necessary requirements for entry to the College of Veterinary Medicine and a Bachelor of Science simultaneously. To receive a Bachelor of Science degree, each student must meet the curriculum requirements set forth by the respective department provided through the Pre-Veterinary Medicine Concentration (Example: See Animal and Dairy Sciences). Upon the successful completion of the undergraduate degree program through the junior year and the pre-veterinary medicine course requirements, a student may apply to the College of Veterinary Medicine (CVM). Upon the successful completion of the first year of CVM courses (approximately 40-42 hrs.), a student may apply these hours toward the bachelor's degree. This course work can serve as the senior year of the undergraduate curriculum. This "three plus one" program is offered by the College of Agriculture and Life Sciences for Pre-Veterinary students.

Address inquiries concerning the Pre-Veterinary medicine concentrations available to desired degree program and advisor listed below:

Animal and Dairy Sciences Pre-Veterinary Medicine Program
Department of Animal and Dairy Sciences
Jessica Graves, Pre-Veterinary Advisor
4017 Wise Center
Box 9815
Mississippi State, MS 39762
Phone: (662) 325-2936

Biochemistry and Molecular Biology
Pre-Veterinary Medicine Program
Department of Biochemistry, Molecular Biology, Entomology & Plant Pathology
Dr. Darrell Sparks, Pre-Veterinary Advisor
402 Dorman Hall
Box 9540
Mississippi State, MS 39762
Phone: (662) 325-7733

Food Science Pre-Veterinary Medicine Program
Department of Food Science, Nutrition and Health Promotion
Dr. Wes Schilling, Pre-Veterinary Advisor
105 Herzer Dairy Science Building
Box 9805
Mississippi State, MS 39762
Phone: (662) 325-3200

Poultry Science Pre-Veterinary Medicine Program
Department of Poultry Science
Ms. Jessica Wells
114 Hill Poultry Science Building
Box 9665
Mississippi State, MS 39762
Phone: (662) 325-3416

Pre-Veterinary Requirements for entry into The College of Veterinary Medicine

Writing/Composition		6
Public Speaking or Technical Writing		3
CO 1003	Fundamentals of Public Speaking	
or AELC 3203	Professional Writing in Agriculture, Natural Resources, and Human Sciences	
Mathematics		6
Microbiology with lab		4
Biological Science with lab		8
BIO 1134	Biology I	
BIO 1144	Biology II	
General/Inorganic Chemistry with lab		8
Organic Chemistry with lab		8
CH 4513	Organic Chemistry I	
CH 4511	Organic Chemistry Laboratory I	
CH 4523	Organic Chemistry II	
CH 4521	Organic Chemistry Laboratory II	
Biochemistry		3
Physics with lab (can be trig-based)		6
Advanced Science Electives		12
Fine Arts		3
Humanities		6
Social/Behavioral Science		6
Total Hours		79

Electives will be needed from requirements toward the student's alternate major to complete the minimum 124 hour degree.

International Studies in Agriculture

The International Studies in Agriculture minor within the College of Agriculture and Life Sciences is offered to allow students to enhance their knowledge of an interdependent global food system, the impacts of international agricultural technologies and systems, and the various agricultural educational systems around the world as well as develop skills needed in a global economy. Students will be prepared to make decisions, communicate effectively, and lead in a culturally diverse agricultural environment. Students must complete a minimum of 21 hours from a list of approved courses with a grade of "C" or above in all classes counting toward the minor.

Students seeking the International Studies in Agriculture minor will be required to complete the following courses:

Core Courses		
GA 2103	Seminar in International Studies in Agricultural Systems	3
or AELC 2103	Seminar in International Studies in Agricultural Systems	
AELC 4503	International Agricultural Education	3
Foreign Language I		3
Foreign Language II		3
Study Abroad [1]		3
Electives		
A minimum of three hours from Category I AND three hours of additional coursework which may come from Category I or II.		6
Category I: CALS Electives that have an International component or that apply boradly to international studies [2]		
ABE 4843	Sustainable Communities	
or LA 4843	Sustainable Communities	
AEC 2713	Introduction to Food and Resource Economics	
AEC 3213	International Trade in Agriculture	
AEC 3233	Introduction to Environmental Economics and Policy	
AEC 3413	Introduction to Food Marketing	
ENS 2103	Introduction to Environmental Science	
FNH 4193	Social-Cultural Aspects of Food	
FNH 4333	Food Law	
FDM 3573	Historic Costume	
LA 1423	History of Landscape Architecture	
FDM 4603	Global Sourcing in the Textile and Apparel Industry	
LA 1803	Landscape Architecture Appreciation	
LA 4113	Design Theory and Criticism.	
LA 4653	Study Abroad: Gardens and Urban Spaces	
LA 4753	Sustainable Landscape Management	
PSS 3633	Sustainable and Organic Horticulture	

PSS 4043	International Horticulture	
Category II: MSU Campus-wide Electives with an International Focus - see advisor for complete list [3]		

1 Three hours (minimum) as a study abroad course or international experience as linked to a degree program-specific course, special topics, directed individual study, internship or other means in the student's curriculum.

2 As additional courses in CALS with an international or global focus are developed, they may be added as an elective. Other courses outside of CALS or as transfer hours may be substituted as approved by the minor advisor.

3 Other courses from across MSU or as transfer hours may be substituted as approved by the minor advisor.

Department of Agricultural and Biological Engineering

Agricultural Engineering Technology and Business (AETB)

Department Head: Dr. Jonathan Pote
Office: 150 Agricultural and Biological Engineering Building

Agricultural Engineering Technology and Business (AETB) graduates can find rewarding careers in a variety of agricultural, environmental, and industrial businesses. Technologists focus on managing, operating, and troubleshooting technology systems (rather than engineering design) by applying their knowledge of technology and business applications. This hands-on curriculum teaches students to manage equipment and machinery, biological processes, computers, computer simulations, and other technologies to create and maintain current and new production systems. A Bachelor of Science degree is offered by the Agricultural and Biological Engineering Department through the College of Agriculture and Life Sciences.

Students may pursue one of four concentrations within AETB:

1. Natural Resources & Environment Management
2. Precision Agriculture
3. Enterprise Management
4. Surveying & Geomatics

The concentrations are achieved by completing 30-32 hours of specific technical electives as approved by an AETB advisor. Concentration descriptions and employment opportunities are discussed below.

Students who plan to attend a community college before transferring to Mississippi State University are strongly encouraged to contact the AETB Undergraduate Coordinator regarding their proposed community college schedule and transfer requirements. Transfer credits with a grade of C or higher will be considered toward fulfillment of the degree requirements in the AETB curriculum. A maximum of 12 transfer hours of technical credit can be applied toward degree requirements. Students are required to earn a "C" or better in all ABE core courses.

Internships or co-op experiences are highly encouraged and help students translate their classroom and laboratory experiences into the reality of the business setting.

The **Natural Resource & Environmental Management** (NREM) concentration is appropriate for students interested in developing skills to manage and solve problems in systems that impact our natural resources and the environment. Skill sets include knowledge in geology, hydrogeology, GIS, water quality, watershed management, and natural resource conservation. A few career paths for NREM Technologists include: Firm Environmental Manager, Conservation District Manager, Mapping/GIS Specialist, Nonpoint Source Pollution Specialist, and Watershed Planner. Employment opportunities include private and public firms with environmental issues, soil and water conservation districts, as well as national, state, county, or city highway and urban planning departments. National government agencies include the USDA NRCS, US EPA, US Army Corps of Engineers, US Geological Survey, US Forest Service, and US Bureau of Land Management to name a few.

The **Precision Agriculture** (PRAG) concentration is appropriate for students interested in developing skills in global positioning systems (GPS), geographical information systems (GIS), remote sensing, and digital mapping technologies. A few career paths for PRAG Technologists include: Food/Fiber Production (Farming), Precision Agriculture Specialist, Mapping/GIS Specialist, Crop Consulting, and Equipment Test Engineer.

The **Enterprise Management** (EMGT) concentration is appropriate for students interested in acquiring the skills to manage and solve problems for a wide variety of systems. Students will get a broad foundation in the management of machine systems, electricity, soil and water conservation, grain, precision agriculture, biorenewables, and animal production systems. A few career paths for EMGT Technologists include: Banking & Ag Lending, Crop Consulting, and Agricultural Technical Sales. Employment opportunities include small and large agricultural production operations, banking and farm credit lenders, Agri-chimical and machinery sales and consulting to name a few.

The **Surveying & Geomatics** (SGEO) concentration provides students with the necessary prerequisites to begin a three-step process (academic training, supervised surveying experience, testing) to become a registered Land Surveyor in Mississippi. A few career paths for SGEO Technologists include: Boundary/Construction Surveyor, Hydrographic Surveyor, Mining Surveyor, Mapping/GIS Specialist, and Image Analyst. Employment opportunities include large and small engineering, architectural, and surveying firms as well as national, state, county, or city highway and urban planning departments. National government agencies include the U.S. Army Corp of Engineers, U.S. Geological Survey, U.S. Forest Service, and U.S. Bureau of Land Management to name a few.

Degree Requirements

English Composition		
EN 1103	English Composition I	3
or EN 1163	Accelerated Composition I	
EN 1113	English Composition II	3
or EN 1173	Accelerated Composition II	
Mathematics		
MA 1713	Calculus I [1]	3
Choose one of the following:		3
BQA 2113	Business Statistical Methods I	
MA 2113	Introduction to Statistics	
ST 2113	Introduction to Statistics	
Science		
PH 1113	General Physics I [1]	3

PH 1123	General Physics II [1]	3
Humanities		
Select from General Education courses		6
Fine Arts		
Select from General Education courses		3
Social Science		
AEC 2713	Introduction to Food and Resource Economics	3
Select from General Education courses		3
Major Core		
ABE 1073	Technology Design I. [1]	3
ABE 1083	Technology Design II	3
ABE 1863	Engineering Technology in Agriculture	3
ABE 2873	Land Surveying [1]	3
ABE 3513	The Global Positional System and Geographic Information Systems in Agriculture and Engineering [1]	3
ABE 4263	Soil and Water Management	3
ABE 4383	Building Construction	3
ABE 4473	Electrical Applications	3
ABE 4961	Seminar	1
Science Courses		
CH 1043	Survey of Chemistry I	3
CH 1053	Survey of Chemistry II	3
CH 1051	Experimental Chemistry	1
Mathematics or Restricted Electives [2]		6
Business Courses		
ACC 2013	Principles of Financial Accounting [1]	3
ACC 2023	Principles of Managerial Accounting [1]	3
AEC 3133	Introductory Agribusiness Management	3
BL 2413	The Legal Environment of Business [1]	3
MGT 3513	Introduction to Human Resource Management	3
Oral Communication Requirement		
CO 1003	Fundamentals of Public Speaking	3
or CO 1013	Introduction to Communication	
Writing Requirement		
AELC 3203	Professional Writing in Agriculture, Natural Resources, and Human Sciences	3
Computer Literacy Requirement		
Satisfied by successful completion of ABE 1073, ABE 1083, ABE 1863, and ABE 3513		
Concentration Courses -- see specific lists for courses		30-32
Total hours		122-124

Natural Resource & Environmental Management (NREM) Concentration

ADS 1113 & ADS 1121	Animal Science and Animal Science Laboratory	4
or BIO 1134	Biology I	
PSS 1313	Plant Science	3
or BIO 1023	Plants and Humans	
GR 2313	Maps and Remote Sensing	3
GR 4303	Principles of GIS	3
PSS 3303	Soils	3
PSS 3301	Soils Laboratory	1
NREM Courses - choose 15 hours from the following: [2]		
AEC 3233	Introduction to Environmental Economics and Policy	3
AEC 4223	Applied Quantitative Analysis in Agricultural Economics	3
AEC 4233	Environmental Economics	3
BIO 2503	Environmental Quality	3
BL 4263	Environmental Law	3
FO 4313	Spatial Technologies in Natural Resources Management	3
FO 4353	Natural Resource Law	3
FO 4463	Forest Hydrology and Watershed Management	3
GG 3133	Introduction to Environmental Geology	3
GG 3613	Water Resources	3
GG 4613	Physical Hydrogeology	3
GR 3113	Conservation of Natural Resources	3
PSS 4333	Soil Conservation and Land Use	3
PSS 4373	Geospatial Agronomic Management	3

Precision Agriculture (PRAG) Concentration

ADS 1113 & ADS 1121	Animal Science and Animal Science Laboratory	4
PSS 1313	Plant Science	3
or BIO 1023	Plants and Humans	
GR 2313	Maps and Remote Sensing	3
GR 4303	Principles of GIS	3
PSS 3303	Soils	3
PSS 3301	Soils Laboratory	1
PSS 4373	Geospatial Agronomic Management	3
PRAG Courses - choose 12 hours from the following: [2]		
ABE 2173	Principles of Agricultural and Off-Road Machines	3
ABE 4163	Agricultural and Off-Road Machinery Management	3
AEC 4413	Public Problems of Agriculture	3
GR 4323	Cartographic Sciences	3
GR 4313	Advanced GIS	3
GR 4333	Remote Sensing of the Physical Environment	3
FO 4453	Remote Sensing Applications	3
PSS 4123	Grain Crops	3
PSS 4133	Fiber and Oilseed Crops	3

Enterprise Management (EMGT) Concentration

ADS 1113 & ADS 1121	Animal Science and Animal Science Laboratory	4
PSS 1313	Plant Science	3
or BIO 1023	Plants and Humans	

PSS 3303	Soils	3
PSS 3301	Soils Laboratory	1
EMGT Courses - choose 21 hours from the following: [2]		
ABE 2173	Principles of Agricultural and Off-Road Machines	3
ABE 4163	Agricultural and Off-Road Machinery Management	3
ADS 4323	Beef Cattle Science	3
AEC 3213	International Trade in Agriculture	3
AEC 3233	Introduction to Environmental Economics and Policy	3
AEC 4413	Public Problems of Agriculture	3
PO 4334	Broiler Production	4
PSS 4103	Forage and Pasture Crops	3
PSS 4123	Grain Crops	3
PSS 4133	Fiber and Oilseed Crops	3

Surveying & Geomatics (SGEO) Concentration

CE 2213	Surveying [1]	3
CE 4233	Control Surveys [1]	3
CE 4243	Land Surveys [1]	3
SGEO Courses - choose 21 hours from the following: [2]		
BL 4333	Real Estate Law [1]	3
FO 4313	Spatial Technologies in Natural Resources Management	3
FO 4453	Remote Sensing Applications	3
GR 2313	Maps and Remote Sensing	3
GR 3303	Survey of Geospatial Technologies	3
GR 4303	Principles of GIS	3
GR 4313	Advanced GIS	3
GR 4323	Cartographic Sciences	3
GR 4333	Remote Sensing of the Physical Environment	3
MGT 3323	Entrepreneurship	3

1 Partial requirements to take the Fundamentals of Surveying Exam

2 See advisor for full list of courses

Department of Agricultural Economics

Major Advisor: Dr. Randy Little
Office: 325-2750

Agriculture and related businesses create more employment than does any other industry. The agribusiness industry accounts for nearly one-fifth of the U.S. gross national product and employs close to one-fourth of the U.S. labor force. Fully understanding how economic forces affect today's agriculture industry is critical for those seeking careers in agriculture-related businesses.

A growing field within economics is environmental economics. A key challenge to the U.S. economy in the 21st century is finding a balance between the demand for natural resources and the need to preserve our environment. Individuals who can analyze these complex problems will be needed for the new "green jobs" that require sustainable solutions to resource and environmental issues.

Two majors, Environmental Economics and Agribusiness, are offered to provide an understanding of economic forces and business management principles as well as technical knowledge of technical agriculture and environmental science. Students completing either major will be prepared to pursue additional training at the graduate level.

Students who plan to attend a community college before transferring to Mississippi State are strongly encouraged to contact the Department's major advisor regarding their proposed community college course schedule and transfer requirements.

Students in both majors are required to earn a "C" or better in all required (non-elective) agricultural economics (AEC), economics (EC), English (EN), and mathematics (MA) courses.

BS in Environmental Economics and Management (EEM)

The Environmental Economics and Management (EEM) major is designed to prepare students for the efficient and productive management of natural and environmental resources. Students receive excellent functional training and learn skills in the areas of environmental science, policy and economics. Potential career fields include, but are not limited to, environmental law; natural resource and environmental policy analysis; environmental consulting; and resource management. In addition, students desiring postgraduate training will have a solid academic foundation for pursuing graduate or professional degrees.

Degree Requirements

English Composition		
EN 1103	English Composition I	3
or EN 1163	Accelerated Composition I	
EN 1113	English Composition II	3
or EN 1173	Accelerated Composition II	
Mathematics		
MA 1313	College Algebra	3
MA 1713	Calculus I	3
MA 3123	Introduction to Statistical Inference	3
Science		
BIO 1134	Biology I	4
BIO 1144	Biology II	4
Humanities		
Select from General Education courses		6
Fine Arts		
Select from General Education courses		3
Social/Behavioral Sciences		
AEC 2713	Introduction to Food and Resource Economics	3
or EC 2123	Principles of Microeconomics	
EC 2113	Principles of Macroeconomics	3
Major Core [1]		
AEC 2611	Seminar I	1
AEC 3113	Introduction to Quantitative Economics	3
AEC 3233	Introduction to Environmental Economics and Policy	3

AEC 3513	Economics of Food and Fiber Production	3
AEC 4133	Analysis of Food Markets and Prices	3
AEC 4223	Applied Quantitative Analysis in Agricultural Economics	3
AEC 4233	Environmental Economics	3
AEC 4243	Natural Resource Economics	3
AEC 4413	Public Problems of Agriculture	3
BIO 3104	Ecology	4
BL 2413	The Legal Environment of Business	3
BL 4263	Environmental Law	3
EC 3113	Intermediate Macroeconomics	3
EC 3123	Intermediate Microeconomics	3
EC 4423	Public Finance	3
PS 1113	American Government	3
PS 2703	Introduction to Public Policy	3
PS 4743	Environmental Policy	3
WFA 3133	Applied Aquatic and Terrestrial Ecology	3
Free Electives		27-28
Oral Communication Requirement		
CO 1003	Fundamentals of Public Speaking	3
Writing Requirement		
AELC 3203	Professional Writing in Agriculture, Natural Resources, and Human Sciences	3
Total Hours		124

1 Courses are listed in alphanumeric order. Students should contact an advisor, refer to the appropriate departmental curriculum sheet or refer to the course description section of this bulletin to determine the prerequisites for each course.

2 See major advisor for a list of courses approved as Restricted Electives.

BS in Agribusiness (AGB)

The Agribusiness (AGB) major provides training in business including accounting, management, marketing, finance and economics, along with training in the agricultural sciences. The AGB major offers students flexibility in preparing for a wide variety of careers in agriculture and agribusiness. The major provides all students excellent foundational training in applied economics and business management while offering students the opportunity to specialize in specific areas. Potential career fields include, but are not limited to, agricultural and environmental law; agricultural policy analysis; economic consulting; agricultural lending; agricultural production management; commodities and equities marketing; and food chain supply management, including procession, sales, and distribution. Also, students desiring post-graduate training will have a solid academic foundation for pursuing graduate degrees.

Degree Requirements

English Composition		
EN 1103	English Composition I	3
or EN 1163	Accelerated Composition I	
EN 1113	English Composition II	3
or EN 1173	Accelerated Composition II	
Mathematics [1]		
MA 1313	College Algebra	3
MA 1613	Calculus for Business and Life Sciences I (OR an equivalent or higher level calculus)	3
BQA 2113	Business Statistical Methods I	3
Science		
Select from General Education courses [2]		7
Humanities		
PHI 1103	Introduction to Philosophy (OR Foreign Language course)	3
Select from General Education courses		3
Fine Arts		
Select from General Education courses		3
Social/Behavioral Sciences		
AEC 2713	Introduction to Food and Resource Economics	3
or EC 2123	Principles of Microeconomics	
EC 2113	Principles of Macroeconomics	3
Major Core [1]		
ACC 2013	Principles of Financial Accounting	3
ACC 2023	Principles of Managerial Accounting	3
AEC 2611	Seminar I	1
AEC 3113	Introduction to Quantitative Economics	3
AEC 3213	International Trade in Agriculture	3
AEC 3233	Introduction to Environmental Economics and Policy	3
AEC 3413	Introduction to Food Marketing	3
AEC 3513	Economics of Food and Fiber Production	3
AEC 4133	Analysis of Food Markets and Prices	3
AEC 4223	Applied Quantitative Analysis in Agricultural Economics	3
AEC 4413	Public Problems of Agriculture	3
BL 2413	The Legal Environment of Business	3
EC 3113	Intermediate Macroeconomics	3
EC 3123	Intermediate Microeconomics	3
Oral Communication Requirement		
CO 1003	Fundamentals of Public Speaking	3
Writing Requirement		
AELC 3203	Professional Writing in Agriculture, Natural Resources, and Human Sciences	3
Choose one of the following concentrations:		41
Management Concentration (MGT)		
ACC 3203	Financial Statement Analysis	
AEC 3133	Introductory Agribusiness Management	
AEC 4113	Agribusiness Firm Management	
AEC 4123	Financial and Commodity Futures Marketing	
FIN 3123	Financial Management	
Communication or Computer Elective (3 hours)		
Restricted Electives (15 hours) [3]		
Free Electives (8 hours)		
Policy and Law Concentration (POLL)		
AEC 4233	Environmental Economics	
AEC 4243	Natural Resource Economics	
EC 4423	Public Finance	

EN 4223	Principles of Legal Writing	
PHI 1113	Introduction to Logic	
PS 1113	American Government	
PS 2703	Introduction to Public Policy	
Restricted Electives (15 hours) [3]		
Free Electives (5 hours)		
Production Concentration (PROD)		
ADS 1113 & ADS 1121	Animal Science and Animal Science Laboratory	
AEC 3133	Introductory Agribusiness Management	
AEC 4123	Financial and Commodity Futures Marketing	
AEC 4343	Advanced Farm Management	
FIN 3123	Financial Management	
PSS 1313	Plant Science	
Restricted Electives (15 hours) [3]		
Free Electives (7 hours)		
Total Hours		124

[1] Courses are listed in alphanumeric order. Students should contact an advisor, refer to the appropriate departmental curriculum sheet or refer to the course description section of this bulletin to determine the prerequisites for each course.

[2] CH 1043/CH 1051 recommended

[3] See major advisor for complete list of courses approved as Restricted Electives for each concentration.

Environmental Economics and Management Minor

The Department of Agricultural Economics offers a minor in Environmental Economics and Management to students outside the department. Course selection for the minor is designed to equip students with fundamental economic and management principles pertinent to environmental and resource policy issues to broaden the scope of career opportunities for students completing the minor.

A minor in Environmental Economics and Management is attained by completing at least 18 hours of environmental and resource economics courses. To satisfy the minor, students must maintain a 2.0 grade point average in courses taken to satisfy the minor. Students may choose among the following:

Required:

AEC 2713	Introduction to Food and Resource Economics	3
or EC 2123	Principles of Microeconomics	
AEC 3233	Introduction to Environmental Economics and Policy	3
AEC 4233	Environmental Economics	3
AEC 4243	Natural Resource Economics	3
Choose at least three of the following:		9
AEC 3113	Introduction to Quantitative Economics	
AEC 3513	Economics of Food and Fiber Production	
AEC 4123	Financial and Commodity Futures Marketing	
AEC 4413	Public Problems of Agriculture	
Total Hours		21

Students are responsible for satisfying all prerequisites before registering for courses. A grade of C or better must be earned in each course to be counted toward the minor. Only students outside the Department of Agricultural Economics are eligible for the minor.

Agribusiness Minor

The Department of Agricultural Economics offers a minor in Agribusiness to students outside the Department. Course selection for the minor in Agribusiness is designed to equip students with fundamental economic and management principles to broaden the scope of career opportunities for students completing the minor.

A minor in Agribusiness is attained by completing at least 18 hours of Agribusiness courses. To qualify for a minor, students must maintain a 2.0 grade point average in courses taken to satisfy the requirements for the minor. Students may choose among the following:

AEC 2713	Introduction to Food and Resource Economics	3
or EC 2123	Principles of Microeconomics	
AEC 3133	Introductory Agribusiness Management	3
Choose at least four of the following:		12
AEC 3213	International Trade in Agriculture	
AEC 3413	Introduction to Food Marketing	
AEC 4113	Agribusiness Firm Management	
AEC 4123	Financial and Commodity Futures Marketing	
AEC 4133	Analysis of Food Markets and Prices	
AEC 4343	Advanced Farm Management	
AEC 4413	Public Problems of Agriculture	
Other approved AEC Elective		
Total Hours		18

Students are responsible for satisfying all prerequisites before registering for courses. A grade of C or better must be earned in each course to be counted toward the minor. Only students outside the Department of Agricultural Economics are eligible for the minor in Agribusiness.

Department of Animal and Dairy Sciences

Major Advisor: Instructor Jessica Graves
Office: 4021 Wise Center

Animal and Dairy Sciences is a multidisciplinary science that focuses on livestock and companion animal growth, health and safety, as well as food and fiber production. Professionals in the diverse fields of animal and dairy sciences strive to provide healthy and wholesome food as well as quality fiber products to support the growing population. Students in Animal and Dairy Sciences will learn about the newest technologies and experience progressive management strategies that will prepare them to be leaders in agriculture.

Joining Animal and Dairy Sciences will give students hands-on education and experience needed to be successful in areas such as breeding, feeding and nutrition, growth and development, reproductive and lactation

physiology, biotechnology, marketing, management, and evaluation as it relates to livestock species. The curriculum is designed to provide students with academic and experiential learning while also allowing them flexibility to tailor their program by taking courses that best prepare and support their professional goals. Students of the Animal and Dairy Sciences will be challenged to think critically and exercise knowledge of discipline content through scientific writing and presentation. Students pursuing veterinary medicine or graduate studies will find the academic setting of the Animal and Dairy Sciences is an ideal fit.

Concentrations:
Pre-Vet Science
Business and Industry
Production Management

BS in Animal and Dairy Sciences (ADS)

Degree Requirements

English Composition		
EN 1103	English Composition I	3
or EN 1163	Accelerated Composition I	
EN 1113	English Composition II	3
or EN 1173	Accelerated Composition II	
Mathematics		
MA 1323	Trigonometry	3
or MA 1713	Calculus I	
MA 2113	Introduction to Statistics	3
Science		
See Concentration Requirements		
Humanities		
Choose from General Education courses		6
Fine Arts		
Choose from General Education courses		3
Social Sciences		
AEC 2713	Introduction to Food and Resource Economics	3
or EC 2113	Principles of Macroeconomics	
or EC 2123	Principles of Microeconomics	
Choose from General Education courses		3
Major Core		
ADS 1111	Orientation in Animal Science	1
ADS 1113	Animal Science	3
ADS 1121	Animal Science Laboratory	1
ADS 2111	Animal Science Career Planning	1
ADS 3014	Anatomy and Physiology	4
ADS 3314	Introduction to Meat Science	4
ADS 4114	Animal Nutrition	4
ADS 4124	Animal Breeding	4
ADS 4213	Feeds and Feeding	3
ADS 4613	Physiology of Reproduction	3
ADS 4611	Practices in Physiology of Reproduction	1
ADS 4221	Capstone in Animal and Dairy Science	1
Experiential Learning		3
ADS 4420	Animal and Dairy Science Internship	
or ADS 4440	Research Experience Practicum	
or ADS 4520	Livestock Extension Experience	
PO /GNS /BIO 3103	Genetics I	3
Plant and Soil Science Elective	Consult advisor	3

Choose one of the following concentrations:

Pre-Vet/Science Concentration

Chemistry Sequence		
CH 1213 & CH 1211	Chemistry I and Investigations in Chemistry I *	4
CH 1223 & CH 1221	Chemistry II and Investigations in Chemistry II *	4
Organic Chemistry & Lab		
CH 2503 & CH 2501	Elementary Organic Chemistry and Elementary Organic Chemistry Laboratory	4
or CH 4513 & CH 4511	Organic Chemistry I and Organic Chemistry Laboratory I	
Biology		
BIO 1134	Biology I *	4
BIO 1144	Biology II	4
BIO 3304	General Microbiology	4
Biochemistry		
BCH 4013	Principles of Biochemistry	3
or BCH 4603	General Biochemistry I	
Oral Communication		
CO 1003	Fundamentals of Public Speaking	3
or CO 1013	Introduction to Communication	
Electives		
Evaluation & Management Elective		2
Production Electives		8
Science Electives		12
Free Electives		6
***See academic advisor for list of approved elective courses**		
Total Hours		124

* Satisfies General Education Requirements.

Business and Industry Concentration

Inorganic Chemistry Sequence		
CH 1043 & CH 1053 & CH 1051	Survey of Chemistry I and Survey of Chemistry II and Experimental Chemistry *	7-8
or CH 1213 & CH 1211 & CH 1223 & CH 1211	Chemistry I and Investigations in Chemistry I and Chemistry II and Investigations in Chemistry I	
Organic Chemistry		
CH 2503 & CH 2501	Elementary Organic Chemistry and Elementary Organic Chemistry Laboratory	4
or CH 4513 & CH 4511	Organic Chemistry I and Organic Chemistry Laboratory I	
Biology		

BIO 1134	Biology I *	4
or BIO 1144	Biology II	
Electives		
Evaluation & Management Electives		4
Production Electives		8
Business Electives		12
General Agriculture Electives		12
Free Electives		7
***See academic advisor for list of approved elective courses**		
Writing Requirement		
Satisfied by the successful completion of ADS 1113, ADS 2111, ADS 4213, ADS 4613, ADS 4221, and ONE of: ADS 2102, ADS 2122, ADS 3213, ADS 4212, ADS 4420, ADS 4440, ADS 4520, or ADS 4623.		
Oral Communication Requirement		
Satisfied by the successful completion of ADS 4613, ADS 4221, and TWO of the following: ADS 2102, ADS 2122, ADS 2223, ADS 3812, ADS 4212, ADS 4412, ADS 4420, ADS 4440, ADS 4520, ADS 4623, or ADS 4813.		
Computer Literacy Requirement		
Satisfied by the successful completion of ADS 3312, ADS 4420, ADS 4440, ADS 4520, ADS 4813, or ADS 4523		
Total Hours		124

* Satisfies General Education Requirements.

Production Management Concentration

Inorganic Chemistry Sequence		
CH 1043 & CH 1053 & CH 1051	Survey of Chemistry I and Survey of Chemistry II and Experimental Chemistry *	7-8
or CH 1213 & CH 1211 & CH 1223 & CH 1221	Chemistry I and Investigations in Chemistry I and Chemistry II and Investigations in Chemistry II	
Organic Chemistry & Lab		
CH 2503 & CH 2501	Elementary Organic Chemistry and Elementary Organic Chemistry Laboratory	4
or CH 4513 & CH 4511	Organic Chemistry I and Organic Chemistry Laboratory I	
Biology		
BIO 1134	Biology I *	4
or BIO 1144	Biology II	
Electives		
Evaluation & Management Electives		4
Production Electives		16
Business Electives		6
General Agriculture Electives		12
Free Electives		5
***See academic advisor for list of approved elective courses.**		
Writing Requirement		
Satisfied by the successful completion of ADS 1113, ADS 2111, ADS 4213, ADS 4613, ADS 4221, and ONE of: ADS 2102, ADS 2122, ADS 3213, ADS 4212, ADS 4420, ADS 4440, ADS 4520, or ADS 4623.		
Oral Communication Requirement		
Satisfied by the successful completion of ADS 4613, ADS 4221, and TWO of the following: ADS 2102, ADS 2122, ADS 2223, ADS 3812, ADS 4212, ADS 4412, ADS 4420, ADS 4440, ADS 4520, ADS 4623, or ADS 4813.		
Computer Literacy Requirement		
Satisfied by the successful completion of ADS 3312, ADS 4420, ADS 4440, ADS 4520, ADS 4813, or ADS 4523		
Total Hours		124

* Satisfies General Education Requirements.

Course requirements for Pre-Veterinary students (3 + 1 program) to obtain a B.S. degree in Animal and Dairy Sciences

Because

1. the entrance requirements for the College of Veterinary Medicine satisfy a portion of the course requirements for the Animal and Dairy Sciences curriculum
2. a number of students are enrolled in Animal and Dairy Sciences while satisfying their pre-veterinary requirements and
3. an Animal and Dairy Sciences degree will be especially helpful to a practicing veterinarian,

the following requirements for those electing to apply for a Bachelor of Science degree in Animal and Dairy Sciences after successfully completing the first year of Veterinary Medicine are listed.

General Education Requirements	27
Dept Core	39
Science/Veterinary Medicine Concentration (excl. Science Electives and Free Electives)	40

To qualify for the Bachelor of Science degree in ADS, a student in the 3+1 program must successfully complete the 3 years of above listed undergraduate course work (115-118 hours) and the first year of the Veterinary Medicine curriculum.

ADS Minor Requirements

Obtaining a minor in Animal and Dairy Sciences will serve to complement other Bachelor of Science studies at Mississippi State University through multidisciplinary science coursework aimed to provide a deeper understanding of livestock.

Requirements

ADS 1113 & ADS 1121	Animal Science and Animal Science Laboratory	4
Production Courses (choose from the following)		3
ADS 3214	Livestock Growth and Development	
ADS 3223	Horse Management	
ADS 4113	Swine Science	
ADS 4223	Goat and Sheep Production	
ADS 4323	Beef Cattle Science	

ADS 4813	Dairy Farm Management	
Evaluation Course (choose from the following)		2
ADS 2102	Equine Conformation and Performance Evaluation	
ADS 2122	Advanced Equine Evaluation	
ADS 3812	Dairy Cattle Appraisal	
ADS 4212	Livestock Evaluation	
ADS 4232	Advanced Livestock Evaluation	
Upper Level Courses (choose from the following)		9
ADS 3014	Anatomy and Physiology	
ADS 3314	Introduction to Meat Science	
ADS 4114	Animal Nutrition	
ADS 4124	Animal Breeding	
ADS 4213	Feeds and Feeding	
ADS 4333	Equine Exercise Physiology	
ADS 4543	Applied Animal Biotechnology	
ADS 4613	Physiology of Reproduction	
ADS 4623	Physiology of Lactation	
ADS 4633	Immunology and Disease in Large Livestock Species	
Minimum Hours Required		18

Department of Biochemistry, Molecular Biology, Entomology and Plant Pathology

Department Head: Jeffrey Dean
Undergraduate Advisor: Darrell Sparks
Graduate Advisor: Ken Willeford
Office: 402 Dorman

Biochemistry and Molecular Biology Program

The Biochemistry and Molecular Biology program within the Department of BCH-EPP involves disciplines at the cutting edge of a revolution in biology. Molecular methods and the use of genetic engineering have given scientists unprecedented power to begin to understand the chemistry of life processes. The Department of BCH-EPP aims to prepare students at Mississippi State in this exciting area. In addition to the undergraduate curriculum in biochemistry and molecular biology, the department provides opportunities for an M.S. degree in Agricultural Life Sciences with a concentration in Biochemistry and a Ph.D. in Molecular Biology (See the Graduate Bulletin for description of programs and requirements for advanced degrees). For the Bachelor of Science degree in biochemistry, the objective of this curriculum is to provide the student with a strong background in science, and to prepare the student for entry into professional schools, graduate study and/or highly technical scientific careers after graduation. There are sufficient individual choices in the curriculum to allow students to tailor their programs to any of several areas of specialization by appropriate use of elective hours.

Biochemistry Minor

The Biochemistry minor is offered to allow undergraduate students in other majors to develop specific skills needed by graduates entering the science-related workforce. Students will enhance their written and oral communication skills and develop problem-solving/application skills. Students must complete 19 to 20 hours of approved coursework.

Entomology Minor

The Entomology minor is offered to help students in other programs develop specific disciplinary skills to prepare them for entry into the science-related workforce. Agriculture, forestry, and service sector industries recruit and employ a diversity of personnel variously trained in the biological sciences, business, chemistry, human health, law, natural resource management, and veterinary medicine for whom expertise in entomology would be considered an asset. The minor in Entomology provides these individuals with enhanced employment opportunities in these industries.

Students seeking an Entomology minor are required to complete at least 18 credit hours as specified to receive a minor in Entomology. Additionally, students in the IPM concentration of the Agronomy major must complete EPP 4164 Insect Taxonomy as a requirement for receiving a minor in Entomology.

Plant Pathology Minor

The Plant Pathology minor is offered to help students in other programs develop specific disciplinary skills to prepare them for entry into the science-related workforce. Agriculture, forestry, and service sector industries recruit and employ a diversity of personnel variously trained in the biological sciences, business, chemistry, human health, law, natural resource management, and veterinary medicine for whom expertise in plant pathology would be considered an asset. The minor in Plant Pathology provides these individuals with enhanced employment opportunities in these industries.

Students seeking a Plant Pathology minor are required to complete at least 18 credit hours as specified to receive a minor in Plant Pathology. Additionally, students in the IPM concentration of the Agronomy major must complete EPP 4254 Introduction to Mycology as a requirement for receiving a minor in Plant Pathology.

Graduate Studies Track

Students aiming for a career requiring graduate education should take Genetics and Cell Biology as technical electives. Since many graduate programs require some form of physical chemistry, it is strongly suggested that students take CH 4413/CH 4423 Quantum Mechanics and Spectroscopy or CH 4403 Biophysical Chemistry as technical electives.

Preparation for entry into an accelerated Master's Program (THESIS) in Biochemistry and Molecular Biology

This program requires careful planning by the student in order to complete the requirements for the B.S. while beginning a research program that should result in successful completion of a Master's thesis at the end of the second summer after the B.S. Only exceptional and motivated students should attempt this program. It is critical that BCH 4603 General Biochemistry I be scheduled in the spring of the sophomore year. The student will be expected to begin a research project in the senior year by taking up to nine hours of Directed Individual Study courses (BCH 4000). Research will continue during the summer after completion of the B.S. degree. The student must register for BCH 8000 (3 hours), Thesis Research during the summer. In addition, the student

should schedule a graduate level BCH course and ST 8114 in the spring of the senior year.

The student interested in the five year program should apply early in the undergraduate program to facilitate the scheduling of courses to conform to time constraints. In addition to applying for admission to the graduate program, the student must also take the Graduate Record Examination early enough so that the results are available by the beginning of the semester in which the student expects to graduate. The student must complete the courses required for completion of the BS degree with no more than 10 hours remaining in the semester of expected graduation.

Preparation for entry into an accelerated Master's Program (NON-THESIS) in Biochemistry and Molecular Biology

This program requires careful planning by the student in order to complete the requirements for the B.S. while initiating graduate work that should result in completion of courses leading to a Master's Degree, non-thesis concentration. This curriculum allows completion of the two degrees in a minimum of five years. Required courses and electives must be scheduled so that the student has only eight hours of undergraduate course work remaining in the spring of the senior year. The student should then schedule ST 8114 Statistical Methods and an 8000 level BCH course in that same semester. Graduate work must include BCH 8654 Intermediary Metabolism or BCH 8633 Enzymesand BCH 7000 (3 hrs) Directed Individual Study (to allow completion of an independent research paper).

The student interested in the five year program should apply early in the undergraduate program to facilitate the scheduling of courses to conform to time constraints. In addition to applying for admission to the graduate program, the student must also take the Graduate Record Examination early enough so that the results are available by the beginning of the semester in which the student expects to graduate. The student must complete the courses required for completion of the B.S. Degree with no more than 10 hours remaining in the semester of expected graduation.

Preparation for entry into an accelerated Ph.D. Program in Molecular Biology

This program requires careful planning by the student in order to complete the requirements for the B.S. while beginning a research program that should meaningfully accelerate progress towards early completion of the Ph.D. degree in Molecular Biology. By initiating a research program in the senior year, a student should reduce the time to completion of the Ph.D. by a year. Only exceptional and motivated students should attempt this program. It is critical that BCH 4603 General Biochemistry I be scheduled in the spring of the sophomore year.

The student will be expected to begin a research project in the senior year by taking the Directed Individual Study Courses. Research will continue during the summer after completion of the B.S. degree. The student must register for BCH 9000 Dissertation Research/ Dissertation in Biochemistry,Molecular Biology,Entomology and Plant Pathology during the summer.

The student should plan his/her complete graduate program of study in conjunction with research Director and Graduate Committee. Since the Ph.D. is primarily a research degree, ultimate time to completion will be dependent upon the period necessary to satisfy the research requirements of the Graduate Committee. This concentration allows the student to begin that research substantially earlier than usual.

BS in Biochemistry & Molecular Biology

Degree Requirements

English Composition		
EN 1103	English Composition I	3
or EN 1163	Accelerated Composition I	
EN 1113	English Composition II	3
or EN 1173	Accelerated Composition II	
Mathematics		
MA 1713	Calculus I	3
MA 1723	Calculus II	3
Science		
Satisfied in major core		9
Humanities		
Select from General Education courses		6
Fine Arts		
Select from General Education courses		3
Social Sciences		
See concentration requirements		6
Major Core		
CH 1213	Chemistry I	3
CH 1211	Investigations in Chemistry I	1
CH 1223	Chemistry II	3
CH 1221	Investigations in Chemistry II	1
CH 4513	Organic Chemistry I	3
CH 4511	Organic Chemistry Laboratory I	1
CH 4523	Organic Chemistry II	3
CH 4521	Organic Chemistry Laboratory II	1
BCH 1001	Introduction to Biochemistry	1
BCH 3901	Senior Seminar	1
BCH 4414	Protein Methods	4
BCH 4503	Scientific Communication Skills	3
BCH 4603	General Biochemistry I	3
BCH 4613	General Biochemistry II	3
BCH 4623	Biochemistry of Specialized Tissues	3
BCH 4713	Molecular Biology	3
BCH 4804	Molecular Biology Methods	4
BIO 1134	Biology I	4
BIO 1144	Biology II	4
BIO 3304	General Microbiology	4
PH 1113	General Physics I [1]	3
or PH 2213	Physics I	
PH 1123	General Physics II [1]	3
or PH 2223	Physics II	
Technical Electives (concentration dependent) [2]		21-32
General Electives (concentration dependent)		0-10
Oral Communication Requirement		
CO 1003	Fundamentals of Public Speaking	3
Writing Requirement		
BCH 4414	Protein Methods	4
BCH 4804	Molecular Biology Methods	4
Computer Literacy		

BCH 4414	Protein Methods	4
BCH 4713	Molecular Biology	3
BCH 4804	Molecular Biology Methods	4

Pre-Medicine Concentration (MED)

Biochemistry is an excellent preparation for medical school. In order to be better prepared for the Medical College Admissions Test (MCAT), medical school classes, and to meet medical school entrance requirements, the following courses are required in lieu of technical or general electives. These courses are also appropriate for students interested in dental school.

Social Sciences (See General Education list)		6
BIO 2103	Cell Biology	3
or BIO 4114	Cellular Physiology	
Choose one of the following:		4
BIO 3004	Human Anatomy	
BIO 3014	Human Physiology	
VS 3014	Anatomy and Physiology	
BIO 4514	Animal Physiology	
BIO 3103	Genetics I	3
or BIO 4133	Human Genetics	
Choose one of the following:		3
PH 1133	General Physics III	
PH 2233	Physics III (OR a technical elective if transferring 8 hours of Physics to the program)	
Choose one of the following:		3
PHI 1123	Introduction to Ethics	
PHI 3323	Medical Ethics	
Science Elective		
Technical electives		6
General or Free electives		8-9
Total hours		120

Pre-Dental Concentration (DENT)

Biochemistry is an excellent preparation for dental school. This concentration prepares students for the Dental Admissions Test, dental school classes, and to meet dental school requirements. The following courses are required as either Social Science core courses or in lieu of technical or general electives.

PSY 1013	General Psychology	3
Social Science (See General Education courses)		3
BIO 2103	Cell Biology	3
or BIO 4114	Cellular Physiology	
BIO 3014	Human Physiology	4
or BIO 4514	Animal Physiology	
ST 2113	Introduction to Statistics	3
Choose one of the following:		3
PHI 1123	Introduction to Ethics [1]	
PHI 3323	Medical Ethics	
Science Elective		
PH 1133	General Physics III (OR Science elective if transferring 8 hours of Physics to the program)	3
Science electives		6
General or Free electives		8-9
Total hours		120

[1] PHI 1123 Introduction to Ethics may be used to fulfill three of the six hours of General Education Humanities requirements. Students taking this course may apply this as a humanities elective (if they so choose) and then take either PHI 3323 Medical Ethics or any other approved Science elective to fulfill this technical elective requirement.

Pre-Pharmacy Concentration (PPHR)

Pharmacy school typically requires only two to three years of college work for entry. However, four-year undergraduate programs can be of benefit to students and Biochemistry graduates have been very successful in Pharmacy School and perform well on the Pharmacy College Admissions Test. The following courses are required as either Social Science core courses or in lieu of technical or general electives.

PSY 1013	General Psychology	3
or SO 1003	Introduction to Sociology	
EC 2113	Principles of Macroeconomics	3
EC 2123	Principles of Microeconomics	3
ST 2113	Introduction to Statistics	3
BIO 3103	Genetics I	3
or BIO 4113	Evolution	
BIO 4405	Pathogenic Microbiology	5
BIO 4413	Immunology	3
BIO 4514	Animal Physiology	4
PHI 3323	Medical Ethics	3
PH 1133	General Physics III (OR Science elective if transferring 8 hours of Physics to the program)	3
General or Free electives		4
Total hours		120

Pre-Optometry Concentration (OPT)

Biochemistry is an excellent preparation for optometry school. This concentration prepares students for the Optometry Admissions Test, optometry school classes, and to meet optometry school requirements. The following courses are required as either Social Science core courses or in lieu of technical or general electives.

PSY 1013	General Psychology	3
Social Science (See General Education courses)		3
BIO 2103	Cell Biology	3
or BIO 4114	Cellular Physiology	
BIO 3014	Human Physiology	4
or BIO 4514	Animal Physiology	
ST 2113	Introduction to Statistics	3
Choose one of the following:		3
PHI 1123	Introduction to Ethics [1]	
PHI 3323	Medical Ethics	
Science Elective		

PH 1133	General Physics III (OR Science elective if transferring 8 hours of Physics to the program)	3
Science elective		6
General or Free electives		8-9
Total hours		120

[1] PHI 1123 Introduction to Ethics may be used to fulfill three of the six hours of General Education Humanities requirements. Students taking this course can apply this as a humanities elective (if they so choose) and then can take either PHI 3323 Medical Ethics or any other approved Science elective to fulfill this technical elective requirement.

Science Concentration (SCI)

The Science concentration provides students with core classes towards a degree in biochemistry coupled with undergraduate research and/or internship requirements. Additional coursework as technical electives concentrate on cell biology, anatomy and/or physiology, with much of the coursework remaining flexible to allow students to explore specialized subject matter or broad areas of interest in the sciences. This concentration is intended for students that may pursue graduate research after their undergraduate degree, or those seeking to tailor a specialization to their interest or intended career track. The following courses are required in lieu of technical or general electives.

Social Sciences (see General Education list)		6
BCH 4100	Biochemistry and Molecular Biology Internship	1-6
or BCH 4000	Directed Individual Study in Biochemistry, Molecular Biology, Entomology, and Plant Pathology	
Choose one of the following:		4
BIO 3014	Human Physiology	
VS 3014	Anatomy and Physiology	
BIO 4514	Animal Physiology	
BIO 2103	Cell Biology	3
or BIO 4114	Cellular Physiology	
Science or business technical electives		12
General/free electives		8-9
Total hours		120

Bioinformatics Concentration (BINF) [1]

This concentration provides the student with a B.S. in Biochemistry and Molecular Biology incorporating a strong background in the biochemical sciences along with a rigorous preparation in the field of computer science. The graduate will be able to either enter graduate school or directly enter a career requiring knowledge of bioinformatics. This exciting field applies computational and database skills to molecular biological problems. Practitioners routinely mine genomic databases for information relating to basic understanding of life processes as well as information providing clues for medical and agricultural advances. This program also constitutes a minor in computer science. Students MUST take the following courses in lieu of technical and general electives.

Social Sciences (See General Education courses)		6
CSE 1284	Introduction to Computer Programming	4
CSE 1384	Intermediate Computer Programming	4
CSE 2383	Data Structures and Analysis of Algorithms	3
CSE 2813	Discrete Structures	3
CSE 3813	Introduction to Formal Languages and Automata	3
CSE 4613	Bio-computing	3
CSE 4633	Artificial Intelligence	3
CSE 4623	Computational Biology	3
CSE 4833	Introduction to Analysis of Algorithms	3
ST 3123	Introduction to Statistical Inference (OR Computer Science Elective)	3
Total hours		121

[1] Completion of the Bioinformatics program also constitutes a minor in Computer Science from the Department of Computer Science and Engineering, and students receive a Certificate in Computational Biology from the Institute of Digital Biology. Note that students must declare to the appropriate program and/or departmental advisor to receive credit for a degree minor and/or to receive a Certificate.

Pre-MBA Concentration (PMBA)

This concentration provides the student with a B.S. in Biochemistry incorporating a strong background in science while preparing the student for immediate entry into a graduate program leading to an advanced business degree (either the Master of Business Administration or the Master of Agribusiness Management). Either program can be completed in a minimum of three semesters. Students thus educated may enter into management level positions in the biotech or agribusiness industry. The following courses are required as either Social Science core courses or in lieu of technical or general electives.

ACC 2013	Principles of Financial Accounting	3
ACC 2023	Principles of Managerial Accounting	3
EC 2113	Principles of Macroeconomics	3
EC 2123	Principles of Microeconomics	3
BQA 2113	Business Statistical Methods I	3
BQA 3123	Business Statistical Methods II	3
MGT 3114	Principles of Management and Production	4
MKT 3013	Principles of Marketing	3
FIN 3123	Financial Management	3
Computer elective		3
General/Free electives		6
Total hours		120

Forensic Sciences Concentration (FOSC)

This concentration provides the student with a B.S. in Biochemistry incorporating a strong background in the biochemical sciences along with a rigorous preparation in the general area of criminology and forensics. Because of the ever increasing use of molecular sciences in forensics, graduates with this specialization should be employable by crime labs or by industry using DNA profiling or other biometric techniques. Internships are encouraged. The following courses are required as either Social Science core courses or in lieu of technical or general electives.

PSY 1013	General Psychology	3
SO 1003	Introduction to Sociology	3
Choose one of the following:		3
CH 2313	Analytical Chemistry I	

ST 2113	Introduction to Statistics	
PSY 3104	Introductory Psychological Statistics	
SO 3603	Criminological Theory	3
CRM 3103	Contemporary Issues in Criminal Justice	3
SO 3313	Deviant Behavior	3
or PSY 3213	Psychology of Abnormal Behavior	
Choose one of the following:		3
PSY 4373	Forensic Psychology	
AN 4313	Human Osteology	
CSE 4273	Introduction to Computer Forensics	
BIO 3103	Genetics I	
BIO 2103	Cell Biology	3
or BIO 4114	Cellular Physiology	
BCH 2013	Introduction to Forensic Science	3
BCH 4333	Advanced Forensic Science	3
SO 4513	Correctional Systems (OR Science elective)	3
General/free electives		3-4
Total hours		120

Entomology Concentration (ENT)

This concentration provides a student with a B.S. in Biochemistry but incorporates a focal area in entomology. Students receive excellent training in the biochemical sciences, coupled with general and specific entomology subject areas from which the student can choose subject matter in their areas of interest. The following courses are required in lieu of technical or general electives.

Social Sciences (see General Education courses)		6
EPP 4154	General Entomology	4
EPP 4164	Insect Taxonomy	4
EPP 4263	Principles of Insect Pest Management	3
EPP 4335	Anatomy and Physiology of Insects	5
Choose three of the following:		6-8
EPP 3124	Forest Pest Management	
EPP 3423	Ornamental and Turfgrass Insects	
EPP 4173	Medical and Veterinary Entomology	
EPP 4234	Field Crop Insects	
EPP 4244	Aquatic Entomology	
EPP 4543	Toxicology and Insecticide Chemistry	
General/free electives		
Total hours		120

Plant Pathology Concentration (PPTH)

This concentration provides a student with a B.S. in Biochemistry but incorporates a focal area in plant pathology. Students receive excellent training in the biochemical sciences, coupled with general and specific plant pathology subject areas in plant disease epidemiology, pathology and disease identification/diagnostics. The following courses are required in lieu of technical or general electives.

Social Sciences (see General Education courses)		6
EPP 3124	Forest Pest Management	4
EPP 4113	Principles of Plant Pathology	3
EPP 4163	Plant Disease Management	3
EPP 4214	Diseases of Crops	4
EPP 4254	Introduction to Mycology	4
EPP 4523	Turfgrass Diseases	3
BIO 2113	Plant Biology	3
or PSS 1313	Plant Science	
Choose one of the following:		3-4
PSS 4553	Plant Growth and Development	
BIO 4214	General Plant Physiology	
General/free electives		3-4
Total hours needed for major		120

Pre-Veterinary Medicine Concentration (PVBC)

Biochemistry is an excellent preparation for veterinary medical school. In order to be better prepared for the Graduate Record Examination (GRE) or Veterinary College Admissions Test, veterinary medical school classes, and to meet veterinary medical school entrance requirements, the following courses are required in lieu of technical or general electives.

BIO 3103	Genetics I	3
or BIO 4133	Human Genetics	
VS 3014	Anatomy and Physiology	4
or BIO 4514	Animal Physiology	
BIO 2103	Cell Biology	3
or BIO 4114	Cellular Physiology	
Science or business technical electives		12
Social Sciences (See General Education courses)		6
General/free electives		8-9
Total hours		120

Three year program (3+1) for early admission into the College of Veterinary Medicine

The aim of this curriculum is to allow a student to matriculate through the Department of Biochemistry and Molecular Biology for three years and then proceed into the College of Veterinary Medicine under their early admissions policy. Successful completion of the courses taken during the first year in Veterinary Medicine will satisfy the Department's requirements for technical electives and allow the University to grant the student a B.S. in Biochemistry and Molecular Biology after this period.

General Education requirements		30
CH 1213	Chemistry I	3
CH 1211	Investigations in Chemistry I	1
CH 1223	Chemistry II	3
CH 1221	Investigations in Chemistry II	1
CH 4513	Organic Chemistry I	3
CH 4511	Organic Chemistry Laboratory I	1
CH 4523	Organic Chemistry II	3
CH 4521	Organic Chemistry Laboratory II	1
BCH 1001	Introduction to Biochemistry	1
BCH 4503	Scientific Communication Skills	3
BCH 4603	General Biochemistry I	3
BCH 4414	Protein Methods	4

BCH 4613	General Biochemistry II	3
BCH 4623	Biochemistry of Specialized Tissues	3
BCH 4713	Molecular Biology	3
BCH 3901	Senior Seminar	1
BCH 4804	Molecular Biology Methods	4
BIO 1134	Biology I	4
BIO 1144	Biology II	4
BIO 3304	General Microbiology	4
PH 1113	General Physics I	3
PH 1123	General Physics II	3
VS 3014	Anatomy and Physiology	4
or BIO 4514	Animal Physiology	
BIO 3103	Genetics I	3
or BIO 4133	Human Genetics	

95 hours required plus successful completion of the first year curriculum of the College of Veterinary Medicine

Mississippi State requires a minimum of 120 hours for the undergraduate degree. Therefore, the first year in the College of Veterinary Medicine will contribute 25 hours of technical electives to this program.

Biochemistry Minor

BCH 4603	General Biochemistry I	3
BCH 4613	General Biochemistry II	3
BCH 4414	Protein Methods	4
or BCH 4804	Molecular Biology Methods	
BCH 4713	Molecular Biology	3
Select a minimum of 6 hours (any two courses) from the following:		6-7
BCH 2013	Introduction to Forensic Science	
BCH 4000	Directed Individual Study in Biochemistry, Molecular Biology, Entomology, and Plant Pathology	
BCH 4100	Biochemistry and Molecular Biology Internship	
BCH 4253	Macronutrients: Human Metabolism	
BCH 4333	Advanced Forensic Science	
BCH 4414	Protein Methods	
or BCH 4804	Molecular Biology Methods	
BCH 4623	Biochemistry of Specialized Tissues	
BCH 4990	Special Topics in Biochemistry, Molecular Biology, Entomology and Plant Pathology	
Total Hours		19-20

Entomology Minor

EPP 2213	Introduction to Insects	3-4
or EPP 4154	General Entomology	
EPP 4263	Principles of Insect Pest Management	3
EPP 4000	Directed Individual Study in Entomology and Plant Pathology	3-5
Choose 6-9 hours from the following:		6-9
EPP 3124	Forest Pest Management	
EPP 3423	Ornamental and Turfgrass Insects	
EPP 4164	Insect Taxonomy (required for AGR-IPM majors)	
EPP 4173	Medical and Veterinary Entomology	
EPP 4234	Field Crop Insects	
EPP 4244	Aquatic Entomology	
EPP 4335	Anatomy and Physiology of Insects	
EPP 4543	Toxicology and Insecticide Chemistry	
EPP 4613	Forensic Entomolgy	
Total Hours		18

Plant Pathology Minor

EPP 4000	Directed Individual Study in Entomology and Plant Pathology	3-5
EPP 4113	Principles of Plant Pathology	3
EPP 4163	Plant Disease Management	3
Choose 7-9 hours from the following:		7-9
EPP 3124	Forest Pest Management	
EPP 4152	Advanced Fungal Taxonomy-Fungi Imperfecti	
EPP 4214	Diseases of Crops	
EPP 4254	Introduction to Mycology (required for AGR-IPM majors)	
EPP 4264	Advanced Mycology	
EPP 4523	Turfgrass Diseases	
Total Hours		18

Department of Food Science, Nutrition and Health Promotion

Department Head: Professor Marion W. Evans, Jr.
Office: 107 Herzer Building

The Food Science, Nutrition and Health Promotion major offers the opportunity to gain a broad education in food science, nutrition, and health, as well as the specific academic background to pursue careers as food scientists and dietitians/nutritionists. It involves the integration of new knowledge and advances in technology and the physical and biological sciences with psychological, sociological, and behavioral sciences in the provision of a safe, nutritious food supply. Research, teaching, and outreach extend the continuum from the processing of food to its marketing, consumption, and impact on public health and community.

Food scientists integrate knowledge from engineering, biological, and physical sciences to study the nature of foods, the causes of deterioration, the principles underlying food processing, and the improvement of foods for the consuming public. Food technology is the application of food science to the selection, preservation, processing, packaging, distribution, and use of safe, nutritious, and wholesome foods (*http://www.ift.org/knowledge-enter/learnabout-food-science.aspx, 2013*).

The Department offers a degree in Culinology®. This is a dual degree program in which students take courses at Mississippi State University and Mississippi University for Women in Columbus, Mississippi. The Culinology® curriculum includes courses that combine the disciplines of food science and culinary arts. Culinologists work in diverse areas within

the food industries - from experimental chefs to food manufacturing and product development.

The Pre-Health Professions concentration is designed to develop students who have a thorough understanding of the principles of food science and have also fulfilled the prerequisites for medical school or other health-related professional or graduate school programs (examples include but are not limited to: medicine, nursing, physician's assistant, physical therapy, pharmacy, occupational therapy, public health, optometry, podiatry, and others).

Nutritionists and dietitians are food and nutrition experts studying the relationship of nutrition and diet in promoting health and treating disease. Studies include nutritional science, medical nutrition therapy, community nutrition, food service, food production and management of food service operations, chemistry, physiology, plus a variety of supporting coursework in related disciplines. The Food and Nutrition concentration fulfills the Academy of Nutrition and Dietetics academic requirements to become a Registered Dietitian (RD), which is also noted Registered Dietitian Nutritionist (RDN).

Students in Food Science, Nutrition and Health Promotion have many exciting and diverse career opportunities. Food Science, Nutrition and Health Promotion careers include Research Scientist (Industrial, Government, Academic); Food Engineer; Food Microbiologist; Research and Development; Product Development Technologist; Research Chef; Food Manufacturing Operations Manager; Quality Control Technician; Regulatory Affairs; Food Packaging Specialist; Processing Engineer; Technical Sales in the Food Industry; Technical Services; Public Health/Community Nutritionist; Clinical Nutrition Educator; Nutrition Educator; Registered Dietitian (Pediatric, Cardiovascular, Renal, Private Practice, Sports/Wellness, Weight Management, Business and Industry, and Journalism and Communications); Healthcare/School Food Service Director; Pharmaceutical Sales Representative; and Public Relations and Marketing Specialists.

A major in Food Science, Nutrition and Health Promotion is also an excellent choice for students interested in pursuing pre-professional career paths like Veterinary School, Medical School, Pharmacy, Physical Therapy, Nursing School, and Dental School.

The following concentrations are offered in the Department of Food Science, Nutrition and Health Promotion:

- Food Processing/Business
- Food Science
- Food Safety (pre-vet)
- Food and Nutrition
- Pre-Health Professions

Food and Nutrition Concentration

The Food and Nutrition concentration prepares students for a wide variety of careers. For students interested in becoming a Registered Dietitian, the Didactic Program in Nutrition and Dietetics (DPD) at Mississippi State University is accredited by the Accreditation Council for Education in Nutrition and Dietetics (ACEND) of the Academy of Nutrition and Dietetics, 120 South Riverside Plaza, Suite 2000, Chicago, IL, 60606-6995; telephone 800-877-1600, http://www.eatright.org/ACEND. Upon completion of the DPD program, graduates may pursue participation in a supervised practice program/dietetic internship.

Didactic Program in Nutrition and Dietetics:

1. To enter the Didactic Program in Nutrition and Dietetics (DPD), students must have a 3.0 MSU GPA and have completed the following courses with a grade of "C" or better: CH 1213 Chemistry I, CH 1211 Investigations in Chemistry I, CH 1223 Chemistry II, CH 1221 Investigations in Chemistry II, CH 2503 Elementary Organic Chemistry, CH 2501 Elementary Organic Chemistry Laboratory, BIO 1134 Biology I, FNH 2203 Science of Food Preparation, FNH 2293 Individual and Family Nutrition, ST 2113 Introduction to Statistics.
2. A grade of "C" or better is required in all Didactic Program courses. A course with a final grade lower than a "C" must be repeated.
3. Students who wish to receive a Letter of Intent and/or verification statement from the MSU Didactic Program in Nutrition and Dietetics (DPD) must have a minimum of a 3.0 MSU GPA and a minimum grade of "C" or better in all of the required DPD courses.
4. Eight (8) hours are available for electives, and students are encouraged to consider an academic minor.
5. Transfer credits with a grade of "C" or better will be considered toward fulfilling degree requirements. After completion of the DPD undergraduate degree, successful completion of the supervised practice program/dietetic internship, followed by the Registration Exam, fulfills the requirements to become a Registered Dietitian. Beginning in 2024, a minimum of a Master's degree will be an eligibility requirement to take the Registration Exam.

BS in Food Science, Nutrition, and Health Promotion

Food Processing/Business Concentration (FSTP)

Major Advisors: Wes Schilling, Professor, and Shecoya White, Assistant Professor

FSTP combines food science and business courses to prepare students for careers in the food industry, government, or private business.

English Composition		6
EN 1103	English Composition I	
or EN 1163	Accelerated Composition I	
EN 1113	English Composition II	
or EN 1173	Accelerated Composition II	
Fine Arts (General Education)		3
Select from University Gen Ed Core		
Natural Sciences (General Education)		12
BIO 1134	Biology I	
CH 1213	Chemistry I	
CH 1211	Investigations in Chemistry I	
CH 1223	Chemistry II	
CH 1221	Investigations in Chemistry II	
Math (General Education)		6
MA 1313	College Algebra (or higher math)	
ST /BQA /MA 2113	Introduction to Statistics	
or ST 3123	Introduction to Statistical Inference	
Humanities (General Education)		6
Select from University Gen Ed Core		
Social/Behavioral Sciences (General Education)		6

AEC 2713	Introduction to Food and Resource Economics	
Select from University Gen Ed Core		
Major Core Courses		17
CH 2503	Elementary Organic Chemistry	
CH 2501	Elementary Organic Chemistry Laboratory	
MGT 3513	Introduction to Human Resource Management	
FNH 2293	Individual and Family Nutrition	
FNH 3111	Food Science, Nutrition and Health Promotion Seminar	
FNH 4243	Composition and Chemical Reactions of Foods	
CO 1003	Fundamentals of Public Speaking	
or CO 1013	Introduction to Communication	
or CO 3213	Small Group Communication	
Food Processing/Business Concentration		68
BIO 3304	General Microbiology	
MA 1323	Trigonometry	
PH 1113	General Physics I	
or PH 2213	Physics I	
AEC 3413	Introduction to Food Marketing	
or MKT 3013	Principles of Marketing	
AELC 3203	Professional Writing in Agriculture, Natural Resources, and Human Sciences [1]	
AELC 4203	Applications of Computer Tech to Agricultural Education, Leadership, and Communications [2]	
FNH 2011	Career Planning and Success Skills in Food Science	
FNH 2112	Food Products Evaluation	
FNH 4114	Analysis of Food Products	
FNH 4241	Applied Food Chemistry	
FNH 4333	Food Law	
FNH 4414	Microbiology of Foods	
FNH 4480	Food Science Internship (6 hours)	
FNH 4573	Food Engineering Fundamentals	
or FNH 4583	Food Preservation Technology	
FNH 4593	New Food Product Development	
Business Electives (12 hours) [5]		
Processing Electives (6-8 hours) [3]		
FNH Electives (3 hours) [4]		
Free Electives (0-1 hours)		
Total Hours		124

1 Fulfills Jr/Sr Writing Requirement

2 Fulfills Computer Lit Requirement

3 Choose 2 courses (6-8 hours) from the Food Processing Electives: FNH 3314 Introduction to Meat Science, FNH 4143 Dairy Foods Processing, FNH 4514 Poultry Processing, or FNH 4613 Seafood Processing

4 Choose one additional FNH 3000-4000 level course from all Food Science, Nutrition, and Health Promotion classes

5 A minor in AgEcon, Marketing, Finance, Management or Business Administration will satisfy the requirement for 12 credits of business electives. In lieu of a minor, students should select 12 credit hours from the following: ACC 2013 Principles of Financial Accounting, MKT 3013 Principles of Marketing, AEC 3133 Introductory Agribusiness Management, AEC 3213 International Trade in Agriculture, AEC 3413 Introduction to Food Marketing, AEC 4113 Agribusiness Firm Management, AEC 4123 Financial and Commodity Futures Marketing, AEC 4133 Analysis of Food Markets and Prices, AEC 4343 Advanced Farm Management; all classes listed under the minors for Marketing, Finance, Business Administration, and Management are also acceptable business electives.

Food Science Concentration (FSSC)

Major Advisors: Wes Schilling, Professor, and Shecoya White, Assistant Professor

FSSC is designed for students who wish to explore a career in research, pursue graduate studies, work for the government, or work in the food industry.

English Composition		6
EN 1103	English Composition I	
or EN 1163	Accelerated Composition I	
EN 1113	English Composition II	
or EN 1173	Accelerated Composition II	
Fine Arts (General Education)		3
Select from University Gen Ed Core		
Natural Sciences (General Education)		12
BIO 1134	Biology I	
CH 1213	Chemistry I	
CH 1211	Investigations in Chemistry I	
CH 1223	Chemistry II	
CH 1221	Investigations in Chemistry II	
Math (General Education)		6
MA 1713	Calculus I	
ST /BQA /MA 2113	Introduction to Statistics	
or ST 3123	Introduction to Statistical Inference	
Humanities (General Education)		6
Select from University Gen Ed Core		
Social/Behavioral Sciences (General Education)		6
AEC 2713	Introduction to Food and Resource Economics	
Select from University Gen Ed Core		
Major Core Courses		17
CH 2503	Elementary Organic Chemistry	
CH 2501	Elementary Organic Chemistry Laboratory	
MGT 3513	Introduction to Human Resource Management	
FNH 2293	Individual and Family Nutrition	
FNH 3111	Food Science, Nutrition and Health Promotion Seminar	
FNH 4243	Composition and Chemical Reactions of Foods	

CO 1003	Fundamentals of Public Speaking	
or CO 1013	Introduction to Communication	
or CO 3213	Small Group Communication	
Food Science Concentration		68
BIO 1144	Biology II	
BIO 3304	General Microbiology	
BCH 4013	Principles of Biochemistry	
MA 1723	Calculus II	
PH 1113	General Physics I	
or PH 2213	Physics I	
PH 1123	General Physics II	
or PH 2223	Physics II	
ACC 2013	Principles of Financial Accounting	
MKT 3013	Principles of Marketing	
AELC 3203	Professional Writing in Agriculture, Natural Resources, and Human Sciences [1]	
AELC 4203	Applications of Computer Tech to Agricultural Education, Leadership, and Communications [2]	
FNH 2011	Career Planning and Success Skills in Food Science	
FNH 2112	Food Products Evaluation	
FNH 4114	Analysis of Food Products	
FNH 4164	Quality Assurance of Food Products	
FNH 4241	Applied Food Chemistry	
FNH 4333	Food Law	
FNH 4414	Microbiology of Foods	
FNH 4573	Food Engineering Fundamentals	
or FNH 4583	Food Preservation Technology	
FNH 4593	New Food Product Development	
FNH 4480	Food Science Internship (6 hours)	
Processing Electives (3-4 hours) [3]		
FNH Electives (3-4 hours) [4]		
Free Electives (0-2 hours)		
Total Hours		124

1. Fulfills Jr/Sr Writing Requirement
2. Fulfills Computer Lit Requirement
3. Choose 1 course (3-4 hours) from the Food Processing Electives: FNH 3314 Introduction to Meat Science, FNH 4143 Dairy Foods Processing, FNH 4514 Poultry Processing, or FNH 4613 Seafood Processing
4. Choose an additional 3-4 hours from all 3000-4000 level Food Science, Nutrition and Health Promotion classes.

Food Safety Concentration (FDS)

Major Advisors: Wes Schilling, Professor, and Shecoya White, Assistant Professor

FDS is designed as a Pre-Veterinary option that focuses on factors affecting food safety and all coursework essential for acceptance in the College of Veterinary Medicine.

English Composition		6
EN 1103	English Composition I	
or EN 1163	Accelerated Composition I	
EN 1113	English Composition II	
or EN 1173	Accelerated Composition II	
Fine Arts (General Education)		3
Select from University Gen Ed Core		
Natural Sciences (General Education)		12
BIO 1134	Biology I	
CH 1213	Chemistry I	
CH 1211	Investigations in Chemistry I	
CH 1223	Chemistry II	
CH 1221	Investigations in Chemistry II	
Math (General Education)		6
MA 1313	College Algebra	
MA 1323	Trigonometry	
or MA 1713	Calculus I	
Humanities (General Education)		6
Select from University Gen Ed Core		
Social/Behavioral Sciences (General Education)		6
Select from University Gen Ed Core		
Major Core Courses		17
CH 2503	Elementary Organic Chemistry	
CH 2501	Elementary Organic Chemistry Laboratory	
MGT 3513	Introduction to Human Resource Management	
FNH 3111	Food Science, Nutrition and Health Promotion Seminar	
FNH 2293	Individual and Family Nutrition	
FNH 4243	Composition and Chemical Reactions of Foods	
CO 1003	Fundamentals of Public Speaking	
or CO 1013	Introduction to Communication	
or CO 3213	Small Group Communication	
Food Safety Concentration [1]		45
CH 4523	Organic Chemistry II	
CH 4521	Organic Chemistry Laboratory II	
BIO 1144	Biology II	
BIO 3304	General Microbiology	
BCH 4013	Principles of Biochemistry	
PH 1113	General Physics I	
or PH 2213	Physics I	
PH 1123	General Physics II	
or PH 2223	Physics II	
AELC 3203	Professional Writing in Agriculture, Natural Resources, and Human Sciences [2]	
AELC 4203	Applications of Computer Tech to Agricultural Education, Leadership, and Communications [3]	
ADS 4114	Animal Nutrition	
FNH 2011	Career Planning and Success Skills in Food Science	
FNH 4241	Applied Food Chemistry	
FNH 3314	Introduction to Meat Science	
FNH 4414	Microbiology of Foods	

FNH 4514	Poultry Processing	
FNH 4583	Food Preservation Technology	
Electives (Select 3-6 credits from the following list)		3-6
ACC 2013	Principles of Financial Accounting	
FNH 3142	Meats Judging I	
FNH 4114	Analysis of Food Products	
FNH 4143	Dairy Foods Processing	
FNH 4164	Quality Assurance of Food Products	
FNH 4593	New Food Product Development	
ADS 1113	Animal Science	
ADS 1121	Animal Science Laboratory	
ADS 3214	Livestock Growth and Development	
ADS 3312	Livestock Management Practices	
ADS 4113	Swine Science	
ADS 4124	Animal Breeding	
ADS 4323	Beef Cattle Science	
ADS 4613	Physiology of Reproduction	
ADS 4611	Practices in Physiology of Reproduction	
BIO 2103	Cell Biology	
BIO 4413	Immunology	
BIO 4503	Vertebrate Histology	
BIO 4514	Animal Physiology	
VS 3014	Anatomy and Physiology	
PO 4033	Diseases of Poultry	
PO 4324	Avian Reproduction	
PO 4334	Broiler Production	
PO 4413	Poultry Nutrition	
PO 4844	Avian Anatomy and Physiology	
Total Hours needed for major through Junior Year		104-107
Students will receive a B.S. in Food Science, Nutrition and Health Promotion upon successful completion of their first year in the College of Veterinary Medicine at Mississippi State University.		
If students do not obtain admittance into the School of Veterinary Medicine after their junior year, an optional 4th year that is listed below will allow these students to graduate with a B.S. in Food Science, Nutrition and Health Promotion (Food Safety Concentration) after their fourth year of studies as well as allow these students another year to attempt to earn admittance into the School of Veterinary Medicine.		
Optional Senior Year		17
FNH 4114	Analysis of Food Products	
FNH 4164	Quality Assurance of Food Products	
FNH 4593	New Food Product Development	
6 hours of electives for 3000-4000 level FNH classes		
Electives from the Electives list above to reach a minimum of 124 hours		
Total Hours		124

1 45 hours is equal to 48-3 hours to account for the substitution for FNH 2293 in the major core.

2 Fulfills Jr/Sr Writing Requirement

3 Fulfills Computer Lit Requirement

Food and Nutrition Concentration (FN)

Major Advisors: Amanda Conrad, Didactic Program in Nutrition and Dietetics Director and Instructor; Rahel Mathews, Assistant Professor; and Anita Norwood, Assistant Professor

English Composition		6
EN 1103	English Composition I	
or EN 1163	Accelerated Composition I	
EN 1113	English Composition II	
or EN 1173	Accelerated Composition II	
Fine Arts		3
Select from University General Education Core		
Natural Sciences		12
CH 1213	Chemistry I	
CH 1211	Investigations in Chemistry I	
CH 1223	Chemistry II	
CH 1221	Investigations in Chemistry II	
BIO 3304	General Microbiology	
Math (General Education)		6
MA 1313	College Algebra (or higher)	
ST /BQA /MA 2113	Introduction to Statistics	
or ST 3123	Introduction to Statistical Inference	
Humanities (General Education)		6
Select from University General Education Core		
Social/Behavioral Sciences (General Education)		6
PSY 1013	General Psychology	
SO 1003	Introduction to Sociology	
or SO 1103	Contemporary Social Problems	
or SO 1203	Sociology of Families	
Major Core Courses		17
CH 2503	Elementary Organic Chemistry	
or CH 4513	Organic Chemistry I	
CH 2501	Elementary Organic Chemistry Laboratory	
or CH 4511	Organic Chemistry Laboratory I	
MGT 3513	Introduction to Human Resource Management	
FNH 2293	Individual and Family Nutrition	
FNH 3111	Food Science, Nutrition and Health Promotion Seminar	
FNH 4243	Composition and Chemical Reactions of Foods	
CO 1003	Fundamentals of Public Speaking [1]	
or CO 1013	Introduction to Communication	
or CO 3213	Small Group Communication	
Food and Nutrition Concentration		68
BCH 4013	Principles of Biochemistry	
BIO 1134	Biology I	
BIO 3004	Human Anatomy	
BIO 3014	Human Physiology	
MGT 3114	Principles of Management and Production	
KI 2603	Medical Terminology	
FNH 2203	Science of Food Preparation	

FNH 3283	The Food Service System	
FNH 3701	Nutrition Professional Development	
FNH 3723	Community Nutrition	
FNH 4013	Nutrition Assessment	
FNH 4123	Nutrition and Chronic Disease	
FNH 4233	Medical Nutrition Therapy	
FNH 4253	Macronutrients: Human Metabolism	
FNH 4284	Quantity Food Production and Service	
FNH 4293	Micronutrients: Human Metabolism [3]	
FNH 4353	Nutrition Throughout the Life Cycle	
FNH 4363	Research Methods in Food and Nutrition [2]	
FNH 4373	Nutrition Education and Counseling Skills	
Electives (8 hours)		
Total Hours		124

1 Fulfills Oral Communication Requirement
2 Fulfills Jr/Sr Writing Requirement
3 Fulfills Computer Literacy Requirement

Pre-Health Professions Concentration (PHP)

Major Advisors: Wes Schilling, Professor; Shecoya White, Assistant Professor; and Antonio Gardner, Assistant Professor

PHP is designed to develop students who have a thorough understanding of principles of food science and have also fulfilled the prerequisites for medical school or other health-related professional or graduate school programs.

English Composition		6
EN 1103	English Composition I	
or EN 1163	Accelerated Composition I	
EN 1113	English Composition II	
or EN 1173	Accelerated Composition II	
Fine Arts		3
Select from General Education Core		
Math (General Education)		9
MA 1313	College Algebra (or higher)	
ST /BQA /MA 2113	Introduction to Statistics	
or ST 3123	Introduction to Statistical Inference	
MA 1713	Calculus I	
Natural Science		12
BIO 1134	Biology I	
CH 1213	Chemistry I	
CH 1211	Investigations in Chemistry I	
CH 1223	Chemistry II	
CH 1221	Investigations in Chemistry II	
Humanities (General Education)		6
Select from General Education Core		
Social/Behavioral Sciences (General Education)		6
Select from General Education Core (SO 1013 and PSY 1073 recommended)		
Major Core		17
FNH 2293	Individual and Family Nutrition	
FNH 3111	Food Science, Nutrition and Health Promotion Seminar	
FNH 4243	Composition and Chemical Reactions of Foods	
MGT 3513	Introduction to Human Resource Management	
CH 4511	Organic Chemistry Laboratory I	
CH 4513	Organic Chemistry I	
CO 1003	Fundamentals of Public Speaking	
or CO 1013	Introduction to Communication	
or CO 3213	Small Group Communication	
Pre-Health Professions Concentration		57
AELC 3203	Professional Writing in Agriculture, Natural Resources, and Human Sciences [1]	
AELC 4203	Applications of Computer Tech to Agricultural Education, Leadership, and Communications [2]	
BCH 4013	Principles of Biochemistry	
BIO 1144	Biology II	
BIO 3014	Human Physiology	
BIO 3304	General Microbiology	
CH 4521	Organic Chemistry Laboratory II	
CH 4523	Organic Chemistry II	
FNH 3103	Introduction to Health Professions	
FNH 3163	Basic Principles of Health Promotion	
FNH 4123	Nutrition and Chronic Disease	
FNH 4241	Applied Food Chemistry	
FNH 4393	Prevention and Control of Disease	
FNH 4414	Microbiology of Foods	
FNH 4583	Food Preservation Technology	
MA 1723	Calculus II	
PH 1113	General Physics I	
or PH 2213	Physics I	
PH 1123	General Physics II	
or PH 2223	Physics II	
PHI 3323	Medical Ethics	
Electives (Choose 2-3 classes based on requirements for specific health professional school; see advisor for options)		8
Total Hours		124

1 Fulfills Jr/Sr Writing Requirement
2 Fulfills Computer Literacy Requirement

B.S. in Culinology ®

Major Advisors: Wes Schilling, Professor and Shecoya White, Assistant Professor

The Culinology® degree program offers the opportunity to gain a broad education in Food Science and Culinary Arts. It involves the integration of Food Science and Culinary Arts so that students are prepared to work in diverse areas within the food industries -- from experimental research chefs and menu planners to food manufacturing, fine dining, and product development.

Culinology® is an approach to food that blends culinary arts and food technology. Through the blending of these two disciplines, Culinology®

seeks to make food taste better -- whether purchased in a supermarket or eaten in a restaurant. Culinology® also seeks to make food more consistent and safer. A primary application of Culinology® is to logically translate sophisticated food concepts, such as those applied in fine dining or in a traditional ethnic cuisine, to items that are on the menus of chain restaurants or those processed for retail sale. Such chain-menu or retail product development is only possible through the astute combination of culinary arts and food science and technology.

According to Jeff Cousminer in Food Product Design Magazine, the word *Culinology*® was coined by the first president and founder of the Research Chefs Association, Winston Riley. The original meaning of the word was quite different than what it has come to mean today. Originally the word was designed to be a combination of two words, culinary and technology. So the first meaning of the word was the convergence of culinary arts and all technology, which includes communications, chemistry, physiology, economics and many others.

Accredited Culinology® educational programs are offered by many institutions. The curriculum included courses that combine the disciplines of cooking and food science. According to industry professionals, like Kraft's Harry Crane, Culinology® should "help jump-start product development."

General Education Requirements

English Composition		6
EN 1103	English Composition I	
or EN 1163	Accelerated Composition I	
EN 1113	English Composition II	
or EN 1173	Accelerated Composition II	
Mathematics (General Education)		6
MA 1313	College Algebra	
ST 3123	Introduction to Statistical Inference	
Natural Sciences		8
CH 1213	Chemistry I	
CH 1211	Investigations in Chemistry I	
CH 1223	Chemistry II	
CH 1221	Investigations in Chemistry II	
Humanities (General Education)		6
Select from General Education courses		
Fine Arts (General Education)		3
Select from General Education courses		
Social/Behavioral Sciences (General Education)		6
Select from General Education courses (w/advisor approval)		
Major Requirements		78
CH 2503	Elementary Organic Chemistry	
CH 2501	Elementary Organic Chemistry Laboratory	
BIO 1134	Biology I	
BIO 3304	General Microbiology	
FNH 1103	Introduction to Food Science, Nutrition and Health Promotion	
FNH 2203	Science of Food Preparation	
FNH 2112	Food Products Evaluation	
FNH 2293	Individual and Family Nutrition	
FNH 4164	Quality Assurance of Food Products	
FNH 4333	Food Law	
FNH 4583	Food Preservation Technology	
FNH 4593	New Food Product Development	
FNH 4243	Composition and Chemical Reactions of Foods	
FNH 4241	Applied Food Chemistry	
FNH 4414	Microbiology of Foods	
CA 1251	ServSafe [MUW]	
CA 2003	Intro to Culinary Arts [MUW]	
CA 3005	Food Prep I [MUW]	
CA 3015	Food Prep II [MUW]	
CA 3023	Menu and Recipe Dev [MUW]	
CA 3500	CA Internship [2]	
or FNH 4480	Food Science Internship	
CA 4005	Food Preparation III [MUW]	
CA 4013	World Cuisines [MUW]	
CA 4103	Business Skills in Culinary Arts [MUW]	
CA/FNH Electives		5-6
Choose from list of approved electives [1]		
Oral Communication Requirement		3
CO 1003	Fundamentals of Public Speaking	
or CO 3213	Small Group Communication	
Writing Requirement		3
AELC 3203	Professional Writing in Agriculture, Natural Resources, and Human Sciences	
Total Hours		124

[MUW] CA courses offered by Mississippi University for Women in Columbus, Mississippi

[1] At least 3 hours must be FNH or business (ACC, MKT, MGT) electives and at least 3 hours must be Culinary Arts (CA) electives: FNH 4363 Research Methods in Food and Nutrition, FNH 4114 Analysis of Food Products, FNH 4143 Dairy Foods Processing, FNH 3314 Introduction to Meat Science, FNH 4514 Poultry Processing, FNH 4573 Food Engineering Fundamentals, FNH 3283 The Food Service System, FNH 4283 Purchasing Food and Equipment for Food Service Systems, ACC 2013 Principles of Financial Accounting, MKT 3013 Principles of Marketing, MGT 3513 Introduction to Human Resource Management, CA 3103 Dining Room Service, CA 3153 Demonstration Techniques, CA 3753 Advancing Baking, CA 4153 Food Styling, CA 2603 CA Entrepreneurship, CA 3623 Business Law for CA, CA 3633 Service Design and Mgmt, CA 3643 CA Venture Marketing, CA 3653 HR Mgmt of Cul Business, CA 4603 Culinary Arts Entrepreneurship

[2] To be completed after the Junior or Senior Year.

Food Science Minor

Students will be required to complete the following courses to receive a minor in Food Science:

FNH 4241	Applied Food Chemistry	1
FNH 4243	Composition and Chemical Reactions of Foods	3
FNH 4414	Microbiology of Foods	4
FNH 4583	Food Preservation Technology	3
Choose 7 or more credits from the following electives:		7
FNH 4593	New Food Product Development	

FNH 1103	Introduction to Food Science, Nutrition and Health Promotion	
FNH 3314	Introduction to Meat Science	
FNH 4164	Quality Assurance of Food Products	
FNH 4143	Dairy Foods Processing	
FNH 4514	Poultry Processing	
FNH 4114	Analysis of Food Products	
Total Hours		18

Department of Landscape Architecture

Department Head: Professor Sadik Artunc
Office: Landscape Architecture Facility C103

Department of Landscape Architecture curricula focus on connecting art, culture, and the environment to provide society with places that people love and that are holistically and ecologically planned, designed and managed. Students explore subjects such as the design process, storm water design, energy flow, native landscapes and plant materials, green infrastructure, sustainability, community planning, and regional planning. An undergraduate student may major in Landscape Architecture, Landscape Contracting and Management, or pursue a dual degree path where students concurrently work toward bachelor degrees in both programs.

A graduate program in Landscape Architecture is also offered in the Department of Landscape Architecture. Consult the Graduate Bulletin for additional details.

BLA in Landscape Architecture

Major Advisor: Associate Professor Jason Walker

Landscape Architecture Major

The profession of landscape architecture offers students the opportunity to engage in shaping the environmental and cultural landscape through planning and design to improve quality of life. The Mississippi State University Landscape Architecture programs teach the artful synthesis of social and ecological processes related to planning, designing, building and managing regenerative communities in Mississippi and the Northern Gulf Region, within a global perspective. Students enrolled in the Bachelor of Landscape Architecture (BLA) program experience an immersive, intense, and rewarding education structured around a studio environment that promotes critical thinking and creative problem solving. The department is dedicated to providing a high-quality education for our students, through small class sizes and one-on-one interaction between student and faculty. The teaching philosophy of the MSU Department of Landscape Architecture is rooted in the cultural and ecological phenomena that constitute our placed-based educational approach to empower student learning. Students in the BLA program cultivate their knowledge, skills, and abilities in a context specific environment across multiple-scales including the site, community, urban, and regional settings.

Our BLA program is the only accredited bachelor of landscape architecture degree program in the three state region of Alabama, Mississippi, and Tennessee. The BLA is a Landscape Architectural Accreditation Board (LAAB) accredited professional degree program. The LAAB evaluates a program based on its stated objectives and compliance to externally mandated minimum standards and accredits professional degrees at the bachelor's and master's levels in the United States. Our BLA program prepares students for entry-level positions in design offices, public practice, not-for-profits and primes students for graduate studies in allied professions. In addition, our department offers a Bachelor of Science in Landscape Contracting and Management that students in the BLA program can pursue simultaneously.

Curriculum

The four-year BLA curriculum provides the foundational framework for a career in landscape architecture. The coursework involves knowledge acquisition, skill development, and the ability to apply knowledge and skill through the design process. The first year of the program introduces the student to relevant history, theory and criticism, plants and cultural systems, and digital and traditional communication applications. The second year begins the Design and Construction sequence.

The design studio is at the core of the professional program. The professional studio sequence includes six (6) landscape architecture design studios, Design I-V and Landscape Architecture Capstone Studio. Capstone is the climax studio, where students pursue individual or specialized interests through the development of a semester long project. The construction sequence consists of three (3) courses, Construction I-III. The studio and construction sequence addresses the design, planning and management of the landscape at multiple scales through the application of the design process.

In years two and three of the program, each student must participate in two department led field trips. The field trips are a critical component of the professional curriculum and provide opportunities for students to study, explore, and experience significant works of landscape architecture in the United States and around the world.

The remainder of the required courses in the curriculum addresses professional practice, public policy and regulation, and professional values and ethics. Finally, year four offers students eleven (11) elective hours of coursework to meet each student's own objectives that lead to a well-rounded university education.

At the successful completion of the fourth year, students receive the professional degree of Bachelor of Landscape Architecture (BLA).

Standards and Requirements

All students in Landscape Architecture are required to have their own personal computer. Students should check with the department for equipment specifications prior to purchasing.

Landscape Architecture requires that a grade of "C" or better is required to fulfill a Major Core Requirement.

The department reserves the right to retain student work for the purpose of records, exhibition, instruction, and accreditation.

In addition to University policies, all students enrolled in this curriculum shall be required to abide by all approved departmental policies.

Degree Requirements

English Composition

EN 1103	English Composition I	3
or EN 1163	Accelerated Composition I	
EN 1113	English Composition II	3

or EN 1173	Accelerated Composition II	
Mathematics		
Select from General Education Requirements Mathematics and Statistics Course List		6-9
Natural Science		
2 lab based sciences required from Gen Ed		
Select from General Education Requirements Natural Science Course List		6-9
Humanities		
Select from General Education Requirements Humanities Course List		6
Fine Arts		
ART 1113	Art Appreciation	3
or ARC 1013	Architectural Appreciation	
Social/Behavioral Sciences		
Select from General Education Requirements Social/Behavioral Sciences Course List		6
Major Core		
ART 1123	Design I	3
ENS 2103	Introduction to Environmental Science	3
PSS 2423	Plant Materials I	3
LA 1153	Introduction to Landscape Architecture	3
LA 1223	Use of Computers in Landscape Architecture	3
LA 1333	Landscape Systems and Plant Communities	3
LA 1423	History of Landscape Architecture	3
LA 1533	Presentation Methods and Media	3
LA 1701	Landscape Professional Career Paths Seminar	1
LA 2544	Landscape Architecture Construction I: Materials	4
LA 2554	Landscape Architecture Design Studio I	4
LA 2652	Landscape Architecture Precedent Studies	2
LA 2644	Construction II: Grading	4
LA 2654	Landscape Architecture Design II: Neighborhood Context	4
LA 3534	Landscape Architecture Construction III - Hydrology	4
LA 3554	Landscape Architecture Design III - Small Town/Rural Context	4
LA 3623	Urban Planning Theory	3
LA 3652	Case Studies of Executed Works in Landscape Architecture	2
LA 3653	Planting Design Fundamentals in Landscape Architecture	3
LA 3654	Landscape Architecture Design IV: Urban Design	4
LA 4723	Professional Practice of Landscape Architecture	3
LA 4754	Design V-Regional	4
LA 4843	Sustainable Communities	3
LA 4854	Landscape Architecture Capstone Studio	4
Electives		11
Oral Communication Requirement		
Satisfied by successful completion of LA 4854		
Writing Requirement		
Satisfied by successful completion of LA 4723		
Computer Literacy		
Satisfied by successful completion of LA 1223		
Total Hours		124

BS in Landscape Contracting

Major Advisor: Dr. Timothy Schauwecker

Landscape Contracting and Management Major (LAC)

A landscape contractor is a specialty contractor who provides the materials and services needed to make the landscape architect's project become a reality; and/or to provide the management and maintenance needed to keep the project in prime condition after implementation.

All students in Landscape Contracting and Management are required to have their own personal computer. Students should check with the department for equipment specifications prior to purchasing.

The Landscape Contracting and Management degree program at Mississippi State University, accredited by the Professional Landcare Network (PLANET), requires three internships which involve three semesters of experiential learning and field experience with an approved landscape contracting company or agency; and, under supervision of a qualified supervisor and oversight of Mississippi State University faculty. In addition, two departmental field trips are specific curriculum requirements for this degree. A field trip fee will be assessed to specific courses. Upon successful completion of curriculum requirements, a student receives a Bachelor of Science degree in Landscape Contracting and Management.

In as much as the published Bulletin of Mississippi State defines a letter grade of "D" as poor, The Department of Landscape Architecture requires that a grade of "C" or better is required to fulfill a major core requirement.[1]

The department reserves the right to retain student work for the purpose of records, exhibition, instruction, industry review, etc. In addition to Mississippi State University policies, all students enrolled in this curriculum shall be required to abide by all approved departmental policies.

[1] As published in the Department of Landscape Architecture policy manual.

English Composition		
EN 1103	English Composition I [1]	3
or EN 1163	Accelerated Composition I	
EN 1113	English Composition II [1]	3
or EN 1173	Accelerated Composition II	
Mathematics		
MA 2113	Introduction to Statistics [3]	3
or ST 2113	Introduction to Statistics	
Select from General Education courses		3
Science [2]		
BIO 2113	Plant Biology	3

CH 1043	Survey of Chemistry I	3
PSS 3303	Soils	3
PSS 3301	Soils Laboratory	1
Humanities		
FLS 1113	Spanish I	3
FLS 1123	Spanish II	3
Fine Arts		
Select from General Education courses		3
Social Sciences		
EC 2113	Principles of Macroeconomics	3
EC 2123	Principles of Microeconomics	3
Major Core		
LA 1711	Landscape Contracting Internship I	1
LA 1153	Introduction to Landscape Architecture	3
LA 1333	Landscape Systems and Plant Communities	3
LA 1533	Presentation Methods and Media	3
LA 2711	Landscape Contracting Internship II	1
LA 2544	Landscape Architecture Construction I: Materials	4
LA 2644	Construction II: Grading	4
LA 3653	Planting Design Fundamentals in Landscape Architecture	3
LA 3701	Landscape Contracting Seminar II	1
LA 4724	Landscape Contracting II	4
LA 3721	Landscape Contracting Field Trip I	1
LA 3711	Landscape Contracting Internship III	1
LA 4701	Landscape Contracting Seminar III	1
LA 4344	Landscape Architecture Construction IV	4
LA 4721	Landscape Contracting Field Trip II	1
LA 4753	Sustainable Landscape Management	3
EPP 3423	Ornamental and Turfgrass Insects	3
PSS 2423	Plant Materials I	3
PSS 3133	Introduction to Weed Science	3
PSS 3473	Plant Materials II	3
PSS 4353	Arboriculture and Landscape Maintenance	3
PSS 4413	Turfgrass Management	3
ACC 2013	Principles of Financial Accounting	3
ACC 2023	Principles of Managerial Accounting	3
MKT 3013	Principles of Marketing	3
BL 3223	The Law of Commercial Transactions	3
MGT 3323	Entrepreneurship	3
MGT 3513	Introduction to Human Resource Management	3
3 hours	Elective	3
Oral Communication Requirement		
CO 1003	Fundamentals of Public Speaking	3
or CO 1013	Introduction to Communication	
Writing Requirement		
LA 4723	Professional Practice of Landscape Architecture	3
Computer Literacy		
LA 1223	Use of Computers in Landscape Architecture	3
Total Hours		123

Department of Plant and Soil Sciences

Department Head: Dr. Darrin Dodds
Office: 117 Dorman Hall

Plant and Soil Sciences curricula focus on the application of sciences to the integrated management of plants, soil, and climate for high-quality production of food, fiber, fuel, and ornamental plants. Central to this course of study is the dedication to conserve, maintain and enhance our environment. An undergraduate student may major in Agronomy (AGN), Envrionmental Sciences in Agricultural Systems (ESAS), or Horticulture (HO) and specialize in concentration areas such as Agricultural and Environmental Soil Sciences (AGN), Golf and Sports Turf Management (AGN), Integrated Crop Management (AGN), Integrated Pest Management (AGN), Floral Management (HO), Floriculture and Ornamentals (HO), and Fruit and Vegetable Production (HO). A grade of "C" or better is required in all required PSS courses in the student's major prior to completion of the degree.

Graduate programs (M.S. and Ph.D.) are also offered in the Department of Plant and Soil Sciences in the major of Plant and Soil Sciences, with concentrations in Agronomy, Horticulture, and Weed Science. Consult the Graduate Bulletin for additional details.

BS in Agronomy (AGN)

Degree Requirements

English Composition		
EN 1103	English Composition I	3
or EN 1163	Accelerated Composition I	
EN 1113	English Composition II	3
or EN 1173	Accelerated Composition II	
Mathematics		
MA 1313	College Algebra	3
Select 3 hours from the General Education courses or see Concentrations:		3
Science		
BIO 2113	Plant Biology [1]	3-4
or BIO 1144	Biology II	
PSS 1313	Plant Science [1]	3
See major core/concentration		
Humanities		
See major core/concentration or General Education list		6
Fine Arts		
See major core/concentration or General Education list		3
Social Science		
AEC 2713	Introduction to Food and Resource Economics	3
or EC 2113	Principles of Macroeconomics	
or EC 2123	Principles of Microeconomics	
Select 3 hours from GenEd list		3
Major Core		

PSS 3301	Soils Laboratory [1]	1
PSS 3303	Soils [1]	3
BIO 4214	General Plant Physiology	3-4
or PSS 4113	Agricultural Crop Physiology	
PSS 4313	Soil Fertility and Fertilizers	3
Oral Communication Requirement:		
CO 1003	Fundamentals of Public Speaking	3
or CO 1013	Introduction to Communication	
Writing Requirement		
AELC 3203	Professional Writing in Agriculture, Natural Resources, and Human Sciences	3
Total Hours		49-53

[1] Satisfies General Education requirement

Choose one of the following concentrations:

Agricultural and Environmental Soil Sciences Concentration (SOSI)

Advisors: Professors Michael Cox, William Kingery, and Jac Varco

The Agricultural and Environmental Soil Science curriculum provides an educational foundation in soil processes involving physical, chemical, and biological interrelationships. The soil resource is an integral component of our environment and is subject to loss and degradation through human activities. Humanity's dependence on soil for food and fiber production and the need for ensuring environmental quality require individuals trained in the management of this resource. Career opportunities exist both nationally and internationally in agricultural and environmental consulting, agribusiness, government agencies, teaching, and research. Required courses provide soil science training, while elective courses can be selected to meet specific needs.

Internship: SOSI students must complete a miniumum one semester internship with an approved internship spnosor in industry, private consulting firms/individuals, or governmental agencies.

GR 1123	Introduction to World Geography [1]	3
MA 1323	Trigonometry [1]	3
MA 1713	Calculus I [1]	3
ST 3123	Introduction to Statistical Inference	3
BIO 3304	General Microbiology	4
CH 1211	Investigations in Chemistry I [1]	1
CH 1213	Chemistry I [1]	3
CH 1221	Investigations in Chemistry II [1]	1
CH 1223	Chemistry II [1]	3
CH 2311	Analytical Chemistry I Laboratory	1
CH 2313	Analytical Chemistry I	3
CH 4513	Organic Chemistry I	3
CH 4523	Organic Chemistry II	3
GG 1111	Earth Sciences I Laboratory	1
GG 1113	Survey of Earth Sciences I	3
PH 1113	General Physics I	3
PH 1123	General Physics II	3
PSS 3423	Agronomy Internship	3
PSS 4314	Microbiology and Ecology of Soil	4
PSS 4323	Soil Classification	3
PSS 4333	Soil Conservation and Land Use	3
PSS 4603	Soil Chemistry	3
Restricted Electives (see advisor) [2]		15
Computer Science Requirement		
AELC 4203	Applications of Computer Tech to Agricultural Education, Leadership, and Communications	3
or TKT 1273	Computer Applications	
Total Hours		121-122

[1] Satisfies General Education requirements.

[2] Restricted Electives. Select from: ABE 4263, ADS 1113, AEC 3133, BCH 4013, BIO 4213, BIO 4404, CH 3213, CH 4303, CH 4403, CH 4413, EPP 2213, EPP 4113, GG 3133, GG 4114, GG 4304, GG 4503, GR 2313, GR 3113, GR 4603, MA 1723, PSS 3133, PSS 4103, PSS 4123, PSS 4133, PSS 4223, PSS 4373, PSS 4413, PSS 4483, PSS 4553.

Golf and Sports Turf Management Concentration (GSTM)

Advisor: Associate Professor Barry Stewart

Golf and Sports Turf Management (GSTM) is the study of plant and soil sciences for the culture of turfgrass on golf and sports facilities. The GSTM curriculum prepares individuals for careers as golf course superintendents at private, daily fee, and resort courses or as sports turf managers at city, school, and professional sports turf facilities (i.e. football, baseball, soccer fields.) New construction of golf courses and sports facilities has led to a heightened demand for trained golf and sports turf management professionals. Three semesters of Cooperative Education work experience will be required of all students enrolled in the GSTM concentration.

Cooperative Education Requirements: GSTM students must complete a minimum 12 months or three semesters of Coop work at a golf course with an individual who is certified or progressing toward certification with the Golf Course Superintendents Association of America or at a sports stadium with a recognized sports turf manager. One of the three Coop semesters enrolled by the student must be a non-summer semester period. A 2.50 cumulative GPA on all MSU work is required to participate in the GSTM program. All new students must register with their coop advisor early in their initial semester of enrollment.

ACC 2013	Principles of Financial Accounting	3
ABE 2873	Land Surveying	3
BIO 1134	Biology I	4
CH 1043	Survey of Chemistry I [1]	3
or CH 1213	Chemistry I	
CH 1053	Survey of Chemistry II [1]	3
or CH 1223	Chemistry II	
CH 1051	Experimental Chemistry [1]	1
or CH 1211	Investigations in Chemistry I	
CH 2503	Elementary Organic Chemistry	3
CH 2501	Elementary Organic Chemistry Laboratory	1
EPP 3423	Ornamental and Turfgrass Insects	3
EPP 4113	Principles of Plant Pathology	3
EPP 4523	Turfgrass Diseases	3
FLS 1113	Spanish I [1]	3

FLS 1123	Spanish II [1]	3
LA 4344	Landscape Architecture Construction IV	4
MA 1323	Trigonometry [1]	3
or ST 2113	Introduction to Statistics	
or MA 2113	Introduction to Statistics	
MGT 3513	Introduction to Human Resource Management	3
PSS 2111	Turf Management Lab	1
PSS 2113	Introduction to Turfgrass Science	3
PSS 2423	Plant Materials I	3
PSS 3133	Introduction to Weed Science	3
PSS 3411	Turf Seminar I	1
PSS 3421	Turn Seminar II	1
PSS 4353	Arboriculture and Landscape Maintenance	3
PSS 4413	Turfgrass Management	3
PSS 4423	Golf Course Operations	3
PSS 4443	Athletic Field Management	3
PSS 4823	Turfgrass Weed Management	3
Restricted Electives (see advisor) [2]		6
Sustainability Elective (see advisor) [3]		3
CP 2103	First Work Semester	3
CP 2203	Second Work Semester	3
CP 3303	Third Work Semester	3
Computer Science Requirement		
Satisfied by successful completion of PSS 4423 and PSS 4443		
Total Hours		122-123

1 Satisfies General Education requirements.

2 Restricted Electives. Select from: ABE 2173, BCH 4013, CO 3213, CO 2253, CO 3833, FIN 2003, GR 1604, KI 2213, LA 3603, LA 4753, PE 1081, PH 1113, PSS 3473, PSS 3633, PSS 3923, PSS 4043, PSS 4223, PSS 4314, PSS 4323, PSS 4333,PSS 4343 PSS 4363, PSS 4373, PSS 4503, PSS 4553

3 Sustainability Electives: LA 4753, PSS 3633, PSS 4363.

Integrated Crop Management Concentration (ICM)

Advisors: Professors Brian Baldwin, Jac Vacaro, William Kingery, Michael Cox
Associate Professors Ted Wallace

Integrated Crop Management (ICM) is the study of food and fiber production utilizing ecologically sound and technologically advanced methods. Areas covered include basic concepts of plant science and specific practices in crop initiation, culture, harvesting, processing, distribution and marketing. Methods of germplasm enhancement are taught. Specific program areas of study include agronomic crop production, crop science, fruit science, seed science, seed technology, and vegetable crop production. Students completing the Integrated Crop Management curriculum are prepared for careers as producers, consultants, technical representatives, assistant plant breeders, extension agents, or inspectors with USDA and state agencies. This curriculum also provides a good background of basic sciences for those who wish to pursue graduate studies.

Internship: ICM students must complete a minimum one semester internship with an approved internship sponsor in industry, private consulting firms/individuals, or governmental agencies.

AEC 3133	Introductory Agribusiness Management	3
BCH 4013	Principles of Biochemistry	3
BIO 3304	General Microbiology	4
or PSS 4314	Microbiology and Ecology of Soil	
CH 1043	Survey of Chemistry I [1]	3
or CH 1213	Chemistry I	
CH 1053	Survey of Chemistry II [1]	3
or CH 1223	Chemistry II	
CH 1051	Experimental Chemistry	1
or CH 1211	Investigations in Chemistry I	
CH 2503	Elementary Organic Chemistry	3
CH 2501	Elementary Organic Chemistry Laboratory	1
EPP 2213	Introduction to Insects	3
EPP 4113	Principles of Plant Pathology	3
MKT 3013	Principles of Marketing	3
PO 3103	Genetics I	3
PSS 3133	Introduction to Weed Science	3
PSS 3423	Agronomy Internship	3
Restricted Electives (see advisor) [2]		24
Unrestricted Electives		6
Computer Science Requirement		
AELC 4203	Applications of Computer Tech to Agricultural Education, Leadership, and Communications	3
or TKT 1273	Computer Applications	
Writing Requirement		
See Major Core		
Total Hours		121-122

1 Satisfies General Education requirements.

2 Restricted Electives. Select from: ABE 3513, EPP 4163, EPP 4234, EPP 4263, GA 1111, MA 1713, PH 1113, PSS 2423, PSS 3043, PSS 3923, PSS 4103, PSS 4123, PSS 4133, PSS 4143, PSS 4223,PSS 4314, PSS 4323, PSS 4333, PSS 4343, PSS 4363, PSS 4373, PSS 4413, PSS 4453, PSS 4483, PSS 4503,PSS 4553, PSS 4603, PSS 4633, PSS 4813.

Integrated Pest Management Concentration (IPM)

Major Advisor: Assistant Professor Fred R. Musser and Connor Ferguson

Integrated Pest Management (IPM) is an interdisciplinary concentration of study in Entomology, Plant Pathology and Weed Science jointly administered by the Department of Entomology and Plant Pathology and the Department of Plant and Soil Sciences. Effective management of pest problems requires a broad base of knowledge in the pest disciplines and practical field experience. The Integrated Pest Management concentration features a strong core of courses in the three pest disciplines (entomology, plant pathology, and weed science); a strong background in biological and physical sciences; and practical training through an internship. The curriculum is designed to meet the needs of students who wish to pursue advanced degrees and of students who wish to terminate their higher education with a baccalaureate degree.

A range of restricted and non-restricted electives allows students to personalize their degree program for careers in crop production, agri-business, natural resource management, and/or graduate studies preparation. A grade of “C” or better is required in all courses with the EPP or PSS prefix prior to completion of the degree. No course may be transferred for credit from another college or university in which a grade of “D” was made.

Graduates are well prepared for employment with industry; state and federal research, extension and regulatory agencies; private agricultural consulting firms; farmer’s cooperatives; nurseries, home and garden centers; greenhouse plant production; and corporate farms.

Internship: IPM students must complete a minimum one semester internship with an approved internship sponsor in industry, private consulting firms/individuals, or governmental agencies.

BIO 1134	Biology I [1]	4
CH 1051	Experimental Chemistry	1
or CH 1211	Investigations in Chemistry I	
CH 1043	Survey of Chemistry I [1]	3
or CH 1213	Chemistry I	
CH 1053	Survey of Chemistry II [1]	3
or CH 1223	Chemistry II	
CH 2503	Elementary Organic Chemistry	3
EPP 4113	Principles of Plant Pathology	3
EPP 4154	General Entomology	4
EPP 4163	Plant Disease Management	3
EPP 4263	Principles of Insect Pest Management	3
PO 3103	Genetics I	3
PSS 3133	Introduction to Weed Science	3
PSS 3423	Agronomy Internship	3
PSS 4553	Plant Growth and Development	3
PSS 4633	Weed Biology and Ecology	3
PSS 4813	Herbicide Technology	3
ST 2113	Introduction to Statistics [1]	3
or ST 3123	Introduction to Statistical Inference	
Restricted Electives (see advisor) [2]		18
Unrestricted Electives		6
Writing Requirement		
See Major Core		
Computer Literacy		
AELC 4203	Applications of Computer Tech to Agricultural Education, Leadership, and Communications	3
or TKT 1273	Computer Applications	
Total Hours		121-122

1 Satisfies University Core.

2 Restricted Electives. Select from: ABE 3513, ABE 4313, ACC 2013, AEC 3113, AEC 3133, AEC 3213, AEC 3233, AEC 3513, AEC 4123, BIO 3304, BIO 4203, EPP 3124, EPP 3423, EPP 4214, EPP 4234, EPP 4244,EPP 4523 EPP 4543,FO 4313, FO 4453, GR 2313, GR 3303, GR 4303, GR 4323, LA 1333, MGT 3513, MKT 3013, PSS 2423, PSS 3473, PSS 4103, PSS 4123, PSS 4133, PSS 4314, PSS 4323, PSS 4333, PSS 4343, PSS 4353, PSS 4363, PSS 4373, PSS 4411, PSS 4413, PSS 4453, WFA 4153, WFA 4253.

BS in Environmental Sciences in Agricultural Systems (ESAS)

Major Advisor: Dr. Michael Cox

The Environmental Sciences in Agricultural Systems (ESAS) curriculum provides an educational foundation to prepare students for diversified careers focused on environmental issues related to agronomic and horticultural production. Students completing this curriculum are prepared for careers in national and international environmental agricultural consulting, government conservation agencies, teaching, and research. Required courses provide training in environmental sciences related to agricultural issues.

Degree Requirements

English Composition		
EN 1103	English Composition I	3
or EN 1163	Accelerated Composition I	
EN 1113	English Composition II	3
or EN 1173	Accelerated Composition II	
Mathematics		
MA 1313	College Algebra	3
ST 3123	Introduction to Statistical Inference	3
or MA 1323	Trigonometry	
Natural Sciences		
BIO 1134	Biology I	4
CH 1211	Investigations in Chemistry I	1
CH 1213	Chemistry I	3
CH 1221	Investigations in Chemistry II	1
Humanities		
FLS 1113	Spanish I	3
FLS 1123	Spanish II	3
Fine Arts		
Select from General Education courses		3
Social/Behavioral Sciences		
Choose one of the following:		3
AEC 2713	Introduction to Food and Resource Economics	
EC 2113	Principles of Macroeconomics	
EC 2123	Principles of Microeconomics	
Select additional course from General Education options		3
Oral Communication Requirement		
CO 1003	Fundamentals of Public Speaking	3
or CO 1013	Introduction to Communication	
Computer Literacy Requirement		
AELC 4203	Applications of Computer Tech to Agricultural Education, Leadership, and Communications	3
or AEC 1223	Computer Applications for Agriculturists and Life Scientists	
Junior Level Writing Requirement		
AELC 3203	Professional Writing in Agriculture, Natural Resources, and Human Sciences	3
Major Core		

ADS 1113 & ADS 1121	Animal Science and Animal Science Laboratory	4
BIO 1144	Biology II	4
BIO 2503	Environmental Quality	3
BIO 3304	General Microbiology	4
BIO 4214	General Plant Physiology	3-4
or PSS 4113	Agricultural Crop Physiology	
CH 1223	Chemistry II	3
CH 2501	Elementary Organic Chemistry Laboratory	1
CH 2503	Elementary Organic Chemistry	3
ENS 2103	Introduction to Environmental Science	3
GG 1111	Earth Sciences I Laboratory	1
GG 1113	Survey of Earth Sciences I	3
GG 3613	Water Resources	3
PH 1113	General Physics I	3
PO 3103	Genetics I	3
PSS 1313	Plant Science	3
PSS 3301	Soils Laboratory	1
PSS 3303	Soils	3
PSS 3423	Agronomy Internship	3
or PSS 3433	Horticulture Internship	
Agricultural Systems Electives - see advisor for list of approved courses		6
Restricted Electives - see advisor for list of approved courses		21
Total Hours		123-124

BS in Horticulture (HO)

Degree Requirements

English Composition		
EN 1103	English Composition I	3
or EN 1163	Accelerated Composition I	
EN 1113	English Composition II	3
or EN 1173	Accelerated Composition II	
Mathematics		
MA 1313	College Algebra	3
See concentration requirements		
Science		
See concentration requirements		
Humanities		
See concentration requirements		
Fine Arts		
See concentration requirements		
Social/Behavioral Sciences		
AEC 2713	Introduction to Food and Resource Economics *	3
or EC 2123	Principles of Microeconomics	
or EC 2113	Principles of Macroeconomics	
See concentration requirements		3
Major Core		
ACC 2013	Principles of Financial Accounting	3
EPP 2213	Introduction to Insects	3
or EPP 3423	Ornamental and Turfgrass Insects	
MKT 3013	Principles of Marketing	3
PSS 1313	Plant Science	3
PSS 3511	Seminar	1
PSS 3923	Plant Propagation	3
Writing Requirement		
AELC 3203	Professional Writing in Agriculture, Natural Resources, and Human Sciences	3
Oral Communcation Requirement		
CO 1003	Fundamentals of Public Speaking	3
or CO 1013	Introduction to Communication	
Computer Literacy Requirement		
AEC 1223	Computer Applications for Agriculturists and Life Scientists	2-3
or AELC 4203	Applications of Computer Tech to Agricultural Education, Leadership, and Communications	
or BIS 1012	Introduction to Business Information Systems	
or TKT 1273	Computer Applications	

* Students in Floral Management concentration may not select EC 2113.

Choose one of the following concentrations:

Floral Management Concentration (FLMG)

Instructors: Lynette McDougald and Dr. Coleman Etheredge

Floral Management involves sourcing, purchasing, distributing, marketing, designing with, and selling floricultural products. Students enrolled in this concentration are provided with courses in design and horticulture, balanced with business and sciences. Career opportunities for graduates include retailing, wholesaling, special event designing, and display gardening. The University Florist, a professional flower shop owned and operated by the Department of Plant and Soil Sciences on the MSU campus, provides students with work and management opportunities.

Internship Requirements (PSS 3413): FM majors must complete a 10 week, 400 clock hour work experience in a floral industry enterprise. The internship requirement may be completed any semester after successful completion of PSS 2343 Floral Design.

Additional General Education courses		
BIO 2113	Plant Biology [1]	3
CH 1043	Survey of Chemistry I [1]	3
or CH 1213	Chemistry I	
CH 1053	Survey of Chemistry II [1]	3
or CH 1223	Chemistry II	
CH 1051	Experimental Chemistry [1]	1
or CH 1211	Investigations in Chemistry I	
PSS 2343	Floral Design [1]	3
Math course from General Education [1]		3
Humanities - Select from General Education courses [1]		6
Concentration courses		
ACC 2023	Principles of Managerial Accounting	3
ART 1113	Art Appreciation	3
ART 1123	Design I	3
BL 2413	The Legal Environment of Business	3
EC 2113	Principles of Macroeconomics	3

FIN 3113	Financial Systems	3
HS 2603	Interior Design Fundamentals	3
LA 1423	History of Landscape Architecture	3
PS 1113	American Government	3
PSS 2423	Plant Materials I	3
PSS 3313	Interior Planting Design and Maintenance	3
PSS 3343	Wedding Floral Design	3
PSS 3413	Floristry Internship	3
PSS 3443	Permanent Botanical Floral Design	3
PSS 4023	Floral Management	3
PSS 4073	Sympathy Floral Design	3
PSS 4083	Floral Design for Special Events	3
PSS 4093	Post-harvest Care of Cut Floral Crops	3
PSY 1013	General Psychology [1]	3
Restricted Electives (see advisor) [2]		6
Total Hours		121

1 Satisfies General Education requirements.

2 Restricted Electives. Select from: EPP 4113, PSS 3043, PSS 3303, PSS 3473, PSS 4000,PSS 4043, PSS 4143, PSS 4343, PSS 4353, PSS 4363, PSS 4453, PSS 4503, PSS 4613.

Floriculture and Ornamental Horticulture Concentration (FLOR)

Advisors: Professor Richard L. Harkess

Floriculture and Ornamental Horticulture offers diversified opportunities that are challenging, intellectually stimulating, and economically rewarding. Floriculture and Ornamental Horticulture is the science and art of producing, distributing, and marketing flowers, flowering and foliage plants. It offers a wide variety of employment opportunities and competitive salaries. Students completing this curriculum are prepared for many different careers including greenhouse or nursery management, landscape management, public service, research and technical product research and sales.

Additional General Education courses		
BIO 1134	Biology I [1]	4
BIO 2113	Plant Biology [1]	3-4
or BIO 1144	Biology II	
CH 1043	Survey of Chemistry I [1]	3
or CH 1213	Chemistry I	
CH 1051	Experimental Chemistry [1]	1
or CH 1211	Investigations in Chemistry I	
CH 1053	Survey of Chemistry II [1]	3
or CH 1223	Chemistry II	
MA /ST 2113	Introduction to Statistics [1]	3
FLS 1113	Spanish I [1]	3
FLS 1123	Spanish II [1]	3
Social Sciences - select from General Education courses [1]		3
PSS 2343	Floral Design [1]	3
or LA 1803	Landscape Architecture Appreciation	
Concentration courses		
BIO 4214	General Plant Physiology	3-4
or PSS 4113	Agricultural Crop Physiology	
CH 2501	Elementary Organic Chemistry Laboratory	1
CH 2503	Elementary Organic Chemistry	3
EPP 4113	Principles of Plant Pathology	3
PO 3103	Genetics I	3
PSS 2423	Plant Materials I	3
PSS 3301	Soils Laboratory	1
PSS 3303	Soils	3
PSS 3313	Interior Planting Design and Maintenance	3
PSS 3433	Horticulture Internship	3
PSS 3473	Plant Materials II	3
PSS 4341	Controlled Environment Agriculture Laboratory	1
PSS 4343	Controlled Environment Agriculture	3
PSS 4363	Sustainable Nursery Production	3
PSS 4613	Floriculture Crop Programming	3
Restricted Electives (see advisor) [2]		18
Total Hours		122

1 Satisfies General Education requirements.

2 Restricted Electives. Select from: AEC 3133 AEC 3413, BCH 4013, BIO 3304, BIO 4204,BIO 4203, BIO 4213, BIO 4404, EPP 4163, EPP 4263, FLS 2133, FLS 2143, LA 1333, LA 4753,MKT 3213, PSS 2113, PSS 2343, PSS 3133, PSS 3043, PSS 3343, PSS 3443, PSS 3633, PSS 4000, PSS 4023, PSS 4073, PSS 4083, PSS 4093 PSS 4143, PSS 4313, PSS 4353, PSS 4043, PSS 4413, PSS 4453, PSS 4503, PSS 4553.

Fruit and Vegetable Production (FVP)

Advisors: Professor Richard Harkess and Assistant Professor Tongyin Li

Fruit and Vegetable Production (FVP) offers opportunities that are challenging, intellectually stimulating, and economically rewarding. Fruit and Vegetable Production focuses on the production, distribution, and marketing of fruits and vegetables for local consumption and commercial markets. It offers a wide variety of employment opportunities and competitive salaries. Students completing this curriculum are prepared for careers in local and commercial production of fruits and vegetables, marketing, quality control, purchasing, research, and technical product research sales.

Additional General Education courses		
BIO 1134	Biology I [1]	4
BIO 2113	Plant Biology [1]	3-4
or BIO 1144	Biology II	
CH 1043	Survey of Chemistry I [1]	3
or CH 1213	Chemistry I	
CH 1051	Experimental Chemistry	1
or CH 1221	Investigations in Chemistry II	
CH 1053	Survey of Chemistry II [1]	3
or CH 1223	Chemistry II	
MA 2113	Introduction to Statistics [1]	3
or ST 2113	Introduction to Statistics	
FLS 1113	Spanish I [1]	3
FLS 1123	Spanish II [1]	3
Social Sciences - Select from General Education courses [1]		3
Fine Arts - Select from General Education courses [1]		3

Concentration courses		
BIO 4214	General Plant Physiology	3-4
or PSS 4113	Agricultural Crop Physiology	
CH 2501	Elementary Organic Chemistry Laboratory	1
CH 2503	Elementary Organic Chemistry	3
EPP 4113	Principles of Plant Pathology	3
PO 3103	Genetics I	3
PSS 3043	Fruit Science	3
PSS 3133	Introduction to Weed Science	3
PSS 3301	Soils Laboratory	1
PSS 3303	Soils	3
PSS 3433	Horticulture Internship	3
PSS 3633	Sustainable and Organic Horticulture	3
PSS 4143	Advanced Fruit Science	3
PSS 4313	Soil Fertility and Fertilizers	3
PSS 4453	Vegetable Production	3
Restricted Electives		12
Free Electives		6
Total Hours		121

[1] Satisfies General Education requirements.

[2] Restricted Electives. Select from: AEC 3133, AEC 3413, BCH 4013, BIO 3304, BIO 4204, BIO 4203, BIO 4213, BIO 4404, EPP 4163, EPP 4263 FNH 4114, FNH 4164, FNH 4193, FNH 4583, MKT 3213, PH 1113, PSS 2423, PSS 3473, PSS 4000, PSS 4093, PSS 4314, PSS 4333,PSS 4341,PSS 4343, PSS 4373, PSS 4043, PSS 4483, PSS 4503, PSS 4553, PSS 4633, PSS 4813

Minors

Agronomy

There is a growing need for people with specialized knowledge outside the field of agronomy. The agronomic industry recruits and employs personnel trained in areas such as accounting, biological sciences, business, computer science, human nutrition, microbiology, engineering, advertising and marketing, veterinary medicine, human resource management and law. A minor in Agronomy provides these individuals enhanced employment opportunities in agriculture.

Students seeking an Agronomy minor are required to complete the following courses to receive a minor in Agronomy:

PSS 1313	Plant Science	3
PSS 3303	Soils	3
PSS 3133	Introduction to Weed Science	3
Choose 9 hours from the following:		9
PSS 2111	Turf Management Lab	
PSS 2113	Introduction to Turfgrass Science	
PSS 4103	Forage and Pasture Crops	
PSS 4123	Grain Crops	
PSS 4133	Fiber and Oilseed Crops	
PSS 4223	Seed Production	
PSS 4313	Soil Fertility and Fertilizers	
PSS 4314	Microbiology and Ecology of Soil	
PSS 4323	Soil Classification	
PSS 4333	Soil Conservation and Land Use	
PSS 4373	Geospatial Agronomic Management	
PSS 4413	Turfgrass Management	
PSS 4423	Golf Course Operations	
PSS 4443	Athletic Field Management	
PSS 4483	Introduction to Remote Sensing Technologies	
PSS 4503	Plant Breeding	
PSS 4603	Soil Chemistry	
PSS 4633	Weed Biology and Ecology	
PSS 4813	Herbicide Technology	
PSS 4823	Turfgrass Weed Management	
Total hours		18

Floral Management

A **minor** in Floral Management is available. To obtain a minor, students are required to complete the following 15 hours:

PSS 2343	Floral Design	3
Choose four of the following courses:		12
PSS 3313	Interior Planting Design and Maintenance	
PSS 3343	Wedding Floral Design	
PSS 3443	Permanent Botanical Floral Design	
PSS 4023	Floral Management	
PSS 4073	Sympathy Floral Design	
PSS 4083	Floral Design for Special Events	
PSS 4093	Post-harvest Care of Cut Floral Crops	

Floriculture and Ornamental Horticulture

A **minor** in Floriculture and Ornamental Horticulture is available. To obtain a minor, students are required to complete 15 hours.

PSS 2423	Plant Materials I	3
PSS 3473	Plant Materials II	3
PSS 3923	Plant Propagation	3
Choose two of the following:		6
PSS 3313	Interior Planting Design and Maintenance	
PSS 4343	Controlled Environment Agriculture	
PSS 4353	Arboriculture and Landscape Maintenance	
PSS 4363	Sustainable Nursery Production	
PSS 4613	Floriculture Crop Programming	

Department of Poultry Science

Major Advisor: Jessica Wells
Office: Hill Poultry Science Rm 104

The U.S. poultry industry is a $21 billion+ business employing hundreds of thousands of people in the United States. Mississippi ranks in the top five broiler producing states and continues to expand. This dynamic industry employs about 25,000 Mississippians directly and another 25,000 indirectly.

The Poultry curriculum provides for in-depth study of scientific principles important in the production, processing and marketing of poultry and poultry products. The curriculum is designed with academic and experiential components to ensure that graduates are prepared to manage people and resources vital to this important food industry.

Poultry students should also expect to develop creative thinking skills that will allow them to develop solutions for complex real world problems as they develop their careers as managers. The strong science content of the curriculum also makes it an excellent fit for pre-vet students and students interested in graduate studies. The department provides one-on-one advising for all Poultry Science students. Concentrations available are:

- Applied Poultry Management
- Science and Pre-Veterinary Science

Only grades of C or higher will be accepted for all PO courses.

BS in Poultry Science (PO)

Degree Requirements

English Composition		6
EN 1103	English Composition I	
or EN 1163	Accelerated Composition I	
EN 1113	English Composition II	
or EN 1173	Accelerated Composition II	
Mathematics		6
MA 1313	College Algebra	
MA higher than MA 1313 (see Gen Ed courses)		
Science		9
See major/concentration		
Humanities		6
Select from General Education courses (except FLS 1113 which is major core requirement)		
Fine Arts		3
Select from General Education courses		
Social Sciences		6
Applied Poultry Management concentration: Select hours from General Education courses (except AEC 2713 which is a major concentration requirement)		
Science and Pre-Vet Science concentration: Select hours from General Education courses		
Major Core		
PO 3011	Seminar	1
PO 3021	Seminar	1
PO 3103	Genetics I	3
PO 3313	Commercial Poultry Production	3
PO 4031	Seminar	1
PO 4041	Seminar	1
PO 4033	Diseases of Poultry	3
PO 4313	Management of Commercial Layers	3
PO 4324	Avian Reproduction	4
PO 4334	Broiler Production	4
PO 4413	Poultry Nutrition	3
PO 4423	Feed Manufacturing	3
PO 4514	Poultry Processing	4
PO 4844	Avian Anatomy and Physiology	4
PO 3353	Poultry Production Internship	3
FLS 1113	Spanish I	3
FNH 4414	Microbiology of Foods	4
or BIO 3304	General Microbiology	
Experiential Learning		3
PO 4990	Special Topics in Poultry Science	
or PO 3363	Poultry Processing Internship	
or PO 4000	Directed Individual Study in Poultry Science	
Oral Communication Requirement		
Satisfied by successful completion of PO 3021, 4031, and 4041		
Writing Requirement		
Satisfied by successful completion of PO 4324 and 4844		
Computer Literacy		
Satisfied by successful completion of PO 4324 and 4844		

Choose one of the following concentrations:

Applied Poultry Management Concentration (APOM)

Many large agribusiness firms are in the poultry sector. It prepares students to enter into all areas of the poultry industry with the knowledge neccessary to be successful.

ACC 2013	Principles of Financial Accounting	3
BL 2413	The Legal Environment of Business	3
AEC 3133	Introductory Agribusiness Management	3
AEC 2713	Introduction to Food and Resource Economics	3
AEC 3233	Introduction to Environmental Economics and Policy	3
AEC 4113	Agribusiness Firm Management	3
AEC 4413	Public Problems of Agriculture	3
MKT 3013	Principles of Marketing	3
Science Requirements		9-11
Choose 3 of the following (major core science requirements):		
BIO 1134	Biology I	
BIO 1123	Animal Biology	
BIO 1144	Biology II	
BIO 2113	Plant Biology	
CH 1043	Survey of Chemistry I	
or CH 1213 & CH 1211	Chemistry I and Investigations in Chemistry I	
CH 1223 & CH 1221	Chemistry II and Investigations in Chemistry II	
Restricted Electives		2-3
Choose one of the following:		
PO 3423	Poultry Evaluation I	
PO 3433	Poultry Evaluation II.	
PO 4512	Poultry Products Safety and Sanitation	
ADS /PO 1013	Animal Agriculture & Society: Food for Thought	
MGT 3513	Introduction to Human Resource Management	
Free Electives		5-8
Total Hours		122

Science and Pre-Veterinary Science Concentration (SPVS)

The Science and Pre-Veterinary Science concentration prepares a student for future programs at a graduate level and also allows a student to satisfy the pre-veterinary requirements while completing a B.S. in Poultry Science.

BIO 1134	Biology I	4
BIO 1144	Biology II	4
CH 1211	Investigations in Chemistry I	1
CH 1213	Chemistry I	3
CH 1221	Investigations in Chemistry II	1
CH 1223	Chemistry II	3
CH 2503 & CH 2501	Elementary Organic Chemistry and Elementary Organic Chemistry Laboratory	4
or CH 4513 & CH 4511	Organic Chemistry I and Organic Chemistry Laboratory I	
Restricted Electives		11-14
Choose four from the following:		
CH 4523 & CH 4521	Organic Chemistry II and Organic Chemistry Laboratory II	
BCH 4013	Principles of Biochemistry	
or BCH 4603	General Biochemistry I	
PH 1113	General Physics I	
PH 1123	General Physics II	
PO 4512	Poultry Products Safety and Sanitation	
PO 3423	Poultry Evaluation I	
PO 3433	Poultry Evaluation II.	
ADS /PO 1013	Animal Agriculture & Society: Food for Thought	
Free Electives		10-13
Total Hours		122

Poultry Science Minor

The need for people who have specialized knowledge outside of classic poultry science is growing rapidly. Currently the industry recruits and employs personnel trained in areas such as accounting, biological sciences, computer science, human nutrition, nursing, microbiology, engineering, food technology, advertising and marketing, veterinary medicine, human resource management and law. A minor in Poultry Science provides these individuals with enhanced employment opportunities in the poultry industry.

Students will be required to complete the following courses to receive a minor in Poultry Science.

PO 3313	Commercial Poultry Production	3
PO 4313	Management of Commercial Layers	3
PO 4334	Broiler Production	4
PO 4413	Poultry Nutrition	3
or PO 4423	Feed Manufacturing	
PO 4514	Poultry Processing	4

School of Human Sciences

Director: Michael E. Newman
Office: (662) 325-2950

The mission of the School of Human Sciences is to improve the well-being of individuals, families, communities and related businesses and industries through teaching, research and outreach. An integrative approach is carried out in these program areas:

- **Agricultural Education, Leadership, and Communications (AELC)**
- **Fashion Design and Merchandising (FDM)**
- **Human Development and Family Science (HDFS)**

The School of Human Sciences currently has the following accreditations: American Association of Family and Consumer Sciences (AAFCS) and National Council for Accreditation of Teacher Education (NCATE) in Vocational Home Economics and Agriculture.

The commitment of Human Sciences' faculty and staff to excellence is evident in teaching, especially considering the growth, demand for the programs offered in the School, and the number of teaching and advising awards received by the faculty. The School of Human Sciences has more Grisham Master Teachers and CALS Excellence in Teaching Awards than any other unit within the Division and College. The School remains committed to this path of excellence, striving to provide students with contemporary programs and outstanding learning opportunities at the undergraduate and graduate levels. The School provides strong curricula and excellent teaching and advising.

The School's programs are strong components of the land grant institution, which is designed to provide outreach to the community and state. The School's commitment to this process is evident in several outreach programs, such as its early childhood development work. Human Sciences faculty and graduates work with people in and across a variety of settings, including homes; schools; clinical settings; community agencies and institutions; and business, industry, and government. Graduates are prepared to address the social and economic challenges that face the state and its communities.

BS in Agricultural Education, Leadership, and Communications

Academic Coordinator: Cappe Hallberg
Office: (662) 325-7703

The Agriculture Education, Leadership, and Communications major equips graduates with the ability to inform and engage people about agricultural information and issues. This is achieved through curriculum emphasizing practical knowledge and hands-on experiences in teaching, leadership, and communications, in addition to well-rounded, individualized coursework in agricultural topics. Agricultural Education, Leadership, and Communications (AELC) graduates may become involved in a variety of occupations in agricultural business and industry, education, production, extension, and communications. The major requires 124 semester hours as shown in the catalog description. Students may choose to complete a concentration in Agricultural Education, Agricultural Leadership, or Agricultural Communications. The AELC concentrations are achieved by completing a combination of 60 hours of specified courses and restricted agriculture electives as

approved by an AELC advisor. All students must earn at least a C in all AELC courses.

The Agricultural Education concentration prepares individuals seeking careers as an agricultural education teacher. The Agricultural Leadership concentration develops students' skills for employment with the Extension service or a variety of agricultural industry careers. The Agricultural Communications concentration develops students' abilities to communicate about agricultural and life sciences issues.

Students desiring to receive certification to teach in secondary agricultural education will need to complete certification requirements. The Agricultural Education teacher education program at Mississippi State University is Council for Accreditation of Education Preparation (CAEP) accredited. Students must conform to the policies on teacher education, as explained under “Teacher Licensure” elsewhere in this catalog.

Graduates will have knowledge of

1. principles of teaching and learning;
2. principles and theories of leadership;
3. principles o of human communication; and
4. basic agricultural sciences.

Graduates will be able to

1. plan and conduct agricultural education programs in classroom and community settings;
2. communicate effectively orally and in writing to various audiences;
3. be proficient in computer applications; and
4. be readily prepared for employment.

In capstone courses, students produce and present reports that demonstrate the performance learning objectives. In addition to faculty assessment, external assessors from other departments and from typical clientele audiences observe presentations and provide feedback.

Field experience supervisors and co-curricular sponsors, along with student participants, provide feedback about the field experience using a form based on the learning objectives.

Degree Requirements

English Composition		
EN 1103	English Composition I	3
or EN 1163	Accelerated Composition I	
EN 1113	English Composition II	3
or EN 1173	Accelerated Composition II	
Mathematics		
MA 1313	College Algebra	3
MA 1323	Trigonometry	3
or MA /ST 2113	Introduction to Statistics	
Science		
BIO 1134	Biology I	4
BIO 1144	Biology II	3-4
or PSS 1313	Plant Science	
Extra Science (if appropriate)		
CH 1043	Survey of Chemistry I	3
or CH 1053	Survey of Chemistry II	
or CH 1213	Chemistry I	
Humanities		
Select from General Education courses		6
Fine Arts		
Select from General Education courses		3
Social Sciences		
AEC 2713	Introduction to Food and Resource Economics	3
or EC 2113	Principles of Macroeconomics	
or EC 2123	Principles of Microeconomics	
See concentration for second Social/Behavioral Science course.		3
Major Core		
ADS 1113	Animal Science	3
ADS 1121	Animal Science Laboratory	1
AELC 2413	Orientation to Agricultural Education, Leadership & Communications	3
AELC 3333	Professional Presentations in Agriculture and Life Sciences	3
AELC 3803	Foundations of Leadership in Agricultural and Life Sciences	3
AELC 4403	Development of Youth Programs	3
AELC 4424	Teaching Methods in Agricultural and Human Sciences	4
PSS 3301	Soils Laboratory	1
PSS 3303	Soils	3
Oral Communication Requirement		
Satisfied by the successful completion of AELC 3333 or AELC 4424		
Writing Requirement		
AELC 3203	Professional Writing in Agriculture, Natural Resources, and Human Sciences	3
Computer Literacy		
AELC 4203	Applications of Computer Tech to Agricultural Education, Leadership, and Communications	3

Agricultural Education Concentration

AELC 3013	Field Experience in Agricultural Education, Leadership and Communications	3
AELC 4113	Methods of Teaching Agriscience	3
AELC 4703	Experiential Learning Programs in Agriculture	3
AELC 4873	Professional Seminar in Agricultural Education	3
AELC 4886	Teaching Internship in Agricultural Education	6
AELC 4896	Teaching Internship in Agricultural Education	6
EDX 3213	Individualizing Instruction for Exceptional Children	3
PSY 1013	General Psychology	3
Restricted Plant Science Elective [1]		
Restricted Environmental Science Elective [2]		
Restricted Animal Science Elective [3]		

Agriculture electives	15-16
Free electives	6

1 Select one course from PSS 1113, PSS 2343, PSS 2423, PSS 3133, PSS 3923, PSS 4103, PSS 4123, PSS 4133, PSS 4613, FO 2113

2 Select one course from PSS 4333, FO 4513, or ENS 2103.

3 Select one course from ADS 2102, ADS 2122, ADS 3142, ADS 3214, ADS 3223, ADS 3312,ADS 3314, ADS 4113, ADS 4212, ADS 4223, ADS 4232, ADS 4323, ADS 4813, PO 3313

Agricultural Leadership Concentration

PHI 1123	Introduction to Ethics	3
or MGT 3823	Socially Responsible Leadership	
PSY 3623	Social Psychology	3
or PS 3013	Political Leadership	
CO 1003	Fundamentals of Public Speaking	3
or CO 3213	Small Group Communication	
or CO 3803	Principles of Public Relations	
AELC 3813	Team Leadership for Agriculture & Life Sciences	3
AELC 4803	Contemporary Issues in Agriculture and Life Sciences	3
PSY 1013	General Psychology	3
or PS 1113	American Government	
or SO 1003	Introduction to Sociology	
Agricultural Leadership Elective		
Choose one of the following:		
ENS 2103	Introduction to Environmental Science	3
or PS 2703	Introduction to Public Policy	
AELC 3500	Internship in Agricultural Leadership	1-6
Professional Electives [1]		18
Ag/Business/Communication Electives [2]		12
Free electives		6
Total Hours		124

1 18 hours of advisor-approved, 3000-4000 level, focus area electives related to career objective (see advisor for suggested areas)

2 12 hours Agriculture, Business, Management, Marketing, or Communication electives (to include all CALS 1000 level and above - ADS, AEC, AELC, PSS, ABE, WFA, FNH, LA, FO, PO, EPP; and MGT, MKT, CO, BL)

Agricultural Communications Concentration

AELC 3603	Internship-Agricultural Communications	3
AELC 4223	Communications Strategies in Agriculture and Life Sciences	3
AELC 4803	Contemporary Issues in Agriculture and Life Sciences	3
CO 1403	Introduction to the Mass Media	3
CO 2333	Television Production	3
CO 2413	Introduction to News Writing and Reporting	3
CO 3403	Photographic Communication	3
CO 3713	Digital Communication	3
CO 3803	Principles of Public Relations	3
PSY 1013	General Psychology	3
or PS 1113	American Government	
or SO 1003	Introduction to Sociology	
Focus Area Electives [1]		24
Free Electives		6
Completing a minor in Communications, Political Science, or Art is recommended as a part of your program of study.		
Total Hours		124

1 Electives must be advisor-approved, focus area-related to a career objective. (See advisor for suggested areas.) A maximum of 9 hours may be 1000- or 2000- level. All remaining hours must be 3000- or 4000-level courses taken at Mississippi State University.

BS in Agricultural Science (AGS)

Academic Coordinator: Cappe Hallberg
Office: (662) 325-7703

The Agricultural Science degree prepares individuals for a variety of agricultural related careers. Many agricultural businesses and organizations are seeking graduates who have a diversified knowledge of agriculture and life sciences, which includes production agriculture, business, leadership and management. Many graduates become involved in agriculture business and industry, production agriculture operations, international agriculture development or pursue advanced study in areas such as nutrition and agricultural education.

Agricultural Science allows students to develop a high concentration of science and specialized agricultural study. Through the Agricultural Science degree program, a student can pursue a bachelor of science in agriculture and develop specialization areas that will serve his/her individual needs and interests. For the degree requirements, students must complete 124 hours, which includes 18 hours of science and 58 hours of agricultural science. Thirty hours will be agricultural science electives, which must be taken from two different agriculture focus areas within the College of Agriculture and Life Sciences. (See advisor for suggested focus areas.) The student should select agricultural focus areas that are closely related and complement each other and are related to the career objectives of the student. At least 12 hours in each agricultural focus area must be 3000-4000 level courses. The student will also have 14 hours of agriculture and science electives to complete which should also complement the selected agricultural focus areas. At least three hours must be a natural life science.

Graduates will have knowledge of

1. the diversified field of agriculture;
2. basic agricultural sciences;
3. leadership principles;
4. the basic principles of production; and
5. the application of basic science principles to production agriculture and agricultural business management.

Graduates will be able to

1. plan and conduct basic agricultural research;
2. manage an agricultural enterprise (business or production);
3. provide leadership in a variety of employment settings; and
4. communicate effectively orally and in writing to various audiences.

In various courses, students produce and present reports that demonstrate the performance learning objectives. In addition to faculty assessment, external assessors from other departments and from typical clientele audiences observe presentations and provide feedback.

Internship supervisors and co-curricular sponsors, along with student participants, provide feedback about the internship using a form based on the learning objectives.

Degree Requirements

English Composition		
EN 1103	English Composition I	3
or EN 1163	Accelerated Composition I	
EN 1113	English Composition II	3
or EN 1173	Accelerated Composition II	
Mathematics		
MA 1313	College Algebra	3
Select from General Education courses		3
Science		
BIO 1134	Biology I	4
BIO 1144	Biology II	4
CH 1043	Survey of Chemistry I	3
or CH 1213	Chemistry I	
Humanities		
Select from General Education courses		6
Fine Arts		
Select from General Education courses		3
Social Science		
AEC 2713	Introduction to Food and Resource Economics	3
or EC 2113	Principles of Macroeconomics	
or EC 2123	Principles of Microeconomics	
Select from General Education courses		3
Major Core		
ABE 1863	Engineering Technology in Agriculture	3
ADS 1113 & ADS 1121	Animal Science and Animal Science Laboratory	4
AEC 3133	Introductory Agribusiness Management	3
AELC 3500	Internship in Agricultural Leadership	1-6
CH 1051	Experimental Chemistry	1
CH 1053	Survey of Chemistry II	3
or CH 1223	Chemistry II	
EPP 2213	Introduction to Insects	3
or EPP 4113	Principles of Plant Pathology	
PSS 1313	Plant Science	3
or BIO 2113	Plant Biology	
PSS 3301	Soils Laboratory	1
PSS 3303	Soils	3
15 hours from each of two agriculture focus areas [1]		30
Agriculture/science electives [1,2]		14
Free electives		6
Oral Communication Requirement		
AELC 3333	Professional Presentations in Agriculture and Life Sciences	3
Writing Requirement		
AELC 3203	Professional Writing in Agriculture, Natural Resources, and Human Sciences	3
Computer Literacy		
AELC 4203	Applications of Computer Tech to Agricultural Education, Leadership, and Communications	3
Total Hours		124

1 See advisor for approved courses.

2 3 hours must be a natural/life science.

BS in Human Development and Family Science (HDFS)

Academic Coordinator: Cappe Hallberg
Office: (662) 325-7703

This degree offers an interdisciplinary lifespan approach to the study of children, youth, and families. It encompasses specialty areas in preschool teaching, child life, child development, youth development, family science, child life, and family and consumer sciences teacher education. Students develop an awareness of trends, issues, and public policy affecting families; analyze factors that influence cognitive, emotional, social, and physical development in the contexts of culture and family. Graduates enter diverse public and private sectors that focus on enabling children, youth, and families to function effectively in today's complex society.

Specific course work is required to specialize in each area or meet Class A teacher licensure requirements for family and consumer sciences in the state of Mississippi. Specific course work is also required to specialize in child life, preschool education, youth development, or family science. A grade of "C" or better is required for all major courses (Human Development and Family Science courses). A student will not be allowed to register for HDFS classes after the initial semester until he or she has submitted an application for a federal background check. If the background check comes back unapproved, the student will not be allowed to continue in the program until the problem is resolved. Students are responsible for paying the fees for the background check.

Degree Requirements

English (General Education)	6
Fine Arts (General Education)	3
Natural Sciences (2 labs required from Gen Ed)	6-8
BIO 1004 required for Child Life Concentration	
Extra Science (if appropriate)	3
(HS 2293 Individual and Family Nutrition required for FCS Education)	
(Select from Gen Ed courses for Child Development, Child Life, Youth Development, and Family Science)	
Math (General Education)	6
Humanities (General Education)	6
Social/Behavioral Sciences (General Education)	6
(HDFS 1813 and EPY 3543 are required for FCS Education)	
(Select from Gen Ed courses for Child Development, Youth Development, and Family Science)	
Major Core	

HS 1701	Survey of Human Sciences	1
HS 4701	Internship Placement Seminar	1
HS 4702	Research and Application in Human Sciences	2
HDFS 2813	Child Development	3
HDFS 3303	Consumer Economics	3
HDFS 4333	Families, Legislation and Public Policy	3
HDFS 4424	Teaching Methods in Agricultural and Human Sciences	4
HDFS 4803	Parenting	3
HDFS 4853	The Family: A Human Ecological Perspective	3
HDFS 4883	Risk, Resilience and Preventive Interventions	3
Writing Requirement		3
AELC 3203	Professional Writing in Agriculture, Natural Resources, and Human Sciences	3
or EDF 3413	Writing for Thinking	
or EPY 3513	Writing in the Behavioral Sciences	
or MGT 3213	Organizational Communications	

Child Development Concentration

The child development concentration explores the growth and development of children (conception until adolescence) within the family system and sociocultural milieu. This coursework prepares students to be become competent early care and education professionals, parent educators, child advocates, and early interventionists within the public, private, and non-profit sectors. Students learn real-world application through lab experiences at the Child Development and Family Studies Center and internships in settings that align with the students' career goals. PreK-K teaching candidates must complete a PreK-K Teacher Candidacy Internship under the supervision of a licensed teacher. To be eligible for PreK-K teaching licensure in Mississippi, students must pass the Praxis Core or have a cumulative ACT score of at least 21; have a GPA of at least 2.75; and pass the Praxis II Early Childhood Principles of Teaching and Learning (5621) and the Praxis II Child Development (5024).

HDFS 1813	Individual and Family Development through the Lifespan	3
HDFS 2803	Prenatal and Infant Development	3
HDFS 3803	Creativity & Play in Young Children	3
HDFS 3813	Lifespan Theory	3
HDFS 3823	Methods & Materials for Early Care and Education Programs	3
HDFS 3843	Guiding Young Children's Behavior & Social Development	3
HDFS 4760	Child Development Internship	12
or HDFS 4740	PreK-K Teacher Candidacy Internship	
HDFS 4823	Development and Administration of Child Service Programs	3
HS 2283	Child Health and Nutrition	3
EDE 3233	Teaching Children's Literature at the Elementary and Middle Levels	3
EDX 3213	Individualizing Instruction for Exceptional Children	3
CO 1003	Fundamentals of Public Speaking	3
or CO 1013	Introduction to Communication	
COE 4013	Facilitative Skills Development	3
Computer Literacy Course (satisfied by TKT 1273 or BIS 1012)		2-3
Electives		8
Child Development Concentration total hours		124

Child Life Concentration

A concentration in Child Life provides the student with an overview of the role of the child life specialist working with children and their families in a health care setting. The primary emphases of the child life concentration are on student demonstration of knowledge, skills, and abilities required to assume the responsibilities of a child life professional. This includes involvement in the assessment of patients and families; planning and delivering child life services to patients including medical play, pre-procedural teaching, use of distractions, etc; and evaluating the effectiveness of the interventions and plan.

HDFS 1813	Individual and Family Development through the Lifespan	3
HDFS 2803	Prenatal and Infant Development	3
HDFS 3803	Creativity & Play in Young Children	3
HDFS 3813	Lifespan Theory	3
HDFS 3823	Methods & Materials for Early Care and Education Programs	3
HDFS 3843	Guiding Young Children's Behavior & Social Development	3
HDFS 4770	Child Life Internship	12
or HDFS 4760	Child Development Internship	
or HDFS 4740	PreK-K Teacher Candidacy Internship	
HDFS 4823	Development and Administration of Child Service Programs	3
HDFS 4832	Child Life Clinical	2
HDFS 4833	The Hospitalized Child	3
CO 1003	Fundamentals of Public Speaking	3
or CO 1013	Introduction to Communication	
COE 4013	Facilitative Skills Development	3
EDE 3233	Teaching Children's Literature at the Elementary and Middle Levels	3
EDX 3213	Individualizing Instruction for Exceptional Children	3
Computer Literacy Course (satisfied by TKT 1273 or BIS 1012)		3
Electives		6
Child Life Concentration total hours		124

Youth Development Concentration

The Youth Development curriculum prepares students to understand and work effectively with children and adolescents, ages 10-18, in a variety of settings. The program provides students with a comprehensive view of the needs and developmental characteristics of youths, as well as the challenges facing today's youths. Emphasis is placed on understanding how youth development does not occur in isolation but is situated in, and affected by, contexts such as relationships, family, neighborhood/ community, school, culture, the economy, and society. Youth Development students gain valuable real-world experience through a required field experience course and an internship. Students are also

able to develop specific areas of specialization to fit their career interests by choosing from a generous variety of focus area courses.

HDFS 1813	Individual and Family Development through the Lifespan	3
HDFS 3000	Field Experience	1-6
HDFS 3813	Lifespan Theory	3
HDFS 4780	Youth Development Internship	12
HDFS 4873	Positive Youth Development	3
PSY 4223	Drug Use and Abuse	3
or SW 4533	Substance Abuse and Addictions in Social Work Services	
CO 1003	Fundamentals of Public Speaking	3
or CO 1013	Introduction to Communication	
Computer Literacy Course (satisfied by TKT 1273 or BIS 1012)		2-3
Choose three of the following:		9
AELC 4403	Development of Youth Programs	
PSY 3413	Human Sexual Behavior	
EDX 3213	Individualizing Instruction for Exceptional Children	
COE 4013	Facilitative Skills Development	
EPY 3543	Psychology of Adolescence	
Choose 15 hours from the following:		15
HDFS 3833	Human Development in the Context of Leisure and Recreation	
HS 3673	Environments for Special Needs	
EDX 4423	Teaching the Disadvantaged Child	
EPY 3503	Principles of Educational Psychology	
EPY 3553	Giftedness/Creativity	
EPY 4053		
SO 2203	Cultural and Racial Minorities	
SO 3213	Introduction to Social Research	
SO 3313	Deviant Behavior	
SO 3503	Violence in the United States	
SO 3603	Criminological Theory	
SO 4233	Juvenile Delinquency	
SO 4333	Sociology of Sport	
PE 3033	Basketball and Football Officials	
PE 3133	Adapted Physical Education	
KI 2213	Emergency Health Care	
PE 3433	General Safety Methods	
MGT 3114	Principles of Management and Production	
MGT 3213	Organizational Communications	
MGT 3513	Introduction to Human Resource Management	
MGT 3813	Organizational Behavior	
MGT 4563	Staffing in Organizations	
MKT 3013	Principles of Marketing	
MKT 3213	Retailing	
MKT 4113	Personal Selling	
MKT 4123	Advertising	
Electives		5
Youth Development Concentration total hours		124

Family Science Concentration

The Family Science program helps students discover, verify, and apply knowledge about the family. Family Science students gain valuable real-world experience through a required field experience course and an internship, and graduates are able to receive provisional certification through the National Council on Family Relations as Certified Family Life Educators, recognizing their competence in a broad range of ten family-related content areas. They are prepared to address societal issues including economics, education, work-family issues, parenting, sexuality, gender, substance abuse, domestic violence, unemployment, debt, and child abuse within the context of the family. Graduates can work in a variety of governmental, non-profit, religious, and private agencies.

HDFS 1813	Individual and Family Development through the Lifespan	3
HDFS 3000	Field Experience	1-6
HDFS 3813	Lifespan Theory	3
HDFS 4313	Family Resource Management	3
HDFS 4403	Introduction to Gerontology	3
HDFS 4790	Family Science Internship	12
HDFS 4813	Adult Development: The Middle Years	3
HDFS 4843	Family Interaction	3
HDFS 4873	Positive Youth Development	3
HDFS 4883	Risk, Resilience and Preventive Interventions	3
HS 3673	Environments for Special Needs	3
CO 1003	Fundamentals of Public Speaking	3
or CO 1013	Introduction to Communication	
COE 4013	Facilitative Skills Development	3
PSY 3413	Human Sexual Behavior	3
PSY 4223	Drug Use and Abuse	3
or SW 4533	Substance Abuse and Addictions in Social Work Services	
Electives		5
Computer Literacy course (satisfied by TKT 1273 or BIS 1012)		3
Family Science Concentration total hours		124

Family and Consumer Sciences Teacher Ed Concentration

The Family and Consumer Sciences teacher education program at Mississippi State University is NCATE accredited. Students must conform to the policies on teacher education, as explained under “Teacher Licensure” elsewhere in this catalog. Following is a list of courses taught in selected Mississippi high schools and vo-tech centers: family dynamics, resource management, nutrition and wellness, family and individual health, personal development, and child development. Family and Consumer Sciences teachers can also teach in high school Occupational Programs (such as food production, childcare, and clothing production). Some additional on-the-job training is required to teach these courses. Completion of a Bachelor of Science in Human Development and Family Science (Family and Consumer Sciences Education emphasis) degree from the School of Human Sciences at Mississippi State University leads to licensure to teach these courses.

FDM 1533	Apparel Construction	3
HDFS 2803	Prenatal and Infant Development	3
HDFS 3000	Field Experience	1-6

HDFS 4313	Family Resource Management	3
HDFS 4462	Curriculum in FCS Education	2
HDFS 4886	Teaching Internship in FCS Education	6
HDFS 4896	Teaching Internship in FCS Education	6
HS 2203	Science of Food Preparation	3
HS 2283	Child Health and Nutrition	3
HS 2603	Interior Design Fundamentals	3
EDF 3333	Social Foundations of Education	3
EDF 4243	Planning for the Diversity of Learners	3
EDX 3213	Individualizing Instruction for Exceptional Children	3
EPY 3143	Human Development and Learning Strategies in Education	3
EPY 3253	Evaluating Learning	3
EDS 3411	Practicum in Secondary Education	1
EDS 4873	Seminar in Managing the Secondary Classroom	3
KI 1803	Health Trends and Topics	3
PSY 3413	Human Sexual Behavior	3
Electives		1
Computer Literacy (Satisfied by successful completion of HDFS 3303)		
Oral Communication Requirement (satisfied by successful completion of HDFS 4424)		
Family and Consumer Sciences Teacher Ed Concentration total hours		124

BS in Fashion Design and Merchandising (FDM)

This degree is designed to provide students with an understanding of fashion and textile industries, consumer behavior, product development, business principles, and technology applications. Students select a concentration in one of two areas: Design and Product Development or Merchandising. Design and Product Development emphasizes the total design and production process from inception to finished product and its ultimate sale to the consumer. Merchandising combines an overview of the fashion industry, consumer behavior, product development, planning, buying business operations and entrepreneurship. Specialized labs and industry software provide students with extensive hands-on experience in the latest design, product development, and fashion retailing technology applications. A grade of “C” or better is required for all major courses (Human Sciences and Fashion Design and Merchandising courses).

Degree Requirements

English (General Education)		6
Fine Arts (General Education)		3
Natural Sciences (2 labs required from Gen Ed)		6
Extra Science (if appropriate)		3
Any Gen Ed Science Course		
Math (General Education)		6
MA 1313	College Algebra	
BQA 2113	Business Statistical Methods I [1]	
or ST 2113	Introduction to Statistics	
Humanities (General Education)		6
3 hours Foreign Language		
3 hours Gen Ed course		
Social/Behavioral Sciences (Gen Ed)		6
PSY 1013	General Psychology [2]	
or SO 1003	Introduction to Sociology	
EC 2113	Principles of Macroeconomics	
Major Core Courses		
FDM 1523	Visual Design in Dress	3
FDM 2524	Textiles for Apparel	4
FDM 2553	Introduction to Merchandising	3
FDM 2593	Product Development II	3
FDM 3221	Internship Preparation	1
FDM 3553	Merchandise Retail Pricing and Inventory Management	3
FDM 3563	Visual Merchandising	3
FDM 3573	Historic Costume	3
HS 1701	Survey of Human Sciences	1
HS 4702	Research and Application in Human Sciences	2
FDM 4763	FDM Internship [3]	3
Oral Communication Requirement		
FDM 4424	Teaching Methods in Agricultural and Human Sciences	4
Writing Requirement		
FDM 4513	Fashion Consumer Behavior	3
Computer Literacy		
FDM 2123	Product Development I	3

1. Required for Pre-MBA emphasis; B or higher in MBA prerequisite courses
2. SO 1003 is required for the Sociology emphasis
3. Two 3-credit hour internships are required.

Merchandising Concentration

The merchandising concentration explores the business and product development aspects of the apparel industry from finalized design to the end-use by consumers and beyond. This coursework prepares students to be become competent in pursuing careers in merchandising, buying, fashion forecasting, fashion communications, fashion business and retail operations. Students learn real-world application through lab experiences and internships in settings that align with the students’ career goals. Students must complete two internships in a related position.

FDM 2153	Fashion Apparel Analysis	3
FDM 2333	Intro to Buying and Management	3
FDM 4533	Merchandise Planning and Buying	3
FDM 4583	Fashion Entrepreneurship	3
FDM 4603	Global Sourcing in the Textile and Apparel Industry	3
FDM 4693	Digital Merchandising	3
Select one of the emphasis areas below:		
General Merchandising		
Choose 18 hours from any of the courses offered in the emphasis areas below or select program related electives approved by academic advisor		18
Business Administration (Pre-MBA)		

Choose any 6 of the following:		
ACC 2013	Principles of Financial Accounting	3
ACC 2023	Principles of Managerial Accounting	3
BIS 3233	Management Information Systems	3
BL 2413	The Legal Environment of Business	3
BQA 2113	Business Statistical Methods I	3
BQA 3123	Business Statistical Methods II [1]	3
EC 2123	Principles of Microeconomics	3
FIN 3123	Financial Management [1]	3
MGT 3114	Principles of Management and Production [1]	4
MKT 3013	Principles of Marketing	3
Communication Studies		
CO 1223	Introduction to Communication Theory	3
CO 2253	Fundamentals of Interpersonal Communication	3
CO 3833	Interviewing in Communication	3
CO 4203	Nonverbal Communication	3
CO 4223	Advanced Communication Theory	3
CO 4243	Rhetorical Theory	3
Entrepreneurship		
MGT 3323	Entrepreneurship	3
MGT 3333	Field Studies in Entrepreneurship	3
BL 4243	Legal Aspects of Entrepreneurship	3
FIN 4323	Entrepreneurial Finance	3
MKT 4423	Strategic Brand Management	3
GE 3011	Engineering Entrepreneurship Seminar	1
Finance		
FIN 3113	Financial Systems	3
FIN 3123	Financial Management	3
FIN 3723	Financial Markets and Institutions	3
FIN 4223	Intermediate Financial Management	3
FIN 4423	Investments	3
FIN 4923	International Financial Management	3
Information Technology Services		
Choose any 6 of the following courses:		
TKB 3133	Administrative Management and Procedures	3
TKB 4283	Advanced Office Systems	3
TKB 4543	Information Processing	3
TKB 4563	Introduction to Data Networks	3
TKB 4583	Graphics and Web Design	3
TKT 3463	Computer Repair and Maintenance	3
TKT 4343	Information Technology Project Management	3
TKT 4743	Elements of Electronic Desktop Publishing	3
TKT 4753	Media for Presentations, Instruction and Gaming	3
TKT 4813	Introduction to Instructional Systems	3
Management		
MGT 3813	Organizational Behavior	3
MGT 3114	Principles of Management and Production	4
MGT 3513	Introduction to Human Resource Management	3
Choose any 3 of the following courses:		
MGT 3323	Entrepreneurship	3
MGT 3333	Field Studies in Entrepreneurship	3
MGT 3823	Socially Responsible Leadership	3
MGT 4153	Management Seminar	3
MGT 4533	Advanced Human Resource Management	3
MGT 4543	Compensation Management	3
MGT 4563	Staffing in Organizations	3
MGT 4613	Cross-Cultural Management	3
Marketing		
MKT 3013	Principles of Marketing	3
MKT 4413	Consumer Behavior	3
Choose any 4 of the following courses:		
MKT 3213	Retailing	3
MKT 3323	International Logistics	3
MKT 3933	International Marketing	3
MKT 4033	International Transportation	3
MKT 4113	Personal Selling	3
MKT 4123	Advertising	3
MKT 4143	Sales Management	3
MKT 4213	Internet Marketing	3
MKT 4313	Physical Distribution Management	3
MKT 4333	International Supply Chain Management	3
MKT 4533	Marketing Research	3
MKT 4613	Services Marketing	3
Sociology		
SO 2203	Cultural and Racial Minorities	3
SO 3213	Introduction to Social Research	3
Choose any 3 SO designated courses at the 2000 level or above and include at least 1 4000 level SO course.		
Free Electives		10
Total Hours		124

[1] Required for Pre-MBA emphasis (B or higher in MBA prerequisite courses)

Design and Product Development Concentration

The Design and Product Development concentration explores the creative and product development aspects of the apparel industry from trend innovation and concept to an end-use product and beyond. This coursework prepares students to be become competent in pursuing careers in creative design, technical design, visual merchandising, styling, fashion communications, fashion forecasting, and related creative industries. Students learn real-world application through lab experiences and internships in settings that align with the students' career goals. Students must complete two internships in a related position.

FDM 1533	Apparel Construction	3
FDM 2573	Fashion Portfolio Development	3
FDM 4343	Pattern Making and Design	3
FDM 4363	Draping	3
FDM 4593	Creative Design Techniques	3
FDM 4733	Computer-Aided Design for Fashion	3
Select one of the emphasis areas below:		

General Design and Product Development		
Choose 18 hours from any of the courses offered in the emphasis areas below or select program-related electives approved by academic advisor		18
Art		
Choose 18 credit hours of courses with an ART prefix. One or more 1000-level courses and one 2000-level course must be completed in addition to at least three 3000- or 4000-level courses		18
Business Administration (Pre-MBA)		
Choose any 6 of the following:		
ACC 2013	Principles of Financial Accounting [1]	3
ACC 2023	Principles of Managerial Accounting	3
BIS 3233	Management Information Systems	3
BL 2413	The Legal Environment of Business	3
BQA 2113	Business Statistical Methods I [1]	3
BQA 3123	Business Statistical Methods II [1]	3
EC 2123	Principles of Microeconomics	3
FIN 3123	Financial Management [1]	3
MGT 3114	Principles of Management and Production [1]	4
MKT 3013	Principles of Marketing	3
Communication Studies		
CO 1223	Introduction to Communication Theory	3
CO 2253	Fundamentals of Interpersonal Communication	3
CO 3833	Interviewing in Communication	3
CO 4203	Nonverbal Communication	3
CO 4223	Advanced Communication Theory	3
CO 4243	Rhetorical Theory	3
Entrepreneurship		
MGT 3323	Entrepreneurship	3
MGT 3333	Field Studies in Entrepreneurship	3
BL 4243	Legal Aspects of Entrepreneurship	3
FIN 4323	Entrepreneurial Finance	3
MKT 4423	Strategic Brand Management	3
GE 3011	Engineering Entrepreneurship Seminar	1
Finance		
FIN 3113	Financial Systems	3
FIN 3123	Financial Management	3
FIN 3723	Financial Markets and Institutions	3
FIN 4223	Intermediate Financial Management	3
FIN 4423	Investments	3
FIN 4923	International Financial Management	3
Information Technology Services		
Choose any 6 of the following courses:		
TKB 3133	Administrative Management and Procedures	3
TKB 4283	Advanced Office Systems	3
TKB 4543	Information Processing	3
TKB 4563	Introduction to Data Networks	3
TKB 4583	Graphics and Web Design	3
TKT 3463	Computer Repair and Maintenance	3
TKT 4343	Information Technology Project Management	3
TKT 4743	Elements of Electronic Desktop Publishing	3
TKT 4753	Media for Presentations, Instruction and Gaming	3
TKT 4813	Introduction to Instructional Systems	3
Management		
MGT 3813	Organizational Behavior	3
MGT 3114	Principles of Management and Production	4
MGT 3513	Introduction to Human Resource Management	3
Choose any 3 of the following courses:		
MGT 3323	Entrepreneurship	3
MGT 3333	Field Studies in Entrepreneurship	3
MGT 3823	Socially Responsible Leadership	3
MGT 4153	Management Seminar	3
MGT 4533	Advanced Human Resource Management	3
MGT 4543	Compensation Management	3
MGT 4563	Staffing in Organizations	3
MGT 4613	Cross-Cultural Management	3
Marketing		
MKT 3013	Principles of Marketing	3
MKT 4413	Consumer Behavior	3
Choose any 4 of the following courses:		
MKT 3213	Retailing	3
MKT 3323	International Logistics	3
MKT 3933	International Marketing	3
MKT 4033	International Transportation	3
MKT 4113	Personal Selling	3
MKT 4123	Advertising	3
MKT 4143	Sales Management	3
MKT 4213	Internet Marketing	3
MKT 4313	Physical Distribution Management	3
MKT 4333	International Supply Chain Management	3
MKT 4533	Marketing Research	3
MKT 4613	Services Marketing	3
Sociology		
SO 2203	Cultural and Racial Minorities	3
SO 3213	Introduction to Social Research	3
Choose any 3 SO designated courses at the 2000 level or above and include at least 1 4000 level SO course.		
Free Electives		10
Total Hours		124

[1] Required for Pre-MBA emphasis (B or higher in MBA prerequisite courses)

Agricultural Education, Leadership, and Communications (AELC) Minor

The Agricultural Education, Leadership, and Communications (AELC) minor is offered to allow students in other majors to develop leadership and human relation skills needed by new graduates entering the agriculture workforce. Students will enhance their communication, leadership, problem-solving, and interpersonal skills to become effective

employees in the agricultural workforce. Students must complete a minimum of 16 hours of AELC coursework from a list of approved courses.

Required courses		10
AELC 2413	Orientation to Agricultural Education, Leadership & Communications	
AELC 3803	Foundations of Leadership in Agricultural and Life Sciences	
AELC 4424	Teaching Methods in Agricultural and Human Sciences	
Electives (choose two of the following)		6
AELC 3333	Professional Presentations in Agriculture and Life Sciences	
AELC 4103	Principles and Practices of Extension Education	
AELC 4403	Development of Youth Programs	
AELC 4503	International Agricultural Education	
Total Hours		16

Gerontology Minor/Certificate

Graduate Certificate Coordinator: Associate Professor Joe Wilmoth

Undergraduate Minor Coordinator: Associate Professor Carolyn Adams-Price

The Gerontology Minor/Certificate provides students with current factual and theoretical data along with practical experience relating to the process of aging. It is a multidisciplinary effort with contributions from a variety of departments cutting across several colleges. Students completing the requirements will earn a minor/certificate in gerontology.

This area of study is open to students from all colleges within the University. The Gerontology Minor/Certificate was developed to supplement the student's chosen major. Undergraduate students wishing to complete the Gerontology minor requirements will select a major in addition to electing 15 hours of gerontology course work.

Undergraduate Minor Requirements: (minimum 15 hours)

HDFS 4403	Introduction to Gerontology	3
Choose at least three of the following:		
COE 4713	Issues in Aging	
EP 4123	Aging and Physical Activity	
EP 4143	Aging and Disability	
HDFS 4813	Adult Development: The Middle Years	
HDFS 4863	Consumer Aspects of Aging	
PSY 4983	Psychology of Aging	
SO 4413	Aging and Retirement in American Society	
SW 3023	Human Behavior and the social Environment II	
SW 4623	Social Work with the Aged	
DIS (could be a Practicum in Aging)		
Choose one of the following (may include courses from above):		
FNH 3163	Basic Principles of Health Promotion	
FNH 3723	Community Nutrition	
FNH 4123	Nutrition and Chronic Disease	
FNH 4233	Medical Nutrition Therapy	
FNH 4353	Nutrition Throughout the Life Cycle	
HS 3673	Environments for Special Needs	
HDFS 4333	Families, Legislation and Public Policy	
PSY 4983	Psychology of Aging	
SO 4423	Health and Society	
SW 3003	Social Work with At-Risk Populations	
SW 4633	Social Work in Health Care	
Total Hours		15

Graduate Certificate Requirements (minimum 13 hours)

HDFS 6403	Introduction to Gerontology	3
Choose at least three of the following:		
PSY 6983	Psychology of Aging	
SO 6413	Aging and Retirement in American Society	
SO 6433	Sociology of Death and Dying	
HDFS 6863	Consumer Aspects of Aging	
HDFS 6813	Adult Development: The Middle Years	
COE 8813	Counseling Elderly Clients	
COE 6713	Issues in Aging	

Trauma-Informed Child Advocacy Certificate

Professionals working with children and families need training in trauma-informed practices. This certificate program complement the MSU HDFS degree and other majors taught across departments and colleges by providing state of the science techniques used to assist and advocate for children and families who have experienced trauma. The certificate requires a minimum of 12 hours of coursework (4 courses) focused on trauma and risk, child advocacy, human behavior and behavioral strategies, and/or family functioning.

Required courses		9
HDFS 2023	Trauma Informed Practice	
HDFS 2123	Perspectives on Child Maltreatment and Child Advocacy	
HDFS 3123	Global Child Advocacy Issues (or other departmental approved 3 hour course)	
Electives		3
HDFS 3843	Guiding Young Children's Behavior & Social Development	
HDFS 4803	Parenting	
PSY 3213	Psychology of Abnormal Behavior	
PSY 3363	Behavioral Modification	
SO 4153	Mentoring for At-Risk Youths	
or CRM 4153	Mentoring for At-Risk Youths	
or SLCE 4153	Mentoring for At-Risk Youths	
SW 4613	Child Welfare Services	
Other courses, including special topics courses (2990 and 4990) will be considered for elective credit on a case-by-case basis.		

Retail Certificate

The Retail Certificate offered by the Fashion Design and Merchandising (FDM) program will complement existing B.S. degree tracks by adding an opportunity to students from any program to complete a formal and coherent grouping of courses with a retail focus. The goal of the Retail Certificate is to introduce current students to the dynamics of the retail industry and to provide them knowledge and tools to be successful in a rapidly growing industry. Recipients of the certificate will be equipped with professional knowledge and technical skills to manage real world daily operations of a retail business and be ready for successful careers in the ever growing and changing retail industry.

Required Courses		
FDM 2553	Introduction to Merchandising	3
FDM 2333	Intro to Buying and Management	3
FDM 3553	Merchandise Retail Pricing and Inventory Management	3
FDM 4693	Digital Merchandising	3
Electives		6
Select two electives approved by the Retail Certificate coordinator in your are of specialization		
Total Hours		18

College of Architecture, Art, and Design

ANGI E. BOURGEOIS, Dean
Jeffrey Haupt, Interim Associate Dean

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Telephone: (662) 325-2202; Fax Number: (662) 325-8872
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Web site: www.caad.msstate.edu

Building Construction Science

Program Director: George Ford, P.E., EdD
Office 132 Howell Building

The Building Construction Science degree program is a four year Bachelor of Science degree designed to prepare graduates for careers in construction or construction-related fields. The 124 credit hour program is an interdisciplinary curriculum that builds upon expertise existing within the School of Architecture and the College of Engineering and the College of Business as well as the building construction industry to provide a knowledge base in business, engineering, and construction sciences. The curriculum's foundational areas are based on a problem- and inquiry-based learning. Through the four year studio curriculum, students learn by applying skills and knowledge to complex construction problems that integrate multiple subject areas. The studio-based teaching focuses on the use of case studies and integration of multiple subject areas. This integration of a broader scope of architectural, engineering, construction, and business practices is a different approach than a traditional construction technology curriculum that separates subject areas into distinct courses.

The Building Construction Science curriculum includes a general education foundation of mathematics, science, business, and construction specific courses: construction systems, building technology, structures, and materials and methods of construction and incorporates these and other areas such as estimating, scheduling, safety, project management, and construction law into the studio curriculum. Course development is built upon the strengths of the three colleges that are collaborating in the effort. Many colleges involve hands-on making using both materials and material constructions. Building Construction Science students collaborate with architecture, engineering, and interior design students as a regular part of their course work. The Building Construction Science curriculum has been designed to meet the criteria established by the American Council for Construction Education (ACCE) and program accreditation is being pursued.

Admissions

Admission to the Building Construction Science degree program is limited and competitive. Prospective students are encouraged to tour the program's facilities to be introduced to the program and talk with students and faculty. Instructions and contact information ca be found at www.caad.msstate.edu/bcs/scheduleavisit.php.

Application Process:

1. Apply to Mississippi State University.
2. Submit all required materials including high school and/or college/university transcripts and ACT and/or SAT scores (see note below regarding admission requirement of MA 1313 College Algebra and MA 1323 Trigonometry or equivalent).
3. Indicate your choice of major as "Building Construction Science."
4. Once admitted to MSU, complete the Building Construction Science application available on the BCS Program website.

BCS program applications are reviewed upon receipt and accepted upon verification that the applicant meets the identified criteria. Preference may be given to highly qualified students who submit applications by February 15. After this date highly qualified students may be considered as space permits.

Grades

A minimum 2.0 MSU GPA is required to be eligible to enroll in BCS studio courses (BCS 1116, BCS 1126, BCS 2116, BCS 2226, BCS 3116, BCS 3126, BCS 4116, BCS 4126). Only courses taken at MSU will raise or lower the cumulative MSU GPA.

Student Fees

Additional course fees are charged for BCS construction studios and other major core courses and are collected with the MSU tuition. Fees are also charged for field trip expenses that occur in specific construction studio courses. Field trip fees are non-refundable after the 6th day of classes.

Computer Requirement

The BCS program requires all students to purchase a laptop computer with related software and peripherals when they enter the studio course sequence. Computer hardware and software specifications are available on the BCS program web site.

Degree Requirements

English Composition		
EN 1103	English Composition I	3
or EN 1163	Accelerated Composition I	
EN 1113	English Composition II	3
or EN 1173	Accelerated Composition II	
Mathematics		
MA 1613	Calculus for Business and Life Sciences I [1]	3
ST 2113	Introduction to Statistics	3
Science		
PH 1113	General Physics I [1]	3
PH 1123	General Physics II	3
BCS 2713	Passive Building Systems	3
Humanities		
See General Education courses		6
Fine Arts		
ARC 1013	Architectural Appreciation	3
Social Sciences		
EC 2113	Principles of Macroeconomics	3
EC 2123	Principles of Microeconomics	3
Major Core		
CE 2213	Surveying	3
ID 3363	3/D CAD/Modeling	3
BCS 3723	Active Building Systems	3

BCS 3904	Structures I	4
BCS 3914	Structures II	4
BCS 1116	Building Construction Studio A [1]	6
BCS 1126	Building Construction Studio B	6
BCS 2116	Building Construction Studio 1	6
BCS 2226	Building Construction Studio 2	6
BCS 3116	Building Construction Studio 3	6
BCS 3126	Building Construction Studio 4	6
BCS 4116	Building Construction Studio 5	6
BCS 4126	Building Construction Studio 6	6
BCS 3213	Mechanical and Electrical Systems	3
BCS 3323	High Performance Construction	3
BCS 4222	Professional Communication and Practice	2
ACC 2013	Principles of Financial Accounting	3
ACC 2023	Principles of Managerial Accounting	3
BL 2413	The Legal Environment of Business	3
MGT 3113	Principles of Management	3
Electives		3
Computer Literacy Requirement		
Satisfied by successful completion of the BCS studio courses		
Oral Communication Requirement		
Satisfied by successful completion of the BCS studio courses		
Writing Requirement		
Satisfied by successful completion of the BCS studio courses		
Total Hours		124

[1] Following are prerequisites for courses that students are recommended to take during the first semester of the BCS program. Please note that BCS 1116, MA 1613, and PH 1113 are prerequisites for other courses in the BCS program.
BCS 1116 Building Construction Studio A - Prerequisites: MA 1323 or an ACT Math subscore of at least 24
MA 1613 Calculus for Business and Life Sciences I - Prerequisite: Grade of C or better in MA 1313 or an ACT Math subscore of at least 24
PH 1113 General Physics I - Prerequisite: MA 1323 or an ACT Math subscore of at least 26
Students may receive credit for MA 1313 College Algebra by completing the College Level Examination Program (CLEP) test. Students may also receive credit for MA 1313 College Algebra and/or MA 1323 Trigonometry by completing the course at another university or community college. Students are responsible for confirming transfer course equivalents in advance using the MSU Transfer Course Equivalent webpage https://www.registrar.msstate.edu/students/transfer-course-information/ (https://www.registrar.msstate.edu/students/transfer-course-information)or by contacting the MSU Registrar directly transferarticulation@registrar.msstate.edu. (transferarticulation@registrar.msstate.edu)
Students should refer to the Undergraduate Student Catalog for prerequisites for other courses.

Department of Art

Interim Department Head: Jeffrey Haupt
Office: 102 Freeman

Mission

The Department of Art's primary undergraduate responsibilities include educating professional artists with concentrations in Fine Arts, Graphic Design, and Photography; preparing students for a career or advanced study; offering courses that fulfill University requirements; and providing an active art gallery to serve the University, the community, and region.

Bachelor of Fine Arts

The Bachelor of Fine Arts (B.F.A.) degree is a professional studio degree. The B.F.A. degree is earned after successful completion of an intensive, 4 year program that provides the student with a series of in-depth studio experiences leading to thesis/senior presentation balanced by studies in humanities, communication, mathematics, and sciences.

The B.F.A. degree may also serve as a preparation for graduate studies-usually the Master of Fine Arts degree in studio art or design.

Admission

Art-Undeclared (UART) - All students desiring to major in art will be admitted into Art-Undeclared in the Department of Art at Mississippi State University. Students will declare their concentration following successful passage of the Foundation Portfolio Review in that concentration.

Concentrations

In the Bachelor of Fine Arts degree, a student may choose a concentration from the following: Fine Arts, Graphic Design, and Photography.

Transfer Requirements

After successful admission to the University, and before applying for the Foundation Portfolio Review, transfer students must submit work to the Transfer Portfolio Review so to articulate art studio and history credits. This review requires the presentation of a comprehensive portfolio of artwork completed in studio courses, as well as course descriptions (and in some cases, syllabi) from classes completed for credit at other institutions. This review takes place before the preregistration advising period each semester. The MSU Department of Art reserves the right to deny or accept transfer courses as applicable to the B.F.A. degree based on portfolio evaluation.

Foundation Portfolio Review Requirements

All Art majors are required to participate in the Foundation Portfolio Review.

For students interested in the Fine Arts concentration (Ceramics, Drawing, Painting, Printmaking, and Sculpture), the Foundation Portfolio Review will take place in the spring semester of each year. The review is a faculty evaluation of student work from a minimum of 18 credit hours completed in the following courses: Drawing I, Drawing II, Design I, Design II, 3-D Design, and Introduction to Computing for Art. The Foundation Portfolio Review will result in an "accept" or "deny" into the Fine Arts concentration.

For students interested in the Photography concentration, the Foundation Portfolio Review will take place in the fall and spring semester of each year. The review is a faculty evaluation of student work from a minimum of 18 credit hours completed in the following courses: Drawing I, Drawing II, Design I, Design II, 3-D Design, and Photography Survey. The

Foundation Portfolio Review will result in an “accept” or “deny” into the Photography concentration.

For students interested in Graphic Design, the Foundation Portfolio Review for entrance into that concentration will take place in the fall semester of each year. The review is a faculty evaluation of student work from a minimum of 18 credit hours completed in the following courses: Drawing I, Drawing II, Design I, Design II, 3-D Design, and Introduction to Computing for Art. The Foundation Portfolio Review will result in an “accept” or “deny” in the Graphic Design concentration.

Students accepted (by faculty evaluation) into the Fine Arts, Graphic Design, or Photography concentration may begin the concentration sequence of courses. Students denied may remain in the art program and resubmit a portfolio in the next Review. Students cannot pursue a concentration in which they have been denied twice. They will have to choose another concentration in order to pursue a B.F.A. in Art at Mississippi State.

Entry into Graphic Design is competitive. Contact the Advising Coordinator for more information.

Senior Presentation Requirements

Senior Graphic Design students are required to present a portfolio and present an exhibition. Senior students in the other concentrations are required to present an exhibition as degree requirements. These final presentation requirements are fulfilled in capstone courses; ART 4640 Advanced Graphics for students in the Graphic Design concentration; ART 4083 Senior Research and ART 4093 Senior Thesis for students in the Fine Arts concentration area; and ART 4583 Photographic Portfolio I and ART 4593 Photographic Portfolio II for students in the Photography concentration.

Computer and Camera Requirements

The Department of Art requires all incoming Art majors to purchase certain technology and equipment necessary for production and presentation of artwork within departmental courses. All incoming students are required to purchase a personal laptop computer and software upon enrollment into their first semester courses. The required computer and software must be selected from an approved departmental list of minimum hardware and software requirements available on the Department of Art web site.

Financial aid that includes this requirement may be available by contacting the MSU Student Financial Aid and Scholarship office.

Additionally, upon enrollment in ART 2103 Photography Survey, students will be required to purchase a digital single-lens reflex (DSLR) camera. The required camera must be selected from an approved departmental list of minimum specifications. The approved list is available on the Department of Art web site.

Student Materials Fee

Additional fees associated with class materials, technology and laboratory materials are required of students and are automatically assessed to the students.

Bachelor of Fine Arts

General Education and College Requirements

English Composition		6
EN 1103	English Composition I	
or EN 1163	Accelerated Composition I	
EN 1113	English Composition II	
or EN 1173	Accelerated Composition II	
Humanities		6
See General Education courses		
Math		6
MA 1313	College Algebra	
Additional Math Class higher than MA 1313 --See General Education courses		
Fine Arts		3
See Art History and Theory Program		
Social Sciences		6
See General Education courses		
Natural Sciences		6-8
See General Education courses		
Math/Science Elective		3
See General Education courses		

Fine Arts Concentration

(Ceramics, Drawing, Painting, Printmaking, and Sculpture)

Foundation Program		
ART 1123	Design I	3
ART 1133	Design II	3
ART 1153	Three-Dimensional Design	3
ART 1213	Drawing I	3
ART 1223	Drawing II	3
ART 2803	Introduction to Computing for Art [1]	3
Survey Program		
ART 2503	Ceramic Art Survey	3
ART 2013	Painting Survey	3
ART 2213	Life Drawing I	3
ART 2303	Printmaking Survey	3
ART 2403	Sculpture Survey	3
ART 2103	Photography Survey	3
Art History and Theory Program		
ART 1013	Art History I [2]	3
ART 1023	Art History II [2]	3
Art History Electives		9
Fine Arts Concentration Program [3]		
Intermediate Studio Requirement - 3 hours chosen from the list below:		3
ART 2233	Drawing III	
ART 3523	3D Seminar	
Intermediate Studio Electives		3
See advisor for list of approved electives		
Advanced Studio Electives		12
See advisor for list of approved electives		

Advanced Studio Requirements		6
ART 4620	Advanced Studio - Fine Arts [4]	
Capstone Courses		6
ART 4083	Senior Research [5]	
ART 4093	Senior Thesis [5]	
Electives		9
Art Studio Electives	choose 6 hours	
General Elective	choose 3 hours	
Total Hours		123

1 Fulfills Computer Literacy Requirement

2 Fulfills Fine Arts General Education Requirement

3 Upon successful completion of the Foundation Portfolio Review for the Fine Arts concentration, students proceed into the concentration sequence of courses.

4 To be taken in conjunction with ART 4083 Senior Research and ART 4093 Senior Thesis, typically in the final two semesters of coursework

5 Senior Capstone experience, co-requisite with 6 hours of ART 4620 Advanced Studio - Fine Arts.

Graphic Design Concentration

Foundation Program [1]		
ART 1123	Design I	3
ART 1133	Design II	3
ART 1153	Three-Dimensional Design	3
ART 1213	Drawing I	3
ART 1223	Drawing II	3
ART 2803	Introduction to Computing for Art [2]	3
CO 1003	Fundamentals of Public Speaking	3
Survey Program		
Choose four of the following courses:		12
ART 2013	Painting Survey	
ART 2213	Life Drawing I	
ART 2303	Printmaking Survey	
ART 2403	Sculpture Survey	
ART 2103	Photography Survey	
ART 2503	Ceramic Art Survey	
Art History and Theory Program		
ART 1013	Art History I [3]	3
ART 1023	Art History II [3]	3
ART 3163	History of Graphic Design	3
Art History Electives		6
Concentration Core		
ART 2813	Intermediate Computing for Designers	3
ART 3313	Graphic Art Design I	3
ART 3323	Graphic Art Design II	3
ART 4103	The Art of Typography and Layout I	3
ART 4403	Advertising Design I	3
ART 4640	Advanced Studio - Graphic Design	3-9
ART 4883	Graphic Design for the Internet	3
Concentration Electives		
Must be selected from list or with consent of Concentration Coordinator.		12
ART 3443	Illustration	
ART 3873	Digital Photography	
ART 3913	Introduction to Print Production	
ART 4113	The Art of Typography and Layout II	
ART 4413	Advertising Design II	
ART 4523	Internship in Graphic Art Design	
ART 4713	Advanced Print Production	
ART 4813	Introduction of Multimedia I Design and Authoring	
ART 4863	Advanced Studio - Computer Art and Design	
Electives		9
Art Studio Electives	choose 6 hours	
General Elective	choose 3 hours	
Total Hours		123

1 The Foundation Portfolio Review is required after successful completion of the Foundation Program.

2 Fulfills Computer Literacy requirement

3 Fulfills Fine Arts General Education requirement

Photography Concentration

Foundation Program		
ART 1123	Design I	3
ART 1133	Design II	3
ART 1153	Three-Dimensional Design	3
ART 1213	Drawing I	3
ART 1223	Drawing II	3
CO 1003	Fundamentals of Public Speaking	3
Survey Program		
ART 2103	Photography Survey	3
ART 2303	Printmaking Survey	3
Choose two of the following:		6
ART 2013	Painting Survey	
ART 2213	Life Drawing I	
ART 2403	Sculpture Survey	
ART 2503	Ceramic Art Survey	
Art History and Theory Program		
ART 1013	Art History I	3
ART 1023	Art History II	3
ART 3633	History of Photography (or approved photo/film based art history course)	3
Art History Electives		6
Concentration Core		
ART 3223	Darkroom Basics	3
ART 3233	Studio Lighting	3
ART 3873	Digital Photography	3
ART 4223	Alternative Photography	3
or ART 4443	Alternative Color	
ART 4583	Photographic Portfolio I	3
ART 4593	Photographic Portfolio II	3

Concentration Electives		
Must be selected from list or with consent of Concentration Coordinator.		12
ART 3243	Intermediate Darkroom	
ART 3303	Printmaking II	
ART 3803	Gallery Management	
ART 4223	Alternative Photography	
ART 4443	Alternative Color	
ART 4660	Advanced Studio - Photography	
ART 4693	Internship in Fine Art	
ART 4873	Digital Imaging	
CO 3713	Digital Communication	
Art Studio Electives		15
Total Hours		123

Art Minor

The Department of Art offers a minor in Art. The minor consists of 18 credit hours of courses with an ART prefix. One or more 1000-level courses and one 2000-level course must be completed in addition to at least three 3000- or 4000-level courses. For an Art minor, a student may take all Art studio courses or a combination of Studio and Art History.

Art History Minor

A minor in Art History consists of 18 credit hours. A student must take

ART 1013	Art History I	3
ART 1023	Art History II	3
Choose four of the following:		12
ART 3143	Italian Renaissance Art History	
ART 3603	Directed Writings in Modern Art History	
ART 3613	Art and Film	
ART 3623	Art in France: 1850-1900	
ART 3653	Roman Baroque Art	
ART 3663	Medieval Stained Glass	
ART 3673	The Gothic Cathedral	
ART 3683	The History of Art and Religion	
ART 4573	Critical Issues in Recent Art	
Other approved Art History courses		
Total Hours		18

Accreditation

Mississippi State University is an accredited institutional member of the National Association of Schools of Art and Design.

Interior Design

Director: Dr. Beth R. Miller
Office: 125 Etheredge Hall

The Interior Design Program offers students the opportunity to develop an ability to identify, analyze, and create solutions using critical thinking and spatial comprehension in solving design problems in the built environment. The program prepares future professional designers to enhance the function and quality of interior spaces for the purpose of improving the quality of life, increasing productivity, and protecting the health, safety, and welfare of the public as well as protecting the environment. Practical studio experience builds competency in design theory; the specification of interior materials and finishes; lighting, universal design, and computer-aided design; building and life safety codes; historical interiors; professional practices; interior construction and furniture design; space planning and programming; and graphic and verbal communication skills.

Accreditation

The Bachelor of Science in Interior Design degree program is fully accredited by the Council for Interior Design Accreditation (CIDA) and the National Association of Schools of Art and Design (NASAD).

Curriculum Progression and Portfolio Review

All students are required to obtain a grade of "C" or better for all major core courses. Students who obtain a "D" or an "F" must retake the course. Only two retakes of any course are allowed.

2nd year Portfolio Review: Each student is required to participate in a portfolio review between the second and third year to determine a student's admission to upper level courses. The 2nd year portfolio review will consist of original work from art foundation courses and ID foundation courses.

Students must have a cumulative GPA of 2.5 or higher and a 2.5 in the Interior Design major core. Students failing to pass the review will not be allowed to enter ID 3614 Interior Design Studio III or ID 3663 Color and Lighting for Interiors. Students will have two opportunities for portfolio submission.

Senior Portfolio and Exhibit: Each senior is required to submit a professional portfolio for faculty review and provide work for a senior exhibit in the spring of their senior year.

Internships

All Interior Design majors are required to complete an internship the summer following either their Junior or Senior year. The internship offers employment experiences through a wide range of projects in the design field. Many ID students are placed in interior design and architecture firms across the United States.

Financial Requirements

Costs for an interior design education are somewhat higher than other disciplines. In addition to standard costs of fees, tuition, room and board, books, field trips, etc., an interior design student must buy required drawing equipment and materials for drawings and models during the school year. A student should budget for at least $300 per semester for these extra costs.

Due to the technological aspect of the profession, each student is required to purchase a computer prior to the fall of their first year in the program. Computer requirements are available on the website: www.caad.msstate.edu/caad_web/id/home.

Field Trips

Field trips are an important part of the curriculum. The observations and experiences from field trips cannot be replaced by library research or reports. Because field trips are a vital part of the design education experience, the cost is an additional charge to the student's account to

ensure that all students are able to take part in these essential learning opportunities.

Interior Design major

General Education Requirements

English Composition		
EN 1103	English Composition I	3
or EN 1163	Accelerated Composition I	
EN 1113	English Composition II	3
or EN 1173	Accelerated Composition II	
Math		
MA 1313	College Algebra	3
MA 1323	Trigonometry	3
Natural Sciences		
CH 1043	Survey of Chemistry I	3
See General Education courses		6
Humanities		
See General Education courses		6
Fine Arts		
ID 3643	History of Interiors I	3
Social Sciences		
PSY 1013	General Psychology	3
EC 2113	Principles of Macroeconomics	3
or EC 2123	Principles of Microeconomics	
Major Core		
ART 1123	Design I	3
ART 1133	Design II	3
ART 1213	Drawing I	3
ART 2103	Photography Survey	3
or CO 3403	Photographic Communication	
ID 1683	Interior Design Graphics	3
ID 1694	Interior Design Studio I	4
ID 2103	CAD for Interior Design	3
ID 2203	Rendering	3
ID 2614	ID Studio II	4
ID 2633	Interior Materials, Treatments, and Resources	3
ID 2664	Textiles for Interiors	4
ID 3363	3/D CAD/Modeling	3
ID 3603	Digital Design for Interiors	3
ID 3611	Career and Portfolio Development	1
ID 3614	Interior Design Studio III	4
ID 3624	Interior Design Studio IV	4
ID 3633	Interior Design Detailing and Construction Documents	3
ID 3653	History of Interiors II	3
ID 3663	Color and Lighting for Interiors	3
ID 3673	Environments for Special Needs	3
ID 4611	Principles of LEED	1
ID 4644	Interior Design Studio V	4
ID 4651	Internship Placement	1
ID 4654	Interior Design Studio VI	4
ID 4661	Senior Portfolio Production	1
ID 4662	Professional Practice for Interior Design	2
ID 4693	Furniture Design	3
ID 4753	Interior Design Internship	3
Free Elective		3
Oral Communication Requirement		
CO 1003	Fundamentals of Public Speaking	3
or CO 1013	Introduction to Communication	
Writing Requirement		
Satisfied by the successful completion of ID 4663		
Computer Literacy Requirement		
Satisfied by the successful completion of ID 2103		
Total Hours		124

Minor in Interior Design Studies

The Interior Design Program offers a Minor in Interior Design Studies for non-Interior Design majors. A minimum of 18-19 hours of interior design courses (as selected from the list below) are required to obtain the Minor in Interior Design Studies. Students interested in this minor should contact an Interior Design Advisor.

Course Selection

Students are required to take ID 2603 Interior Design Fundamentals, then choose an additional 15-16 hours from the courses listed below. Some courses require Instructor permission. Additionally, students must follow the appropriate prerequisites for the listed courses.

Required Course		
ID 2603	Interior Design Fundamentals	3
Elective Courses (choose 15-16 hours)		
Courses not requiring Instructor Permission		
ID 1683	Interior Design Graphics	3
ID 2203	Rendering	3
ID 2403	Introduction to Historic Preservation	3
ID 3603	Digital Design for Interiors	3
ID 3643	History of Interiors I	3
ID 3653	History of Interiors II	3
ID 3673	Environments for Special Needs	3
ID 4611	Principles of LEED	1
Courses requiring Instructor Permission		
ID 2103	CAD for Interior Design	3
ID 3363	3/D CAD/Modeling	3
ID 3633	Interior Design Detailing and Construction Documents	3
ID 4693	Furniture Design	3

School of Architecture

Director: Michael A. Berk
Academic Records Assistant: Pandora Prater
Academic Advising: Laura Mitchell
Office: 240 Giles Hall

General Information

The profession of architecture offers the student the opportunity to participate in improving the physical world, in solving problems of our society, and in giving form to the needs of modern culture. To meet these demands requires a highly trained profession composed of sensitive, dedicated men and women. The School of Architecture is the educational foundation of the profession in the State of Mississippi and provides for the development of the skills and understanding to prepare the student for his or her role in the practice of architecture.

The School of Architecture offers an intense, carefully structured, and rich array of courses which constitute a solid foundation for architectural practice. The course work provides students with an awareness of the diversity and complexity of today's professional world. Each course has its own important role in developing the knowledge, collaborative skills, and abilities required of architects in a contemporary practice.

The School of Architecture at Mississippi State University is the professional school for the State of Mississippi and is the only program in the state that leads to a professional degree in architecture. To meet the needs of the state and region, the School was established in 1973 with the support of an Advisory Committee of the Mississippi Chapter of the American Institute of Architects.

Accreditation

In the United States, most state registration boards require a degree from an accredited professional degree program as a prerequisite for licensure. The National Architectural Accrediting Board (NAAB), which is the sole agency authorized to accredit U.S. professional degree programs in architecture, recognizes three types of degrees: the Bachelor of Architecture, the Master of Architecture, and the Doctor of Architecture. A program may be granted an eight-year, a three-year, or a two-year term of accreditation, depending on the degree and quality of its conformance with established educational standards.

The Bachelor of Architecture program at the School of Architecture at Mississippi State University has been continuously accredited since its inception. In 2016 the School was reaccredited for another full eight-year term.

Admissions

Admission to the School of Architecture is limited and highly competitive. The School of Architecture has a rigorous application process for admission into the professional program. Unfortunately, due to stringent accreditation guidelines and standards related to the limited size of our program (including facilities and faculty/staff), the School of Architecture is not in a position to accommodate all of the applicants that have been accepted at MSU.

Prospective students should carefully read application/admission materials on the School web site and communicate with the School of Architecture to request current information, and if possible, arrange for a tour of facilities, and meet the School's admissions coordinator.

Application Process

1. Apply to Mississippi State University.
2. Submit all required materials including high school transcripts and ACT or SAT scores to MSU
3. You must indicate your choice of major as "Architecture."
4. Once admitted to MSU, you must complete the School of Architecture online application; the online application link can be found on the applicant's my.msstate.edu homepage.

Architecture on-line applications must be received on or before January 15. Applications are reviewed and ranked as received. Places for students with qualified applications received after this date will be considered as space permits; these late applications will be wait-listed to fill-in openings if they become available.

The School of Architecture considers applications in the following manner:

1. Full Admission to begin the Fall Architecture Program (in the fall term). Entrance to the Fall Architecture Program is competitive and has academic prerequisites. Students with an ACT score of 26 or better (or the SAT equivalent) and a 3.5 GPA or greater may qualify for Early Acceptance if their formal online Architecture Application submission is received prior to December 15 (depending on available space).
2. Students not accepted into the Fall Architecture Program are classified as *Undeclared – architecture concentration.* The *Undeclared – architecture concentration* students follow a similar course of study, but do not take ARC 1536 and ARC 1546 (Freshman Studio courses). There are many reasons why a student may not be admitted to the Fall Architecture Program: late architecture application, lower ranking in the applicant pool, and/or lack of math pre-requisites. The School of Architecture attracts highly talented students. The professional study of architecture is very rigorous and academically challenging.
3. The *Undeclared – architecture concentration* student may attend MSU and continue to pursue the study of architecture and officially re-apply to the program for the following summer. Once the student enters the university in the Fall and completes required freshmen courses (for the *Undeclared – Architecture concentration* curriculum) while maintaining a cumulative grade point average of at least a 2.5, the student will be eligible to re-apply to the following *Summer Architecture Program* by re-submitting the online application to the School of Architecture by the next February 15 deadline. During the Summer Program terms the student will take ARC 1536and ARC 1546 (Freshman studio courses). Successful completion of these summer studios will allow the student to join the second year (Sophomore) studio in the fall.
4. Students may receive transfer credit for non-professional courses completed at other universities, colleges, and community colleges, provided a grade of C or better is received for each course. Transfer credit from other architecture programs is reviewed by the admissions committee and the director. Transfer credit for courses listed as technical, vocational, or architectural is solely at the discretion of the department. In addition to transcripts, course descriptions, syllabi, examples of work done and portfolio may all be required to receive any credit for such courses.
5. All MSU admitted students that fail to submit an on-line Architecture Application will automatically be classified as: *Undeclared – Architecture concentration.*

Finances

Costs for an architectural education are somewhat higher than in other disciplines. In addition to standard costs of fees, tuition, room, board, books, etc, an architectural student must buy required drawing equipment

and materials for drawings and models during the school year. This can add $600 or so per semester. Additionally, at least one major field trip is required each year. Charges for field trip expenses are collected with tuition and currently range from $600 in first year to $2500 in fifth year 2-week study abroad program. These charges are intended to cover transportation and lodging during field trips. These fees are not typically refundable after the first day of classes. Students are required to purchase a laptop computer in their first year, selected from a range of models approved by the School.

Scholarships

A number of scholarship opportunities as well as design competitions and awards are available to students within the School of Architecture. See the School's website for additional information. Normal MSU Scholarships are available to in-state and out-of-state students. Inquiries for financial aid or assistance should be sent directly to the MSU Department of Student Financial Aid and/or Office of Admissions and Scholarships.

Counseling

Once accepted into the School of Architecture, students are required to maintain at least an MSU 2.0 cumulative quality point average to remain in design courses. At the end of the first year, a student must have completed all required courses to enter the second year, and at the end of the fourth year, a student must have completed all required courses in order to advance to the fifth year. Any student who receives a grade of D or lower for two sequential design courses must repeat both of these courses and receive a grade of C or higher in both courses to advance in the program, or receive the Bachelor of Architecture degree. If a studio course is failed, a grade of C must be received to advance in the program, or receive the Bachelor of Architecture degree.

Research Centers in the School of Architecture

Carl Small Town Center (CSTC)

Established in 1979, the vision of the Carl Small Town Center is to strengthen communities and to promote a prosperous and sustainable future by raising an awareness of the physical environment through research and excellence in design. For further information, contact the Director of the Carl Small Town Center at 662-325-2207.

Gulf Coast Community Design Studio (GCCDS)

The GCCDS was established after hurricane Katrina. GCCDS is located in Biloxi and is providing community planning and architectural design services to communities and rebuilding organizations. GCCDS has provided design and construction assistance for hundreds of new and existing homes, produced survey and GIS mapping for Biloxi, and planning work for a collaboration of housing organizations. For more information, contact the Director of GCCDS at 228-436-4461.

Curriculum

The curriculum is divided into three levels: the first-year level is defined as the pre-professional program; the second and third year levels comprise the professional core; the fourth year comprises topical and capstone studios, and the fifth-year provides the transition to professional practice and includes a comprehensive capstone project. The first four years are at the main campus of MSU in Starkville; the fifth year is at the Stuart C. Irby Studios at the Jackson Center in downtown Jackson, MS.

The curriculum is composed of four areas of study representing:

(1) Design, (2) History/Theory, (3) Technology, (4) Professional Practice

1. Design - concerned with the understanding of form, shape, and space responsive to human needs and programs, together with development of architectural communication skills and ecological thinking.
2. History/Theory - composed of architectural history and philosophy, current architectural ideas, and future implications.
3. Technology - providing basic knowledge in physical systems of structures, materials, construction, sustainability, and service systems of plumbing, electrical, heating, and air conditioning.
4. Professional Practice - representing the tools necessary to direct the processes of architecture, integrated project delivery, areas of economics, real estate, finance, land use, law, and office practice.

Located at the Jackson Center in downtown Jackson, the fifth-year offers the student the opportunity to develop depth and expertise through research and design projects focused on urban issues. The city provides a major resource for the activities and a laboratory for continued study. Professionals involved in all areas of the built environment contribute to the teaching. This experience provides a transition from the academic foundation to the professional realities of architecture.

General Education Requirements

EN 1103	English Composition I	3
or EN 1163	Accelerated Composition I	
EN 1113	English Composition II	3
or EN 1173	Accelerated Composition II	
Mathematics		
MA 1313	College Algebra [1]	3
MA 1323	Trigonometry [1]	3
MA 1613	Calculus for Business and Life Sciences I	3
Science		
PH 1113	General Physics I	3
PH 1123	General Physics II	3
ARC 2713	Passive Building Systems	3
Humanities		
ARC 2313	History of Architecture I	3
ARC 3313	History of Architecture II	3
Fine Arts		
See General Education courses		3
Social Sciences		
See General Education courses		6
Major Core		
ARC 1536	Architectural Design I-A [2]	6
ARC 1546	Architectural Design I-B	6
ARC 2536	Architectural Design II-A	6
ARC 2546	Architectural Design II-B	6
ARC 3536	Architectural Design III-A	6
ARC 3546	Architectural Design III-B	6
ARC 4536	Architectural Design IV-A	6

ARC 4546	Architectural Design IV-B	6
ARC 5576	Architectural Design V-A	6
ARC 5589	Architectural Design V-B	9
ART 1213	Drawing I	3
ART 1223	Drawing II [3]	3
ARC 2313	History of Architecture I (see Gen. Ed.)	3
ARC 3313	History of Architecture II (see Gen. Ed.)	3
ARC 3323	History of Architecture III	3
ARC 4313	Architectural Theory	3
ARC 2713	Passive Building Systems (see Gen. Ed.)	3
ARC 3723	Active Building Systems	3
ARC 2723	Materials	3
ARC 3713	Assemblages	3
ARC 3904	Architectural Structures I	4
ARC 3914	Structures II	4
ARC 4733	Site Planning for Architects	3
ARC 5383	Legal Aspects of Architecture	3
ARC 5443	Architectural Programming	3
ARC 5493	Architectural Practice	3
ARC 5353	Philosophy of Architecture	3
ARC 5623	Theory of Urban Design	3
Approved Electives		12
Oral Communication Requirement		
Satisfied by successful completion of Architectural Design courses.		
Writing Requirement		
Satisfied by successful completion of ARC 4313		
Total Hours		152

1 MA 1313 College Algebra and MA 1323 Trigonometry should be completed prior to beginning studies in architecture. Students may satisfy math prerequisite requirements of MA 1313 College Algebra with a 24 ACT Math score. Students may also take the College Level Examination Program (CLEP) exam to place out of MA 1313. Students with a 26 ACT Math score may satisfy the prerequisite of PH 1113 General Physics I.

2 Pre-Architecture and some transfer students take ARC 1536 and ARC 1546 in the summer terms upon demonstrating completion of required Freshman courses. Applications due February 15.

3 ART 1223 Drawing II is required of all students receiving a grade of “C” or less in ART 1213 Drawing I.

Minor in Architectural Studies

The School of Architecture offers a minor in architectural studies. The minor consists of 18 credit hours of ARC courses. The following courses are available to receive a minor:

Required		
ARC 1013	Architectural Appreciation	3
Taken without instructor approval:		
ARC 2313	History of Architecture I	3
ARC 3313	History of Architecture II	3
ARC 3323	History of Architecture III	3
ARC 4313	Architectural Theory	3
ARC 2713	Passive Building Systems	3
ARC 4733	Site Planning for Architects	3
Require consent of instructor for enrollment:		
ARC 2723	Materials	3
ARC 3713	Assemblages	3
ARC 3723	Active Building Systems	3
ARC 3573	The Art/Architecture of Packaging	3
ARC 4990	Special Topics in Architecture	3

College of Arts & Sciences

RICK TRAVIS, Dean
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General Information

The College of Arts & Sciences provides the fundamental training needed by all persons who wish to become college graduates. Students in all undergraduate schools and colleges in the University take more than half their courses during the first two years in the College of Arts & Sciences. In addition, the College provides pre-professional curricula for students who take their professional training elsewhere. Thus, pre-medical, pre-dental, pre-pharmacy, pre-law, pre-ministerial, pre-optometry, medical records administration, pre-nursing, and physical therapy training are available within the College of Arts & Sciences.

Majors are offered in the following: anthropology, biological sciences, chemistry, communication, criminology, economics, English, foreign languages, general liberal arts, general science, geoscience, history, interdisciplinary studies, international business, mathematics, medical technology, microbiology, music, physics, political science, philosophy, psychology, sociology, and social work.

Students who are undecided about a specific curriculum should select the Undeclared category. Advisors are available to assist these students in developing their educational and career goals. A student is permitted to delay a decision as to a field of concentration for one year.

Minors are available in the following: aerospace studies, African American studies, anthropology, biological sciences, chemistry, communication, English, foreign languages, geography, geology, geoscience, history, linguistics, mathematics, philosophy, physics, political science, psychology, religion, sociology and statistics.

In addition to these majors and minors, courses are offered in Air Force ROTC, archaeology, Army ROTC, corrections, gerontology, and gender studies. Information concerning these offerings can be found in this section of the catalog.

Mission

The educational mission of the College of Arts & Sciences is two-fold: to provide students with a liberal education which will facilitate intellectual development and stimulate a life-long pursuit of knowledge, and to give students an in-depth education in at least one specialized area necessary to prepare them for a career or for advanced study.

The College offers curricula in the fine arts, the humanities, the sciences and the social sciences. These curricula are designed to introduce students to the basic methods of inquiry in diverse disciplines, to develop their analytical abilities, to improve their skills in writing and speaking, and to broaden their perspectives on humanity and culture in the natural and technological worlds. Additionally, they provide intensive preparation in one or more academic disciplines.

A liberal education attained in this context should ensure that graduates of the College have gained an understanding and appreciation of human culture. They should have examined the social, historical, political, philosophical and economic dimensions of the human condition and mankind's perception of the world as it is expressed through the fine arts, language, and literature. They should have learned the use of quantitative and scientific methods and should have participated in the universal quest to comprehend natural phenomena and to utilize this knowledge beneficially and ethically.

Advising

The student is assigned an advisor as soon as he or she enters the College of Arts & Sciences and should maintain contact with that advisor throughout the university affiliation. The advisor will assist the student in developing a course of study and will serve as a resource person to deal with academic problems and student needs.

Degrees

The College of Arts & Sciences offers three degrees: the Bachelor of Arts, the Bachelor of Social Work, and the Bachelor of Science. All B.A., B.S., and B.S.W. students take a common set of requirements consisting of 25-29 semester credit hours in basic skills, 9-10 semester credit hours in natural sciences, 6 semester credit hours each in humanities and social sciences, and 3 semester credit hours in fine arts, computer literacy, and a junior/senior level writing course. The B.A. and B.S.W. curriculum requires 12 additional semester credit hours each in humanities and social sciences. The requirements for all three degrees as well as the curricula for specific areas of study are described below. Details for B.S.W. degree requirements are listed under Social Work.

In order to qualify for a second bachelor's degree at Mississippi State University, the candidate must meet the following requirements:

1. The student must satisfy all course requirements for the degree sought; and
2. The student must satisfy residency requirements at Mississippi State University after the first degree has been conferred (30 hours upper division work).

The major department from which the second degree is sought shall determine completion of requirements.

College Requirements for All A&S Degrees

The College of Arts & Sciences has identified graduation requirements which must be satisfied by all students pursuing degrees conferred by the College. Furthermore, these requirements (listed immediately below) must be satisfied from a list of courses approved by the College. These approved courses are taken from a longer list of courses satisfying general education requirements which can be found in the Academic Policies section of this Bulletin. However, majors in the College of Arts & Sciences must be aware that there are numerous courses on the General Education list which are not on the College approved list. Copies of the College courses approved list are available both from the Dean's Office and from advisors.

Bachelor of Arts Degrees and Requirements

A Bachelor of Arts degree is offered in the following areas: anthropology, chemistry, communication, criminology, economics, English, foreign languages, general liberal arts, history, mathematics, music, philosophy, political science, and sociology. A minimum of 120-124 credit hours is required in all B.A. programs, 31 of which must be upper-division (3000-level or higher) courses in residence at Mississippi State University through Arts & Sciences. The Bachelor of Social Work is offered in Social Work and follows the same basic regulations as the B.A. degree except that courses must be taken in proper sequence and a minimum of 124 hours is required.

The liberal arts include certain basic academic disciplines that contribute to the development of intelligent, moral beings. Over the centuries various subjects have at one time or another been spoken of as “liberal arts,” but the objective of liberal-arts training has remained unchanged. Whether students major in liberal arts or whether they merely take a few basic courses in that field, the liberal arts will enable them to develop those fundamental habits of good citizenship and cultural awareness which are expected of all members of our society.

The curriculum in liberal arts at Mississippi State University is intended to provide:

1. a broad educational experience in the liberal arts, regardless of professional objectives;
2. adequate preparation for admission to professional schools and graduate schools in the liberal arts disciplines;
3. specialized training of a professional or pre-professional nature, as offered by the several liberal-arts departments.

Bachelor of Science Degrees and Requirements

A Bachelor of Science degree is offered in the following areas: biological sciences, chemistry, general science, geoscience, mathematics, medical technology, microbiology, physics and psychology.

The Bachelor of Science degree is awarded:

1. on the completion of not fewer than 124 semester credit hours of study including 31 upper-division Arts & Sciences approved credits and the common curricula for Arts & Sciences approved by the dean and an official advisor.
2. on the transfer of satisfactory credits from other institutions, provided the candidate, during at least one academic year in actual residence, receives 31 credits in upper-division courses in the College of Arts & Sciences.

Graduation Requirements in the College

Arts & Sciences majors are responsible both for knowing the graduation requirements associated with their degree program and for keeping track of their own progress toward graduation. Departmental advisors are available to offer students informed answers to their questions and, during registration, to review and approve their course schedules. In addition to the graduation requirements outlined above, students pursuing majors in the College of Arts & Sciences need to be aware of a number of special requirements having to do with graduation.

1. 75-hour check sheets: Students who have completed 75 or more semester hours (including ‘S’ hours) must meet with their advisors and complete a 75-hour check sheet or they will be unable to register for courses. A completed 75-hour check sheet allows a student to determine which graduation requirements are not completed at the time the check sheet is filled out; this then allows the student to identify those remaining courses he/she still needs to pass in order to graduate. A 75-hour check sheet cannot be completed until all transfer course work and/or independent study is on record with the Office of the Registrar.
2. Off Campus Study: Arts & Sciences majors are expected to take courses on the Mississippi State University campus when possible. If the desired courses are not offered, or if special circumstances exist, students may receive permission from the Dean to take courses off campus.
3. CLEP Credit: The College does not allow graduation requirements in English Composition, Literature, or Public Speaking to be satisfied by the awarding of CLEP credit.
4. PE: Only two 1-hour PE courses may be used toward graduation requirements.

English and Foreign Languages Requirements

The English and foreign language requirements apply to all Arts & Sciences students. Since departments have the authority to require specific foreign languages for their majors, students must become familiar with the language required by their individual major. The foreign language requirement is ordinarily satisfied:

The B.A. degree requires a 3rd semester proficiency in a foreign language. Students may fulfill the requirement through placement tests administered by the Department of Classical and Modern Languages and Literature or by passing nine hours of a foreign language. One year of a foreign language taken at the high school level allows a student to bypass one semester of foreign language. Students are encouraged to take the foreign language placement test before enrolling in a foreign language course.

The B.S. degree requires a 2nd semester proficiency in a foreign language. Students may fulfill the requirement through placement tests administered by the Department of Classical and Modern Languages and Literature or by passing six hours of a foreign language.

Students For Whom English is a Second Language. Students for whom English is a second language must fulfill the English and foreign language requirements as stated in this bulletin. Most majors allow these students to use their native languages to fulfill the foreign language requirement. But students planning to use their native languages in order to satisfy the foreign language requirement are urged to check with their major department to determine if that language is acceptable to the department. The following conditions must be met for students using a native language:

1. the language is a recognized mode of communication in conducting official business in a given country and taught in the primary and secondary schools of the country (regional languages and dialects do not qualify as official languages);
2. the Department of CMLL has the expertise to administer a test in the language, or, where such expertise is not available, the student takes the initiative to take a test in the language from those administered

through the National Testing Service, or by another certifiable agency;

3. the language meets specific departmental requirements.

In English, a maximum of 12 semester hours total of English as a Second Language (ESL) and freshman composition courses (including the required EN 1103 and EN 1113 may be counted for graduation. Proper placement of international students from ESL courses into English composition courses is important to students' academic success.

Pre-Professional Curricula

The College offers appropriate curricula for students who plan to enter schools of dentistry, law, medicine, theology, nursing, optometry, pharmacy, and physical therapy. These are described with the departmental entries in the following pages.

Arts & Sciences Core

In order to satisfy College graduation requirements, students seeking B.A., B.S., or B.S.W. degrees must take the number of courses indicated in each of the areas below. By satisfying these College requirements, students will also satisfy all analogous General Education requirements.

B.A. and B.S.W. students must complete 12 hours in Humanities and 12 hours in Social Sciences in addition to the two courses in the Humanities and Social Sciences required of all majors. Hence, a student must complete a total of 18 hours in the Humanities (EN, HI, PHI, REL), AND 18 hours in the Social Sciences (AN, GR, PS, PSY, SO).

These additional 24 hours are not limited to the courses listed below; they may be satisfied by others in EN, HI, PHI, and REL or in AN, EC, GR, PS, PSY, SO as long as they satisfy the distribution requirements for the major.

While all of the courses below satisfy college-wide requirements, individual departments may require that particular courses in each area be taken to satisfy requirements for their majors.

NOTE: Courses separated by "OR" cannot be taken in combination. Students will not receive credit in Arts & Sciences for two courses which are separated by "OR."

Also, Honors classes satisfy requirements and students who qualify are encouraged to take the Honors sections.

Basic Skills		
English Composition		
EN 1103	English Composition I	3
or EN 1163	Accelerated Composition I	
EN 1113	English Composition II	3
or EN 1173	Accelerated Composition II	
Oral Communication Requirement [1]		
CO 1003	Fundamentals of Public Speaking	3
CO 1013	Introduction to Communication	3
Foreign Language		
3 sem. for B.A.	One Foreign Language (1113, 1123, 2133)	
2 sem. for B.S.	One Foreign Language (1113, 1123)	
Fine Arts		
Choose one of the following:		3
AAS 1103	African American Music	
ARC 1013	Architectural Appreciation	
ART 1013	Art History I	
ART 1023	Art History II	
ART 1113	Art Appreciation	
CO 1503	Introduction to the Theatre	
HON 3173	Honors Seminar in Fine Arts	
MU 1103	African American Music	
MU 1113	History and Appreciation of Music	
MU 1123	History and Appreciation of American Music	
MU 1133	The History of Rock and Roll	
MU 3023	Survey of Western Music History II	
PE 1323	History and Appreciation of Dance	
Humanities (EN, FL, HI, REL, PHI)		
B.S. degree	Requires one EN and one HI from the core listing.	
B.A. and B.S.W.	Require one EN, one HI, and one PHI course plus 3 other humanities (not necessarily on the following list). These three courses should cover at least two areas.)	
AAS 1063	Introduction to African American Studies	3
AAS 2363	Introduction to African American Literature	3
AAS 3013	African American History to 1865	3
AAS 3023	African American History since 1865	3
EN 2203	Introduction to Literature (Not applicable if Honors sections are taken)	3
EN 2213	English Literature Before 1800	3
EN 2223	English Literature After 1800	3
EN 2243	American Literature Before 1865	3
EN 2253	American Literature After 1865	3
EN 2273	World Literature Before 1600	3
EN 2283	World Literature After 1600	3
FLF 4053	19th Century Studies: Baudelaire Seminar	3
FLF 4173	Introduction to Francophone Cinema	3
FLF 4193	18th Century French Literature	3
FLF 4223	French Novel Before 1945	3
FLF 4233	Modern French Poetry	3
FLF 4273	The Human Condition	3
FLF 4323	Studies in the 20th Century: Le Clezio Seminar	3
FLG 4143	Verwandlungen	3
FLG 4303	German Film	3
FLG 4353	German Novella	3
FLG 4493	Mysteries in Literature and Film	3
FLG 4503	German Literature to 1750	3
FLG 4523	German Literature from 1750 to Present	3
FLS 4213	Modern Spanish Women Writers	3
FLS 4243	Modern Spanish Essay	3
FLS 4273	Modern Spanish Drama	3
FLS 4293	Cinema in the Context of Spanish Culture	3
FLS 4543	Survey of Modern Spanish-American Literature	3
FLS 4573	Contemporary Spanish-American Drama	3

FLS 4613	Spanish-American Cinema	3
FLS 4853	Survey of Spanish-American Poetry	3
HI 1003	History of Science in Six Ideas	3
HI 1013	History of Technology in Six Objects	3
HI 1063	Early U.S. History	3
HI 1073	Modern U.S. History	3
HI 1163	World History Before 1500	3
HI 1173	World History Since 1500	3
HI 1213	Early Western World	3
HI 1223	Modern Western World	3
HI 1313	East Asian Civilizations to 1300	3
HI 1323	East Asian Civilizations since 1300	3
HI 3013	African American History to 1865	3
HI 3023	African American History since 1865	3
HON 1163	The Quest Begins	3
HON 3183	Honors Seminar in the Humanities	3
B.A. and B.S.W. majors must take at least 1 PHI course.		
PHI 1103	Introduction to Philosophy	3
PHI 1113	Introduction to Logic	3
PHI 1123	Introduction to Ethics	3
PHI 3023	History of Western Philosophy I	3
PHI 3033	History of Western Philosophy II	3
PHI 3153	Aesthetics	3
REL 1103	Introduction to Religion	3
REL 3213	World Religions I	3
REL 3223	World Religions II	3
Social and Behavioral Sciences		
B.S.	Two courses in different disciplines.	
B.A. and B.S.W.	Courses spread over at least four disciplines, max of two in each discipline. Of the six, only two are required to be from this list. Only one of the CO and one of the EC courses listed may count.	
AN 1103	Introduction to Anthropology	3
AN 1143	Introduction to Cultural Anthropology	3
AN 1543	Introduction to Archaeology	3
AN 2403	Introduction to the Study of Language	3
CO 1223	Introduction to Communication Theory	3
CO 1403	Introduction to the Mass Media	3
EC 1033	Economics of Social Issues	3
EC 2113	Principles of Macroeconomics	3
EC 2123	Principles of Microeconomics	3
EN 2403	Introduction to the Study of Language	3
GR 1123	Introduction to World Geography	3
GR 2013	Cultural Geography	3
HON 1173	The West and the Wider World	3
HON 3143	Honors Seminar in Social Science	3
PS 1113	American Government	3
PS 1313	Introduction to International Relations	3
PS 1513	Comparative Government	3
PSY 1013	General Psychology	3
PSY 3073	Psychology of Interpersonal Relations	3
SO 1003	Introduction to Sociology	3
SO 1103	Contemporary Social Problems	3
SO 1203	Sociology of Families	3
Computer Literacy		
One 2-3 hour course required. Consult advisor.		2-3
Mathematics & Statistics [2]		
MA 1313	College Algebra	3
MA 1323	Trigonometry	3
MA 1613	Calculus for Business and Life Sciences I	3
MA 1713	Calculus I	3
MA 1723	Calculus II	3
MA 2733	Calculus III	3
MA 2743	Calculus IV	3
MA /ST 2113	Introduction to Statistics	3
MA /ST 3123	Introduction to Statistical Inference	3
Natural Sciences [3]		
AN 1344	Introduction to Biological Anthropology	4
BIO 1004	Anatomy and Physiology	4
BIO 1023	Plants and Humans	3
BIO 1123	Animal Biology	3
BIO 1134	Biology I	4
BIO 1144	Biology II	4
BIO 2113	Plant Biology	3
BIO 3103	Genetics I	3
BIO 3304	General Microbiology	4
CH 1043	Survey of Chemistry I	3
or CH 1213	Chemistry I	
CH 1053	Survey of Chemistry II	3
or CH 1223	Chemistry II	
CH 1051	Experimental Chemistry	1
CH 1211	Investigations in Chemistry I	1
CH 1221	Investigations in Chemistry II	1
GG 1111	Earth Sciences I Laboratory	1
GG 1113	Survey of Earth Sciences I	3
GG 1121	Earth Sciences II Laboratory	1
GG 1123	Survey of Earth Sciences II	3
GR 1114	Elements of Physical Geography	4
GR 1604	Weather and Climate	4
HON 3163	Honors Seminar in Natural Sciences	3
PH 1011	Physical Science Laboratory I	1
PH 1063	Descriptive Astronomy	3
PH 1021	Physical Science Laboratory 2	1
PH 1013	Physical Science Survey I	3
PH 1023	Physical Science Survey 2	3
PH 1113	General Physics I	3
PH 2213	Physics I	3
PH 1123	General Physics II	3
PH 2223	Physics II	3
PH 1133	General Physics III	3
PH 2233	Physics III	3
Junior/Senior Writing		
Consult advisor for selections.		3

[1] Air Force ROTC students may substitute AS 3013 and AS 3023.

[2] Either two courses required or one MA course at the level of MA 1613 or higher (with the exception of MA 2113/ST 2113).

[3] 3 courses required, 2 with labs. B.A. and B.S.W. Majors must take one lab course in the Life Sciences AN or BIO and one in the Physical Sciences CH, GG, GR, PH.

Minor in International Studies

The Minor in International Studies is designed to enhance students' understanding of the global environment in which they are living. Students completing this program will develop some proficiency in a foreign language, have experience living in another country, and have some general background of different cultures and societies. The Introduction to International Relations course serves as a broad introduction to the political, military, economic, and cultural interaction of state and on-state actors at the global level. The Principles of Macroeconomics course provides students with the background needed to build a deeper understanding of common issues of trade and development encountered in International Studies. The two upper division courses serve as capstones to bring the ideas of students in the program together from the perspective of their selected approaches -- formalized as Tracks -- to the minor. A total of 21 approved hours must be completed in this minor.

Course Options:

Required Minor Courses		
PS 1313	Introduction to International Relations	3
EC 2113	Principles of Macroeconomics	3
Approved Study Abroad		3
Elective Course with International focus		6
Choose a Track:		
Diplomacy and Governance (DG) Track		6
PS 4343	International Conflict and Security	
Foreign Languages Upper Level Course		
Cultures and Traditions (CT) Track		6
PS 4623	Politics of the Third World	
Foreign Languages Upper Level Course		
National Security (NS) Track		6
PS 4343	International Conflict and Security	
MA 3123	Introduction to Statistical Inference	
Total Hours		21

For additional information, contact the Office of Study Abroad or visit the web site at international.msstate.edu/current/minor/index.php.

Minor in Organizational Leader Development

Organizational Leader Development is an academic discipline with applicability to all Mississippi State University students. The Organizational Leader Development minor can be applied in military, government, and business. The program provides a curriculum that develops students into agile leaders who can think creatively and critically, enabling them to lead and solve complex organizational matters. Students will also be able to develop others in their organization, producing a more effective environment. This is achieved through classroom training, leadership labs, and comprehensive summer training*.

*Summer training is only for contracted cadets and will not prevent general students from obtaining the organizational skills minor.

Course Options:

MS 2113	Advanced Leadership	3
MS 2123	Tactics and Officership	3
MS 3113	Advanced Military Skills I	3
MS 3123	Advanced Military Skills II	3
MS 4114	Leadership Challenges and Goal-Setting	4
MS 4124	Transition to Lieutenant	4
Total Hours Required		20
MS 3376	Advanced Leadership Course (summer training)	6

Medical Humanities Certificate

The Medical Humanities Certificate is designed to provide students with an interdisciplinary perspective on biomedicine, health, and the health professions. The program requires 15 credit hours (5 courses) spanning the Arts & Sciences curriculum, which will introduce students to critical humanities and social science perspectives on medicine and healthcare. Students who earn the Medical Humanities Certificate will have acquired a proficiency in critical, interdisciplinary studies of health and medicine.

The Medical Humanities Certificate is open to undergraduate students in good standing who are currently enrolled at the university in any major. The certificate program requires a minimum of 15 semester hours with a grade of C or above in each course.

Required Courses		
HI 4883	U.S. History of Medicine	3
PHI 3323	Medical Ethics	3
Electives		9
AN 1344	Introduction to Biological Anthropology	
AN 2103	Nutritional Anthropology	
AN 2990	Special Topics in Anthropology	
AN 4133	Medical Anthropology	
AN 4313	Human Osteology	
AN 4323	Plagues and People	
AN 3343	Introduction to Forensic Anthropology	
AN 4303	Human Variation and Origins	
AN 4990	Special Topics in Anthropology	
CO 4283	Health Communication	
HI 1003	History of Science in Six Ideas	
HI 4293	History of Gender and Science	
PHI 4173	Philosophy of Biology	
PHI 4223	Philosophy of Cognitive Science	
PSY 3363	Behavioral Modification	
PSY 3503	Health Psychology	
PSY 3723	Cognitive Neuroscience	
PSY 4323	History of Psychology	
PSY 4403	Biological Psychology	
REL 3483	Judeo-Christian Ethics	
SO 4423	Health and Society	

SO 4433	Sociology of Death and Dying	
SW 3003	Social Work with At-Risk Populations	
SW 4623	Social Work with the Aged	
SW 4633	Social Work in Health Care	
*Other courses, including special topics courses (2990 and 4990) and graduate courses, will be considered for elective credit on a case-by-case basis.		
Total Hours		15

African American Studies

African American Studies (AAS) brings together an interdisciplinary community of scholars to offer courses leading to a minor. Our faculty is committed to exploring creative approaches to research and teaching by making the study of African Americans a central element in their scholarship and courses. Our faculty also promote research across departmental boundaries, thereby producing scholarship touching upon politics, identify, religion, and other variables. The interdisciplinary methodology of AAS informs students who work in a variety of disciplines, including history, political science, sociology, anthropology, music, economics, literature, education, and psychology. While the majority of our courses examine the history and culture of African Americans, the minor concentration also enables students to study Africans in the homeland and the Diaspora.

The interdisciplinary minor consists of 18 credit hours offered in African American Studies, with the cooperation of several departments within the College of Arts & Sciences. To earn the minor students are required to take AAS 1063. They must also take at least 3 credit hours in the categories of Literature and Fine Arts, 3 in the Social Sciences, at least 6 hours in the Humanities, and one 3-hour elective at the 3000 or 4000 level.

Required Course		
AAS 1063	Introduction to African American Studies	3
Literature and Fine Arts		
Choose one of the following:		3
AAS 1103	African American Music	
AAS 4343	Studies in African American Literature	
Humanities		
Choose two of the following:		6
AAS 3013	African American History to 1865	
AAS 3023	African American History since 1865	
AAS 4093	The African Diaspora	
AAS 4363	African-American History and Culture	
AAS 4373	History of Modern Civil Rights Movement	
AAS 4383	African American Leadership in the Twentieth Century	
AAS 4783	African Civilization to 1880	
AAS 4793	Modern Africa	
Social Sciences		
Choose one of the following:		3
AAS 2203	Cultural and Racial Minorities	
AAS 3043	Modern Civil Rights Law	
AAS 4273	African American Politics	
AAS 4543	African Politics	
AAS 4643	Race and the Media	
AAS 4983	African Americans and the Law	
Elective		
Elective		3
Total Hours		18

Department of Anthropology and Middle Eastern Cultures

Undergraduate Coordinator: Dr. Darcy Shane Miller
Office: 209 Cobb Institute of Archaeology

Anthropology is the study of humans as biological and cultural beings. Its subfields include archaeology, biological anthropology, cultural anthropology, and linguistics. Students majoring in anthropology may undertake course work in all four subfields, with concentrations offered in archaeology and cultural and biological anthropology.

Anthropology is a particularly broad major, designed for students who are preparing for employment with research organizations or museums, cultural research management for administrative and research positions with state or federal governments (such as state highway departments, medical examiner's offices, and the National Park Service), and with human service agencies, non-governmental organizations (NGO's), or organizations that involve work in both the U.S. and foreign countries. The undergraduate major in anthropology also prepares students for graduate training in professional fields such as environmental and sustainability studies,planning, law, medicine, public health, forensics, and public administration, as well as for graduate training in anthropology leading to college and university teaching and research positions.

A student wishing to pursue a program leading to a Bachelor of Arts with a major in anthropology is required to complete the program of study outlined on this page. Students are encouraged to take elective courses in related fields which will strengthen their academic training and job skills. These may include courses in history, human biology, disease, and anatomy, soils, geology, criminology, and geographic information systems (GIS).

Students are eligible for membership in the Alpha chapter of Lambda Alpha, the national anthropology honor society. In order to be considered, a student must have at least a 2.50 overall GPA, with a 3.00 GPA in anthropology courses, and have earned a minimum of 12 semester hours credit in anthropology. Part-time jobs are available for anthropology majors through the Department of Anthropology and Middle Eastern Cultures and through the Cobb Institute of Archaeology.

The Anthropology faculty and staff are housed in the Cobb Institute of Archaeology. Facilities include archaeology, bioarchaeology, and forensics laboratories and a museum. The museum houses artifacts from Mississippi and the Middle East, including replicas of large-scale relief sculptures and statues from Assyria and Egypt.

Anthropology may be used as a minor field of study at both the undergraduate and graduate levels. Fifteen hours (nine hours must be 3000 level or above), including AN 1103, constitute an undergraduate minor. Requirements for an anthropology minor at the graduate level will be established in consultation with the anthropology graduate advisor. Courses taken for an undergraduate or graduate minor must be taught by anthropology faculty.

General Education and College Requirements

English Composition		
EN 1103	English Composition I	3
or EN 1163	Accelerated Composition I	
EN 1113	English Composition II	3
or EN 1173	Accelerated Composition II	
Foreign Language		
3 semesters	one Foreign Language - see advisor	9
Humanities		
Literature	see General Education courses	3
History	see General Education courses	3
Philosophy	See A&S requirements	3
Humanities Elective	Consult Advisor. Must be from 2 different areas - see A&S Core	9
Mathematics		
MA 1313	College Algebra	3
MA /ST 2113	Introduction to Statistics	3
Fine Arts		
See A&S Core List		3
Natural Sciences		
Physical Sciences w/lab (CH, GG, PH) [1]		3-4
Life Science w/ lab (BIO)		3-4
Natural Science Elective [2]		3-4
Social Sciences		
See General Education courses		6
Social Sciences Electives [3]		12
Major Core		
AN 1143	Introduction to Cultural Anthropology	3
AN 1344	Introduction to Biological Anthropology	4
AN 1543	Introduction to Archaeology	3
Anthropology Upper Div Electives - see advisor		18
Anthropology Lower or Upper Division Elective		2
Oral Communication Requirement		
AN 4123	Anthropological Theory	3
Writing Requirement		
AN 4123	Anthropological Theory	3
Computer Literacy		
AN 4143	Ethnographic Methods	3
or AN 3513	Artifact Analysis	
General Electives		
General Electives - Consult advisor		15-24
Total Hours		124

Note: Minimum hours required is 123 but based on electives chosen more hours may be taken.

1 See General Education courses.

2 Consult advisor.

3 Must be from 2 different areas and must cross 4 disciplines over the 18 hours. Only one Economics allowed. Two Anthropology courses may be included. Consult advisor.

Middle Eastern Studies Minor

The Middle Eastern Studies (MES) minor is offered to MSU students as formal acknowledgement of the completion of a specialized program of study over and above their normal degree requirements that leads to greater proficiency in areas related to Middle Eastern Studies. The MES minor requires a minimum of 18 credit hours. Students must complete at least 9 hours (3 courses) from the Core Course List, and 9 hours (3 courses) from the Elective Course List. Only one Special Topics (2990, 4990) or Directed Individual Study (4000) in Middle Eastern Cultures, Religion, or Anthropology will be accepted for completion of this minor.

Students must choose three of the following:		9
AN 3553	Near Eastern Archaeology	
or MEC 3553	Near Eastern Archaeology	
or REL 3553	Near Eastern Archaeology	
HI 4403	The Ancient Near East	
or MEC 4403	The Ancient Near East	
or REL 4403	The Ancient Near East	
HI 4413	Ancient Greece and Rome	
MEC 3473	Islam	
or REL 3473	Islam	
MEC 4000	Directed Individual Study [1]	
Students must select three of the following:		9
AN 1143	Introduction to Cultural Anthropology	
AN 3533	Rise of Civilization	
AN 3553	Near Eastern Archaeology	
or MEC 3553	Near Eastern Archaeology	
or REL 3553	Near Eastern Archaeology	
AN 3540	Archaeological Travel and Participation Program	
FLH 1113	Greek I	
FLH 1123	Elementary Ancient Greek II	
FLL 1113	Latin I	
FLL 1123	Latin II	
GR 4283	Geography of Islamic World	
HI 4403	The Ancient Near East	
or MEC 4403	The Ancient Near East	
or REL 4403	The Ancient Near East	
HI 4413	Ancient Greece and Rome	
MEC 3473	Islam	
or REL 3473	Islam	
REL 1213	Introduction to the Old Testament	
REL 1223	Introduction to the New Testament	
REL 2233	Introduction to Old Testament Archaeology	
or MEC 2233	Introduction to Old Testament Archaeology	
REL 3203	The Prophets of Ancient Israel	
REL 4143	Classical Mythology	
or FL 4143	Classical Mythology	
Total Hours		18

1 May use only one Directed Individual Study/Special Topic. This also includes AN/REL 2990, 4000, and 4990.

Department of Biological Sciences

The Department of Biological Sciences provides an outstanding educational experience across the entire field of biology. Our expert faculty have diverse research and teaching interests that span molecular and cellular biology, microbiology, computational biology, evolutionary biology, genetics, and ecology, of all living organisms. Our faculty are actively engaged in highly interdisciplinary cutting-edge research and are committed to providing students with an extensive exposure to biological processes and systems and a deep understanding of biology at environmental, organismal, cellular, and molecular levels through engaging lectures and hands-on laboratory experiences. Graduates leave the department with the knowledge base and critical thinking skills to be successful in graduate programs leading to M.S. or Ph.D., medical, dental and veterinary schools, health professional schools, research, and teaching.

Majors offered in the department are the B.S. in Biological Sciences, B.S. in Medical Technology, B.S. in Microbiology, M.S. in Biological Sciences, Ph.D. in Biological Sciences, and an M.S. in General Biology, a distance program for science teachers.

An accelerated Master's program is available to outstanding students engaged in undergraduate research.

Medical Technology Major (MEDT)

Major Advisor: Mary Celeste Reese, Dir. of Undergraduate Advising
Office: 117 Harned Hall

Medical technologists are prepared for positions in hospital laboratories, clinics, research laboratories, the Public Health Service industry, and in various local, state and federal health organizations.

The medical technology curriculum leading to the Bachelor of Science degree from Mississippi State University includes three years of study at Mississippi State University and one year of study in a hospital School of Medical Technology accredited by the National Accrediting Agency for Clinical Laboratory Sciences. Admission to the hospital school is competitive. A student who has satisfactorily completed the three years on the campus and has gained admission to a hospital school will register for the hospital phase and will be considered to be enrolled at Mississippi State during the final year of study. Graduates are prepared for certification by several national agencies.

Biological Sciences Major (BIO)

Major Advisor: Mary Celeste Reese, Dir. of Undergraduate Advising
Office: 117 Harned Hall

General Education and College Requirements

English Composition		
EN 1103	English Composition I	3
or EN 1163	Accelerated Composition I	
EN 1113	English Composition II	3
or EN 1173	Accelerated Composition II	
Foreign Language		
2 semesters - one Foreign Language (see advisor)		6
Humanities		
Literature		3
History		3
Mathematics		
MA 1713	Calculus I	3
ST 3123	Introduction to Statistical Inference	3
Fine Arts		
See A&S requirements		3
Natural Sciences		
See Major Core - Consult advisor for specifics		9-12
Social Sciences		
Must be from 2 different areas - see A&S requirements		6
Oral Communication Requirement		
CO 1003	Fundamentals of Public Speaking	3
or CO 1013	Introduction to Communication	
Writing Requirement		
Satisfied by successful completion of BIO 3104		
Computer Literacy Requirement		
Satisfied by successful completion of BIO 3104		
Major Core - Biological Sciences		
BIO 1134	Biology I	4
BIO 1144	Biology II	4
BIO 3304	General Microbiology	4
BIO 4133	Human Genetics	3
BIO 2103	Cell Biology	3
BIO 2113	Plant Biology	3
BIO 2513	Animal Diversity	3
BIO 3104	Ecology	4
BIO 4113	Evolution	3
Additional department requirements:		
CH 1213	Chemistry I	3
CH 1223	Chemistry II	3
CH 1211	Investigations in Chemistry I	1
CH 1221	Investigations in Chemistry II	1
CH 4513	Organic Chemistry I	3
CH 4523	Organic Chemistry II	3
CH 4511	Organic Chemistry Laboratory I	1
CH 4521	Organic Chemistry Laboratory II	1
PH 1113	General Physics I	3
PH 1123	General Physics II	3
or PH 1133	General Physics III	
Additional Science Electives		15-20
Choose 5 courses from the following:		
BCH 4013	Principles of Biochemistry	
BCH 4603	General Biochemistry I	
BCH 4613	General Biochemistry II	
BIO 2213	Survey Plant Kingdom	
Any 3000- or 4000- level BIO course, excluding BIO 3004, BIO 3014, and BIO 4000		
General Electives		15-20
Total Hours		124

NOTE: University, College and Department restrictions - the following courses may not be used to meet the above science requirements: BIO 1004, BIO 1023, BIO 1123, BIO 3004, BIO 3014.

Minor in Biological Sciences

A minor in Biological Sciences is an exceptional accompaniment to many academic majors, as well as students pursuing pre-professional programs. Courses required for the minor provide students with specialized knowledge in the life sciences and enhance understanding of current developments in science.

BIO 1134	Biology I	4
BIO 1144	Biology II	4
BIO 2103	Cell Biology	3
BIO 4113	Evolution	3
BIO 4133	Human Genetics	3
Choose one of the following:		3-4
BIO 2213	Survey Plant Kingdom	
Any 3000- or 4000- level BIO course excluding BIO 3004, BIO 3014, and BIO 4000		
Total Hours		20-21

Microbiology Major (MIC)

Major Advisor: Mary Celeste Reese, Dir. of Undergraduate Advising
Office: 117 Harned Hall

General Education and College Requirements

English Composition		
EN 1103	English Composition I	3
or EN 1163	Accelerated Composition I	
EN 1113	English Composition II	3
or EN 1173	Accelerated Composition II	
Foreign Language		
2 semesters - one Foreign Language (see advisor)		6
Humanities		
Literature - see A&S requirements		3
History - see A&S requirements		3
Mathematics		
MA 1713	Calculus I	3
ST 3123	Introduction to Statistical Inference	3
Fine Arts		
See A&S requirements		3
Natural Sciences		
See Major Core - Consult advisor for specifics		
Social Sciences		
Must be from 2 different areas and from A&S Core. Consult advisor for acceptable areas.		6
Oral Communication Requirement		
CO 1003	Fundamentals of Public Speaking	3
or CO 1013	Introduction to Communication	
Writing Requirement		
Satisfied by successful completion of BIO 4405, BIO 4442, and BIO 4463		
Computer Literacy Requirement		
Satisfied by successful completion of BIO 4405, BIO 4442, and BIO 4463		
Departmental Core		
BIO 1134	Biology I	4
BIO 1144	Biology II	4
BIO 2103	Cell Biology	3
Major Core		
BIO 3304	General Microbiology	4
BIO 4405	Pathogenic Microbiology	5
BIO 4413	Immunology	3
BIO 4433	Principles of Virology	3
BIO 4443	Bacterial Genetics	3
BIO 4442	Bacterial Genetics Laboratory	2
BIO 4463	Bacterial Physiology	3
Microbiology Electives (Choose from any 3000- or 4000- BIO courses, excluding BIO 3004, BIO 3014, and BIO 4000)		8
Additional department requirements		
CH 1213	Chemistry I	3
CH 1223	Chemistry II	3
CH 1211	Investigations in Chemistry I	1
CH 1221	Investigations in Chemistry II	1
CH 4513	Organic Chemistry I	3
CH 4523	Organic Chemistry II	3
CH 4511	Organic Chemistry Laboratory I	1
CH 4521	Organic Chemistry Laboratory II	1
PH 1113 & PH 1123	General Physics I and General Physics II	3-6
or PH 1133	General Physics III	
BCH 4603 & BCH 4613	General Biochemistry I and General Biochemistry II	3-6
or BCH 4013	Principles of Biochemistry	
General Electives		
General Electives		18-21
Total Hours		124

Applied microbiology courses are strongly recommended, regardless of the department in which they are offered (for example, Food Micro, Environmental Micro, or Soil Micro). Upper division courses in Medical Technology or Biochemistry are also acceptable. Students should see their advisor for assistance in selecting courses for microbiology elective credit. Hours in excess of 8 will reduce the general electives requirement by an equal number.

Students planning to attend professional schools should check with the faculty advisor for that program to identify additional courses that may be needed. Such courses can be taken for general elective credit.

For the pre-professional/graduate track, BCH 4603/ and 15 hours of general electives are required. For career track, BCH 4013 may be substituted for BCH 4603/BCH 4613, and 18 hours of general electives are required.

Minor in Microbiology

The minor in microbiology provides a strong complement for students who are majoring in related scientific disciplines. This is particularly true for those who have an interest in the role of microorganisms in industry, agriculture, or health. Students will develop a comprehensive understanding of microbial processes and interactions, including infectious agents of plants and animals as well as host responses to those pathogens.

BIO 1134	Biology I	4
BIO 3304	General Microbiology	4
BIO 4405	Pathogenic Microbiology	5
Choose two of the following:		6-7
BIO 4413	Immunology	
BIO 4433	Principles of Virology	
BIO 4443	Bacterial Genetics	
BIO 4463	Bacterial Physiology	
BIO 4414	Microbiology of Foods	
Total Hours		19-20

Medical Technology Major (MEDT) [1]

Major Advisor: Mary Celeste Reese, Dir. of Undergraduate Advising
Office: 117 Harned Hall

General Education and College Requirements

English Composition		
EN 1103	English Composition I	3
or EN 1163	Accelerated Composition I	
EN 1113	English Composition II	3
or EN 1173	Accelerated Composition II	
Foreign Language		
2 semesters - one Foreign Language (see advisor)		6
Humanities		
Literature - see A&S requirements		3
History - see A&S requirements		3
Mathematics		
MA 1313	College Algebra	3
MA 1323	Trigonometry	3
or ST 3123	Introduction to Statistical Inference	
Fine Arts		
See A&S requirements		3
Natural Sciences		
See Major Core - Consult Advisor for specifics		9-12
Social Sciences		
Must be from 2 different areas - See University/A&S Core		6
Major Core		
BIO 1134	Biology I	4
BIO 3004	Human Anatomy	4
BIO 3303	Parasitology	3
BIO 3304	General Microbiology	4
BIO 4133	Human Genetics	3
BIO 4303	Bioinstrumentation	3
BIO 4405	Pathogenic Microbiology	5
BIO 4413	Immunology	3
BIO 4610	Urinalysis	2-6
BIO 4620	Hematology	2-9
BIO 4630	Special Topics	1-9
BIO 4640	Clinical Micro	2-9
BIO 4650	Immunohematology	2-9
BIO 4660	Serology/Immunology	2-9
BIO 4670	Clinical Chemistry	2-9
BCH 4013	Principles of Biochemistry	3
CH 1213	Chemistry I	3
CH 1211	Investigations in Chemistry I	1
CH 1223	Chemistry II	3
CH 1221	Investigations in Chemistry II	1
CH 4513	Organic Chemistry I	3
CH 4523	Organic Chemistry II	3
General and Science Electives		9
Oral Communication Requirement		
CO 1003	Fundamentals of Public Speaking	3
or CO 1013	Introduction to Communication	
Computer Literacy Requirement		
Satisfied by successful completion of BIO 3303, BIO 4303, and BIO 4405		
Writing Requirement		
Satisfied by successful completion of BIO 3303, BIO 4303, and BIO 4405		
Total Hours		124

[1] In affiliated hospital schools of Medical Technology, admission is on a competitive basis.

Program Consultants in Cooperating Hospitals

Mississippi State University maintains close contact with the teaching personnel in medical technology at the following hospitals in the area:

- Jennifer Knight, MHS, MLS(ASCP), affiliate faculty and Program Director, Mississippi Baptist Medical Center, Jackson, Miss.
- Lee Montgomery, MT (ASCP), affiliate faculty and Program Director, North Mississippi Medical Center, Tupelo, Miss.
- Holly Covas, MT (ASCP), affiliate faculty and Program Director, Vanderbilt University Medical Center, Nashville, Tenn.

Department of Chemistry

Undergraduate Coordinator: Deb MIsna
Advisors: Professors Joseph Emerson and Steven Gwaltney
1115 Hand Chemical Laboratory

Chemistry is concerned with the properties and compositions of substances and the transformations which they undergo. Because chemistry is a basic science to many careers, two undergraduate degree programs and three concentrations are offered to provide the needed flexibility for majors. These degrees are the B.S. and the B.A. degrees. A minimum of 124 hours is required for the B.S. degree and the B.A. degree. The department also offers the M.S. and the Ph.D. graduate degrees. Students in other majors may earn a minor in Chemistry by achieving at least a 2.00 average in a total of 22 hours of chemistry with 14 of the hours in upper-division courses and a minimum of 11 of the total hours completed at MSU.

The American Chemical Society (ACS) has continually approved the department and its curriculum since 1941, and awards a certificate to students who complete the ACS program with their BS degree. The ACS program is primarily intended as preparatory for graduate study in chemistry leading to a career in basic research. Graduates could also go directly into research and development positions in industry. Students

seeking information on the ACS certification should contact a major advisor.

The B.A. degree program has a stronger liberal arts emphasis and could serve as a preparation for a secondary teaching career, chemical sales, or further study in a professional school.

B.S. in Chemistry

General Education and Degree Requirements

English Composition		
EN 1103	English Composition I	3
or EN 1163	Accelerated Composition I	
EN 1113	English Composition II	3
or EN 1173	Accelerated Composition II	
Foreign Language		
2 semesters - one Foreign Language (see advisor)		6
Humanities		
Literature - see A&S requirements		3
History - see A&S requirements		3
Mathematics		
MA 1713	Calculus I	3
MA 1723	Calculus II	3
Fine Arts		
See A&S requirements		3
Natural Sciences		
See Major Core - Consult Advisor for specifics		9-12
Social Sciences		
Must be from 2 different areas and must be selected from University/ A&S Core		6
PSY 1013	General Psychology (required for pre-medicine)	
Major Core		
Student should check for prerequisites for all courses. See advisor.		
CH 1141	Professional Chemistry: Paths	1
CH 1234	Integrated Chemistry I [1]	4
CH 1244	Integrated Chemistry II [2]	4
CH 2141	Professional Chemistry: Tools	1
CH 2311	Analytical Chemistry I Laboratory	1
CH 2313	Analytical Chemistry I	3
CH 3141	Professional Chemistry: Literature	1
CH 4141	Professional Chemistry: Research	1
CH 4213	Advanced Inorganic Chemistry I	3
CH 4351	Analytical Chemistry Laboratory II	1
CH 4353	Analytical Chemistry II	3
CH 4554	Integrated Organic I [3]	4
CH 4564	Integrated Organic II [4]	4
CH 4711	Senior Seminar	1
Oral Communication Requirement		
Satisfied by successful completion of CH 1141, 2141, 3141, 4141, and 4711.		
Writing Requirement		
Satisfied by successful completion of CH 3141, 4141, and 4711.		
Computer Literacy		
Satisfied by successful completion of CH 1141, 2141, 2313, 3141, 4141, 4351, and 4711.		

1 CH 1234 can be replaced by CH 1213 and CH 1211

2 CH 1244 can be replaced by CH 1223 and CH 1221

3 CH 4554 can be replaced by CH 4513 and CH 4511

4 CH 4564 can be replaced by CH 4523 and CH 4521

Choose one of following paths to complete the B.S. degree:

B.S. with non-A.C.S. certification

Choose one of the following:		4
CH 4413 & CH 4411	Thermodynamics and Kinetics and Physical Chemistry Laboratory I	
CH 4423 & CH 4421	Quantum Mechanics and Spectroscopy and Physical Chemistry Laboratory II	
CH 4403 & CH 4411	Biophysical Chemistry and Physical Chemistry Laboratory I	
CH 4403 & CH 4421	Biophysical Chemistry and Physical Chemistry Laboratory II	
Chemistry Elective [1]		6
PH 2213	Physics I	3
or PH 1113	General Physics I	
PH 2223	Physics II	3
or PH 1123	General Physics II	
PH 2233	Physics III	3
or PH 1133	General Physics III	
General Electives		
Number of credit hours needed to bring the total number of credit hours to 124. Consult advisor.		
Total Hours		124

1 Advisor approved chemistry or biochemistry courses 3000-level and above.

A.C.S. concentration

CH 3213	Inorganic Chemistry	3
CH 4212	Advanced Inorganic Laboratory	2
CH 4413	Thermodynamics and Kinetics	3
CH 4411	Physical Chemistry Laboratory I	1
CH 4423	Quantum Mechanics and Spectroscopy	3
CH 4421	Physical Chemistry Laboratory II	1
CH 4603	Undergraduate Research	3
BCH 4603	General Biochemistry I	3
PH 2213	Physics I	3
PH 2223	Physics II	3
PH 2233	Physics III	3
MA 2733	Calculus III	3
General Electives		
Number of credit hours needed to bring the total number of credit hours to 124. Consult advisor.		
Total Hours		124

Pre-Medical concentration

Student should check for prerequisites for all courses. See advisor.

CH 4403 & CH 4411	Biophysical Chemistry and Physical Chemistry Laboratory I	4
BCH 4603	General Biochemistry I	3
BCH 4613	General Biochemistry II	3
PH 2213 or PH 1113	Physics I General Physics I	3
PH 2223 or PH 1123	Physics II General Physics II	3
PH 2233 or PH 1133	Physics III General Physics III	3
Technical and General Electives		
BIO 1134	Biology I	4
BIO 1144	Biology II	4
BIO 2103 or BCH 4713	Cell Biology Molecular Biology	3
BIO 3304	General Microbiology	4
BIO 3103 or BIO 4133	Genetics I Human Genetics	3
BIO 3504	Comparative Anatomy	4
BIO 4413	Immunology	3
BIO 4514	Animal Physiology	4
General Electives		
Number of credit hours needed to bring the total of credit hours to 124. Consult advisor.		
Total Hours		124

Pre-Pharmacy Requirements

The pre-pharmacy program is intended for students who wish to attend the School of Pharmacy at the University of Mississippi. Students may choose to obtain the B.S. with non-ACS certification degree or complete only the pre-pharmacy requirements, for which a degree is not awarded from MSU. The courses listed below will satisfy the requirements for the School of Pharmacy at the University of Mississippi. Most pharmacy schools have similar requirements. However, students who wish to attend other pharmacy schools should check the specific requirements for that school.

Required Courses		
CH 1213	Chemistry I [1]	3
CH 1211	Investigations in Chemistry I [1]	1
CH 1223	Chemistry II [2]	3
CH 1221	Investigations in Chemistry II [2]	1
CH 4513	Organic Chemistry I [3]	3
CH 4511	Organic Chemistry Laboratory I [3]	1
CH 4523	Organic Chemistry II [4]	3
CH 4521	Organic Chemistry Laboratory II [4]	1
BCH 4603	General Biochemistry I	3
BIO 1134	Biology I	4
BIO 1144	Biology II	4
BIO 3014	Human Physiology	4
BIO 3304	General Microbiology	4
BIO 4405	Pathogenic Microbiology	5
BIO 3103 or BIO 4133	Genetics I Human Genetics	3
PHI 3323	Medical Ethics	3
EN 1103	English Composition I	3
EN 1113	English Composition II	3
ST 2113	Introduction to Statistics	3
MA 1713	Calculus I	3
PH 1113	General Physics I	3
PH 1123	General Physics II	3
CO 1003	Fundamentals of Public Speaking	3
EC 2123	Principles of Microeconomics	3
Electives		
Social and Behavioral Science Electives [5]		6
Humanities and Fine Arts Electives [6]		9
General Electives		
To bring the total number of credit hours up to 92		

1 CH 1213 and CH 1211 can be replaced by CH 1234

2 CH 1223 and CH 1221 can be replaced by CH 1244

3 CH 4513 and CH 4511 can be replaced by CH 4554

4 CH 4523 and CH 4521 can be replaced by CH 4564

5 At MSU EC 2113 Principles of Macroeconomics is a pre-requisite for the required course EC 2123 (see above), and EC 2113 will count as one social science elective. In addition to EC 2113 one course from either Psychology, Sociology, Political Science, or Anthropology is required.

6 At least 3 credit hours required in each of the two main areas. Humanities Electives should be chosen from the areas: English Literature, Foreign Language, History, Religion or Philosophy

B.A. in Chemistry

General Education and College Requirements

English Composition		
EN 1103 or EN 1163	English Composition I Accelerated Composition I	3
EN 1113 or EN 1173	English Composition II Accelerated Composition II	3
Foreign Language		
3 semesters - one Foreign Language (see advisor)		9
Humanities		
Literature - see General Education courses		3
History - see General Education courses		3
Philosophy - see A&S Core		3
Electives (Must be from 2 different areas) See A&S Core		9
Math		
See A&S requirements		6
Fine Arts		
See A&S requirements		3
Natural Sciences		
See Major Core - Consult advisor for specifics		9-12
Social Sciences		
See A&S requirements		6

Social Sciences Electives - See advisor [5]		12
Major Core		
Student should check for prerequisites for all courses. See advisor.		
CH 1141	Professional Chemistry: Paths	1
CH 1234	Integrated Chemistry I [1]	4
CH 1244	Integrated Chemistry II [2]	4
CH 2141	Professional Chemistry: Tools	1
CH 2311	Analytical Chemistry I Laboratory	1
CH 2313	Analytical Chemistry I	3
CH 3141	Professional Chemistry: Literature	1
CH 3213	Inorganic Chemistry	3
CH 4141	Professional Chemistry: Research	1
CH 4554	Integrated Organic I [3]	4
CH 4564	Integrated Organic II [4]	4
CH 4711	Senior Seminar	1
Chemistry Electives - See advisor [6]		7
PH 1113	General Physics I	3
or PH 2213	Physics I	
PH 1123	General Physics II	3
or PH 2223	Physics II	
PH 1133	General Physics III	3
or PH 2233	Physics III	
Oral Communication Requirement		
Satisfied by successful completion of CH 1141, 2141, 3141, 4141, and 4711.		
Writing Requirement		
Satisfied by successful completion of CH 3141, 4141, and 4711.		
Computer Literacy		
Satisfied by successful completion of CH 1141, 2141, 2313, 3141, 4141, and 4711.		
General Electives		20-23
Number of credit hours needed to bring the total number of credit hours to 124. Consult advisor.		
Total Hours		124

1. CH 1234 can be replaced by CH 1213 and CH 1211
2. CH 1244 can be replaced by CH 1223 and CH 1221
3. CH 4554 can be replaced by CH 4513 and CH 4511
4. CH 4564 can be replaced by CH 4523 and CH 4521
5. Must be from 2 different areas and must cross 4 disciplines over the 18 hours. Only one Economics allowed.
6. Advisor approved chemistry courses 3000-level and above

Department of Classical & Modern Languages and Literatures

B.A. in Foreign Languages

Interim Department Head: Peter L. Corrigan
Associate Professor Brian Davisson (M.A. program)
Instructor Amie Russell (B.A. program)
Office: 1500 Lee Hall

Foreign language majors prepare for careers in government (State Department, foreign service, diplomatic corps, FBI, CIA, USIA, the military, immigration, etc), international business, the human services fields, teaching at all levels (secondary school, junior college, university), and other language-related jobs.

Programs of study leading to the Bachelor of Arts (B.A.), the joint Bachelor of Arts and Bachelor of Business Administration, and the Master of Arts (M.A.) in Foreign Languages are offered. For the B.A., the department offers four major concentrations: Classics, French, German, and Spanish. A minor in Foreign Languages with concentrations in Chinese, French, German, Italian, Japanese, Russian, and Spanish may be obtained upon satisfactory completion of 18 semester hours in one target language. A minor with concentration in Classics requires 15 hours, 12 of which must be Greek or Latin courses beyond the first year; the remaining course may be any FL Classics course. Education students desiring Foreign Language teaching certification must see appropriate guidelines from the Department of Curriculum, Instruction, and Special Education for the language requirements.

The Department sponsors three honor societies: Pi Delta Phi (French), Delta Phi Alpha (German), and Sigma Delta Pi (Spanish). Information about membership requirements may be obtained from the Head of the Department. The Department also sponsors language clubs which provide social and cultural activities for faculty and students.

The Bachelor of Arts in Foreign Languages is awarded upon the successful completion of a minimum of 123 semester hours, including the following areas:

1. General Education Requirements
2. Bachelor of Arts Common Requirements
3. Note that degree requirements vary among the concentrations. It is the student's responsibility to meet the requirements of the chosen concentration, as listed below.
4. Completion of the fourth semester course of a second foreign language (12 semester credit hours) is recommended. In addition to the concentrations (Classics, French, German, and Spanish), the department offers courses in Chinese, Italian, Japanese, and Russian.
5. Study abroad is highly recommended. Foreign Language majors interested in following this recommended course of study should notify the advisor as soon as possible, so that a plan of study can be developed to make sure graduation requirements are met.
6. The hours needed for graduation will depend upon the entry level of study into the major language; a minimum of eight, 3-credit hour courses in the chosen concentration at the 3000-level, or higher, is required.

International Business Program

A Five-Year Double Degree Program:
B.A. in Foreign Languages & B.B.A. in Business Administration

Office: 210 McCool Hall

Major Advisor - Business Administration: Clinical Assistant Professor Travis Wiseman
Major Advisor - Foreign Languages: Instructor Amie Russell
1500 Lee Hall

The International Business Program provides students with an academic background and work experience to help ensure success in the

marketplace. Students receive a double degree at graduation reflecting the dual concentration in Business: B.B.A (with an international focus and a specific discipline such as Marketing or Finance); and in the Arts: B.A. (language and cultural proficiency). This is additional to the first two years of study developing abilities in writing, math, sciences, and computer literacy.

The hallmarks of this program include a work internship and an outside the country academic experience of a full summer or one semester duration (generally taken the last of the 4th year or beginning of the 5th year). The internship is ideally reflective of the student's specific business discipline and the study abroad is reflective of the student's language proficiency area. The student who selects to combine the work and abroad experience must petition the IB Director for approval. Minimum acceptable levels are:

1. WORK: 10 continuous weeks of international tasks and responsibilities;
2. ABROAD: 6 continuous weeks in one location for cultural immersion.

The total number of semester credit hours (SCH) will be 154 for most students. The program has five main components:

1. a core of basic skills, including courses in writing, mathematics, sciences, and communication (30 SCH);
2. a core of humanities and social science courses selected to fit the special needs of international business major, emphasizing both the history and culture of other societies and the ways these societies relate to our own (27 SCH);
3. intensive training to develop proficiency in one foreign language and its associated cultures and literatures (35 SCH);
4. a thorough grounding in business techniques and practices, including 33 SCH of general business courses, up to 12 SCH of international business courses, and 15 SCH in one of six functional/discipline emphasis in business (accounting, finance, information systems[1], economics, management, marketing[1], or risk management, insurance and financial planning[1]).
5. a one-semester internship program with an international business (4 SCH).

Students interested in following this recommended course of study should notify the Department Head of Classical & Modern Languages and Literatures and the Director of International Business Academic Programs. Students must have the Director's written approval to join the International Business Program. Students must meet all graduation requirements for the College of Business and the College of Arts & Sciences. These requirements include a 2.5 GPA in Upper Division Business courses and 31 resident credit hours of Upper Division Arts & Sciences courses. International Business students must also have an overall and previous semester GPA of 2.67 to be eligible for internship and study abroad. Students are reminded that an International Business degree is a double major, and they must see an adviser in Classical & Modern Languages and Literatures in addition to any advising they have from the College of Business.

B.A. in Foreign Languages

Major Advisor: Instructor Amie Russell
Associate Professor Brian Davisson (M.A. program)
Office: 1500 Lee Hall

General Education and College Requirements

English Composition		
EN 1103	English Composition I	3
or EN 1163	Accelerated Composition I	
EN 1113	English Composition II	3
or EN 1173	Accelerated Composition II	
Foreign Language		
See each concentration		
Humanities		
FL 4143	Classical Mythology	3
Literature - see University/A&S Core		3
History - see University/A&S Core		3
Philosophy Elective - see advisor		3
Humanities Electives [1]		6
Math		
See University/A&S requirements		6
Fine Arts		
See A&S Requirements		3
Natural Sciences		
Physical Science w/Lab [2]		3-4
Biological Science w/Lab [3]		3-4
Natural Science Elective [4]		3
Social Sciences		
See A&S requirements		6
Social Sciences Electives [5]		12
Oral Communication Requirement		3-4
See each concentration		
For Classics: [6]		
CO 1003	Fundamentals of Public Speaking	3
or CO 1013	Introduction to Communication	
or a course satisfying the oral communication requirement in one of the CMLL modern language concentrations		
Writing Requirement		3-4
See each concentration		
Computer Literacy		2-3
Consult advisor		
General Elective [7]		
Consult advisor - Study abroad and/or second language highly recommended.		19-28

Choose one of the following concentrations:

Classics

FLL 2133	Latin III (Latin I & II (or equivalents) do not count towards the 30-hour concentration but do count as electives for the degree)	3
FLL 2143	Latin IV	3
FLH 2133	Greek III (Greek I & II (or equivalents) do not count towards the 30-hour concentration but do count as electives for the degree)	3
FLH 2143	Greek IV	3

Writing Requirement

FLL 3111	Latin Prose Composition I	1
FLL 3121	Latin Prose Composition II	1
FLL 3131	Latin Prose Composition III	1
Choose two of the following:		6
(Latin)		
FLL 3173	Augustan Literature and Culture	
FLL 4443	Caesar	
FLL 4990	Special Topics in Latin	
(Greek)		
FLH 3013	Plato	
FLH 4990	Special Topics in Greek	
Choose three of the following:		9
FL 4133	Roman Civilization	
FL 4493	Greek Comedy and Tragedy	
FL 4773	The Age of Homer	
PHI 3023	History of Western Philosophy I	
FL 4143	Classical Mythology	
Total hours		30

French

FLF 2133	French III	3
FLF 2143	French IV (or equivalents; I & II do not count towards the 35-hour concentration, but do count as electives for the degree)	3
Writing Requirement		
FLF 3114	Advanced French Composition	4
Oral Communication Requirement		
FLF 3124	Advanced French Conversation	4
FLF 3513	Survey of French Literature (both recommended)	3
or FLF 3523	Survey of French Literature	
French electives numbered 3000 and above		18
Total Hours		35

German

FLG 1113	German I	12
& FLG 1123	and German II	
& FLG 2133	and German III	
& FLG 2143	and German IV (or equivalents)	
Oral Communication Requirement		3-4
FLG 3124	Advanced German Conversation	
or FLG 3143	German Civilization	
or FLG 3153	Modern German Culture	
or FLG 3313	Business German I	
Writing Requirement		3-4
FLG 3114	Advanced German Composition (or any FLG 4000-level course)	
German electives numbered 3000 and above		18
Total Hours		36-38

Spanish

FLS 1113	Spanish I	12
& FLS 1123	and Spanish II	
& FLS 2133	and Spanish III	
& FLS 2143	and Spanish IV (or equivalents)	
FLS 3143	Hispanic Civilization	3
Writing Requirement		4
FLS 3113	Advanced Spanish Composition	
FLS 3111	Advanced Spanish Laboratory	
Oral Communication Requirement		4
FLS 3233	Advanced Spanish Conversation	
FLS 3121	Advanced Spanish Conversation Practicum	
Spanish Literature: See advisor for courses		6
Spanish electives numbered 3000 and above		3
Spanish electives numbered 4000 and above		6
Total Hours		38

Total hours needed for major: 123

1 Must be from 2 different areas. See A&S Requirements.

2 CH, GG, or PH; see A&S Requirements.

3 BIO, EPP, or PO; see A&S Requirements.

4 Consult advisor.

5 Must be from 2 different areas and must cross 4 disciplines over the 18 hours. Only one Economics and one Communication allowed. See advisor.

6 These 3 credit-hours do not count towards the 30 hour Classics concentration but are required for the degree. For all the other concentrations, the oral communication requirement is satisfied within the concentration.

7 The general elective credits vary accordingly to the concentration. Consult advisor.

International Business Program

General Education Requirements

English Composition		
EN 1103	English Composition I	3
or EN 1163	Accelerated Composition I	
EN 1113	English Composition II	3
or EN 1173	Accelerated Composition II	
Mathematics		
MA 1313	College Algebra	3
MA 1613	Calculus for Business and Life Sciences I	3
ST 2113	Introduction to Statistics	3
or BQA 2113	Business Statistical Methods I	
Science		
Life Science and Lab (BIO prefix)		3
Physical Science and Lab (CH, GG, OR PH prefix)		4
Humanities		
EN 2273	World Literature Before 1600	3
or EN 2283	World Literature After 1600	
HI 1173	World History Since 1500	3
or HI 1223	Modern Western World	

Fine Arts		
Choose one the following:		3
ARC 1013	Architectural Appreciation	
ARC 2313	History of Architecture I	
ART 1013	Art History I	
ART 1023	Art History II	
ART 1113	Art Appreciation	
ART 3143	Italian Renaissance Art History	
MU 1113	History and Appreciation of Music	
CO 1503	Introduction to the Theatre	
PE 1323	History and Appreciation of Dance	
Social/Behavioral Sciences		
GR 1123	Introduction to World Geography	3
AN 1143	Introduction to Cultural Anthropology	3
College of Arts and Sciences Core		
PHI 3013	Business Ethics	3
PS 1313	Introduction to International Relations	3
or PS 1513	Comparative Government	
Upper-level History Elective (see advisor)		3
Upper-level Social Science Elective (see advisor)		3
Choose one of the following:		3
FLF 1113	French I	
FLG 1113	German I	
FLS 1113	Spanish I	
Choose one of the following:		3
FLF 1123	French II	
FLG 1123	German II	
FLS 1123	Spanish II	
Choose one of the following:		3
FLF 2133	French III	
FLG 2133	German III	
FLS 2133	Spanish III	
Choose one of the following:		3
FLF 2143	French IV	
FLG 2143	German IV	
FLS 2143	Spanish IV	
Choose one of the following:		4
FLF 3114	Advanced French Composition	
FLG 3114	Advanced German Composition	
FLS 3113 & FLS 3111	Advanced Spanish Composition and Advanced Spanish Laboratory	
Choose one of the following:		4
FLF 3124	Advanced French Conversation	
FLG 3124	Advanced German Conversation	
FLS 3233 & FLS 3121	Advanced Spanish Conversation and Advanced Spanish Conversation Practicum	
Choose one of the following:		3
FLF 3143	French Civilization	
FLG 3143	German Civilization	
FLS 3143	Hispanic Civilization	
Choose one of the following:		3
FLF 3313	Business French I	
FLG 3313	Business German I	
FLS 3313	Economics of the Spanish-Speaking World	
Business-related Language course		3
See FL advisor for available courses		
Literature course in target language		3
See FL advisor for available courses		
Foreign Language Elective		3
See FL advisor for options		
College of Business Core		
ACC 2013	Principles of Financial Accounting	3
ACC 2023	Principles of Managerial Accounting	3
EC 2113	Principles of Macroeconomics	3
EC 2123	Principles of Microeconomics	3
BL 2413	The Legal Environment of Business	3
BIS 3233	Management Information Systems	3
FIN 3123	Financial Management	3
MKT 3013	Principles of Marketing	3
MGT 3114	Principles of Management and Production	4
Oral Communication Requirement		
CO 1003	Fundamentals of Public Speaking	3
or CO 1013	Introduction to Communication	
Computer Literacy Requirement		
BIS 1012	Introduction to Business Information Systems	2
Writing Requirement		
MGT 3213	Organizational Communications	3
Internation Business Core		
IB 1001	Introduction to International Business	1
IB 3900	Internship Work	1-6
IB 4903	Internship Academic Report	3
International Business Elective (see advisor)		3
MGT 4863	International Strategic Management	3
Free Electives		
Major Courses		21-24
Students must select 21 hours of upper level course work within a specific business discipline to complete the major. Accounting majors must complete 24 hours of upper level (3000+) course work for the Bachelor of Accountancy degree. Courses counting toward the required hours are provided below.		
Total Hours		154

Accounting

ACC 3003	Accounting Information Systems I	3
ACC 3013	Cost Accounting	3
ACC 3023	Intermediate Accounting I	3
ACC 3033	Intermediate Accounting II	3
ACC 3053	Accounting Information Systems II	3
ACC 4013	Income Tax I	3
ACC 4033	Auditing	3
Accounting Elective (see advisor)		3
3000-4000 level course		

Business Information Systems

BIS 1733	Visual Basic Programming	3
BIS 1753	Introduction to Business COBOL	3
BIS 3523	Advanced Languages I	3
BIS 3753	Business Database Systems	3
BIS 4753	Structured Systems Analysis and Design	3
BIS Electives	3000-4000 level courses	6

Economics

EC 3113	Intermediate Macroeconomics	3
EC 3123	Intermediate Microeconomics	3
EC 4323	International Economics	3
EC 4643	Economic Forecasting and Analysis	3
Economics Electives	3000-4000 level courses	9

Finance

FIN 3723	Financial Markets and Institutions	3
FIN 4223	Intermediate Financial Management	3
FIN 4243	Senior Seminar in Financial Management	3
FIN 4423	Investments	3
FIN 4923	International Financial Management	3
Finance Electives	4000-level courses	6

Management

MGT 3323	Entrepreneurship	3
MGT 3513	Introduction to Human Resource Management	3
MGT 3813	Organizational Behavior	3
MGT 4153	Management Seminar	3
MGT 4613	Cross-Cultural Management	3
Management Electives	3000-4000 level courses	6

Marketing

MKT 3933	International Marketing	3
MKT 4413	Consumer Behavior	3
MKT 4533	Marketing Research	3
MKT 4813	Marketing Management	3
Marketing Electives	3000-4000-level courses [1]	9

Footnotes

[1] See IB advisor for elective options, including a concentration in Supply Chain Management.

Business Administration

MKT 3933	International Marketing	3
FIN 4923	International Financial Management	3
EC 4323	International Economics	3
MGT 4613	Cross-Cultural Management	3
BL 4273	International Business Law	3
International Business Electives	See adivsor	6

Department of Communication

Dr. Terry Likes, Department Head
Emily Cain, Advising/Recruiting Coordinator
Office: 130 McComas Hall

The Bachelor of Arts degree in Communication is offered. The department offers concentrations in Broadcast and Digital Journalism, Communication Studies, Print and Digital Journalism, Public Relations, and Theatre. Students may choose more than one concentration. Minors are available in all areas. In addition, the department offers numerous courses online throughout the year. Contact specific advisors for additional information.

The total major consists of 48-49 semester hours in Communication courses: 12 hours of the departmental core; and 36-37 hours of additional specified work in the concentration area(s). In addition, students complete the Arts & Sciences core curriculum and electives for a total of 124 semester hours leading to the B. A. Degree.

1. A minimum grade of C in all Communication courses (or approved substitutes) is required. Students earning a grade lower than C in a Communication course must retake that course.
2. Incoming freshmen must earn a score of 20 or higher on the ACT Enhanced English sub-scale before entering the major. Students who believe that the ACT does not accurately assess their language ability and who can present evidence of above average language skills (excellent English grades, extensive writing samples, etc.) will be given the opportunity to satisfactorily complete a screening test and gain admission to the major.
3. No transfer student, either from another institution or within the university, will be accepted who has not earned a minimum 2.0 GPA on all college work attempted prior to entering the major.

Prospective students are reminded that Communication is a language intensive discipline. Students with only minimal oral and written language competency should expect to be at a competitive disadvantage in classes as well as in careers after graduation. Transfer students with less than a C in English composition courses may have difficulty with the advanced writing courses required in this major.

Computer and Camera Requirements

The Department of Communication requires incoming B.A. Communication majors to purchase certain technology and equipment necessary for production and presentation of projects within departmental courses. All incoming students are required to purchase a personal laptop computer and software. Each concentration in the Department provides specific guidelines for hardware and software and a suggested timetable for purchases. The required computer and software must be selected from an approved departmental list of minimum hardware and software requirements available on the Department of Communication web site.

Financial aid that includes this requirement may be available by contacting the MSU Student Financial Aid and Scholarship office.

Additionally, upon enrollment in CO 3403 Photographic Communication, students will be required to purchase a digital single-lens reflex (dSLR) camera. The required camera must be selected from an approved

departmental list of minimum specifications. The approved list is available on the Department of Communication web site.

Communication Lab Fees

Additional fees associated with class materials and technology are associated with certain classes in the Department and are automatically assessed to the students upon enrollment in those courses.

Broadcast and Digital Journalism

The Broadcast and Digital Journalism concentration prepares students for work in television, radio, multi-media and other areas. Graduates work in front of and behind the camera. In addition to the expected journalistic jobs, graduates also find positions in extension service, university relations, government, and industry.

Communication Studies

The career track for this area is aimed at positions in corporate and public communication offices. Students preparing for graduate school or teaching in Communication and other areas often choose the Communication Studies curriculum.

Print and Digital Journalism

In addition to filling positions for newspapers, magazines, and digital publications in the state and around the country, graduates of the Print and Digital Journalism concentration obtain news-related jobs in universities, business, and industrial relations.

Public Relations

The Public Relations concentration prepares students for a variety of professional positions. In addition to work with public relations and advertising firms, graduates are employed by colleges and schools, newspapers and broadcasting organizations, banks, churches, hospitals, insurance companies, businesses and corporations, charitable and political groups, and state and federal governments.

Theatre

Students choosing the Theatre concentration find positions with regional and repertory companies, community theatres (both on stage and off stage), and professional theatres in educational institutions, broadcasting, and film.

Communication Minors

Minors in each of the concentration areas (Broadcast and Digital Journalism, Communication Studies, Print and Digital Journalism, Public Relations, and Theatre) are available. Because of the differences between and among the disciplines in the department, students considering a minor are advised to meet with the department head or advising coordinator prior to making a decision regarding a minor. The Department of Communication endeavors to work with individual students so that the minor field combines appropriately with his/her major field of study. Students with majors in business, agriculture, social sciences, and the humanities are especially encouraged to consider a minor in one of the related areas.

Professional Societies and Scholarships

Students in any of the departmental concentration areas with superior averages after completing certain courses may qualify for membership in the Theta Alpha Chapter of Lambda Pi Eta, the official honor society of the National Communication Association. Students in Theatre may be tapped for Alpha Psi Omega honorary after completing certain work in theatrical productions.

Numerous scholarships are available in the Department of Communication. See the department's website for a complete list of available scholarships.

Professional societies are available for students in most of the concentration areas. The Public Relations Student Society of America, the Public Relations Association of Mississippi, and the Southern Public Relations Federation provide pre-professional experience and contacts for students of Public Relations. Blackfriars is available to students of Theatre. The Student Broadcasting Association services students in the Broadcast and Digital Journalism concentration; this group is directly involved in the production of several television programs.

General Education and College Requirements

English Composition		
EN 1103	English Composition I	3
or EN 1163	Accelerated Composition I	
EN 1113	English Composition II	3
or EN 1173	Accelerated Composition II	
Foreign Language		
3 semesters - one Foreign Language (see advisor)		9
Humanities		
English Literature - see General Education courses		3
History - see General Education courses		3
Philosophy - see General Education courses		3
Humanities Elective [1]		9
Math		
MA 1313	College Algebra	3
See General Education courses		3
Fine Arts		
CO 1503	Introduction to the Theatre (required unless student has completed acceptable Fine Arts other than Theatre course prior to declaring CO major)	3
Natural Sciences		
Physical Science w/Lab [2]		3-4
Life Science w/Lab [3]		3-4
Natural Science Elective		3-4
Social Sciences [4]		
PSY 1013	General Psychology	3
SO 1003	Introduction to Sociology	3
GR 1123	Introduction to World Geography	3
CO 1403	Introduction to the Mass Media [5]	3
or CO 1223	Introduction to Communication Theory	
Electives		6
Major Core		
Student should check for prerequisites for all courses. Consult advisor or course descriptions in catalog.		
CO 1003	Fundamentals of Public Speaking [6]	3
CO 1223	Introduction to Communication Theory [5]	3
or CO 1403	Introduction to the Mass Media	

[1] Must be selected from 2 different areas. Not required to be selected from core listing; may have to be taken at Upper Division level to meet 31 hours A&S UD requirement.

[2] CH, GG, GR, or PH; see General Education courses.

[3] BIO, EPP, or PO; see General Education courses.

[4] Must be from 2 different areas and must cross 4 disciplines over the 18 hours. Not required to be selected from core listing; may have to be taken at Upper Division level to meet 31 hours A&S UD requirement. Only one Economics allowed.

[5] CO 1223 or CO 1403 will count as 3 additional Social Science hours to reach 9 hour elective total. The course not counted as a Social Science will be required additionally in the major.

[6] CO 1003 is required unless student has completed CO 1013 prior to declaring CO major. This course satisfies the Oral Communication Requirement. Students are not allowed to receive credit for both CO 1003 and CO 1013.

Choose one or more of the following concentrations:

Broadcast and Digital Journalism Concentration (BCST)

CO 2333	Television Production	3
CO 2413	Introduction to News Writing and Reporting	3
CO 3313	News Writing for the Electronic Media	3
CO 3333	Advanced Television Production	3
CO 3403	Photographic Communication	3
CO 3713	Digital Communication	3
CO 4313	Mass Media Law	3
CO 4343	Backpack Video Journalism	3
CO 4394	Broadcast Capstone	4
CO 4403	Journalism Ethics	3
CO 4713	Digital Communication II	3
Upper Division CO elective - see advisor		3
General Electives [1]		9-12
Total Hours		124

[1] May need to be taken at Upper Division level to meet A&S UD requirement.

Communication Studies Concentration (CMGT)

CO 2253	Fundamentals of Interpersonal Communication	3
CO 3213	Small Group Communication	3
CO 4203	Nonverbal Communication	3
CO 4213	Political Communication	3
CO 4223	Advanced Communication Theory	3
CO 4243	Rhetorical Theory	3
CO 4253	Elements of Persuasion	3
CO 4313	Mass Media Law	3
or CO 4323	Mass Media and Society	
Upper Division CO Electives - see advisor		12
General Electives [1]		10-13
Total Hours		124

[1] May need to be taken at Upper Division level to meet A&S UD requirement.

Print and Digital Journalism Concentration (JOUR)

CO 2333	Television Production	3
CO 2413	Introduction to News Writing and Reporting	3
CO 3403	Photographic Communication	3
CO 3423	Feature Writing	3
CO 3433	Editing and Design	3
CO 3443	Advanced News Writing and Reporting	3
CO 3713	Digital Communication	3
CO 4313	Mass Media Law	3
CO 4403	Journalism Ethics	3
CO 4494	Bulldog Online Newsroom	4
CO 4713	Digital Communication II	3
Upper Division CO Electives - see advisor		3
General Electives [1]		9-12
Total Hours		124

[1] May need to be taken at Upper Division level to meet A&S UD requirement.

Public Relations Concentration (PREL)

CO 2333	Television Production	3
or CO 3403	Photographic Communication	
or CO 3713	Digital Communication	
CO 2413	Introduction to News Writing and Reporting	3
CO 3803	Principles of Public Relations	3
CO 3813	Public Relations Case Problems	3
CO 3853	Public Relations Writing	3
CO 3863	Public Relations Production	3
CO 4253	Elements of Persuasion	3
CO 4313	Mass Media Law	3
or CO 4323	Mass Media and Society	
CO 4803	Research in Public Relations and Advertising	3
CO 4813	Public Relations in Organizations	3
CO Upper-Division Electives		6
General Electives [1]		10-13
Total Hours		124

[1] May need to be taken at Upper Division level to meet A&S UD requirement.

Theatre Concentration (THEA)

CO 1533	Theatre Practicum #3	3
or CO 1543	Theatre Practicum #4	
or CO 1553	Theatre Practicum #5	
or CO 1563	Theatre Practicum #6	
CO 2013	Voice and Articulation	3

CO 2613	Introduction to Oral Interpretation	3
CO 2503	Acting	3
CO 2524	Stagecraft and Lighting	4
CO 2544	Makeup and Costuming	4
CO 4504	History of Theatre	4
CO 4524	Directing	4
CO 4533	Advanced Acting	3
CO 4573	Theatre Management	3
CO 4583	Playwriting	3
General Electives [1]		9-12
Total Hours		124

[1] May need to be taken at Upper Division level to meet A&S UD requirement.

Department of English

Major Advisors: Professor Daniel Punday (Head)
Professor Lara Dodds (M.A. program)
Associate Professor Ginger Pizer (B.A. program)
Office: 2000 Lee Hall

The study of English not only gives students knowledge of language and literature but also helps to develop their ability to read perceptively, think critically, analyze problems, and write correctly and persuasively. For this reason, a major in English has traditionally been viewed as good training for careers in law, government, business, and publishing, as well as for careers in teaching and writing.

The department offers an undergraduate major (B.A.); undergraduate minors in English, creative writing, and linguistics; a certificate in TESOL; and an M.A. The department also edits and publishes two distinguished journals. *Mississippi Quarterly* is a refereed scholarly journal dedicated to the life and culture of the American South, past and present. *Jabberwock Review* is a literary journal publishing stories, poems, and essays by writers across the country. Additionally, the department operates the university Writing Center to assist all MSU students with their writing.

The Department of English awards several scholarships annually: the Howell H. and Elizabeth S. Gwin Scholarships to outstanding juniors or seniors majoring in English and to graduate students in English; the Helen W. Skelton Annual Scholarship and the Ann Pittman Andrews Memorial Scholarship to full-time English majors maintaining at least a 3.0 GPA and demonstrating good character, leadership and financial need; the William H. Magruder Scholarship to an upper-division or graduate English major; the Roger LeMoyne Dabbs Memorial Scholarship to an English or Communication major; and the Eugene Butler Creative Writing Scholarship to an undergraduate or graduate student. The Department of English sponsors the Xi Kappa Chapter of Sigma Tau Delta National English Honor Society; memberships are offered by invitation to scholastically qualified junior and senior undergraduate students and to second-year graduate students who are English majors. The Department of English also offers the Nolan Book Award competition for junior and senior English majors and sponsors several writing contests and awards.

In addition to two semesters of freshman composition, which the department recommends be taken at the Accelerated or Honors level, English majors take EN 2213, EN 2223, EN 2243, EN 2253, and EN 3414, and at least 21 additional hours of English electives, of which 15 hours must be 4000 level and taken in residence, distributed among English, American, and World literature. EN 2203 does not count toward the requirements for the major

English majors must attain a C or better in all English courses at the 2000 level or above in order for those courses to count toward the requirements of the major.

Students seeking secondary-school teaching certification should consult with an English Education advisor.

English minors take at least 18 hours of English electives with a grade of C or better beyond completion of the freshman composition requirement of their major. Of these hours, at least six must be at the 4000 level; these must be completed in residence. No more than six hours may be linguistics classes, i.e., classes which count toward the linguistics minor. No more than two classes may be classes which count toward the minor in Film Studies. Students who are earning the Creative Writing minor must complete 12 hours of English classes in addition to the requirements for that minor in order to earn the English minor as well. Students pursuing the English minor should consult the English major advisor to plan a minor program which will complement their major studies and career interests.

General Education and College Requirements

English Composition		
EN 1103	English Composition I	3
EN 1113	English Composition II	3
or EN 1173	Accelerated Composition II	
Foreign Language		
3 semesters: One Foreign Language		9
Humanities		
Philosophy Elective - see advisor		3
Early History - choose one of the following:		3
HI 1063	Early U.S. History	
HI 1163	World History Before 1500	
HI 1213	Early Western World	
HI 1313	East Asian Civilizations to 1300	
Late History - choose one of the following:		3
HI 1073	Modern U.S. History	
HI 1173	World History Since 1500	
HI 1223	Modern Western World	
HI 1323	East Asian Civilizations since 1300	
Math		
MA 1313	College Algebra	3
3 hours above College Algebra		3
Fine Arts		
See A&S requirements		3
Natural Sciences		
Physical Science w/Lab [1]		3-4
Biological Science w/Lab [2]		3-4
Natural Science Elective [3]		3-4
Social Sciences [4]		
See A&S requirements		6
Social Science Electives		12
Major Core		
Fourth semester in chosen Foreign Language		3

Upper Division A&S Humanities (HI, FL, PHI) or Study Abroad Elective		3
EN 1111	English Studies	1
EN 2213	English Literature Before 1800	3
EN 2223	English Literature After 1800	3
EN 2243	American Literature Before 1865	3
EN 2253	American Literature After 1865	3
EN 3414	Critical Writing and Research in Literary Studies	4
EN 4111	Portfolios and Reflective Writing	1
Upper Division Requirements		
Pre-1660 English Lit Elective (Group I) (one course)		3
EN 4503	Shakespeare	
EN 4513	Shakespeare	
EN 4523	Chaucer	
EN 4533	Milton	
EN 4703	English Literature of the Sixteenth Century	
EN 4713	English Literature of the Seventeenth Century	
Post-1660 English Lit Elective (Group II)(one course)		3
EN 4643	The Eighteenth-Century British Novel	
EN 4653	The Nineteenth-Century British Novel	
EN 4663	British and Irish Novel Since 1900	
EN 4723	British Literature and Culture from 1600-1700	
EN 4733	British Literature and Culture of the Eighteenth Century	
EN 4863	Romantic Poetry	
EN 4883	Victorian Poets and Prose Writers	
Postcolonial or World Lit Elective (Group III) or one more course from Group I or Group II (one course)		3
EN 4393	Postcolonial Literature and Theory	
EN 4813	The World Novel Since 1900	
American or Contemporary Lit Elective (Group IV)(two courses)		6
EN 4333	Southern Literature	
EN 4343	Studies in African American Literature	
EN 4833	The American Short Story	
EN 4903	American Literature: 1800-1860	
EN 4913	American Literature: 1860-1900	
EN 4923	American Novel Since 1900	
EN 4933	Survey of Contemporary Literature	
English Vocational Elective		
Select one of the following:		3
EN 3303	Creative Writing	
EN 3313	Writing for the Workplace	
EN 4223	Principles of Legal Writing	
EN 4233	Composition Pedagogy	
EN 4243	Writing Center Tutor Training	
EN 4323	Literary Criticism from Plato-Present	
EN 4353	Critical Theory Since 1900	
EN 4403	Introduction to Linguistics	
EN 4413	History of the English Language	
English Elective		3
any EN course except EN 2203		
Oral Communication Requirement		
CO 1003	Fundamentals of Public Speaking	3
or CO 1013	Introduction to Communication	
General Electives		
General Electives - Consult advisor		15
Total Hours		124

Must make a grade of C or higher in all English courses at the 2000 level or above. Must complete 31 upper division A&S hours. Must take 15 hours at the 4000 level in residence.)

1 CH, GG, GR, or PH; see General Education courses.

2 AN or BIO; see General Education courses.

3 Consult advisor.

4 No more than two courses per discipline (no more than one CO and EC) and must include 4 disciplines over the 18 hours.

Linguistics Minor

Linguistics is the study of language, including the structure of sounds, words, and sentences, how our brains process it, how people learn it, and the roles it plays in our societies. Studying linguistics raises students' awareness of patterns in the language of their daily lives and can contribute to careers such as language teaching, editing and publishing, speech therapy, advertising, and more.

The Minor in Linguistics is open to undergraduate students in any major except General Liberal Arts with a focus in Linguistics.

The minor requires a minimum of 18 semester hours with a grade of C or above in each course. In addition to the courses listed below, up to two Special Topics or Directed Individual Study courses will count toward the minor when approved in advance by the Linguistics Committee. Courses that are cross-listed in more than one department may be taken under any cross-listing.

Required Course		3
EN /AN 4403	Introduction to Linguistics	
Minor Core Courses		9-15
EN /AN 2403	Introduction to the Study of Language	
EN 3423	Descriptive English Grammar [1]	
EN 4413	History of the English Language	
EN 4443	English Syntax [1]	
EN 4463	Studies in Second Language Acquisition	
EN /PSY 4473	Phonetics	
EN /AN /SO 4623	Language and Culture	
EN /AN /SO 4633	Language and Society	
Minor Electives		0-6
AN 1103	Introduction to Anthropology	
AN 1143	Introduction to Cultural Anthropology	
AN 4143	Ethnographic Methods	
CO 4203	Nonverbal Communication	
CO 4273	Intercultural Communication	
CSE 3813	Introduction to Formal Languages and Automata	
PHI 1113	Introduction to Logic	
PHI 4223	Philosophy of Cognitive Science	

PSY 3713	Cognitive Psychology [2]	
PSY 3723	Cognitive Neuroscience	
PSY 4653	Cognitive Science [2]	
PSY 4713	Language and Thought	
Total Hours		18

[1] Only one of EN 3423 or EN 4443 may count toward the minor.

[2] Only one of PSY 3713 or PSY 4653 may count toward the minor.

Creative Writing Minor

The minor in creative writing will focus on the study of poetry and fiction writing, including the learning of techniques, forms, and approaches of creative expression. Creative writing offers students the opportunity to use language as a means of making art that explores the complexity of human experience. A background in creative writing prepares students for a variety of future paths, including teaching, editing, publishing, law, advertising, public relations, and any career that places emphasis on the written word.

The minor requires 18 semester hours (six courses) with a grade of C or above in each course. Transfer credit awarded if approved by the Director of the Creative Writing program.

Required Course		9
EN 3303	Creative Writing	
EN 3803	Intermediate Poetry Writing	
EN 3903	Intermediate Fiction Writing	
Choose one or two of the following:		3-6
EN 4303	Craft of Poetry	
EN 4313	Craft of Fiction	
Choose one or two of the following (depending on major):		3-6
English Majors		
EN 4943	Form and Theory of Fiction	
EN 4953	Form and Theory of Poetry	
Non-English Majors		
See advisor for list of approved electives		
Total Hours		18

Film Studies Minor

The minor in Film Studies provides students with a strong background in the study of film language, history, theory, and production, emphasizing varied filmmaking practices throughout the world. Students will gain a proficiency in what filmmakers call "film language" and a working knowledge of film form. Students will be able to apply film language to the analysis of film, literature and art, and convergent media technologies. Students will learn the specificity of global film traditions through comparative study, will be introduced to the basics of film theory and production, and will gain knowledge of the economic, social, cultural, and historical roots of cinema form diverse parts of the world.

Required Course		4
ART /CO /EN 2904	Introduction to Film	
Core Courses (select at least one core course from the list below. Students may take additional core courses to meet the electives requirement.)		3
CO 3903	Advanced Cinema Studies	
ART /CO /EN 4124	Topics in Film	
ART /CO /EN 4924	Film Theory	
Electives		12
ART 2103	Photography Survey	
ART 3233	Studio Lighting	
ART 3613	Art and Film	
ART 3633	History of Photography	
ART 3643	Art of the Graphic Novel	
ART 3873	Digital Photography	
ART 4893	Video Art	
CO 2503	Acting	
CO 3403	Photographic Communication	
CO /GS 4233	Gender and Media	
CO 4423	Advanced Photo Communication	
CO 4504	History of Theatre	
CO 4524	Directing	
CO /AAS /SO 4643	Race and the Media	
EN 2434	Literature and Film	
EN 3523	Shakespeare and Film	
Total Hours		19

[1] Only one of EN 3423 or EN 4443 may count toward the minor.

[2] Only one of PSY 3713 or PSY 4653 may count toward the minor.

Certificate in TESOL

The certificate in Teaching of English to Speakers of Other Languages (TESOL) is designed to provide students with the theoretical and practical knowledge needed to begin a career in English language teaching. The program requires 15 credit hours (5 courses) in linguistics and English language teaching methods that introduce students to basic methods of linguistic analysis and principles of communicative language teaching. Students who earn the certificate will be prepared to teach English as a foreign language in countries outside the United States and English as a second language in positions inside the United States that do not require a teacher's license.

The certificate program is open to undergraduate and graduate students in good standing who are currently enrolled at the university in any major.

The program requires a minimum of 15 hours with a grade of C or better in each course. Graduate students are required to attain a minimum GPA of 3.0 for their coursework.

Students must take the following courses in theoretical background:

EN 4403/6403	Introduction to Linguistics	3
EN 4463/6463	Studies in Second Language Acquisition	3
EN 4443/6443	English Syntax	3
Students must take two of the following courses in pedagogy:		6
EN 4433/6433	Approaches to TESOL	
EN 4453/6453	Methods in TESOL	
EN 4493/6493	TESOL Practicum	
Total Hours		15

Department of Geosciences

Department Head: Dr. John Rodgers
Office: 108 Hilbun
Undergraduate Coordinator: Dr. Andrew Mercer (Starkville campus) and Dr. Erik Fraza (Distance Learning)
Academic Coordinator: Tina Davis (Starkville campus) and Yasma Jacobs (Distance Learning)

B.S. and M.S. degrees in Geoscience and a PhD in Earth and Atmospheric Sciences are offered with emphasis in sub-disciplines described below. Minors are offered at both B.S. and M.S. levels in Geoscience.

The Department of Geosciences strives for an integrated, interdisciplinary study of the whole Earth from the bachelor's through the Ph.D. levels. Course offerings are grouped into six areas of emphasis:

1. Professional Geology - physical, biological, and chemical aspects of the Earth;
2. Geography - distribution of physical features and human interaction with the Earth;
3. Environmental Geoscience - conservation and management of Earth resources and remediation of natural and human hazards;
4. Broadcast Meteorology/Climatology - radio/television weathercasting;
5. Professional Meteorology/Climatology - atmospheric processes and climatic variability; and
6. Geographic Information Systems - spatial analysis and topological relationships of geographic data.

Within the six areas of emphasis outlined above, a student may further focus interests in a variety of areas including: water resources, hydrogeology and environmental clean-up and monitoring, petroleum exploration and services, construction and urbanization involving geological applications, geophysics and geochemistry, sedimentary geology and paleontology, Quaternary geology and karst processes, Geographic Information Systems, human or physical geography, or analysis and prediction of weather and climate. A minimum of 40 credit hours in geoscience courses is required for the geoscience degree. A grade of C or higher is required on all departmental courses to satisfy graduation requirements. Students in the professional geology concentration are required to take the Association of State Board of Geologists Fundamentals of Geology (ASBOG-FG) exam.

A minor in geoscience consists of a minimum of 14 credit hours in courses numbered 2000 and above, in addition to the first year courses. The following are examples of variations within a geoscience minor. A minor with a Geology emphasis should include physical (GG 1113/GG 1111) and historical geology (GG 1123/GG 1121) plus 14 hours 2000 and above for a total of 22 hours; for an Environmental Geoscience emphasis, physical and historical geology with laboratory plus introduction to environmental geology (GG 3133) and other course work 2000 and above for a total of 22 hours; for emphasis in Geography, cultural geography (GR 2013), world geography (GR 1123) and other course work 2000 and above; and Broadcast Meteorology/climatology, physical geography (GR 1114) and either introduction to environmental geology (GG 3133) or conservation of natural resources (GR 3113) and other course work 2000 and above for a total of 21 hours. Minors in Geoscience are also available at the M.S. level.

Three educational enhancement awards and seven scholarships are available to students majoring in Geoscience, namely the F.F. Mellen, Forrest W. Pace, and Summer Geology Educational Enhancement awards, and the George W. Bishop, the Paul H. Dunn Memorial, the Ronald Greeley Memorial, the Gordon W. Gulmon, the Sistrunk Endowed, the Mark Worthey Endowed, and the Dr. Charles Wax Endowed Scholarship. The three Educational Enhancement Awards provide financial assistance to those enrolled in field geology camp during the summer. The seven scholarships are awarded to students for academic excellence. All are restricted to students at junior or senior rank, with the exception of the Sistrunk Endowed, the Worthey Endowed, and the Greeley Memorial Scholarships. The Dr. Charles Wax Endowed Scholarship is only for graduate students.

The Department of Geosciences encourages involvement in Sigma Gamma Epsilon, a nationally recognized honorary Earth Science society and Gamma Theta Upsilon, international honor society in geography. Requirements for acceptance in Sigma Gamma Upsilon include a grade-point average of at least 3.00 in 12 or more hours of geoscience and a cumulative average of 2.67. Requirements for Gamma Theta Upsilon are a grade-point average of at least 3.3 overall as well as in at least 9 hours of "GR" courses.

The Department of Geosciences participates with the National Weather Association (NWA) and the American Meteorological Society (AMS) in training individuals for the respective “Weathercaster Seals of Approval”. The Office of the State Climatologist and the MSU Climatology Laboratory are housed in the Department and are strongly involved in programs for all students with interests in professional and broadcast meteorology and climatology.

Distance Learning Programs

The Department of Geosciences offers four distance learning programs listed below that can lead to a degree in Geosciences. Each program utilizes recorded lectures and the Internet for course instruction.

Broadcast and Operational Meteorology Program. A three-year, 17 course, 53 credit hour program of study that can lead to a B.S. degree in Geosciences. Primarily for individuals in television weather.

Teachers In Geoscience Program. A two-year, 12 course, 36 credit hour program of study that leads to a M.S. degree in Geosciences. Primarily for K-12 teachers. An additional two-year, 10 course, 30 credit hour program of advance course work is available.

Applied Meteorology Program. A two-year, 12 course 36 credit hour program of study that leads to a M.S. degree in Geosciences. Primarily for individuals with meteorological, environmental, or hazards-related careers.

Environmental Geoscience Program. A 30-credit hour, non-thesis program that leads to a M.S. degree in Geosciences. It is designed for students interested in graduate study of a broad cross-section of the geosciences and is offered both on-campus and through distance education.

Geosciences Major

General Education and College Requirements

English Composition

EN 1103	English Composition I	3
or EN 1163	Accelerated Composition I	

EN 1113	English Composition II	3
or EN 1173	Accelerated Composition II	
Foreign Language		
2 semesters - one Foreign Language (see advisor)		6
Humanities		
Literature - see General Education courses		3
History - see General Education courses		3
Mathematics		
Specified under concentration areas		6
Fine Arts		
CO 1503	Introduction to the Theatre (for Broadcast Meteorology)	3
See A&S Core requirements (for other concentrations)		
Natural Sciences		
Specified under concentration areas		9-12
Social Sciences		
GR 1123	Introduction to World Geography	3
CO 1403	Introduction to the Mass Media (for Broadcast Meteorology)	3
see Gen. Ed./A&S Core (other concentrations)		3
Major Core		
Basic Courses		
GG 1113 & GG 1111	Survey of Earth Sciences I and Earth Sciences I Laboratory	4
or GR 1114	Elements of Physical Geography	
Oral Communication Requirement		
CO 1003	Fundamentals of Public Speaking	3

Choose one of the following concentrations:

Professional Geology Concentration (GEOL)

The Professional Geology concentration is designed to prepare students for entry-level employment in the environmental consulting industry; state and federal government agencies; as well as energy and extraction industries, such as oil, gas, and coal. The Professional Geology degree also prepares students for application to a graduate program.

Mathematics		
MA 1713	Calculus I	3
MA 1723	Calculus II	3
Natural Sciences		
CH 1213	Chemistry I	3
CH 1211	Investigations in Chemistry I	1
CH 1223	Chemistry II	3
CH 1221	Investigations in Chemistry II	1
PH 1113	General Physics I	3
PH 1123	General Physics II	3
PH 1133	General Physics III	3
or GG 4233	Applied Geophysics	
or GG 4633	Introduction to Geochemistry	
Concentration Requirements		
GG 1121	Earth Sciences II Laboratory	1
GG 1123	Survey of Earth Sciences II	3
GG 3133	Introduction to Environmental Geology	3
GG 3613	Water Resources [1]	3
GG 4114	Mineralogy	4
GG 4123	Petrology	3
GG 4201	Practicum on Paleontology	1
GG 4304	Principles of Sedimentary Deposits I	4
GG 4413	Structural Geology	3
GG 4333	Geowriting [2]	3
GG 4443	Principles of Sedimentary Deposits II	3
GG 4503	Geomorphology	3
GR 2313	Maps and Remote Sensing	3
GR 4303	Principles of GIS	3
GR 4633	Statistical Climatology	3
or ST 2113	Introduction to Statistics	
or ST 3123	Introduction to Statistical Inference	
GG 4446	Summer Geology Field Camp	6
Choose one of the following:		3
GG 4113	Micropaleontology	
GG 4133	Principles of Paleocology	
GG 4203	Principles of Paleobiology	
Choose two of the following:		6
GG 1133	Planetary Geology	
GG 3603	Introduction to Oceanography	
GG 4523	Coastal Environments	
GR 1604	Weather and Climate	
Choose three additional courses from the following lists:		
Environmental Professional Emphasis		
GG 4613	Physical Hydrogeology	
GG 4633	Introduction to Geochemistry	
GG 4153	Engineering Geology	
Petroleum Professional Emphasis		
GG 4233	Applied Geophysics	
GG 4433	Subsurface Methods	
GG 4063	Earth and Atmospheric Energy Resources	
Geospatial Professional Emphasis		
GR 4313	Advanced GIS	
GR 4333	Remote Sensing of the Physical Environment	
GR 4343	Advanced Remote Sensing in Geosciences	
GR 4363	Geographic Information Systems Programming	
Total Hours		124

1 Fulfills Computer Literacy Requirement.

2 Fulfills Computer Literacy Requirement and Writing Requirement.

3 From an approved university. See advisor.

Environmental Geoscience Concentration (ENGS)

The Environmental Geoscience concentration is designed to be a flexible degree that provides a broad cross-section of the geosciences with emphasis on environmental stewardship. The degree can be molded with the assistance of an academic adviser to suit individual goals of students that do not readily align with other geosciences curricula. The degree

prepares students to work as a geoscientist or prepares students for graduate school in the geosciences or other related fields.

Mathematics		
MA 1313	College Algebra	3
MA 1323	Trigonometry	3
Natural Sciences		
Science with lab (CH, PH, BIO)		6-8
Science without lab (CH, PH, BIO)		3
Concentration Requirements		
GG 3603	Introduction to Oceanography	3
GG 3613	Water Resources [1]	3
GG 4333	Geowriting [2]	3
GR 1604	Weather and Climate	4
GR 4633	Statistical Climatology [1]	3
or ST 2113	Introduction to Statistics	
or ST 3123	Introduction to Statistical Inference	
4000 level departmental courses		18
Choose one of the following:		3
GG 1133	Planetary Geology	
GG 3133	Introduction to Environmental Geology	
GG 4523	Coastal Environments	
GR 2313	Maps and Remote Sensing	
GR 3113	Conservation of Natural Resources	
GR 4813	Natural Hazards and Processes	
General Electives		
Consult advisor		36-38
Total Hours		124

1 Fulfills Computer Literacy Requirement.

2 Fulfills Computer Literacy Requirement and Writing Requirement.

Geography Concentration (GPHY)

This program prepares students to work in a variety of fields across the social and natural sciences. A geography degree can provide the multidisciplinary foundation necessary for careers in government, environmental management, education, planning, and development. People with geography degrees have found employment with: the US Census Bureau, National Parks Service, the National Forest Service, and other federal government agencies, non-profit organizations focusing on community and international development, the environmental assessment industry, the GIS/geospatial industry, environmental and historical interpretation, and urban and regional planning. Our students also receive a strong foundation for further graduate studies in geography and related disciplines.

Mathematics		
MA 1313	College Algebra	3
MA 1323	Trigonometry	3
Natural Sciences		
Science with lab (CH, PH, BIO)		6-9
Science without lab (CH, PH, BIO)		3
Concentration Requirements		
GG 4333	Geowriting [1]	3
GR 1604	Weather and Climate	4
GR 2013	Cultural Geography	3
GR 2313	Maps and Remote Sensing	3
GR 4203	Geography of North America	3
GR 4303	Principles of GIS	3
GR 4633	Statistical Climatology	3
or ST 2113	Introduction to Statistics	
or ST 3123	Introduction to Statistical Inference	
4000 level departmental courses		12
Choose four of the following:		12
GG 3133	Introduction to Environmental Geology	
GG 3603	Introduction to Oceanography	
GG 3613	Water Resources [2]	
GG 4523	Coastal Environments	
GR 3113	Conservation of Natural Resources	
GR 4813	Natural Hazards and Processes	
Choose four of the following:		12
GR 4123	Urban Geography	
GR 4213	Geography of Latin America	
GR 4223	Geography of Europe	
GR 4233	Geography of Asia	
GR 4243	Geography of Russia and the Former Soviet Republics	
GR 4253	Geography of Africa	
GR 4263	Geography of the South	
GR 4283	Geography of Islamic World	
General Electives		
Consult Advisor		14-17
Total Hours		124

1 Fulfills Computer Literacy Requirement and Writing Requirement

2 Fulfills Computer Literacy Requirement.

Broadcast Meteorology Concentration (BMP)

This program focuses on preparing students for a career in radio/television weathercasting. The coursework does not meet the requirements for the American Meteorological Society's Certified Broadcast Meteorological Seal of Approval because it lacks some of the math and physics requirements. Individuals can, however, be qualified to earn the National Weather Association Seal of Approval after working in the industry for three years.

Mathematics		
MA 1713	Calculus I	3
MA 1723	Calculus II	3
Natural Sciences		
CH 1043	Survey of Chemistry I	3
PH 1113	General Physics I (w/ lab)	3
PH 1123	General Physics II (w/ lab)	3
Concentration Requirements		
GR 1604	Weather and Climate	4
GR 4422	Weather Forecasting I	2
GR 4432	Weather Forecasting II	2
GR 4623	Physical Meteorology	3
GR 4633	Statistical Climatology [1]	3

or ST 3123	Introduction to Statistical Inference	
GR 4643	Physical Climatology	3
GR 4733	Synoptic Meteorology	3
GR 4783	Satellite Meteorology	3
or GR 4883	Radar Meteorology	
GR 4823	Dynamic Meteorology I	3
GR 4963	Mesoscale Meteorology	3
GR 4502	Practicum in Broadcast Meteorology I	2
GR 4512	Practicum in Broadcast Meteorology II	2
GR 4522	Practicum in Broadcast Meteorology III	2
GR 4532	Practicum in Broadcast Meteorology IV	2
CO 2013	Voice and Articulation	3
CO 3313	News Writing for the Electronic Media [2]	3
CO 2333	Television Production	3
CO 3333	Advanced Television Production	3
Choose four of the following:		12
GG 3603	Introduction to Oceanography	
GG 3613	Water Resources	
GG 4523	Coastal Environments	
GR 3113	Conservation of Natural Resources	
GR 4303	Principles of GIS	
GR 4203	Geography of North America	
GR 4553	Computer Methods in Meteorology	
GR 4613	Applied Climatology	
GR 4813	Natural Hazards and Processes	
GR 4883	Radar Meteorology (if not taken as Concentration course)	
or GR 4783	Satellite Meteorology	
GR 4943	Tropical Meteorology	
GR 4933	Dynamic Meteorology II	
General Electives		
Consult Advisor		14
Total Hours		124

1 Fulfills Computer Literacy Requirement.

2 Fulfills Writing Requirement.

Professional Meteorology Concentration (PMET)

This program focuses on the study of atmospheric processes and climatic variability. Upon completion of the program (operational emphasis), students will have met the coursework requirements for the National Weather Service, the private meteorology sector, or continue their education in graduate school. Students choosing the program with the broadcast emphasis can also work for the National Weather Service and also earn the American Meteorological Society's Certified Broadcast Meteorologist Seal of Approval.

Mathematics		
MA 1713	Calculus I	3
MA 1723	Calculus II	3
MA 2733	Calculus III	3
MA 3253	Differential Equations I	3
Natural Sciences		
CH 1213	Chemistry I	3
CH 1211	Investigations in Chemistry I	1
PH 2213	Physics I	3
PH 2223	Physics II	3
Concentration Requirements		
GG 4333	Geowriting [2, 3]	3
or CO 3313	News Writing for the Electronic Media	
GR 1604	Weather and Climate	4
GR 4422	Weather Forecasting I	2
GR 4432	Weather Forecasting II	2
GR 4623	Physical Meteorology	3
GR 4633	Statistical Climatology [1]	3
or ST 3123	Introduction to Statistical Inference	
GR 4643	Physical Climatology	3
GR 4733	Synoptic Meteorology	3
GR 4783	Satellite Meteorology	3
or GR 4883	Radar Meteorology	
GR 4823	Dynamic Meteorology I	3
GR 4933	Dynamic Meteorology II	3
GR 4963	Mesoscale Meteorology	3
Choose four of the following:		12
GG 3603	Introduction to Oceanography	
GG 3613	Water Resources	
GR 4363	Geographic Information Systems Programming [1]	
GG 4523	Coastal Environments	
GR 4813	Natural Hazards and Processes	
GR 3113	Conservation of Natural Resources	
GR 4203	Geography of North America	
GR 4303	Principles of GIS	
GR 4553	Computer Methods in Meteorology	
GR 4613	Applied Climatology	
GR 4883	Radar Meteorology (if not taken as Concentration course)	
or GR 4783	Satellite Meteorology	
GR 4943	Tropical Meteorology	
Specified Electives		
See advisor		20-21
AMS (Broadcast Meteorology)		
GR 4502	Practicum in Broadcast Meteorology I	2
GR 4512	Practicum in Broadcast Meteorology II	2
GR 4522	Practicum in Broadcast Meteorology III	2
GR 4532	Practicum in Broadcast Meteorology IV	2
CO 2013	Voice and Articulation	3
CO 2333	Television Production	3
CO 3333	Advanced Television Production	3
GIS		
GR 2313	Maps and Remote Sensing	3
GR 3303	Survey of Geospatial Technologies	3
GR 4303	Principles of GIS	3
GR 4313	Advanced GIS	3
GR 4323	Cartographic Sciences	3

GR 4333	Remote Sensing of the Physical Environment	3
GR 4353	Geodatabase Design	3
ROTC		
AS 1012	Foundations of U.S. Air Force-I	2
AS 1022	Foundations of U.S. Air Force-II	2
AS 2012	Air and Space Power-I	2
AS 2022	Air and Space Power-II	2
AS 3013	Air Force Leadership Studies-I	3
AS 3023	Air Force Leadership Studies-II	3
AS 4013	National Security Affairs and Preparation for Active Duty-I	3
AS 4023	National Security Affairs and Preparation for Active Duty-II	3
General Electives		
Consult advisor		0-1
Total Hours		124

1 Fulfills Computer Literacy Requirement.

2 Fulfills Writing Requirement.

3 CO 3313 must be taken for the Broadcast Meteorology emphasis

Geographic Information Systems (GIS) Concentration

This program provides a fundamental background in the geospatial sciences, including geographic information systems, remote sensing, spatial analysis, database management, geospatial modeling, and spatial programming. The geospatial sciences are applicable to many different fields and will prepare students for careers in: government agencies, urban and regional planning, environmental management, intelligence, natural areas management, local government, transportation planning and many others. This program also prepares students for further graduate studies in geospatial disciplines.

Mathematics		
MA 1313	College Algebra	3
MA 1323	Trigonometry	3
Natural Sciences		
Science with lab (CH, PH, BIO)		6-9
Science without lab (CH, PH, BIO)		3
Concentration Requirements		56
GR 1604	Weather and Climate	4
GR 2313	Maps and Remote Sensing	3
GR 3303	Survey of Geospatial Technologies	3
GR 3113	Conservation of Natural Resources	3
GR 4303	Principles of GIS	3
GR 4313	Advanced GIS	3
GR 4323	Cartographic Sciences	3
GR 4333	Remote Sensing of the Physical Environment	3
GR 4353	Geodatabase Design	3
GG 4333	Geowriting [2]	3
4000-level departmental courses		12
CSE 1284	Introduction to Computer Programming	4
ST 3123	Introduction to Statistical Inference	3
or GR 4633	Statistical Climatology	
GR 4343	Advanced Remote Sensing in Geosciences	3
GR 4363	Geographic Information Systems Programming	3
PSS 4411	Remote Sensing Seminar	1
Choose two of the following:		6
GG 3133	Introduction to Environmental Geology	
GG 3603	Introduction to Oceanography	
GG 3613	Water Resources [1]	
GG 4523	Coastal Environments	
GR 4813	Natural Hazards and Processes	
General Electives		
Consult advisor		9-12
Total Hours		124

1 Fulfills Computer Literacy Requirement.

2 Fulfills Computer Literacy Requirement and Writing Requirement.

Broadcast Meteorology Concentration (Distance Learning only)

Mathematics		
See A&S Core requirements		
Natural Sciences		
See A&S Core requirements		
Concentration Requirements		
GR 1604	Weather and Climate	4
GR 4443	Weather Prediction I	3
GR 4453	Weather Prediction II	3
GR 4473	Numerical Weather Prediction	3
GR 4613	Applied Climatology	3
GR 4623	Physical Meteorology	3
GR 4633	Statistical Climatology	3
GR 4643	Physical Climatology	3
GR 4713	Synoptic Meteorology I	3
or GR 4733	Synoptic Meteorology	
GR 4753	Satellite and Radar Meteorology	3
GR 4813	Natural Hazards and Processes	3
GR 4913	Thermodynamic Meteorology	3
or GR 4823	Dynamic Meteorology I	
GR 4923	Severe Weather	3
or GR 4963	Mesoscale Meteorology	
GG 3603	Introduction to Oceanography	3
GG 3613	Water Resources	3
GG 4333	Geowriting [2]	3
or CO 3313	News Writing for the Electronic Media	
General Electives		24-26
Total Hours		124

1 Fulfills Computer Literacy Requirement.

2 Fulfills Computer Literacy Requirement and Writing Requirement.

Department of History

Major Advisor: Dr. Matthew Lavine
Office: 213 Allen Hall

Among the humanities disciplines, history is unique in the emphasis it places on interpreting human experience over place and time. Historians study the evolution of human beings and societies, emphasizing the importance of people's choices, values, and actions. History provides indispensable background and the social and political context for other academic disciplines and branches of knowledge.

Specialization in history on the undergraduate level has direct professional application in the field of secondary education and provides excellent preparation for careers in law, the ministry, communication, journalism, government service, the military, and business. The department maintains a close working relationship with other departments on campus, making it possible for students who desire to do so to pursue double majors, joining history with geography, English, political science, business, computer science, or other fields.

To earn a Bachelor of Arts degree with a major in history, a student must pass a minimum of 39 semester hours in history with a 2.50 average in those courses. All undergraduates majoring in history must complete two of the following basic sequences: HI 1063/HI 1073; HI 1163/HI 1173; HI 1213/HI 1223; HI 1313/HI 1323. Along with these basic sequences, students are required to take a minimum of two upper division courses from Category I, two upper division courses from Category II, two upper division courses from Category III, plus two upper division courses from any Category.

For information on which courses fit into particular categories, please contact an advisor. At the beginning of their junior year majors must enroll in and pass with a grade of "C" or better, a course in Historiography and Historical Method (HI 3903). Fifteen hours of the upper division work (3000 and 4000 level courses) must be taken at Mississippi State. For a minor in history, a student must take a minimum of 18 semester hours of history including one of the basic sequences listed above plus twelve additional credit hours in history courses numbered 3000 and above including at least one at the 4000 level. Students interested in a major or minor in history should consult one of the advisors listed.

The Department of History offers work leading to both the M.A. and Ph.D. degrees. The prerequisite for admission to a graduate program in history is a minimum of 18 hours of undergraduate history courses. Students desiring to pursue graduate studies should consult the Graduate Coordinator.

Mississippi State has a chapter of Phi Alpha Theta, the international history honorary society. Those interested in the eligibility requirements should consult with Professor Matthew Lavine.

General Education and College Requirements

English Composition		
EN 1103	English Composition I	3
or EN 1163	Accelerated Composition I	
EN 1113	English Composition II	3
or EN 1173	Accelerated Composition II	
Foreign Language		
3 semesters - one Foreign Language - see advisor		9
Humanities		
Literature - see General Education courses		3
History - see major		3
Philosophy Elective - see A&S requirements		3
Humanities Elective - see A&S core [1]		9
Math		
MA 1313	College Algebra	3
MA 1323	Trigonometry	3
or ST 2113	Introduction to Statistics	
Fine Arts		
See A&S requirements		3
Natural Sciences		
Physical Science w/Lab [2]		3-4
Biological Science w/Lab [3]		3-4
Natural Science Elective [4]		3-4
Social Sciences [5]		
See A&S requirements		6
Social Sciences Electives		12
Major Core		
Must choose two of the following sequences:		12
U.S. History		
HI 1063	Early U.S. History	
HI 1073	Modern U.S. History	
World History		
HI 1163	World History Before 1500	
HI 1173	World History Since 1500	
Western World		
HI 1213	Early Western World	
HI 1223	Modern Western World	
East Asian Civ		
HI 1313	East Asian Civilizations to 1300	
HI 1323	East Asian Civilizations since 1300	
Category I History U/D Electives		6
Category II History U/D Electives		6
Category III History U/D Electives		6
U/D Electives		6
Oral Communication Requirement		
CO 1003	Fundamentals of Public Speaking	3
or CO 1013	Introduction to Communication	
Writing Requirement		
HI 3903	Historiography and Historical Method	3
Computer Literacy		
BIS 1012	Introduction to Business Information Systems	2
or TKT 1273	Computer Applications	
General Electives [6]		
Consult advisor		12
Total Hours		124

(31 hours must be A&S 3000 or above)

[1] Must be from 2 different areas. Can be upper division hours; 6 hours may be HI courses; 3 hours must be from another area.

2 CH, GG, or PH; see General Education courses.

3 BIO, EPP, or PO; see General Education courses.

4 Consult advisor.

5 Must be from 2 different areas and must cross 4 disciplines over the 18 hours. Only one Economics allowed. Can be upper division hours. See advisor.

6 13 hours of general electives required if BIS 1012 is chosen for computer requirement.

Department of Mathematics and Statistics

Department Head: Mohsen Razzaghi
Associate Director and Graduate Coordinator: Mohammad Sepehrifar
Undergraduate Coordinator: Matt McBride
Associate Undergraduate Coordinator for Advising: Robert Banik
Office: 410 Allen Hall

The Department of Mathematics and Statistics offers a Bachelor of Arts degree and a Bachelor of Science degree. Both degrees are 124 hours. The department also offers undergraduate minors in mathematics and statistics which are described below.

Candidates for the Bachelor of Arts degree are required to complete a minimum of 36 hours of mathematics. Candidates for the Bachelor of Science degree are required to take a minimum of 42 hours of mathematics. Required courses for each degree are listed below. Students must also satisfy the General Education requirements and College Core requirements, including speech, computer literacy and writing requirements.

Mathematics courses below Calculus I (MA 1713), do not count toward a degree in mathematics. Entering freshmen who plan to major in mathematics but do not meet the prerequisites for MA 1713 are encouraged to take the necessary courses during the summer in order to avoid adding one or two semesters to their degree. Otherwise, students who wish to major in mathematics but who do not meet the prerequisites of MA 1713 should join the undeclared major until they are ready to take Calculus I. At that time, they will be assigned an advisor in the Department of Mathematics and Statistics.

For all degree programs, including minors, a student must have an overall C average and a C average in the math classes which count toward the degree. Moreover, students pursuing a B.A. or B.S. degree in mathematics must have at least a GPA of 2.5 in Calculus I-IV, Linear Algebra and Differential Equations (MA 1713, MA 1723, MA 2733, MA 2743, MA 3113 and MA 3253). Students who fail to meet this requirement must withdraw from the B.A. and B.S. degree programs in Mathematics, subject to appeal to the department's undergraduate coordinator.

Regarding graduate study, the Department of Mathematics and Statistics offers a Master of Science in Mathematics, Master of Science in Statistics, and a Doctor of Philosophy in Mathematical Sciences. Major areas of study for the Doctor of Philosophy in Mathematical Sciences include applied and computational mathematics, ordinary and partial differential equations, functional analysis and operator theory, graph theory, geometric combinatorics, topology and statistics. Please see the graduate coordinator for more details.

B.A. in Mathematics

General Education and College Requirements

English Composition		
EN 1103	English Composition I	3
or EN 1163	Accelerated Composition I	
EN 1113	English Composition II	3
or EN 1173	Accelerated Composition II	
Foreign Language		
3 semesters - one Foreign Language - see advisor		9
Humanities		
Literature - see University/A&S Core		3
History - see University/A&S Core		3
Philosophy - see University/A&S Core		3
From at least 2 different areas of Humanities		9
Math		
See Major Core		6
Fine Arts		
See A&S Requirements		3
Natural Sciences		
BIO 1134	Biology I	4
or BIO 1144	Biology II	
AND		
CH 1213	Chemistry I	3
CH 1223	Chemistry II	3
CH 1211	Investigations in Chemistry I	1
OR		
PH 2213	Physics I	
PH 2223	Physics II	
Social Sciences Electives		
Courses must spread over at least 4 disciplines with a max of one Economics and a max of 2 in each remaining discipline; 6 hours need to be from A&S requirements.		18
Major Core		
Students should check for prerequisites for all courses and consult their advisor.		
MA 1713	Calculus I	3
MA 1723	Calculus II	3
MA 2733	Calculus III	3
MA 2743	Calculus IV	3
MA 3053	Foundations of Mathematics	3
MA 3113	Introduction to Linear Algebra	3
MA 3163	Introduction to Modern Algebra	3
MA 3253	Differential Equations I	3
MA 4633	Advanced Calculus I	3
Math Elective - 3000+		3
Math Elective - 4000		3
Oral Communication Requirement		
CO 1003	Fundamentals of Public Speaking	3
Writing Requirement		
MA 4213	Senior Seminar in Mathematics	3
Computer Literacy		
CSE 1233	Computer Programming with C	3

General Electives		
Consult advisor		16-28
Total Hours		124
(31 hours must be 3000/4000 from A&S)		

B.S. in Mathematics

General Education and College Requirements

English Composition		
EN 1103	English Composition I	3
or EN 1163	Accelerated Composition I	
EN 1113	English Composition II	3
or EN 1173	Accelerated Composition II	
Foreign Language		
2 semesters - one Foreign Language - see advisor		6
Humanities		
Literature - see University/A&S Core		3
History - see University/A&S Core		3
Math		
See Major Core		6
Fine Arts		
See A&S Requirements		3
Natural Sciences		
Choose one of three options:		15-18
Option 1		
PH 2213	Physics I	
PH 2223	Physics II	
PH 2233	Physics III	
CH 1213	Chemistry I	
CH 1223	Chemistry II	
CH 1211	Investigations in Chemistry I	
Option 2		
PH 2213	Physics I	
PH 2223	Physics II	
PH 2233	Physics III	
PLUS choose two of the following:		
BIO 1134	Biology I	
BIO 1144	Biology II	
BIO 3103	Genetics I	
Option 3		
BIO 1134	Biology I	
BIO 1144	Biology II	
BIO 3103	Genetics I	
CH 1213	Chemistry I	
CH 1223	Chemistry II	
CH 1211	Investigations in Chemistry I	
Social Sciences		
See A&S Requirements		6
Major Core		
Students should check for prerequisites for all courses and consult their advisor.		
MA 1713	Calculus I	3
MA 1723	Calculus II	3
MA 2733	Calculus III	3
MA 2743	Calculus IV	3
MA 3053	Foundations of Mathematics	3
MA 3113	Introduction to Linear Algebra	3
MA 3163	Introduction to Modern Algebra	3
MA 3253	Differential Equations I	3
MA 4313	Numerical Analysis I	3
MA 4633	Advanced Calculus I	3
MA 4643	Advanced Calculus II	3
Math Elective (3000+)		3
Math Elective (4000)		3
Oral Communication Requirement		
CO 1003	Fundamentals of Public Speaking	3
Writing Requirement		
MA 4213	Senior Seminar in Mathematics	3
Computer Literacy		
CSE 1233	Computer Programming with C	3
General Electives		
Consult advisor		30-40
Total Hours		124
(31 hours must be 3000/4000 from A&S)		

Math Minor

A minor in mathematics consists of

MA 1713	Calculus I	3
MA 1723	Calculus II	3
MA 2733	Calculus III	3
MA 2743	Calculus IV	3
MA 3113	Introduction to Linear Algebra	3
MA 3253	Differential Equations I	3

One additional math course at the 3000 level and one additional 4000-level math course

Statistics (ST)

Major Advisor: Associate Professor Mohammad Sepehrifar
Office: 448 Allen Hall

Courses in statistics are designed to satisfy two objectives. The first objective is to provide graduate training for those students wishing to pursue a career as professional statisticians. Both graduate and undergraduate courses are available for this purpose. The second is to provide minors for students from other disciplines. A minor in statistics consists of

MA /ST 3123	Introduction to Statistical Inference	3
ST 4111	Seminar in Statistical Packages	1
ST 4213	Nonparametric Methods	3
or ST 4313	Introduction to Spatial Statistics	
Choose one of the following:		3
MA /ST 4523	Introduction to Probability	
MA /ST 4543	Introduction to Mathematical Statistics I	
ST 4243	Data Analysis I	3
ST 4253	Data Analysis II	3

Please notice that MA 2743 and MA 3113 are prerequisites for ST 4243 and ST 4253.

Graduate study is offered in the Department of Mathematics and Statistics leading to the degree of Master of Science in Mathematics, Master of Science in Statistics, and a Doctor of Philosophy in Mathematical Sciences. Many applied statistics courses are offered which are suitable for a minor in statistics at the master's or doctoral level. Specific course requirements for the graduate minor in statistics may be obtained from the Graduate Coordinator of the Department of Mathematics and Statistics.

Admission to the master's program in statistics is open to graduates in all disciplines. The program of study is a blend of both statistical theory and statistical methods. In addition, there is ample flexibility in the non-thesis option to allow a graduate student with special interests in an area of statistical application to minor in that particular applied field. The department awards a limited number of teaching assistantships. For further details, consult the Graduate Coordinator of the Department of Mathematics and Statistics.

Department of Philosophy and Religion

Philosophy Major (PR)

Major Advisor: Danielle Wylie
Office: 225 Etheredge Hall
http://www.philosophyandreligion.msstate.edu

Philosophy is the study of the basic concepts—such as reality, truth, and goodness—which underlie the more specialized pursuits of science, art, education, religion, etc. Although students often study philosophy for its own sake, the general perspective it provides, and the critical thinking skills it develops, are of immense practical value in any profession.

The baccalaureate degree in philosophy is the accepted major for those planning to enter graduate school in philosophy. It is, however, an excellent pre-law and pre-seminary degree and, because of its general nature, philosophy is highly appropriate as a double major with any other concentrated field of study.

The standard program leading to the Bachelor of Arts degree in philosophy has a major requirement of 30 hours, including Introduction to Philosophy, Introduction to Logic, Introduction to Ethics, History of Western Philosophy parts I and II, and Seminar in Philosophy. The final 12 hours, including six that must be PHI courses, are to be selected in consultation with, and with approval by, the major advisor.

The department also offers a minor in philosophy, with the requirements being 15 hours of PHI courses.

Students considering either a major or minor in philosophy should meet with one of the department's advisors as early in their careers as possible.

General Education and College Requirements

English Composition		
EN 1103	English Composition I	3
or EN 1163	Accelerated Composition I	
EN 1113	English Composition II	3
or EN 1173	Accelerated Composition II	
Foreign Language		
3 semesters - one Foreign Language - see advisor		9
Humanities		
Literature - see University/A&S Core		3
History - see University/A&S Core		3
Philosophy Elective - see major		3
Humanities Elective - see major. Must be from 2 different areas-see A&S Core		9
Math		
MA 1313	College Algebra	3
MA 1323	Trigonometry	3
or ST 2113	Introduction to Statistics	
Fine Arts		
See University/A&S Requirements		3
Natural Sciences		
Physical Sciences w/lab (CH, GG, PH) [1]		3-4
Biological Sciences w/lab (BIO, EPP, PO) [1]		3-4
Natural Science Elective [2]		3-4
Social Sciences [3]		
See A&S requirements		6
Social Sciences Electives		12
Major Core		
PHI 1103	Introduction to Philosophy	3
PHI 1113	Introduction to Logic	3
PHI 1123	Introduction to Ethics	3
PHI 3023	History of Western Philosophy I	3
PHI 3033	History of Western Philosophy II	3
PHI Electives		12
Oral Communication Requirement		
CO 1003	Fundamentals of Public Speaking	3
or CO 1013	Introduction to Communication	
Writing Requirement		
PHI 3133	Seminar in Philosophy	3
Computer Literacy		
Choose one of the following:		3
TKT 1273	Computer Applications	
BIS 1012	Introduction to Business Information Systems	
CSE 1233	Computer Programming with C	
CSE 1273	Computer Programming with Java	
General Electives		
Consult advisor		19
Total Hours		124

(31 hours must be 3000/4000 from A&S)

1. See University/A&S Core.
2. Consult advisor.
3. Must be from 2 different areas and must cross 4 disciplines over the 18 hours. Only one Economics allowed. See advisor.

Religion Concentration (REL)

Program Coordinator and Advisor: Albert Bisson

Office: 227 Etheredge Hall

Religion refers to the basic human impulse to seek coherence in life, and to experience a sacred reality that guides and orders human existence. As an academic discipline the study of religion involves consideration of those writings, customs, and rituals that have historically served to form and distinguish religious groups. It includes examination of primitive religions and sectarian developments as well as study of the major world religions of both the east and west.

The Department of Philosophy and Religion offers a concentration in religion leading to the Bachelor of Arts degree in philosophy. This degree is an accepted major for graduate school, or for a career in a professional ministry or teaching. The religion concentration has a special pastoral track for students who wish to prepare for graduate seminary studies. The broad historical and cultural orientation of the philosophy degree with a religion concentration makes it an excellent preparation for any career. It is highly appropriate as a double major, or as a minor in association with another field of study.

The major with the concentration in religion has a requirement of 30 hours. Of these, nine hours are required in philosophy. The philosophy component may be satisfied by taking either a) Introduction to Philosophy, Introduction to Logic, and the Seminar in Philosophy, or b) History of Western Philosophy I and II, and the Seminar in Philosophy. The remaining 21 hours must include Introduction to Religion, World Religions I and II, six hours of REL courses, and six hours of REL or PHI courses which are to be selected in consultation with, approved by, the Religion advisor.

The Department also offers a minor in Religion, with the requirement being 15 hours of any REL courses.

General Education and College Requirements

See Philosophy Requirements above		
Concentration Core		
REL 1103	Introduction to Religion	3
REL 3213	World Religions I	3
REL 3223	World Religions II	3
Choose one of the following combinations:		6
PHI 1103 & PHI 1113	Introduction to Philosophy and Introduction to Logic	
PHI 3023 & PHI 3033	History of Western Philosophy I and History of Western Philosophy II	
Electives		
REL/PHI Electives		12
Oral Communication Requirement		
CO 1003	Fundamentals of Public Speaking	3
Writing Requirement		
PHI 3133	Seminar in Philosophy	3
Computer Literacy		
Choose one of the following:		3
TKT 1273	Computer Applications	
BIS 1012	Introduction to Business Information Systems	
CSE 1233	Computer Programming with C	
CSE 1273	Computer Programming with Java	
General Electives		
Consult advisor		19
Total Hours		124

(31 hours must be 3000/4000 level from A&S)

Department of Physics and Astronomy

Major Advisors: Torsten Clay, Mark Novotny, and Jeffry Winger
Office: 125 Hilbun Hall

Physics plays a basic role in all science and engineering disciplines. Physics is concerned with the study of the structure of matter, the nature of radiation, and the interaction of radiation and matter. Among the major branches are optical, laser, atomic, nuclear, molecular particle, condensed matter, bio-, astro-, plasma and computational physics. The B.S. program in physics provides an excellent, broadly based course of study with electives that allow the student to pursue his/her special interests in other subjects. The B.S. degree provides the necessary training for either employment in industry or government, or continued study at the graduate level.

The department also has a Physics/Pre-Medical curriculum for those students who wish to compete for admission to medical and dental schools. An applied physics curriculum is available for those who wish to work in research and development or pursue graduate work in applied physics, engineering physics or some branch of engineering. In addition, the department offers the Master of Science in physics, a Ph.D. in physics, and a Ph.D. in Engineering with a concentration in applied physics. Information may be obtained by writing the Department of Physics and Astronomy, P.O. Box 5167, Mississippi State, MS 39762. http://physics.msstate.edu/

A minor in physics requires 12 hours of physics at the 3000 level or above. These courses should be selected in consultation with a physics advisor.

The following is a recommended physics B.S. curriculum. Requirements for graduation are 124 hours with a GPA of at least 2.0. In addition, the student is required to maintain at least a C average in all physics courses.

General Education and College Requirements

English Composition		
EN 1103	English Composition I	3
or EN 1163	Accelerated Composition I	
EN 1113	English Composition II	3
or EN 1173	Accelerated Composition II	
Foreign Language		
2 semesters - one Foreign Language - see advisor		6
Humanities		
Literature - see University/A&S Core		3
History - see University/A&S Core		3
Math		
See Major Core		
Fine Arts		
See A&S Requirements		3
Natural Sciences		

See Major Core		
Social Sciences		
See A&S requirements		6
Major Core		
Some substitutions for required courses are possible for double majors. Student should check prerequisites for all courses. Consult advisor.		
PH 1063	Descriptive Astronomy	3
PH 2213	Physics I	3
PH 2223	Physics II	3
PH 2233	Physics III	3
PH 3613	Modern Physics	3
PH 4113	Electronic Circuits for Scientists	3
PH 4143	Intermediate Laboratory	3
PH 4213	Intermediate Mechanics I	3
PH 4323	Electromagnetic Fields I	3
PH 4413	Thermal Physics	3
PH 4513	Intermediate Optics	3
PH 4152	Modern Physics Laboratory	2
PH 4713	Introduction to Quantum Mechanics	3
Physics Electives		
6 hours; 3 hours must be above 3000 and 3 hours must be from:		6
PH 4223	Intermediate Mechanics II	
PH 4333	Electromagnetic Fields II	
PH 4723	Applications of Quantum Mechanics	
Required Math and Science Courses		
CH 1213	Chemistry I	3
CH 1211	Investigations in Chemistry I (Lab)	1
CH 1223	Chemistry II	3
CH 1221	Investigations in Chemistry II (Lab)	1
MA 1713	Calculus I	3
MA 1723	Calculus II	3
MA 2733	Calculus III	3
MA 2743	Calculus IV	3
MA 3113	Introduction to Linear Algebra	3
MA 3253	Differential Equations I	3
MA 3353	Differential Equations II	3
Oral Communication Requirement		
CO 1003	Fundamentals of Public Speaking	3
Writing Requirement		
GE 3513	Technical Writing	3
Computer Literacy		
Choose one of the following:		3
CSE 1233	Computer Programming with C (recommended)	
CSE 1284	Introduction to Computer Programming	
Science and Math Electives		
Consult advisor		9
General Electives		
Consult advisor		6
Total Hours		124

(31 hours must be 3000/4000 from A&S)

Physics/Pre-Medical Curriculum

For this curriculum the required courses for the physics major are reduced by 9 hours of physics (two physics electives and PH 4413) and 3 hours of math (MA 3353). The recommended use of these 12 hours and 15 elective hours follows (check with Pre-medical advisor):

CH 4513	Organic Chemistry I	3
CH 4511	Organic Chemistry Laboratory I	1
CH 4523	Organic Chemistry II	3
CH 4521	Organic Chemistry Laboratory II	1
BCH 4013	Principles of Biochemistry	3
BIO 1134	Biology I	4
BIO 1144	Biology II	4
Choose two of the following:		8
BIO 3304	General Microbiology	
BIO 3504	Comparative Anatomy	
BIO 4504	Comparative Vertebrate Embryology	
BIO 4514	Animal Physiology	
Total Hours		27

Applied Physics Curriculum

For this curriculum the required physics courses for the physics major are reduced by 6 hours of physics electives. The recommended use of these 6 hours and 15 elective hours follows:

PH 4333	Electromagnetic Fields II	3
or ECE 3323	Electromagnetics II	
Technical electives; consult advisor		18

Department of Political Science and Public Administration

Undergraduate Coordinator: Dr. Brian Shoup
Office: 194 Bowen Hall

The Department of Political Science and Public Administration offers a Bachelor of Arts degree (B.A.) for individuals who have an interest in politics and who seek careers in the law, in federal, state, or local government (either administrative or elective), in the diplomatic service, with international organizations, in the business world, or in teaching. The Department also offers a Master of Arts degree in Political Science (M.A.), a National Association of Public Affairs and Administration Accredited graduate professional degree in Public Administration (M.P.P.A.) and a Ph.D. in Public Policy and Administration which prepare students for careers in the public service. Interested students should consult the undergraduate or graduate coordinator.

Students pursuing the B.A. degree in Political Science are required to complete PS 1113 and choose three of the following: PS 1313, PS 1513, PS 2403, PS 2703, or PS 2713. Students must also complete PS 4464 in their junior or senior year.

They must also complete a minimum of seven upper-division elective courses in Political Science (totaling at least 21 credits); of these seven courses, at least one must be completed in each of three of the four subfields of the discipline as displayed in the “Part III: Description of Courses” portion of this Bulletin (American Politics, International Politics, Political Theory, and Comparative Politics).

Political Science majors who wish to teach social studies in Mississippi may become certified by combining the Political Science major with appropriate courses in the College of Education; in Mississippi, it is not necessary to major in secondary education in order to become certified to teach. At the same time, majors in secondary education who plan to become social science teachers should consider a second major, or a minor in Political Science.

Students not majoring in Political Science may wish to select a minor. A minor consists of a minimum of 18 hours of course work in Political science at least nine of which must be at the 3000 level or above. Interested nonmajors should speak with the undergraduate coordinator to formulate a suitable program of study.

The John C. Stennis Scholarship in Political Science is awarded each spring to at least two graduating high school seniors and/or community-college graduates who are Mississippi residents, and who plan to major in Political Science at Mississippi State University. These scholarships carry a stipend of $2,000 per year for four years or until graduation, whichever comes sooner.[1] The Stennis Scholarships are awarded to academically outstanding students who demonstrate the desire and potential to become actively involved as leaders in the political and governmental affairs of the community, state, or nation. For further information, consult the Head of the Department of Political Science and Public Administration, P.O. Box PC, Mississippi State, MS 39762 or telephone (662) 325-2711.

The Morris W. H. “Bill” Collins Scholarship may be awarded to one African American political science major who is a resident of Mississippi, who has earned 15 credits in Political Science at Mississippi State University, and who demonstrates potential for making contributions in some area of public service. This scholarship carries a stipend of $1,500 per year for two years or until graduation, whichever comes first. For further information, consult the Head of the Department of Political Science, P.O. Box PC, Mississippi State, MS 39762 or telephone (662) 325-2711.

The Haley Barbour Scholarship is awarded each spring to one Political Science major, with two years of college remaining, who evidences a determination to become involved in the political life of the nation. The Barbour Scholarship carries a stipend of $1,500 per year for a maximum of two years, typically the recipient’s junior and senior years. For further information, consult the Head of the Department of Political Science and Public Administration, P.O. Box PC, Mississippi State, MS 39762 or telephone (662) 325-2711.

The Tip Allen Scholarships are awarded to Political Science majors who are participating in a public service internship in the summer, who have earned at least 12 credits in Political Science at MSU, and who demonstrate potential for making contributions in some area of public service.

The Dr. Marty Wiseman Scholarship is awarded to a Political Science major who has demonstrated achievement and a commitment to public service.

The Dr. Charles E. Menifield Public Service and Leadership Annual Scholarship is awarded to an African American Political Science major who has demonstrated leadership potential and a commitment to public service.

The following is a typical course of study for Political Science majors, but students should consult with their advisor in order to develop a program which is best for them. For more information contact: Dr. Brian Shoup at bds223@msstate.edu.

1 Transfer students receive the stipend for two years or until graduation, which ever comes sooner.

Minor in Pre-Law

Whit Waide, Advisor
199 Bowen Hall
wwaide@pspa.msstate.edu

The interdisciplinary minor in Pre-Law consists of 19 credit hours offered through several departments and programs throughout the university. The minor will consist of a two-semester prerequisite class called "Introduction to Law I and II" (PS 1182/1192), as well as the requirement that a student take PHI 1113 Introduction to Logic, and a Constitutional Law class (PS 3063, 3073, or AAS 3043/PS 3043) or Principles of Legal Writing (EN 4223). At least 9 of the 19 hours must be at the 3000 or 4000 level.

The Pre-Law minor is designed to be a curriculum that is consistent with the best practice in preparing undergraduates for the study of law. It has an interdisciplinary focus, creates a practicum like common experience, and focuses on analytic skill development. It will assist students in determining whether they desire to attend law school and will provide exposure to what they will encounter should they decide to attend law school.

Accelerated MPPA Program

Brian Shoup
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bds223@msstate.edu

Students with at least a 3.5 GPA can opt to apply for the Accelerated MPPA program in their senior year. This program allows students to take up to nine (9) credit hours of approved classes for both undergraduate AND graduate credit that can be applied towards their MPPA degree. In essence, students graduate with both a BA and a MPPA degree, Students apply for the graduate program in their senior year and take three approved cross-listed courses in their last semester that contribute to the program.

Core Courses (27 Hours)

PPA 8103 Seminar in Public Administration
PPA 8703 Government Organization and Administrative Theory
PPA 8713 Public Personnel Management
PPA 8723 Public Budgeting and Financial Management
PPA 8733 Public Program Evaluation
PPA 8743 Administrative Law
PPA 8803 Research Methods for Public Affairs
PPA 8903 Public Policy
PPA 8983 Integrative Capstone

Electives (12 Hours)

Each student must complete a 12-hour elective concentration to augment knowledge, skills, and abilities acquired in required courses. These courses are tailored to the student's career objective.

Internship (3 Hours)

Each student completes an internship in a public or nonprofit agency. The internship is waived for students possessing at least one year of relevant work experience.

General Education and College Requirements

English Composition		
EN 1103	English Composition I	3
or EN 1163	Accelerated Composition I	
EN 1113	English Composition II	3
or EN 1173	Accelerated Composition II	
Foreign Language		
3 semesters - one Foreign Language - see advisor		9
Humanities		
Literature - see General Education courses		3
History - see General Education courses		3
Philosophy Elective - Consult advisor		3
Humanities Electives - Must be from 2 different areas - see A&S Core		9
Mathematics		
MA 1313	College Algebra	3
above college algebra		3
Fine Arts		
See A&S Core List		3
Natural Sciences		
Physical Sciences w/lab (CH, GG, PH) [1]		3-4
Biological Sciences w/lab (BIO, EPP, PO) [1]		3-4
Natural Science Elective [2]		3-4
Social Sciences [3]		
See General Education courses		6
Social Sciences Electives		12
Major Core		
PS 1113	American Government [4]	3
Introductory PS Courses		
Choose three of the following (one counts as a Social Science req):		9
PS 1313	Introduction to International Relations	
PS 1513	Comparative Government	
PS 2403	Introduction to Political Theory	
PS 2703	Introduction to Public Policy	
PS 2713	Introduction to Engineering and Public Policy	
PS Upper Division Electives		
See advisors for selection [5]		21
Oral Communication Requirement		
CO 1003	Fundamentals of Public Speaking	3
or CO 1013	Introduction to Communication	
Writing Requirement		
PS 4464	Political Analysis	4
Computer Literacy		
PS 4464	Political Analysis	4
General Electives		
General Electives		18
Total Hours		124

(31 hours must be A&S upper division)

1. See General Education courses.
2. Consult advisor.
3. Must be from 2 different areas and must cross 4 disciplines over the 18 hours. Only one Economics - EC 1033 or EC 2113, can be chosen. See advisor.
4. Also counts as Social Science Requirement.
5. Must have at least one course from 3 of 4 areas as listed under the Political Science and Public Administration Department in the bulletin's Description of Courses: American Politics, International Politics, Political Theory, Comparative Politics. Only one directed individual study course and only one honors thesis course my be included.

Minor in Pre-Law

PHI 1113	Introduction to Logic	3
PS 1182	Introduction to Law I	2
PS 1192	Introduction to Law II	2
Choose one of the following:		3
AAS /PS 3043	Modern Civil Rights Law	
PS 3063	Constitutional Powers	
PS 3073	Civil Liberties	
EN 4223	Principles of Legal Writing	
Elective Courses [1]		9
African American Studies		
AAS 3043	Modern Civil Rights Law	
AAS 4983	African Americans and the Law	
Agricultural Economics		
AEC 4413	Public Problems of Agriculture	
Anthropology		
AN 4633	Language and Society	
Business		
BL 2413	The Legal Environment of Business	
BL 3223	The Law of Commercial Transactions	
BL 3233	Business Law for Resorts	
BL 4263	Environmental Law	
BL 4273	International Business Law	
BL 4333	Real Estate Law	
Communication		
CO 4243	Rhetorical Theory	
CO 4253	Elements of Persuasion	
CO 4313	Mass Media Law	
Criminology		
CRM 3343	Gender, Crime, and Justice	
CRM 3353	Race, Crime and Justice	
CRM 4243	Drugs, Crime and Control	
CRM 4253	White Collar Crime and Elite Deviance	
CRM 4323	Victimology	
CRM 4513	Correctional Systems	
Economics		

EC 4043	Survey of Economics
EC 4223	Labor Law and Employment Policy
English	
EN 2243	American Literature Before 1865
EN 2253	American Literature After 1865
EN 2273	World Literature Before 1600
EN 2283	World Literature After 1600
EN 4223	Principles of Legal Writing
Foreign Languages	
FLL 1113	Latin I
FLL 1123	Latin II
FLL 2133	Latin III
FLL 2143	Latin IV
Food Science, Nutrition, & Health Promotion	
FNH 4333	Food Law
Forestry	
FO 4353	Natural Resource Law
Health Care Administration	
HCA 3813	Healthcare Regulations
History	
HI 3903	Historiography and Historical Method
Insurance	
INS 3103	Principles of Insurance
Philosophy	
PHI 1103	Introduction to Philosophy
PHI 1123	Introduction to Ethics
PHI 3113	Philosophy of Law
Political Science	
PS 2403	Introduction to Political Theory
PS 3063	Constitutional Powers
PS 3073	Civil Liberties
PS 3183	Law and Politics
PS 4113	State Government
PS 4173	Legislative Process
PS 4183	Judicial Process
PS 4193	Mississippi Judicial System
PS 4263	Mississippi Government and Politics
PS 4313	Principles of International Law
Psychology	
PSY 4353	Psychology and the Law
Religion	
REL 1213	Introduction to the Old Testament
Sociology	
SO 3343	Gender, Crime, and Justice
SO 3353	Race, Crime, & Justice
SO 4243	Drugs, Crime and Control
SO 4253	White Collar Crime and Elite Deviance
SO 4523	Law and Society
SO 4633	Language and Society
Sports Administration	
SS 3203	Sport Law

[1] Must be from at least two different disciplines

Department of Psychology

Undergraduate Coordinator: Dr. Danielle Nadorff
Office: 214 Magruder

Mississippi State University offers majors leading to the B.S., the M.S., and Ph.D. degrees. Undergraduate students wishing to major in psychology must have a minimum 2.0 GPA on all college work attempted prior to entering the major. Transfer students also must have a minimum 2.0 GPA to be admitted to the psychology major. **Students must earn a grade of C or higher in all PSY courses applied toward the psychology major requirements.**

The Bachelor of Science degree program in psychology is designed to provide training either for immediate employment or for advanced training in psychology or related fields. Many careers in psychology require advanced study beyond the bachelor's degree, but there are also career opportunities at the bachelor's level.

A bachelor's degree in psychology prepares graduates to pursue:

- master's or doctoral study in psychology, such as clinical or counseling psychology, cognitive psychology, social psychology, developmental psychology, experimental psychology, forensic psychology, etc.
- graduate school in related areas such as guidance, clinical mental health counseling, school counseling, educational psychology, rehabilitation, social work, criminology, law school, management, marketing, etc.
- admission to medical, nursing, or physical therapy school with a psychology major and all necessary science courses.
- immediate employment in private business, community mental health, or government (e.g., case management, social work, personnel work, quality control jobs, management training, marketing research, sales, etc.).

B.S. in Psychology

The Bachelor of Science degree program in psychology provides students broad training in psychology while still ensuring adequate exposure to the humanities and social sciences. Foreign language proficiency at the second-semester level is required.

General Education and College Requirements

English Composition		
EN 1103	English Composition I [1]	3
or EN 1163	Accelerated Composition I	
EN 1113	English Composition II [1]	3
or EN 1173	Accelerated Composition II	
Foreign Language		
2 semesters: one Foreign Language - see advisor		6
Humanities		
Literature - see General Education courses		3
History - see General Education courses		3
Mathematics		
MA 1313	College Algebra [1]	3
Advanced Math course		3

Fine Arts		
See A&S Core List		3
Natural Sciences		
Physical Sciences w/lab (CH, GG, PH) [2]		3-4
Biological Sciences w/lab (BIO, EPP, PO) [2]		3-4
Natural Science Elective [3]		3-4
Social Sciences Electives [4]		
PSY 1013	General Psychology	3
Behavioral/Social Science (See Gen. Ed./A&S Core)		3
Major Core		
PSY 1021	Careers in Psychology (typically offered only in Spring)	1
PSY 3104	Introductory Psychological Statistics	4
PSY 3213	Psychology of Abnormal Behavior	3
PSY 3314	Experimental Psychology	4
PSY 3343	Psychology of Learning	3
PSY 3623	Social Psychology	3
PSY 3713	Cognitive Psychology	3
PSY 3803	Introduction to Developmental Psychology	3
PSY 4403	Biological Psychology	3
PSY Upper Division Electives [5]		18
Oral Communication Requirement		
CO 1003	Fundamentals of Public Speaking	3
or CO 1013	Introduction to Communication	
Writing Requirement		
Satisfied by successful completion of PSY 3314		
Computer Literacy		
Satisfied by successful completion of PSY 3314		
General Electives		
General Electives - enough to equal 124 total hours [6]		32-34
Total Hours		124

(31 hours must be A&S 3000/4000 work)

1 Or equivalent

2 See General Education courses.

3 Consult advisor.

4 Must be from 2 different areas.

5 Psychology majors must take 18 additional 3000/4000 level Psychology credits (typically 6 courses) from among the courses offered by the department. Six of these credits may be from Directed Individual Study (PSY 4000) courses.

6 Consult advisor. No more than 2 one-credit PE courses may be counted toward graduation.

For a Psychology concentration in the B.S.I.S program of study, at least half of the classes (six hours for the 12-hour concentration or nine hours for the 18-hour concentration) must come from the list of core PSY courses while the remainder may come from the list of PSY electives. All of these must be upper-division courses. Students should see the undergraduate coordinator in the Psychology Department to plan a concentration that will complement their career interests.

Minor in Psychology

For the 18-hour minor in Psychology, at least nine hours must come from the list of core PSY courses, while the remainder may come from the list of PSY electives. All minor courses must be upper-division. See http://psychology.msstate.edu/undergraduate for detailed minor requirements. Students should consult a PSY major advisor to plan a minor program that will complement their major studies and career interests.

Minor in Cognitive Science

A minor in Cognitive Science is designed for students who wish to pursue an interdisciplinary study of mind and thought. Students completing the program will have a broad understanding of the field of cognitive science and will have demonstrated an approach that highlights the interdisciplinary nature of Cognitive Science. The candidate must complete 18 hours of coursework from the approved list. All students will be required to pass PSY 4713/CSE 4633, PSY 3713, and a computer programming course (CSE 1233, CSE 1273, CSE 1284, or CSE 1384). In addtion, all students must pass 9 hours of approved electives from two (2) departments from the following list:

PSY 4423 Sensation and Perception
PSY 4713 Language and Thought
PSY 4733 Memory
PSY 4743 Psychology of Human-Computer Interaction
PSY 4753 Applied Cognitive Psychology/IE 4123 Psychology of Human-Computer Interaction
PHI 4143 Philosophy of Science
EN 4403 Introduction to Linguistics/AN 4403 Introduction to Linguistics
EN 4443 English Syntax
EN 4463 Studies in Second Language Acquisition
EN 4633 Language and Society/SO 4633 Language and Society/AN 4633 Language and Society
BIO 4133 Human Genetics
CSE 3813 Introduction to Formal Languages and Automata
CSE 4633 Artificial Intelligence
CSE 4663 Human-Computer Interaction
CSE 4833 Introduction to Analysis of Algorithms
IE 4113 Human Factors Engineering

Department of Sociology

Social Work (SW)

Program Director: Kenya M. Cistrunk
Office: 298 Bowen Hall

The Social Work Program at Mississippi State University is accredited by the Council on Social Work Education. Social work is a challenging and rewarding profession with the primary goal of enhancing individual functioning and promoting human rights and social and economic justice. The Bachelor of Social Work graduate is prepared to pursue graduate social work education or to work as a generalist social work practitioner in a variety of practice settings. These include, but are not limited to the following: child welfare service agencies, family services, medical hospitals, mental health clinics, public health clinics, home health agencies, nursing homes, industries, juvenile and family court, shelters for battered women and children, neighborhood and community services.

The Social Work curriculum is grounded in a liberal arts perspective. This liberal arts perspective enhances the person-in-environment focus of generalist social work practice. A student may declare social work as a major at any time in his or her academic career. There is a formal admission process into the program. Some upper division courses are

restricted to students who have been admitted to the program. To be eligible for admission to the social work program students must:

1. Have a cumulative GPA of 2.0;
2. Complete two of the following social work courses with a minimum grade of “C”: SW 2303 Social Welfare Policy I, SW 3003 Social Work with At-Risk Populations, and SW 3013 Human Behavior in the Social Environment I;
3. Complete SW 2313 Intro to Social Work (including 30 hrs of service learning experience) with a minimum grade of "B";
4. Complete an “Application for Admission” including three references on the designated program form;
5. Participate in a personal interview with Social Work Admissions Committee.

The following liberal arts courses must be completed prior to petition for admission to the major:

EN 1103	English Composition I	3
or EN 1163	Accelerated Composition I	
EN 1113	English Composition II	3
or EN 1173	Accelerated Composition II	
MA 1313	College Algebra	3
BIO 1004	Anatomy and Physiology	4
PS 1113	American Government	3
PSY 1013	General Psychology	3
SO 1003	Introduction to Sociology	3
EC 2113	Principles of Macroeconomics	3

Before enrolling in any social work classes, it is the responsibility of the student to consult with their social work advisor regarding any prerequisites for social work classes.

The criteria for remaining in the program include:

1. Maintain an overall GPA of 2.0, with a 2.5 GPA for all social work courses.
2. Must earn a minimum of a “C” in each social work course.
3. Continue to demonstrate an aptitude for a social work career.
4. Adhere to all academic expectations of the university and the social work program.
5. Adhere to the National Association of Social Workers Code of Ethics.

Sociology (SO)

Undergraduate Advisor: Mary Ann Dean
Graduate Advisor: Stacy Haynes
Office: 207 Bowen Hall

The following degree programs are offered: Bachelor of Arts, Master of Science, and Doctor of Philosophy.

Sociology is the scientific study of social life. With an interest in understanding human behavior, sociologists study such phenomena as deviant behavior, social organization, stratification, population, community, social institutions, race and ethnic relations, social problems, theory and methods of research.

Sociology majors are well prepared to enter many rewarding positions in the work force right out of college or further graduate training in law, business, community planning, architecture, medicine, politics or academics. Opportunities for employment include, but are not restricted to entry-level positions in administration, advertising, banking, counseling (family planning, career, substance abuse, etc.), health services, journalism, group and recreation work, marketing and market research, sales, non-profit organizations, teaching, criminal justice, social services and social research. In addition, sociology provides training that other liberal arts majors do not, such as the core elements of human interaction and relationships, and basic training for research analyst positions (in statistics and research methods, which include computer applications, for example).

Students are eligible for membership in the Mississippi Alpha chapter of Alpha Kappa Delta, the International Sociology Honor Society. To be considered for membership, a student must be an officially declared sociology major or demonstrate a serious interest in sociology, must be at least a junior, have at least a 3.00 overall GPA, and must have maintained a 3.00 GPA in sociology courses.

To earn a Bachelor of Arts degree with a major in sociology, a student is required to take 36 hours of sociology.

All new freshmen desiring to major in Sociology will be admitted into the Sociology major in the College of Arts and Sciences at Mississippi State University. For all other students wishing to major in Sociology, to be eligible for admission to the Sociology program, students must have a cumulative GPA of 2.0 or above on all college work attempted prior to entering the major. The criteria for remaining in the program include:

1. Students must earn a minimum of a "C" in all Sociology courses. Students earning a grade lower than C in a Sociology course must retake that course.
2. Students must maintain an overall GPA of 2.0 or above. Students who fall below the overall GPA of 2.0 must bring it up to 2.0 the next semester or drop the Sociology major.

Sociology Major Course Requirements

The sociology major consists of a sequence of four levels of courses ranging from introductory to the more advanced and capstone courses. Students are expected to complete courses in the lower levels before taking courses in the more advanced levels. For example, students should complete Level 1 courses before completing Level II courses, etc. The lower level courses are prerequisites for the advanced level courses.

Required courses include: SO 1003 Introduction to Sociology, SO 2203 Cultural and Racial Minorities, SO 3103 Social Theory I, SO 3213 Introduction to Social Research, and SO 4804 Social Research Practice.

Students are also required to take one of the following courses: SO 3003 Social Inequality, SO 3013 Society and the Individual, or SO 3053 Organizations in Modern Society.

Finally, students must select any seven additional sociology courses, including any of those not listed above. A minimum of six of these courses must be 3000 or 4000 level.

Sociology Minor

To earn a minor in sociology, a student must take 18 hours of undergraduate sociology courses. SO 1003, SO 2203, and SO 3213 are required. The other three SO courses must be 2000 level or above and include at least one 4000 level SO course.

Students who wish to major or minor in the department should plan their programs with the departmental major advisor as soon as possible after entering the University and should consult with their advisor before each registration period. Programs are arranged individually to combine the most varied advantages consistent with the student's interest and purposes. Persons interested in secondary school teaching may elect sufficient courses in the College of Education to satisfy certification requirements for teaching social studies.

Criminology (CRM)

Major Advisor: Mary Ann Dean
Office: 207 Bowen Hall

The following degree program is offered: Bachelor of Arts.

Criminology, as a field, explores the nature and causes of crime. Criminology also examines the impact crime has on society and how society responds to the social problem of crime. The Bachelor's degree in Criminology will emphasize the study of types, patterns and trends in criminal behavior; the social etiology of crime; and the social response to crime and its effect on society. The program will also train students to analyze crime data, test explanations of crime and victimization, and critically evaluate crime theory and policy.

The Criminology program is appropriate for students wishing to pursue career paths in all justice related fields including: law enforcement; probation and parole; community based prevention and control programs; court based programs; and corrections. Because our program provides for a broad knowledge of the nature and trends of crime and an understanding of crime control policy along with methodological and critical thinking skills, our students will be prepared to assume positions of leadership across a range of career paths in crime and justice related professions, as well as be prepared for post-graduate studies in Sociology, Criminology, and Law and Legal Studies.

All new freshmen desiring to major in Criminology will be admitted into the Criminology major in the College of Arts and Sciences at Mississippi State University. All other students wishing to major in Criminology must have a cumulative GPA of 2.0 or above on all college work attempted prior to entering the major. The criteria for remaining in the program include:

1. Students must earn a minimum of a "C" in all Criminology and Sociology courses. Students earning a grade lower than C in a Criminology or Sociology course must retake that course.
2. Students must maintain an overall GPA of 2.0 or above. Students who fall below the overall GPA of 2.0 must bring it up to 2.0 the next semester or drop the Criminology major.

Criminology Major Requirements

The BA in Criminology is a 36 credit hour major and is housed in the Sociology Department. All students will complete 18 hours in required course work: CRM 1003 Crime and Justice in America, CRM 2003 Crime, Justice, and Inequality, CRM 3603 Criminological Theory, SO 3213 Introduction to Social Research, SO 4804 Social Research Practice, and CRM 4803 Senior Seminar in Criminology. Students will also be required to take a minimum of three hours in each of three sub-areas of the program and nine hours of 3000-.or 4000- level criminology electives. The sub-areas are: Criminal Behavior and Motivation, Social Dimensions of Crime, and Crime Control Policy and Practice.

Senior Internships will be available at various crime and justice related agencies. To qualify for an internship a student must have completed 24 hours of coursework within the criminology major and have earned a minimum of a 2.5 GPA in said coursework. Students will meet with the Criminology Program Coordinator to discuss the selection of an appropriate internship site. Students will be expected to have a minimum of 150 contact hours with the sponsoring internship agency, as well as meet specific course assignments. The internship is elective. Students will register for CRM 3033 Criminology Internship.

A senior thesis option is available for students who have completed a minimum of 24 hours of coursework within criminology and have at least a 3.0 GPA in said coursework. Students who qualify and have an interest in the senior thesis option will work individually with a faculty member to produce a research paper on an approved topic in criminology. The thesis option is elective and designed for students wishing to pursue graduate school in criminology or a related field. Students will register for CRM 4000 Directed Individual Study in Criminology: Senior Thesis as a six credit hour course.

Social Work

General Education and College Requirements

English Composition		
EN 1103	English Composition I	3
or EN 1163	Accelerated Composition I	
EN 1113	English Composition II	3
or EN 1173	Accelerated Composition II	
Foreign Language		
2 semesters - one Foreign Language - see advisor		6
Humanities [1]		
Literature - see General Education courses		3
History - see General Education courses		3
PHI 1103	Introduction to Philosophy	3
or PHI 1113	Introduction to Logic	
Literature Elective		3
History Elective		3
Humanities Elective		3
Mathematics		
MA 1313	College Algebra	3
ST 2113	Introduction to Statistics	3
Fine Arts		
See A&S Core List		3
Natural Sciences		
BIO 1004	Anatomy and Physiology	4
Physical Sciences w/lab (CH, GG, PH) [2]		3-4
Natural Science Elective [1]		3-4
Social Sciences		
SO 1003	Introduction to Sociology	3
PS 1113	American Government	3
SW 3003	Social Work with At-Risk Populations	3
PSY 1013	General Psychology	3
EC 2113	Principles of Macroeconomics	3
AN 1103	Introduction to Anthropology	3
or AN 1143	Introduction to Cultural Anthropology	
Major Core		

See advisor for course sequencing		
SW 2303	Social Welfare Policy I	3
SW 2313	Introduction to Social Work/Social Welfare	3
SW 2323	Social Welfare Policy II [3]	3
SW 3013	Human Behavior and the Social Environment I	3
SW 3023	Human Behavior and the social Environment II [3]	3
SW 4613	Child Welfare Services	3
SW 3213	Research Methods in Social Work [3]	3
Choose one of the following:		3
SW 4623	Social Work with the Aged	
SW 4633	Social Work in Health Care	
SW 4643	Social Work Services in Schools	
SW 4533	Substance Abuse and Addictions in Social Work Services	
Students must successfully complete a formal admissions process prior to taking the following courses		
SW 3513	Social Work Practice I [3]	3
SW 3523	Social Work Practice II [3]	3
SW 3533	Social Work with Communities and Organizations	3
Field Work includes full-time placement for one semester in a supervised agency setting.		
SW 4916	Social Work Field Practicum/Seminar I [3]	6
SW 4926	Social Work Practicum/Seminar II [3]	6
Oral Communication Requirement		
CO 1003	Fundamentals of Public Speaking	3
Writing Requirement		
SW 4713	Social Work Senior Seminar [3]	3
Computer Literacy		
TKT 1273	Computer Applications	3
General Electives		
Consult advisor		2
Total Hours		124
(31 hours must be A&S 3000/4000 level)		

1 Consult advisor.

2 See General Education courses.

3 Course has prerequisite. Check course description in back of this catalog or consult advisor.

Sociology

General Education and College Requirements

English Composition		
EN 1103	English Composition I	3
or EN 1163	Accelerated Composition I	
EN 1113	English Composition II	3
or EN 1173	Accelerated Composition II	
Foreign Language		
3 semesters - one Foreign Language - see advisor		9
Humanities		
Literature - see General Education courses		3
History - see General Education courses		3
Philosophy - see General Education courses		3
Humanities Electives - Must be from 2 different areas - see A&S Core list		9
Mathematics		
MA 1313	College Algebra	3
Mathematics higher than MA 1313		3
Fine Arts		
See A&S Core List		3
Natural Sciences		
Physical Sciences w/lab (CH, GG, PH) [1]		3-4
Biological Sciences w/lab (BIO, EPP, PO) [1]		3-4
Natural Science Elective - see General Education courses [2]		3-4
Social Sciences		
See Major Core Level I		
Major Core		
Courses in the major are sequenced by level.		
Level I: Intro to the discipline		
Social Sciences - Must be from 2 different areas and must cross 4 disciplines over the 18 hours. Only one Economics allowed. See advisor.		
SO 1003	Introduction to Sociology	3
PS 1113	American Government	3
EC 2113	Principles of Macroeconomics	3
see General Education courses		3
Social Science courses - see A&S Core list		6
Level II: Sociology Substantive Core		
SO 2203	Cultural and Racial Minorities	3
Choose one of the following:		3
SO 3003	Social Inequality	
SO 3013	Society and the Individual	
SO 3053	Organizations in Modern Society	
Level III: Tools and Skills		
SO 3103	Social Theory I	3
SO 3213	Introduction to Social Research	3
SO 4804	Social Research Practice	4
Level IV: Sociology General Upper Division Core		21
Select any seven additional sociology courses, including any of those not listed above. A minimum of six of these courses must be 3000 or 4000 level.		
Oral Communication Requirement		
CO 1003	Fundamentals of Public Speaking	3
or CO 1013	Introduction to Communication	
Writing Requirement		
Satisfied by successful completion of SO 3103		
Computer Literacy		
Satisfied by successful completion of SO 4804		
General Electives		
Consult advisor		15
Total Hours		124
(31 hours must be 3000/4000 from A&S)		

Criminology

General Education and College Requirements

English Composition		
EN 1103	English Composition I	3
or EN 1163	Accelerated Composition I	
EN 1113	English Composition II	3
or EN 1173	Accelerated Composition II	
Foreign Languages		
3 Semesters - one Foreign Language – see advisor		9
Humanities		
Literature – see General Education Courses		3
History – see General Education Courses		3
Philosophy – see General Education Courses		3
Humanities Electives - Must be from 2 different areas – see A&S Core		9
Mathematics		
MA 1313	College Algebra	3
Elective Mathematics higher than MA 1313		3
Fine Arts		
See A&S Core		3
Natural Sciences		
Physical Sciences w/lab (CH, GG, PH) see General Education Courses		3-4
Life Sciences w/lab (BIO, EPP, PO) see General Education Courses		3-4
Natural Science Elective		3
Social Sciences		
SO 1003	Introduction to Sociology	3
PS 1113	American Government	3
PSY 1013	General Psychology	3
see A&S Core		9
Major Core		
CRM 1003	Crime and Justice in America	3
CRM 2003	Crime, Justice, and Inequality	3
CRM 3603	Criminological Theory	3
SO 3213	Introduction to Social Research	3
SO 4804	Social Research Practice	4
CRM 4803	Senior Seminar in Criminology	3
Major Electives		
Criminal Behavior and Motivation Area		
Choose one of the following:		3
CRM 3313	Deviant Behavior.	
CRM 3503	Violence in the United States	
CRM 4233	Juvenile Delinquency	
CRM 4243	Drugs, Crime and Control	
CRM 4253	White Collar Crime and Elite Deviance	
Social Dimensions of Crime Area		
Choose one of the following:		3
CRM 3343	Gender, Crime, and Justice	
CRM 3353	Race, Crime and Justice	
CRM 3363	Globalization and Crime	
CRM 4323	Victimology	
CRM 4343	Media, Crime and Justice	
Crime Control Policy and Practice Area		
Choose one of the following:		3
CRM 3103	Contemporary Issues in Criminal Justice	
CRM 3113	Community Crime Prevention and Policy	
CRM 3123	Policing and Society	
CRM 4513	Correctional Systems	
CRM 4523	Law and Society	
Upper Level Electives		9
Select any three criminology courses at the 3000- or 4000-level		
Oral Communication Requirement		
CO 1003	Fundamentals of Public Speaking	3
or CO 1013	Introduction to Communication	
Writing Requirement		
Satisfied by successful completion of CRM 3603		
Computer Literacy		
Satisfied by successful completion of SO 3213		
General Electives		
Consult advisor		15
Total Hours		124

(31 hours must be 3000/4000 from A&S)

Economics

Major Advisor: Travis Wiseman, Ph. D.
Office: 210 McCool Hall

Economics is the scientific study of how people and institutions make choices concerning the use of society's scarce resources. It is a broad social science that shares common interests with both the behavioral sciences (e.g. sociology and psychology) and the decision sciences (e.g. finance and management). The importance of economic analysis is recognized by being the only social science in which a Nobel Prize is awarded. Economics students receive training in the methods and uses of economic analysis as applied to households, businesses, and governments.

The study of economics offers students many career options. Economics majors are found pursuing careers in industry, trade, finance, law, government, and education. An economics major or minor also helps prepare the student for graduate professional training in business, public administration, and law. The flexibility of the economics major is reflected in relatively high starting salaries and lifetime earnings of economists. Undergraduates at Mississippi State may pursue an economics major through either the College of Arts & Sciences (B.A. degree) as described below or through the College of Business and Industry (B.B.A. degree). The business program in economics is described later in this Bulletin.

Economics Major

Students seeking the B.A. with a major in economics are required to complete all College of Arts & Sciences core and University general education requirements. Majors must also complete the program of study on this page, including 12 hours of advanced electives. Elective courses should be chosen with the advisor's approval and used to enhance the student's overall program. Although not required, economics majors may elect to pursue a minor in another discipline with the advisor's approval.

Only grades of C or higher will be accepted for EC courses that are counted toward the major.

Economics Minor

A minor in economics is attained by selecting, in consultation with the economics minor advisor, at least 15 hours of economics course work. Three hours of courses from finance (FIN) or agricultural economics (AEC) may be applied to the economics minor with approval from the advisor. All economics minors must register with the economics minor advisor in the Department of Finance and Economics, 312 McCool Hall. Students with majors in business, engineering, agriculture, the social sciences, mathematics, and pre-law are especially encouraged to consider the economics minor. Only grades of C or higher will be accepted for courses to counted toward the minor.

Advising and Honors Organization

Academic advising and career counseling are available from the economics faculty for both majors and minors. Students interested in the study of economics should contact the Department of Finance and Economics, 312 McCool Hall. Any student who completes 12 credit hours of economics with at least a 3.0 GPA and has an overall GPA of 3.0 or higher is eligible for membership in Omicron Delta Epsilon, the international honor society in economics.

General Education and College Requirements

English Composition		
EN 1103	English Composition I	3
or EN 1163	Accelerated Composition I	
EN 1113	English Composition II	3
or EN 1173	Accelerated Composition II	
Foreign Language		
3 semesters - one Foreign Language (see advisor)		9
Humanities		
Literature - see General Education courses		3
History - see General Education courses		3
Humanities Elective [1]		9
Philosophy Elective - see General Education courses		3
Math		
MA 1613	Calculus for Business and Life Sciences I	3
ST 2113	Introduction to Statistics	3
Fine Arts		
See A&S Core Requirements		3
Natural Sciences		
Physical Science w/Lab [2]		3-4
Biological Science w/Lab [3]		3-4
Natural Science Elective [4]		3-4
Social Sciences [5]		
Met in major requirement		3
PS 1113	American Government	3
AN 1103	Introduction to Anthropology	3
PSY 1013	General Psychology	3
PS 1513	Comparative Government	3
SO 1003	Introduction to Sociology	3
Major Core		
EC 2113	Principles of Macroeconomics	3
EC 2123	Principles of Microeconomics	3
EC 3113	Intermediate Macroeconomics	3
EC 3123	Intermediate Microeconomics	3
EC 4643	Economic Forecasting and Analysis	3
EC Upper Division Electives		12
Oral Communication Requirement		
CO 1003	Fundamentals of Public Speaking	3
Writing Requirement		
EC 3113	Intermediate Macroeconomics	3
EC 4643	Economic Forecasting and Analysis	3
Computer Literacy		
BIS 1012	Introduction to Business Information Systems	2
or TKT 1273	Computer Applications	
General Electives		
General Electives - See advisor		20
Total Hours		124

(31 hours must be A&S 3000/4000 work)

1. Must be selected from 2 different areas. Not required to be selected from core listing; may have to be taken at Upper Division level to meet 32 hours A&S UD requirement.
2. CH, GG, or PH; see General Education courses.
3. BIO, EPP, or PO; see General Education courses.
4. Consult advisor.
5. Must be from 2 different areas and must cross 4 disciplines over the 18 hours. Only one Economics allowed. See advisor.

Gender Studies Minor

Advisor: Dr. Kimberly Kelly
225 Etheredge Hall

Gender Studies is an interdisciplinary field that examines the complex interaction of gender with race, class, sexuality and nationality. Gender is a psychological and cultural construction of fundamental importance to people everywhere. It is a central aspect of personal and social identity, and a criterion for social stratification and differential political treatment. In addition to the field's examination of the historical contributions and concerns of women, gender studies also explores research in men's lives and masculinities. Understanding gender and gender biases enhances the abilities of students to succeed in a variety of fields and professions.

Undergraduate students would a Gender Studies minor by completing 18 credits of course work from a variety of fields distributed as follows; only nine credits from any one department may count toward the minor.

Required Course		
SO /AN /GS 1173	Introduction to Gender Studies	3
Additional core courses		
Choose two of the following:		6
COE 4743	Gender Issues in Counseling	
EN /GS 3513	Women and Literature: Selected Topics	
HI 4273	Women in American History	

PS 3033	Gender and Politics	
PSY 3203	Psychology of Gender Differences	
SO 4403	Sociology of Gender and Sexuality	
SO /CRM 3343	Gender, Crime, and Justice	
Electives		
See Gender Studies Advisor for list of approved electives.		9
Total Hours		18

General Liberal Arts

Advisor: Tracy Britt
Office: 224 Allen Hall

Students who prefer to specialize in more than one field of study may earn a B.A. degree in General Liberal Arts. Requirements for this degree include all of the following: satisfactory completion of the University General Education and College Core curriculum; satisfactory completion of the College of Arts & Sciences B.A. requirements; approval of the proposed G.L.A. program; satisfactory completion of 12 hours of upper-division courses (courses numbered 3000 and above) in each of three fields of study, all with a grade of C or better. The three fields may all be within the College of Arts & Sciences, or one of the three may be within another school/college of the University if that field is related to the student's educational or career goals. To insure an orderly progression of work toward the degree, interested students should meet with the program's advisor as early as possible. Furthermore, admittance into the program requires approval of the GLA Committee and the Associate Dean of the College of Arts & Sciences. General Liberal Arts is not suitable for students who are uncertain about their choice of a major; these students should see the Undecided listing in the Academic Affairs section.

General Education and College Requirements

English Composition		
EN 1103	English Composition I	3
or EN 1163	Accelerated Composition I	
EN 1113	English Composition II	3
or EN 1173	Accelerated Composition II	
Foreign Language		
3rd semester proficiency - one language		39
Emphasis Area - consult advisor		36
Humanities		
Literature - see A&S requirements		3
History - see A&S requirements		3
Philosophy Elective - consult advisor		3
Humanities Electives - must be from 2 different areas - see A&S core		9
Math		
MA 1313	College Algebra	3
Above College Algebra		3
Fine Arts		
See A&S requirements		3
Natural Sciences		
Physical Science w/Lab [1]		3-4
Biological Science w/Lab [2]		3-4
Natural Science Elective [3]		3-4
Social Sciences [4]		
See A&S core		6
Social Sciences Electives		12
Major Core		
GLA 4001	Senior Project	1
Oral Communication Requirement [3]		3
Computer Requirement [3]		3
Writing Requirement [3]		3
Electives		
15 or more hours to equal 124		15
Total Hours		124

1. CH, GG, or PH; see A&S core courses.
2. BIO, EPP, or PO; see A&S core courses.
3. Consult advisor.
4. Must be from 2 different areas and must cross 4 disciplines over the 18 hours. Only one Economics allowed. See advisor.

General Science

Major Advisor: Professor R. Torsten Clay
Office: 233 Hilbun Hall

For various reasons, a student may not require the intensive preparation that is typical of a professional curriculum. The general science curriculum is tailored for his/her needs. Flexibility is the key characteristic of the curriculum. The general science program is designed to give students a broad general education and at the same time teach them the fundamentals of science. By judiciously choosing his/her course of study, a student may use the general science curriculum in many ways. For example, by concentrating on biological science or chemistry the student may prepare for medical or dental school, and with appropriate choice of electives preparation for clinical and other laboratory positions in such fields as public health and marine biology is possible.

If the student is interested in interdisciplinary studies related to environmental science, the general science curriculum is suitable. Any one of the physical or biological sciences may be emphasized. The curriculum, however, involves courses from several sciences, and from other fields concerned with the environment. Persons trained in this option should be in demand in the health industry, science laboratories, federal, state, and local governmental agencies, and in industries involved with earth resources.

Successful completion of the University and curriculum requirements will result in the awarding of a B.S. degree in General Science.

The following requirements apply to all general science students:

1. The B.S. Common Curriculum must be satisfied.
2. A minimum of 60 credit hours in science, of which at least 30 must be in one science, is required.
3. Electives must be approved by the faculty advisor.
4. A total of 124 credit hours is required.
5. A minimum grade of C is required for all Major Core courses, and in the 30 hours of one science.

General Education and College Requirements

English Composition		
EN 1103	English Composition I	3
or EN 1163	Accelerated Composition I	
EN 1113	English Composition II	3
or EN 1173	Accelerated Composition II	
Foreign Language		
2 semesters - one Foreign Language (see advisor)		6
Humanities		
Literature - see University/A&S Core		3
History - see University/A&S Core		3
Mathematics		
MA 1313	College Algebra	3
MA course above College Algebra		3
Fine Arts		
See A&S requirements		3
Natural Sciences		
See major courses - consult advisor for specifics		9-12
Social Sciences [1]		
See A&S requirements		6
Major Core [2]		
GG 1113	Survey of Earth Sciences I	3
GG 1111	Earth Sciences I Laboratory	1
CH 1211	Investigations in Chemistry I	1
CH 1213	Chemistry I	3
CH 1221	Investigations in Chemistry II	1
CH 1223	Chemistry II	3
CH 4511	Organic Chemistry Laboratory I	1
CH 4513	Organic Chemistry I	3
CH 4521	Organic Chemistry Laboratory II	1
CH 4523	Organic Chemistry II	3
PH 1113	General Physics I	3
PH 1123	General Physics II	3
BIO 1144	Biology II	4
BIO 3103	Genetics I	3
Oral Communication Requirement		
CO 1003	Fundamentals of Public Speaking	3
Writing Requirement		
Consult advisor and choose from the following:		
BIO 3013	Professional Writing for Biologists	
EN 3303	Creative Writing	
GE 3513	Technical Writing	
GG 4333	Geowriting	
Computer Literacy		
Consult advisor for options		
General Electives		
Consult Advisor		13
Total Hours		124

1 Must be from 2 different areas and must be selected from University/A&S Core requirements.

2 Student should check for prerequisites for all courses. Consult advisor. Minimum of 60 hours in science, of which at least 30 must be in one science.

3 Consult advisor.

Interdisciplinary Studies

The Bachelor of Science in Interdisciplinary Studies is a university-wide degree coordinated through the College of Arts & Sciences by the Interdisciplinary Studies Committee. This multi-discipline academic program is appropriate for students motivated by specific interests not recognized in traditional majors and is not intended to compete with existing programs. All University requirements, including 31 hours of upper division course work and a year's residence, must be met for graduation.

The Bachelor of Science in Interdisciplinary Studies is intended to allow students maximum flexibility to custom-design a curriculum to meet their personal and career goals. Such a program of study must assure depth of study as well as breadth. Therefore, it must insure that students take at least 36 upper-division hours in the areas they have chosen for emphasis and that they select a minimum of 12 hours in each of three areas or 18 hours in two. Emphasis areas must be selected from at least two colleges. Only one grade of "D" will be accepted in each area of emphasis, and a minimum GPA of 2.0 is required in each area of emphasis. General Education requirement (45 hours) must be met in addition to a general studies core of 12 hours. A total of 122 semester hours is required for graduation, along with an MSU and cumulative GPA of 2.0.

To insure coherence in the program, the student must construct and explain in writing the rationale for the interdisciplinary studies program's direct relationship to the student's personal and career goals. Each student will be required to meet with advisors in the academic disciplines who will agree to sponsor the student in drawing up the proposed curriculum, formulating the rationale, and presenting the case in writing to the Interdisciplinary Studies Committee. This should be done prior to the senior year.

BSIS Limitations: Students may not receive minors in the BSIS program. After a BSIS degree is awarded, a student may not return to school and receive a second bachelor's degree in an area of emphasis used in BSIS. A student may not receive a BSIS degree if he/she already has a bachelor's degree.

The Interdisciplinary Studies Committee will review applications, and if approved, the student may proceed with the curriculum. The Committee will meet during the fall, spring and summer semesters, and students must make written application by September 1, February 1 or May 1. Application for a degree must be submitted to the Office of the Registrar. For further information, contact:

College of Arts & Sciences
224 Allen Hall, Mail Stop 9706
Mississippi State, MS 39762
(662) 325-2646

BS in Interdisciplinary Studies

Degree Requirements

English Composition		
EN 1103	English Composition I	3

or EN 1163	Accelerated Composition I	
EN 1113	English Composition II	3
or EN 1173	Accelerated Composition II	
Humanities		
See General Education courses		6
Mathematics		
See General Education courses		6
Fine Arts		
See General Education courses		3
Natural Sciences		
See General Education courses. Two labs required.		6-8
Math/Science Elective		
See General Education courses. Lab not required.		3
Social Sciences		
See General Education courses		6
Major Core		
General Studies	Consult advisor	12
IDS 4111	Professional Seminar	1
Emphasis Area	Consult advisor	36
Free Electives		29
Oral Communication Requirement		
CO 1003	Fundamentals of Public Speaking	3
or CO 1013	Introduction to Communication	
Writing Requirement		
Consult advisor		3
Computer Literacy		
Consult advisor		2-3

Music

Department Head: Barry E. Kopetz
Department Office:
Music Building A
Telephone: (662) 325-3070
Fax: (662) 325-0250
http://music.msstate.edu/

Mailing Address:
Department of Music
PO Box 6240
Mississippi State, MS 39762

University Bands
Ms. Elva Kaye Lance, Director of Bands
Telephone: (662) 325-2713
http://msuband.msstate.edu

University Choirs
Dr. Gary Packwood, Director of Choral Activities
Telephone: (662) 325-7801
http://www.statesings.com/

University Philharmonia Orchestra
Dr. Barry E. Kopetz, Director
Telephone: (662) 325-3070

Mission

The mission of the Department of Music at Mississippi State University is to contribute to the development of broadly acculturated citizens in our state and region through enhanced musical understanding and enriching musical experiences, providing access and opportunity to our diverse population through programs of teaching, research, and service. The department:

- offers excellent instruction to its students, helping to produce future generations of music professionals and patrons.
- engages in meaningful research, performance, and other creative work, positively affecting students, colleagues, and audiences throughout our community and beyond.

The Mission of the Department of Music at Mississippi State University is two-fold. The department's first obligation is to provide music instruction and specialized pedagogical training for state-certified elementary and secondary school music teachers. This program of instruction is intended to prepare students for exemplary entry-level teaching performance and for admission to selective graduate schools. To this end, the Department of Music provides:

- curricula and advisement that encourage students to acquire a broad, liberal education.
- a comprehensive undergraduate education in the art of music.
- a background in existing music curricula, curriculum design principles, materials, and methodologies.
- preparation in general education, theory, history, and methodology.

Bachelor of Arts in Music
The Department of Music offers a Bachelor of Arts in Music degree in a liberal arts tradition of music study. This degree is designed to provide foundation coursework to apply to a variety of interdisciplinary careers including music, in preparation for graduate study, or for self-improvement.

Students are required to earn a "C" or better in all required applied music (MUA), music (MU), and music education (MUE) courses.

Auditions
All potential music majors and minors are required to audition for appropriate faculty in order to determine their preparedness to enter the program, participate in ensembles, and determine eligibility for a scholarship or service award.

Although alternate dates are available, the preferred audition date for music majors and minors in all areas is the third Saturday in February. Other audition dates are available by contacting the applied faculty of your area of concentration, the department office (662) 325-3070, or the major ensemble offices.(Choir (662) 325-3490; Band (662) 325-2713)

Transfer Information
After successful admission to the University, and in addition to the music major audition, transfer students are required to complete a music theory and aural skills entrance exam to determine preparedness for upper division study. For more information see the Department of Music website at http://www.music.msstate.edu/students/transfers/ or call 662-325-3070.

Music Minor
Mississippi State University offers MSU students the opportunity to complete a minor in music. The Music Minor is a comprehensive set of courses designed to increase student musicianship and knowledge.

Students must audition and be accepted as a music minor before the minor may be declared. Acceptance in any given studio area is on a space available basis. The requirements for the music minor cannot be completed after graduating from MSU.

For information and required courses, visit the Department of Music website: http://www.music.msstate.edu/academics/minorinmusic/

General Education and College Requirements

English Composition		
EN 1103	English Composition I	3
or EN 1163	Accelerated Composition I	
EN 1113	English Composition II	3
or EN 1173	Accelerated Composition II	
Foreign Languages		
3 semesters - Foreign Language - see advisor		9
Humanities		
Literature Elective - see A&S requirements		3
History Elective - see A&S requirements		3
Philosophy Elective - see A&S requirements		3
Must be from 2 areas - EN, HI, PHI or REL		6
Met in Major Core		3
Mathematics		
MA 1313	College Algebra	3
Math higher than MA 1313		3
Natural Sciences		
Physical Sciences w/lab (CH, GG, PH) [1]		3-4
Biological Sciences w/lab (BIO, EPP, PO) [1]		3-4
Natural Science Elective [2]		3-4
Fine Arts		
MU 3013	Survey of Western Music History I	3
Social Science		
See A&S requirements		6
Must be from 3 areas - AN, CO, EC, GR, PS, PSY or SO		9
Met in Major Core		3
Major Core		
MU 1213	Music Theory I	3
MU 1321	Ear Training I	1
MU 1413	Music Theory II	3
MU 1521	Ear Training II	1
MU 2012	World Music	2
MU 2613	Music Theory III	3
MU 2721	Ear Training III	1
MU 2813	Music Theory IV	3
MU 2921	Ear Training IV	1
MU 3023	Survey of Western Music History II	3
MU 3412	Conducting	2
MU 2111	Piano Class	1
MU 2121	Piano Class	1
MU 3111	Piano Class	1
MU 3121	Piano Class	1
or MU 3112	Functional Skills of Piano I	
MU 3122	Functional Skills of Piano II	2
Oral Communication Requirement		
CO 1003	Fundamentals of Public Speaking	3
Computer Literacy Requirement		
Achieved through the Music Theory sequence		
MU 1213	Music Theory I	3
MU 1413	Music Theory II	3
MU 2613	Music Theory III	3
MU 2813	Music Theory IV	3
Writing Requirement		
EDF 3413	Writing for Thinking (See advisor for other approved courses.)	3
Applied Study		
6 semesters of study at 2 hours per semester:		
2 semesters of 1000-level courses		
2 semesters of 2000-level courses		
2 semesters of 3000-level courses must be completed on the same instrument		
At least 1 semester of 2000-level and 2 semesters of 3000-level work must be completed at MSU.		
Ensembles		
4 semesters of ensembles must be completed at MSU, two of which must be the designated major ensembles.		
Other Requirements		
Piano Proficiency Exam		
Upper Division Proficiency Exam		
MU 1010	Recital Hour (must be enrolled 8 semesters)	0
Recital or Project		
Music Electives		
Music Electives		4
Met in College Core		6
Total Hours		122

[1] See University/A&S Core.

[2] Consult advisor.

Pre-Professional Programs

Pre-Law Minor (LAW)

Whit Waide, J.D., Advisor
199 Bowen Hall
wwaide@pspa.msstate.edu

The interdisciplinary minor in Pre-Law consists of 19 credit hours offered through several departments and programs throughout the university. The minor will consist of a two-semester prerequisite class called "Introduction to Law I and II" (PS 1182/1192), as well as the requirement that a student take PHI 1113 Introduction to Logic, and a Constitutional Law class (PS 3063, 3073, or AAS 3043/PS 3043) or Principles of Legal Writing (EN 4223). At least 9 of the 19 hours must be at the 3000 or 4000 level.

The Pre-Law minor is designed to be a curriculum that is consistent with the best practice in preparing undergraduates for the study of law. It has an interdisciplinary focus, creates a practicum like common experience,

and focuses on analytic skill development. It will assist students in determining whether they desire to attend law school and will provide exposure to what they will encounter should they decide to attend law school.

Students interested in careers in law are encouraged to speak with Whit Waide, Pre-Law advisor. The Pre-Law advisor will provide guidance on the law school admissions test (LSAT), law school application process, and on selecting the best law school for you. For additional information contact Mr. Waide at wwaide@pspa.msstate.edu.

Dr. A. Randle and Marilyn W. White Health Professions Resource Center

Mary Celeste Reese, PhD; Director
Office: 115 Harned Hall
Email: prehealth@msstate.edu
Phone: (662) 325-5966
Mailing address: PO Box GY, Mississippi State, MS 39762
Website: Prehealth.msstate.edu

The Health Professions Resource Center (HPRC) offers a centralized advising service to all current and former MSU students, regardless of major, interested in a health career path. Operating under the College of Arts and Sciences, the HPRC offers academic planning, assistance with the application process, reviewing personal statements, partnering with our Career Center to offer mock interviews, a summer MCAT prep course, informative workshops, along with many other helpful resources to support students to be competitive applicants. The HPRC helps support the following health careers, but are not limited to these concentrations:

- Pre-Any Allied Health
- Pre-Chiropractic Medicine
- Pre-Dentistry
- Pre-Medicine
- Pre-Nursing
- Pre-Occupational Therapy
- Pre-Optometry
- Pre-Pharmacy
- Pre-Physical Therapy
- Pre-Physician Assistant
- Pre-Veterinary Medicine

Many professional schools require a bachelor’s degree before matriculation. Even if a degree is not required, some students may wish to earn a degree from MSU before moving on to professional school. If a professional school requires a degree, a student must declare a major. None of the concentration areas listed above are majors. No specific major is preferred over another by professional schools, so students are encouraged to choose a major based on their academic interests. A major may be chosen from any of the colleges at MSU. Pre-health students who declare a major will have both a pre-health advisor and an academic advisor. Students seeking advice from a pre-health advisor will need to check in with the HPRC. Appointments are typically preferred.

College of Business

SHARON L. OSWALD, Dean

Kevin E. Rogers, Associate Dean
Offices: Suite 114 McCool Hall
Telephone: (662) 325-2580
Mailing Address: Box 5288, Mississippi State, MS 39762
http://www.business.msstate.edu

Historical Information

The College of Business, organized in 1915, is the oldest college of business in the state and one of the oldest in the South. In 1979, the Department of Accounting was designated as the School of Accountancy in answer to a need for attention to the unique requirements of the growing profession of accountancy. In 2007, the School of Accountancy was renamed the Richard C. Adkerson School of Accountancy.

This college permits students to major in any of the following programs: Accounting, Finance, Finance - Risk Management and Insurance, Information Systems, Economics, Business Administration, BA-International Business/Foreign Languages (double degree), Management, Marketing, Marketing-Supply Chain Management, and Marketing-Professional Golf Management. The College offers degree programs that lead to bachelor's, master's and doctoral degrees. Distance learning through interactive classrooms and Internet courses is another avenue available to pursue course work for College of Business students. Minors are available in most program areas.

Mission

The Mississippi State University College of Business serves the people and businesses of Mississippi and beyond through an enriched learning community. Students are prepared to think, communicate, and collaborate ethically in today's diverse, technology-driven, global business environment. Our college provides a collegial academic atmosphere that nurtures students and encourages faculty to be innovative and to integrate teaching, research, and service.

Accreditation

The undergraduate, masters, and doctoral business programs are accredited by AACSB International (The Association to Advance Collegiate Schools of Business). The Adkerson School of Accountancy is separately accredited at the undergraduate and masters levels by AACSB International.

Organization

The administrative units of the College of Business consist of the Adkerson School of Accountancy and the Departments of Finance and Economics; Management and Information Systems; and Marketing, Quantitative Analysis, and Business Law. In addition to these units, the college includes the Office of the Graduate School in Business, the Office of Business Outreach and the College of Business Academic Advising Center. The administrators of these units are as follows:

Unit	Name
Adkerson School of Accountancy 300 McCool Hall	Shawn Mauldin, Director 325-3710
Finance and Economics 312 McCool Hall	Kathleen Thomas, Head 325-2342
Mgt & Info Systems Dept 302 McCool Hall	James Chrisman, Head 325-3928
Mkt, Quan Analysis & BL 324 McCool Hall	Melissa Moore, Head 325-3163
Graduate Studies 200 McCool Hall	Nicole Ponder, Director 325-1891
Distance Learning 200 McCool Hall	Cindy Smith, Director 325-1891
COB Acad Advising Ctr 106 McCool Hall	Vergie Bash, Acad. Coor.
	Vickie Mann, Acad. Coor.
	Kim McLeod, Acad. Coor.
	Vincent Young, Acad. Coor.
	325-1890

Directors and managers of other academic and professional support units in the College of Business are:

Unit	Name
Small Business Develop Ctr Research & Tech	Chip Templeton, Director 325-8684
Center for Entrepreneurship and Outreach 101 McCool Hall	Eric Hill, Entrepreneurship Director 325-3521
	Jeffrey Rupp, Outreach Director 325-8122
Computing Services 222 McCool Hall	Eric Hester, Manager 325-1545
P. Koch Lutken Chair of Ins 312 McCool Hall	325-2341
International Business 210 McCool Hall	Travis Wiseman, Director 325-2580
PGA Golf Management 309 McCool Hall	Jeff Adkerson, Director 325-3161

Support Services

COB Academic Advising Center
Coordinator: Vergie Bash
106 McCool Hall: 325-1890

The College of Business (COB) Academic Advising Center provides centralized advising resources to students (current, prospective, and alumni), parents, faculty, and support staff. The Academic Advising Center maintains the official records of COB students (Accounting majors should see the Director of Accountancy). The Center represents the Dean on all academic paperwork such as transfer evaluations, off-campus requests, withdrawals, overload requests, degree audits, change of majors, and correspondence course approvals.

Unless otherwise noted, all undergraduate business majors are advised through the COB Academic Advising Center.

Employment Service

The College of Business endeavors, in cooperation with the Career Center (located at 300 Montgomery Hall), to arrange employment interviews for graduating seniors. Former graduates seeking employment or change of position are urged to keep the Career Center informed as to availability.

Rules for Scheduling Classes

The normal load for an undergraduate student in a regular semester is 15-18 credit hours. Mississippi State University has established undergraduate student course limits based on cumulative and MSU grade point averages. (See Item III, A-7 Student Load in the Introduction Section.)

Admission

All new freshmen desiring to major in business will be admitted to into their chosen major in the College of Business at Mississippi State University. Transfer students wishing to major in business must meet a minimum grade point average requirement. Freshmen must have a minimum 2.0 overall, sophomores must have a minimum 2.25 overall, and juniors must have a minimum 2.5 overall grade point average. Current MSU students wishing to change majors to business must also meet minimum grade point averages on courses taken at MSU. Freshmen must have a minimum 2.0 overall, sophomores must have a minimum 2.25 overall, and juniors must have a minimum 2.5 grade point average at MSU.

Junior Screen – Students with between 50 and 75 applied hours of college credit towards the BBA degree must meet the following to continue in the College of Business: (i) a student must have a minimum 2.5 overall grade point average and a minimum 2.5 MSU grade point average; and (ii) a student must have earned a grade of "C" or better in the following seven courses (or equivalent): BIS 1012, ACC 2013, ACC 2023, EC 2113, EC 2123, BQA 2113, and BL 2413. Students not meeting these criteria will not be permitted to enroll in selected 3000 level or any 4000 level business classes. Questions about this policy can be referred to the Academic Advising Center.

Bachelor of Business Administration Degree Programs

Graduation Requirements

The admission/readmission requirements for the Bachelor of Business Administration degree are described in Part I, Section II of this catalog.

In addition to the University's minimum requirements, the following requirements must be met for students applying for graduation:

- Pass 124-154 applicable hours
- Take a minimum of 62 semester hours from a senior college
- Take a minimum of 32 upper level business hours at MSU
- Complete the last 32 hours in residence at MSU
- Have at least a:
  - 2.50 GPA on all upper level business courses attempted,
  - 2.50 GPA on all major courses attempted,
  - 2.00 GPA on all MSU course work attempted, and
  - 2.00 GPA on all course work attempted.
- Have no more than two D's in upper level business courses. In excess of two D's will have to be repeated with a grade of C or better.

It is the student's responsibility to be sure that he/she has fulfilled the requirements of the particular curriculum before applying for a degree. Students must complete a graduation audit in the COB Academic Advising Center prior to graduation.

College-Wide Degree Course Requirements

The College of Business requires each student to take a planned and coordinated Arts & Sciences foundation designed to increase cultural appreciation and to give a broad knowledge of world affairs. Each program also permits the election of additional courses, according to the interests of the individual student. The total number of credits earned in the Arts & Sciences foundation program and other non-business courses shall not be less than 52 semester hours.

The B.B.A. as a Double Degree and as a Second Baccalaureate Degree

A double degree is available in the College of Business for students pursuing a primary degree in a a non-business area or accounting field at MSU. These programs require that a student satisfy the normal graduation requirements in the non-COB area first, as well as the required courses for the second degree. The required graduation grade point average in upper business course work is 2.50. Students are not allowed more than two D's in upper level business courses. Students must apply for and confirm both degrees at the same time. Students must establish a double degree record in the COB Academic Advising Center in 106 McCool.

The second degree curriculum is available to students who hold a baccalaureate degree in any non-business or accounting field of study from a regionally accredited institution. The combination of the first degree and the following second degree program must include the current general education courses and the courses listed below. A minimum of 32 semester hours upper business work must be earned in residence at Mississippi State University after the first degree has been conferred. Students must establish a second degree record with the COB Academic Advising Center.

Required Courses		
ACC 2013	Principles of Financial Accounting	3
ACC 2023	Principles of Managerial Accounting	3
BIS 1012	Introduction to Business Information Systems	2
BIS 3233	Management Information Systems	3
BL 2413	The Legal Environment of Business	3
BQA 2113	Business Statistical Methods I	3
BQA 3123	Business Statistical Methods II	3
EC 2113	Principles of Macroeconomics	3
EC 2123	Principles of Microeconomics	3
FIN 3123	Financial Management	3
MGT 3114	Principles of Management and Production	4
MGT 3213	Organizational Communications	3
MKT 3013	Principles of Marketing	3
MKT 3323	International Logistics	3
BUS 4853	Business Policy (Graduating semester only)	3
International Elective		3
Major Courses		21+ hours
Total Hours		69+

Preparation for the Study of Law

Office: 324 McCool Hall

Each year a number of graduates of the College of Business enter law school. Although there is no formal pre-law curriculum, most law schools advise pre-law students to seek a wide background of studies. The curriculum in the College is good preparation for the study of law because it offers the opportunity to study the arts, the humanities, science, and mathematics, in addition to business and economic disciplines which constitute the background for understanding the study of most legal problems. Because many areas of law practice deal with business, a background in business is very useful to the practicing attorney. Moreover, several business law course offerings are available to expose the student to introductory-level law courses. In addition, if a person should decide not to pursue a legal career, there are many opportunities available in business. A professor of business law—pre-law advisor—is available for providing information about the legal professional, assistance in choosing courses, and guidance concerning law school admissions.

Graduate Programs in Business Administration

Office: 200 McCool Hall

The College of Business offers five graduate programs in business administration, namely, the Master of Business Administration (MBA), The Master of Science in Information System (MSIS), Master of Professional Accountancy (MPA), Master of Taxation (MTX), and the Doctor of Philosophy in Business Administration (Ph.D.). An M.A. in Economics is also offered in the College.

Admission requirements for graduate programs in business include an acceptable history of previous academic work and a competitive score on the Graduate Management Admission Test (GMAT). Required background for admission to graduate course-work includes a general knowledge of the functions of business, statistics, and proficiency in computer usage.

Details concerning these graduate programs can be found in the Graduate Bulletin. Students who are interested in pursuing any of these programs should communicate with the Director of Graduate Studies in Business, P. O. Box 5288, Mississippi State, MS 39762. For further information, call (662) 325-1891.

Business Administration Major

The curriculum in Business Administration is designed for students who desire a general rather than a specialized program in business. BUAD advisors are located in the COB Academic Advising Center. Students are encouraged to make appointments with advisors, as they are not always available on a walk-in basis.

Business Administration majors must complete 12 hours from one major area and 6 hours from two additional major areas selected from the list below, for a total of 24 hours.

- Accounting
- Insurance
- Marketing
- Real Estate
- Management
- Economics
- Information Systems
- Finance
- International Business
- Legal Environ of Business
- Supply Chain Management

General Education Requirements

English Composition		
EN 1103	English Composition I	3
or EN 1163	Accelerated Composition I	
EN 1113	English Composition II	3
or EN 1173	Accelerated Composition II	
Mathematics		
MA 1313	College Algebra	3
MA 1613	Calculus for Business and Life Sciences I	3
BQA 2113	Business Statistical Methods I	3
Science		
2 Lab Sciences from General Education courses		6
Humanities		
See General Education courses		6
Fine Arts		
See General Education courses		3
Social/Behavioral Sciences		
PS 1113	American Government	3
Choose from General Education courses excluding: AEC and EC		3
College Core		
BQA 3123	Business Statistical Methods II	3
ACC 2013	Principles of Financial Accounting	3
ACC 2023	Principles of Managerial Accounting	3
EC 2113	Principles of Macroeconomics	3
EC 2123	Principles of Microeconomics	3
BL 2413	The Legal Environment of Business	3
BIS 3233	Management Information Systems	3
FIN 3123	Financial Management	3
MGT 3113	Principles of Management	3
MKT 3013	Principles of Marketing	3
MKT 3323	International Logistics	3
BUS 4853	Business Policy	3
Oral Communication Requirement		
CO 1003	Fundamentals of Public Speaking	3
or CO 1013	Introduction to Communication	
Computer Literacy Requirement		
BIS 1012	Introduction to Business Information Systems	2
Writing Requirement		
MGT 3213	Organizational Communications	3
Major Core		
International Elective (see advisor for options)		3
Select three areas of concentration from the following prefixes: [1]		
ACC, BIS, BL, EC, FIN, IB, INS, MGT, MKT, REF		
1st Major Area (12 hours)		

2nd Major Area (6 hours)	
3rd Major Area (6 hours)	
Non-business electives	13
Free electives	3
Total Hours	123

[1] Courses must be 3000-level or higher

Business Administration Minor

A minor in Business Administration will help non-business students prepare for entrance into the world of business. Students will become familiar with basic concepts and techniques necessary for analyzing business environments, making sound business decisions and planning one's career. Academic advising is available in the Academic Advising Center, 106 McCool Hall.

A minimum of 21 hours must be taken to obtain a BUAD minor. A minimum of 12 hours must be taken at MSU to receive the BUAD minor. Note that some choices require others as prerequisites.

Choose seven of the following:		21
BL 2413	The Legal Environment of Business	
ACC 2013	Principles of Financial Accounting	
ACC 2023	Principles of Managerial Accounting	
EC 2113	Principles of Macroeconomics	
EC 2123	Principles of Microeconomics	
FIN 3123	Financial Management	
MKT 3013	Principles of Marketing	
MGT 3114	Principles of Management and Production	
BIS 3233	Management Information Systems	
BQA 2113	Business Statistical Methods I	
BQA 3123	Business Statistical Methods II	
MGT 3413	Production Management	
Total Hours		21

Entrepreneurship Minor

In partnership with the MSU Entrepreneurship Center, the College of Business offers a minor in Entrepreneurship to help students prepare for launching and growing new business ventures. This minor offers interdisciplinary coursework in management, marketing/branding, entrepreneurial finance, and the legal aspects of entrepreneurship. Each course in the minor goes beyond traditional business courses by focusing on entrepreneurial applications. The entrepreneurship minor is available to any MSU student, regardless of major. The minor in entrepreneurship is designed to complement the Engineering Entrepreneurship Certificate program by allowing engineering majors to benefit from more advanced coursework in entrepreneurship. Upon completion of the Engineering Entrepreneurship Certificate, a student will have the prerequisites for the Entrepreneurship minor.

The minor is comprised of 16 hours listed below:

MGT 3323	Entrepreneurship	3
MGT 3333	Field Studies in Entrepreneurship	3
BL 4243	Legal Aspects of Entrepreneurship	3
FIN 4323	Entrepreneurial Finance	3
MKT 4423	Strategic Brand Management	3
GE 3011	Engineering Entrepreneurship Seminar	1

Students interested in the Entrepreneurship Minor should contact the MSU E-center in 101 McCool Hall.

Department of Finance and Economics

Office: 312 McCool Hall

Business Economics Major (ECO)

Economics is the scientific study of how people and institutions make choices concerning the use of society's scarce resources. Applied to business, economics is primarily concerned with the decision-making of households and firms within a market context. The importance of economic analysis is recognized by it being the only social science in which a Nobel Prize is awarded. The B.B.A. in economics provides the analytical skills and empirical background needed to understand the dynamic problems facing businesses in the ever-changing economic environment. Career opportunities available to an economics graduate include management, research, and instructional positions with corporations, banks, economic development agencies, trade organizations, governments, and educational institutions.

An economics major or minor also helps prepare the student for graduate professional training in business, public administration, and law. The flexibility of the economics major is reflected in relatively high starting salaries and lifetime earnings of economists. Undergraduates at Mississippi State University may pursue an economics major through either the College of Business (B.B.A degree) as described here or through the College of Arts and Sciences (B.A. degree) as described previously in this bulletin.

Students seeking the B.B.A. with a major in economics are required to complete all College of Business and university common core requirements. Majors are required to take MA 1613 Calculus for Business and Life Sciences I . Elective courses should be chosen with the advisor's approval and used to enhance the student's overall program. Only grades of C or higher will be accepted for EC courses that are counted toward the major.

The economics faculty offers a minor in economics through the College of Arts and Sciences. This minor is open to any student regardless of major or college of enrollment. A minor in economics is attained by selecting, in consultation with the economics minor advisor, at least 15 hours of economics course work. Three hours of courses from finance (FIN) or agricultural economics (AEC) may be applied to the economics minor with approval from the advisor. All economics minors must register with the economics minor advisor in the Department of Finance and Economics, 312 McCool Hall. Students with majors in business, engineering, agriculture, the social sciences, mathematics, and pre-law are especially encouraged to consider the economics minor.

Academic advising and career counseling are available from the economics faculty for both majors and minors. Students interested in the study of economics should contact the Department of Finance and Economics, 312 McCool Hall. Any student who completes 12 credit hours of economics with at least a 3.0 GPA and has an overall GPA of 3.0 or higher is eligible for membership in Omicron Delta Epsilon, the international honor society in economics.

Finance Major (FINA)

Finance plays a central role in the operation of the economy and is crucial to an organized society's resource allocation system. Individuals often come in contact with financial instruments (money, stocks, bonds, etc.) and financial institutions (banks, thrifts, insurance companies, etc.); thus, they need to understand the role of the financial system in managing their lifetime financial portfolio. Finance majors acquire the knowledge and skills to help individuals and companies make decisions regarding allocation of scarce resources through analyzing accounting data, utilizing economic concepts, and applying statistical tools in the valuation of financial and real assets.
The Finance major requires 124 credit hours and leads to a Bachelor of Business Administration (B.B.A.) degree. For specialization, students may choose from a list of electives based on their interests and career preparation needs. In order to maximize the benefits of their degree, students are strongly encouraged to work closely with a faculty advisor in securing an internship and developing their personal program of study.

The career opportunities for Finance majors are varied and challenging. Graduates pursue careers in corporate financial management, commercial banking, real estate investment, mortgage lending, investment banking, financial planning, and wealth management. In addition, an optional concentration in Risk Management and Insurance is also available.

Finance minors and double majors are available for both business and non-business majors. For specifics, see the Programs of Study tab and the Minors tab.

Risk Management and Insurance Concentration

The concentration in Risk Management and Insurance option leads to a Bachelor of Business Administration (B.B.A.) degree with a major in Finance (FINA) and a Concentration in Risk Management and Insurance (RMI). The program offers a broad study of subjects related to the fields of Risk Management and Insurance with an emphasis on the professional educational requirements in the Insurance industry.

Students enrolled in the concentration must complete an Introductory course in Insurance as well as advanced courses in Life and Health Insurance, Property and Casualty Insurance, and Enterprise Risk Management.

Business Economics Major (ECO)

General Education Requirements

English Composition		
EN 1103	English Composition I	3
or EN 1163	Accelerated Composition I	
EN 1113	English Composition II	3
or EN 1173	Accelerated Composition II	
Mathematics		
MA 1313	College Algebra	3
MA 1613	Calculus for Business and Life Sciences I	3
BQA 2113	Business Statistical Methods I	3
Science		
2 Lab Sciences from General Education courses		6
Humanities		
See General Education courses		6
Fine Arts		
See General Education courses		3
Social/Behavioral Sciences		
PS 1113	American Government	3
See General Educ courses excluding: AEC and EC		3
College Core		
BQA 3123	Business Statistical Methods II	3
ACC 2013	Principles of Financial Accounting	3
ACC 2023	Principles of Managerial Accounting	3
EC 2113	Principles of Macroeconomics	3
EC 2123	Principles of Microeconomics	3
BL 2413	The Legal Environment of Business	3
BIS 3233	Management Information Systems	3
FIN 3123	Financial Management	3
MKT 3013	Principles of Marketing	3
MGT 3113	Principles of Management	3
BUS 4853	Business Policy	3
Oral Communication Requirement		
CO 1003	Fundamentals of Public Speaking	3
or CO 1013	Introduction to Communication	
Computer Literacy Requirement		
BIS 1012	Introduction to Business Information Systems	2
Writing Requirement		
MGT 3213	Organizational Communications	3
Major Core		
International Elective		
Choose one of the following:		3
EC 3513	Comparative Economic Policy	
EC 4303	International Economic Development	
EC 4323	International Economics	
Required Courses		
EC 3113	Intermediate Macroeconomics	3
EC 3123	Intermediate Microeconomics	3
EC 4643	Economic Forecasting and Analysis	3
Upper Division EC electives		
See advisor for options		9
Non-business electives		
See advisor for options		12
Free electives		10
Total Hours		123

Finance Major (FINA)

Finance minors and double majors are available for both business and non-business majors. For specifics, see below.

General Education Requirements

English Composition		
EN 1103	English Composition I	3
or EN 1163	Accelerated Composition I	
EN 1113	English Composition II	3

or EN 1173	Accelerated Composition II	
Mathematics		
MA 1313	College Algebra	3
MA 1613	Calculus for Business and Life Sciences I	3
BQA 2113	Business Statistical Methods I	3
Science		
2 Lab Sciences from General Education courses		6
Humanities		
See General Education courses		6
Fine Arts		
See General Education courses		3
Social/Behavioral Sciences		
PS 1113	American Government	3
Choose from General Education courses excluding: AEC and EC		3
College Core		
BQA 3123	Business Statistical Methods II	3
ACC 2013	Principles of Financial Accounting	3
ACC 2023	Principles of Managerial Accounting	3
EC 2113	Principles of Macroeconomics	3
EC 2123	Principles of Microeconomics	3
BL 2413	The Legal Environment of Business	3
BIS 3233	Management Information Systems	3
FIN 3123	Financial Management	3
MKT 3013	Principles of Marketing	3
MGT 3113	Principles of Management	3
BUS 4853	Business Policy	3
Oral Communication Requirement		
CO 1003	Fundamentals of Public Speaking	3
or CO 1013	Introduction to Communication	
Computer Literacy Requirement		
BIS 1012	Introduction to Business Information Systems	2
Writing Requirement		
MGT 3213	Organizational Communications	3
Major Core		
FIN 3723	Financial Markets and Institutions	3
FIN 4223	Intermediate Financial Management	3
FIN 4423	Investments	3
Accounting Elective	Choose one of the following:	3
ACC 3013	Cost Accounting	
ACC 3023	Intermediate Accounting I	
ACC 3203	Financial Statement Analysis	
Senior Capstone Requirement (select at least one):		3
FIN 4243	Senior Seminar in Financial Management	
FIN 4433	Senior Seminar in Portfolio Management	
Finance (FIN) or Real Estate Finance (REF) electives at the 3000-level or above		12
Risk Management and Insurance concentration (replace 27-hour FIN Major Core above with the following)		
FIN 3723	Financial Markets and Institutions	3
FIN 4223	Intermediate Financial Management	3
FIN 4423	Investments	3
Accounting Elective	Choose one of the following:	3
ACC 3013	Cost Accounting	
ACC 3023	Intermediate Accounting I	
ACC 3203	Financial Statement Analysis	
INS 3103	Principles of Insurance	3
INS 3203	Property and Casualty Insurance	3
INS 3303	Life and Health Insurance	3
Finance (FIN) or Real Estate Finance (REF) electives at the 3000-level or above		3
Total Hours		123

[1] These courses are to be selected in consultation with your finance advisor. They may be taken along with Junior-Senior core courses. Of the three courses required, at least two should be Finance (FIN) or Real Estate Finance (REF) electives at the 3000 level or above.

Double Major. Students with another B.B.A Major[1] who desire a Double Major in Finance must take the following 18 hours beyond the 124 hours required for the first major. For additional depth, they may choose from the listed optional courses.

Required Courses for Double Major		
FIN 3723	Financial Markets and Institutions	3
FIN 4423	Investments	3
FIN 4223	Intermediate Financial Management	3
FIN 4923	International Financial Management	3
FIN 4723	Bank Management	3
FIN 4243	Senior Seminar in Financial Management	3
Optional Finance Courses		
FIN 3203	Financial Statement Analysis	3
FIN 4233	Working Capital Management	3
FIN 4433	Senior Seminar in Portfolio Management	3

[1] Non-Business School Majors wishing to pursue a second degree in a Business Administration field, please consult the MSU Bulletin or the COB Advisement Center.

Finance Minor

Students with a Business School Major who desire to Minor in Finance are required to take:

FIN 3723	Financial Markets and Institutions	3
FIN 4223	Intermediate Financial Management	3
FIN 4423	Investments	3

Students with a Non-business School Major who desire to Minor in Finance are required to take:

FIN 3123	Financial Management	3
FIN 3723	Financial Markets and Institutions	3
FIN 4423	Investments	3
FIN 4223	Intermediate Financial Management	3
FIN 4923	International Financial Management	3
Finance (FIN) or Real Estate Finance (REF) elective at the 3000-level or above		3

Insurance Minor

The College of Business offers a minor in Insurance to help students prepare for careers in the insurance industry. This minor provides students with the expertise to pursue insurance related careers such as insurance underwriter, sales/agency management, claims adjustor, financial planner and actuary. The insurance minor enhances many existing business majors including business administration, business information systems, management, and marketing. The minor also complements many non-business majors such as mathematics, statistics, communication, and psychology.

The minor is comprised of 15 hours listed below:

INS 3103	Principles of Insurance	3
INS 3203	Property and Casualty Insurance	3
INS 3303	Life and Health Insurance	3
INS 4503	Enterprise Risk Management	3
INS 3403	Financial Planning	3
or INS 3503	Employee Benefits	

Students interested in the Insurance Minor should contact the Department of Finance & Economics, 312 McCool Hall.

Economics Minor

The economics faculty offers a minor in economics through the College of Arts and Sciences. This minor is open to any student regardless of major or college of enrollment. A minor in economics is attained by selecting, in consultation with the economics minor advisor, at least 15 hours of economics course work. Three hours of courses from finance (FIN) or agricultural economics (AEC) may be applied to the economics minor with approval from the advisor. All economics minors must register with the economics minor advisor in the Department of Finance and Economics, 312 McCool Hall. Students with majors in business, engineering, agriculture, the social sciences, mathematics, and pre-law are especially encouraged to consider the economics minor.

Department of Management and Information Systems

Office: 302 McCool Hall

Students in the Department of Management and Information Systems may elect to major in either Management or Business Information Systems. Both majors offer excellent job opportunities and can help graduates to achieve their potential in business firms or other organizations.

Management Major (MGT)

Regardless of one's chosen career, future responsibilities will very likely require a knowledge of management concepts. While an organization can acquire more capital, and technology becomes more common and cost-effective, the only true sustainable source of competitive advantage for an organization is people, and how these resources are managed. Management adds value by encouraging employee involvement, creativity, motivation and loyalty. A student may choose to take electives emphasizing human resource management, general management, and entrepreneurship.

Business Information Systems Major (BIS)

Business, industrial, governmental, and military establishments are constantly seeking persons with the necessary aptitude, professional education, and experience for careers in the fast-growing field of computer information systems. Through the facilities of the academic departments and the computing center, students at Mississippi State University have a unique opportunity to acquire both professional education and experience in business and management information systems.

The purpose of the Business Information Systems major is to prepare students to solve business problems where the solution normally involves the use of a computer. Thus, the student must have a strong foundation in computer concepts, systems analysis and design, programming and quantitative skills. Since the student will be expected to solve business related problems, he/she must have a broad background and understanding of the business environment including such topics as accounting, economics, law, management, production, marketing, finance, and communications.

A student chapter of the BIS club is active and provides students with the opportunity to keep abreast of current developments in the field of management information systems through professional speakers, social activities, and field trips.

Management Major (MGT)

General Education Requirements

English Composition		
EN 1103	English Composition I	3
or EN 1163	Accelerated Composition I	
EN 1113	English Composition II	3
or EN 1173	Accelerated Composition II	
Mathematics		
MA 1313	College Algebra	3
MA 1613	Calculus for Business and Life Sciences I	3
BQA 2113	Business Statistical Methods I	3
Science		
2 Lab Sciences from General Education courses		6
Humanities		
See General Education courses		6
Fine Arts		
See General Education courses		3
Social/Behavioral Sciences		
PS 1113	American Government	3
Choose from General Education excluding: AEC and EC		3
College Core		
BQA 3123	Business Statistical Methods II	3
ACC 2013	Principles of Financial Accounting	3
ACC 2023	Principles of Managerial Accounting	3
EC 2113	Principles of Macroeconomics	3
EC 2123	Principles of Microeconomics	3
BL 2413	The Legal Environment of Business	3
BIS 3233	Management Information Systems	3
FIN 3113	Financial Systems	3

FIN 3123	Financial Management	3
MKT 3013	Principles of Marketing	3
MGT 3113	Principles of Management	3
BUS 4853	Business Policy	3
International Elective (see advisor for options)		3
Oral Communication Requirement		
CO 1003	Fundamentals of Public Speaking	3
or CO 1013	Introduction to Communication	
Computer Literacy Requirement		
BIS 1012	Introduction to Business Information Systems	2
Writing Requirement		
MGT 3213	Organizational Communications	3
Major Core		
MGT 3323	Entrepreneurship	3
MGT 3513	Introduction to Human Resource Management	3
MGT 3813	Organizational Behavior	3
MGT 4153	Management Seminar	3
Choose any three MGT electives 3000-level or above:		9
MGT 3333	Field Studies in Entrepreneurship	
MGT 3823	Socially Responsible Leadership	
MGT 4533	Advanced Human Resource Management	
MGT 4543	Compensation Management	
MGT 4563	Staffing in Organizations	
MGT 4613	Cross-Cultural Management	
Non-business electives (see advisor for options)		15
Free electives		4
Total Hours		124

Business Information Systems Major (BIS)

General Education Requirements

English Composition		
EN 1103	English Composition I	3
or EN 1163	Accelerated Composition I	
EN 1113	English Composition II	3
or EN 1173	Accelerated Composition II	
Mathematics		
MA 1313	College Algebra	3
MA 1613	Calculus for Business and Life Sciences I	3
BQA 2113	Business Statistical Methods I	3
Science		
2 Lab Sciences from General Education courses		6
Humanities		
See General Education courses		6
Fine Arts		
See General Education courses		3
Social/Behavioral Sciences		
PS 1113	American Government	3
Choose from General Education excluding: AEC and EC		3
College Core		
BQA 3123	Business Statistical Methods II	3
ACC 2013	Principles of Financial Accounting	3
ACC 2023	Principles of Managerial Accounting	3
EC 2113	Principles of Macroeconomics	3
EC 2123	Principles of Microeconomics	3
BL 2413	The Legal Environment of Business	3
BIS 3233	Management Information Systems	3
FIN 3113	Financial Systems	3
FIN 3123	Financial Management	3
MKT 3013	Principles of Marketing	3
MGT 3113	Principles of Management	3
BUS 4853	Business Policy	3
International Elective (see advisor for options)		3
Oral Communication Requirement		
CO 1003	Fundamentals of Public Speaking	3
or CO 1013	Introduction to Communication	
Computer Literacy Requirement		
BIS 1012	Introduction to Business Information Systems	2
Writing Requirement		
MGT 3213	Organizational Communications	3
Major Core		
BIS 1523	Web Development I	3
BIS 2523	Web Development II	3
BIS 3523	Advanced Languages I	3
BIS 3753	Business Database Systems	3
BIS 4753	Structured Systems Analysis and Design	3
BIS 4763	BIS Senior Seminar	3
Choose two of the following:		6
BIS 4113	Business Information Systems Security Management	
BIS 4513	Microcomputers and Networks	
BIS 4523	Business Programming with COBOL	
BIS 4533	Decision Support Systems	
Non-business electives (see advisor for options)		
Computer Science Engineering (CSE) electives		3
Computer-related electives		9
Free electives		4
Total Hours		123

Department of Marketing, Quantitative Analysis and Business Law

Office: 324 McCool Hall

This department offers one major (Marketing), two minors (Marketing and Business Analytics), and three concentrations (PGA Golf Management, Supply Chain Management, and Integrated Digital Marketing). In addition, the department offers marketing, quantitative analysis and business law courses to support other programs in the college and across campus.

Marketing Major (MKT)

Marketing consists of three significant interlocking activities:

1. understanding consumers along with their wants and unfilled needs;
2. developing improved products and services that meet the identified needs of consumers; and
3. communicating the benefits of the improved products and services through advertising, public relations, promotion and effective salesmanship.

Courses offered within this unit prepare students to provide marketing leadership and assume a variety of career paths, including field sales, brand management, marketing communications, store management, procurement, logistics, and small business.

PGA Golf Management Concentration (PGM)

Director: Jeffrey W. Adkerson, PGA
Office: 309 McCool Hall; Phone: (662) 325-3161

The PGA Golf Management Program is the second oldest PGA Golf Management Program program accredited by the Professional Golfers' Association of America (PGA). The Program prepares graduates for careers as Class A PGA Professionals at golf courses and other industry businesses. A PGA Professional must have a broad assortment of marketing, management and other business-related skills to be effective in the golf profession. The PGA Golf Management Program is a demanding four and one half year curriculum.

The 4 ½ year program leads to a bachelor's degree in business administration with a major in marketing. In addition to the requirements for a degree in marketing, students must complete courses in turf management, food management, landscape architecture, human resource management; and all PGA Golf Management requirements. Students must also complete a minimum of 16 months of co-op under the guidance of the MSU Cooperative Education Program. These work experiences are under the tutelage of Class A PGA Professionals throughout the country. Students are required to be continuously enrolled at MSU as full-time students or in the MSU Cooperative Education Program according to their co-op schedule. Those who complete the program thus earn a prestigious degree, and upon eligible employment, membership in the PGA of America.

PGA Membership. Please see PGA Golf Management staff to discuss PGA Membership Requirements.

PGA Golf Management Graduation Requirements. Students must complete the last semester in school (not on co-op). They must also pass the PGA Playing Ability Test, complete 16 months of co-op, and complete all levels of the PGA Golf Management Program.

PGA Golf Management Admission Procedures. The PGA Golf Management Program has a limited enrollment. The current enrollment limit is 200; however, this number is subject to change based on the placement outlook and PGA Golf Management and Co-op budget constraints. The number of students admitted each year is determined by graduation and attrition of the previous year. Students are admitted once per year for entrance in the fall semester. The deadline for completed applications is May 1 each year.

Entrance Requirements

Freshmen:

- Meet MSU regular admission requirements
- Have a USGA Handicap of 8 or less

Transfer Students:

- Meet MSU admission requirements
- 2.5 GPA with maximum of 62 applied semester hours
- Have a USGA Handicap of 8 or less

Non-Citizen:

- The MSU PGA Golf Management Program is sanctioned by PGA of America to educate and train graduates to become PGA Members. International students must complete and sign a non-citizen form as required by the PGA of America.

Supply Chain Management Concentration (SCM)

Supply chain management continues to play a major role in the national and international economy. As businesses continue to focus on logistics and transportation improvements, job opportunities for graduates in the supply chain management concentration increase. The curriculum in the supply chain management concentration will acquaint the student with the issues, perspectives, and techniques associated with transportation and logistics theory and practice. It offers in-depth treatment of distribution, supply, warehousing, inventory control, and operations in the modes of transportation.

Integrated Digital Marketing Concentration (IDM)

The internet and digital marketing have grown to become an important resource for organizations and consumers. As firms and individuals focus on utilizing digital tools and applications for all aspects of marketing from product development, consumer behavior and customer touch points, job opportunities for graduates in the integrated digital marketing concentration increase. The curriculum in the integrated digital marketing concentration will provide the student with the strategic application skills needed in the digital world. Students will be exposed to industry standard tools and techniques through the analyses and assessment of leading firm practices and the development of comprehensive applied projects.

Marketing Major (MKT)

General Education Requirements

English Composition		
EN 1103	English Composition I	3
or EN 1163	Accelerated Composition I	
EN 1113	English Composition II	3
or EN 1173	Accelerated Composition II	
Mathematics		
MA 1313	College Algebra	3
MA 1613	Calculus for Business and Life Sciences I	3
BQA 2113	Business Statistical Methods I	3
Science		
2 Lab Sciences from General Education courses		6

Humanities		
See General Education courses		6
Fine Arts		
See General Education courses		3
Social Sciences		
PS 1113	American Government	3
Introductory course in AN, PSY or SO		3
College Core		
BQA 3123	Business Statistical Methods II	3
ACC 2013	Principles of Financial Accounting	3
ACC 2023	Principles of Managerial Accounting	3
EC 2113	Principles of Macroeconomics	3
EC 2123	Principles of Microeconomics	3
BL 2413	The Legal Environment of Business	3
BIS 3233	Management Information Systems	3
FIN 3123	Financial Management	3
MKT 3013	Principles of Marketing	3
MKT 3323	International Logistics	3
MGT 3113	Principles of Management	3
BUS 4853	Business Policy	3
Oral Communication Requirement		
CO 1003	Fundamentals of Public Speaking	3
or CO 1013	Introduction to Communication	
Computer Literacy Requirement		
BIS 1012	Introduction to Business Information Systems	2
Writing Requirement		
MGT 3213	Organizational Communications	3
Major Core		
International Elective (see advisor for options)		3
MKT 4413	Consumer Behavior	3
MKT 4533	Marketing Research	3
MKT 4813	Marketing Management	3
Choose four of the following:		12
MKT 3213	Retailing	
MKT 4113	Personal Selling	
MKT 4123	Advertising	
MKT 4213	Internet Marketing	
MKT 4223	Social Media Marketing	
MKT 4423	Strategic Brand Management	
MKT 4613	Services Marketing	
MKT 4143	Sales Management	
MKT 3933	International Marketing	
MKT 4033	International Transportation	
MKT 4313	Physical Distribution Management	
MKT 4333	International Supply Chain Management	
Non-business electives (see advisor for options) [1]		13
Free electives (see advisor for options) [1]		6
Total Hours		123

[1] To be selected with the advice and approval of advisor

PGA Golf Management Concentration (PGM)

Director: Jeffrey W. Adkerson, PGA
Office: 309 McCool Hall; Phone: (662) 325-3161

Concentration Course Requirements

PGA Golf Management students are required to take all courses listed under the General Education and College requirements for Marketing in addition to the following courses:

MKT 2211	PGM Level I Seminar	1
MKT 2213	PGA Golf Facility Management I	3
MKT 2223	Introduction to Golf Swing Instruction	3
MKT 2233	Intermediate Golf Instruction	3
MKT 2243	PGA Golf Facility Management II	3
MKT 2252	Advanced Golf Instruction	2
MKT 3213	Retailing	3
MKT 4234	Golf Operations Management	4
MKT 4413	Consumer Behavior	3
MKT 4533	Marketing Research	3
MGT 3513	Introduction to Human Resource Management	3
International Elective (see advisor for options)		3
Choose three of the following:		9
MKT 3933	International Marketing	
MKT 4113	Personal Selling	
MKT 4123	Advertising	
MKT 4143	Sales Management	
MKT 4213	Internet Marketing	
MKT 4223	Social Media Marketing	
MKT 4423	Strategic Brand Management	
MKT 4613	Services Marketing	
Total Hours		123

Co-op Work

PGA Golf Management students must complete a minimum of 16 months of co-op work with Class A PGA professionals at country clubs, public golf courses, golf resorts, or other golf facilities. A 2.25 cumulative GPA on all work at MSU is required to earn credit for a specific work experience.

PGA Golf Management

PGA Golf Management students will complete all PGA Golf Management requirements including testing, which will be conducted on the Mississippi State University campus by officials of the PGA. An initial lab fee and a semester lab fee is charged to students each semester on campus to cover the PGA Golf Management seminars, tests, workshops and playing privileges at the MSU Golf Course. A typical schedule of classes and co-ops are as follows:

Freshman Year	
Fall School	16
Spring School	16
Summer Co-op	
Sophomore Year	
Fall School	16
Spring School	16

Summer Co-op	
Junior Year	
Fall Co-op	
Spring School	16
Summer School	12
Senior Year	
Fall School	16
Spring Co-op	
Summer Co-op	
Fall School (Graduation)	16

Supply Chain Management Concentration (SCM)

Concentration Course Requirements

Supply Chain Management students are required to take all courses listed under the General Education and College requirements for Marketing in addition to the following courses:

International Elective (see advisor for options)		3
MKT 3323	International Logistics	3
MKT 4033	International Transportation	3
MKT 4313	Physical Distribution Management	3
MKT 4333	International Supply Chain Management	3
MKT 4413	Consumer Behavior	3
MKT 4533	Marketing Research	3
MKT 4813	Marketing Management	3
Non-business electives (see advisor for options)		13
Free electives		6
Total Hours		123

Integrated Digital Marketing Concentration (IDM)

Concentration Course Requirements

IDM students are required to take all courses listed under the General Education and College requirements for Marketing in addition to the following courses:

MKT 4213	Internet Marketing	3
MKT 4223	Social Media Marketing	3
Choose two of the following:		6
MKT 4123	Advertising	
MKT 4423	Strategic Brand Management	
MKT 3513	Marketing Internship (with prior approval)	
MKT 3213	Retailing	
Total Hours		123

Marketing Minor

A Marketing minor is offered to both Business and Non-Business students. A minor in Marketing is attained by taking the following courses:

MKT 3013	Principles of Marketing	3
MKT 4413	Consumer Behavior	3
Choose four of the following:		12
MKT 3213	Retailing	
MKT 3323	International Logistics	
MKT 3933	International Marketing	
MKT 4033	International Transportation	
MKT 4113	Personal Selling	
MKT 4123	Advertising	
MKT 4143	Sales Management	
MKT 4213	Internet Marketing	
MKT 4333	International Supply Chain Management	
MKT 4423	Strategic Brand Management	
MKT 4533	Marketing Research	
MKT 4613	Services Marketing	
MKT 4313	Physical Distribution Management	

Students interested in this minor should contact a Marketing advisor.

Business Analytics Minor

The minor will provide students with both an appreciation of the use of analytic techniques in business and the practical skills to implement and understand these techniques. Students completing the minor will obtain a range of real world technical skills, such as using R, SAS, Tableau, and Excel. They will also gain insight into a wide range of business problems and scenarios. A specific niche/competitive advantage of this program is that students will be introduced to a range of software, such as widely used free analytics software (e.g., R). The minor will give commercially useful skills to many existing business students, such as those in accounting, business administration, business information systems, business economics, finance, and marketing. It also will provide business analytic skills for many non-business majors in areas such as computer science, engineering, mathematics, and psychology.

Analytics Skills		9
Choose 3		
BQA 4413/6413	Business Forecasting and Predictive Analytics	
BQA 4423/6423	Business Decision Analysis	
EC 4643/6643	Economic Forecasting and Analysis	
BIS 3753	Business Database Systems	
Analytics Applications		6
Choose 2		
ACC 3003	Accounting Information Systems I	
ACC 3053	Accounting Information Systems II	
BIS 4533	Decision Support Systems	
MKT 4033	International Transportation	
MKT 4333	International Supply Chain Management	
MKT 4533	Marketing Research	
Total Hours		15

International Business Program

A Five-Year Double Degree Program:
B.B.A. in Business Administration & B.A. in Foreign Languages

Office: 102 McCool Hall

Major Advisor - Business Administration: Travis Wiseman, Ph.D., 210 McCool Hall

Major Advisors - Foreign Languages: Amie Russell, 1500 Lee Hall

The International Business Program at Mississippi State University is designed to help bright, ambitious students prepare for an increasingly global future. The program is distinct in discharging this mission through (1) education in the principles of international business, (2) a concentrated study in foreign language and, (3) a coordinated program of practical skills acquisition.

Graduates from the International Business program typically complete their studies in five years, receiving two degrees, each designed to cover a separate aspect of living and working internationally:

- a Bachelor of Business Administration (or a Bachelor of Accountancy) with a major in a specific business discipline such as marketing, finance, management or accounting, and a concentration in international business.

- a Bachelor of Arts with a major in foreign languages, and a concentration in a specific language such as Spanish, German or French.

The hallmark of the International Business program at MSU is its emphasis on real cross-cultural immersion, both academically and in a real-world business context. All IB students must study abroad for at least six continuous weeks in one location. This experience can be either for a summer or a regular semester term.

IB students must also complete an internationally-oriented internship in which they work for a company conducting significant international business. The minimum duration of the internship is ten weeks on the job. Ideally, the internship will be reflective of the student's specific business discipline and language proficiency area, but will ultimately be dependent on the student's own initiative, qualifications and interest.

Students may elect to combine the practical and abroad experiences by pursuing an internship outside the country. Such an internship must be 10 weeks in length.

In addition to the business and cultural immersion aspects, the program has four main academic components:

1. a core of basic skills, including courses in writing, mathematics, sciences, and communication (30 SCH);
2. a core of humanities and social science courses selected to fit the special needs of international business students, emphasizing both the history and culture of other societies and the ways these societies relate to our own (27 SCH);
3. intensive training to develop proficiency in one foreign language and its associated cultures and literatures (35);
4. a thorough grounding in business techniques and practices, including 33 SCH of general business courses and 21-24 SCH training in one of six disciplines in business (accounting, finance, information systems, economics, management, or marketing).

As a specialized, five-year program a minimum of 154 total credit hours are required.

Admissions to the International Business Program are limited and competitive. In addition to being accepted at Mississippi State University, applicants are evaluated on their academic qualifications by the International Business Academic Program Committee. Existing foreign language fluency is not required.

Students must meet all graduation requirements for the College of Business and the College of Arts & Sciences. International Business students must have an overall and previous semester GPA of 2.67 to be eligible for internship and study abroad.

General Education Requirements

English Composition		
EN 1103	English Composition I	3
or EN 1163	Accelerated Composition I	
EN 1113	English Composition II	3
or EN 1173	Accelerated Composition II	
Mathematics		
MA 1313	College Algebra	3
MA 1613	Calculus for Business and Life Sciences I	3
ST 2113	Introduction to Statistics	3
or BQA 2113	Business Statistical Methods I	
Science		
Life Science and Lab (BIO prefix)		3
Physical Science and Lab (CH, GG, OR PH prefix)		4
Humanities		
EN 2273	World Literature Before 1600	3
or EN 2283	World Literature After 1600	
HI 1173	World History Since 1500	3
or HI 1223	Modern Western World	
Fine Arts		
Choose one the following:		3
ARC 1013	Architectural Appreciation	
ARC 2313	History of Architecture I	
ART 1013	Art History I	
ART 1023	Art History II	
ART 1113	Art Appreciation	
ART 3143	Italian Renaissance Art History	
MU 1113	History and Appreciation of Music	
CO 1503	Introduction to the Theatre	
PE 1323	History and Appreciation of Dance	
Social/Behavioral Sciences		
GR 1123	Introduction to World Geography	3
AN 1143	Introduction to Cultural Anthropology	3
College of Arts and Sciences Core		
PHI 3013	Business Ethics	3
PS 1313	Introduction to International Relations	3
or PS 1513	Comparative Government	
HI 3000+	Upper-level History Elective (see advisor)	
SO 3000+	Upper-level Social Science Elective (see advisor)	
Choose one of the following:		3
FLF 1113	French I	
FLG 1113	German I	
FLS 1113	Spanish I	
Choose one of the following:		3
FLF 1123	French II	
FLG 1123	German II	
FLS 1123	Spanish II	

Choose one of the following:		3
FLF 2133	French III	
FLG 2133	German III	
FLS 2133	Spanish III	
Choose one of the following:		3
FLF 2143	French IV	
FLG 2143	German IV	
FLS 2143	Spanish IV	
Choose one of the following:		4
FLF 3114	Advanced French Composition	
FLG 3114	Advanced German Composition	
FLS 3113 & FLS 3111	Advanced Spanish Composition and Advanced Spanish Laboratory	
Choose one of the following:		4
FLF 3124	Advanced French Conversation	
FLG 3124	Advanced German Conversation	
FLS 3233 & FLS 3121	Advanced Spanish Conversation and Advanced Spanish Conversation Practicum	
Choose one of the following:		3
FLF 3143	French Civilization	
FLG 3143	German Civilization	
FLS 3143	Hispanic Civilization	
Choose one of the following:		3
FLF 3313	Business French I	
FLG 3313	Business German I	
FLS 3313	Economics of the Spanish-Speaking World	
Business-related Language course		3
See FL advisor for available courses		
Literature course in target language		3
See FL advisor for available courses		
Foreign Language Elective		
See FL advisor for options		
College of Business Core		
ACC 2013	Principles of Financial Accounting	3
ACC 2023	Principles of Managerial Accounting	3
EC 2113	Principles of Macroeconomics	3
EC 2123	Principles of Microeconomics	3
BL 2413	The Legal Environment of Business	3
BIS 3233	Management Information Systems	3
FIN 3123	Financial Management	3
MKT 3013	Principles of Marketing	3
MGT 3114	Principles of Management and Production	4
Oral Communication Requirement		
CO 1003	Fundamentals of Public Speaking	3
or CO 1013	Introduction to Communication	
Computer Literacy Requirement		
BIS 1012	Introduction to Business Information Systems	2
Writing Requirement		
MGT 3213	Organizational Communications	3
Internation Business Core		
IB 1001	Introduction to International Business	1
IB 3900	Internship Work	1-6
IB 4903	Internship Academic Report	3
International Business Elective (see advisor)		3
MGT 4863	International Strategic Management	3
Free Electives		
Major Courses		21-24
Students must select 21 hours of upper level course work within a specific business discipline to complete the major. Accounting majors must complete 24 hours of upper level (3000+) course work for the Bachelor of Accountancy degree. Courses counting toward the required hours are provided below.		
Total Hours		154

Accounting

ACC 3003	Accounting Information Systems I	3
ACC 3013	Cost Accounting	3
ACC 3023	Intermediate Accounting I	3
ACC 3033	Intermediate Accounting II	3
ACC 3053	Accounting Information Systems II	3
ACC 4013	Income Tax I	3
ACC 4033	Auditing	3
Accounting Elective (see advisor)		3
3000-4000 level course		

Business Information Systems

BIS 1733	Visual Basic Programming	3
BIS 1753	Introduction to Business COBOL	3
BIS 3523	Advanced Languages I	3
BIS 3753	Business Database Systems	3
BIS 4753	Structured Systems Analysis and Design	3
BIS Electives	3000-4000 level courses	6

Economics

EC 3113	Intermediate Macroeconomics	3
EC 3123	Intermediate Microeconomics	3
EC 4323	International Economics	3
EC 4643	Economic Forecasting and Analysis	3
Economics Electives	3000-4000 level courses	9

Finance

FIN 3723	Financial Markets and Institutions	3
FIN 4223	Intermediate Financial Management	3
FIN 4243	Senior Seminar in Financial Management	3
FIN 4423	Investments	3
FIN 4923	International Financial Management	3
Finance Electives	4000-level courses	6

Management

MGT 3323	Entrepreneurship	3
MGT 3513	Introduction to Human Resource Management	3
MGT 3813	Organizational Behavior	3
MGT 4153	Management Seminar	3
MGT 4613	Cross-Cultural Management	3

Management Electives	3000-4000 level courses	6

Marketing

MKT 3933	International Marketing	3
MKT 4413	Consumer Behavior	3
MKT 4533	Marketing Research	3
MKT 4813	Marketing Management	3
Marketing Electives	3000-4000-level courses [1]	9

Footnotes

[1] See IB advisor for elective options, including a concentration in Supply Chain Management.

Business Administration

MKT 3933	International Marketing	3
FIN 4923	International Financial Management	3
EC 4323	International Economics	3
MGT 4613	Cross-Cultural Management	3
BL 4273	International Business Law	3
International Business Electives	See adivsor	6

Richard C. Adkerson School of Accountancy

Director: Shawn Mauldin
Office: 300 McCool Hall, 325-3710

Academic Coordinator: Krystle Dixon
Office: 300A McCool Hall, 325-1631

The Richard C. Adkerson School of Accountancy is a professional school whose mission is to prepare students for successful careers in accountancy and business by fostering an environment that promotes innovative teaching and curricula, high quality research, and professional engagement. Such career preparation includes a wide range of professional accounting activities, general education, and broad training in business administration. This program of study gives students the basic preparation for positions in all areas of accounting including, but not limited to, public, private, and governmental accounting. It also (1) requires students to take a planned and coordinated non-business program designed to increase their cultural appreciation and give them a broad knowledge of world affairs and (2) permits the election of additional non-business courses according to the interests of the individual student.

The accountancy program is accredited by the AACSB (The International Association for Management Education) as part of the overall accreditation of the College of Business as well as the separate and additional accreditation of accounting programs.

Certification

The Bachelor of Accountancy Degree (BACC) from the Adkerson School of Accountancy, Mississippi State University, is recognized by those states requiring the baccalaureate degree as a minimum, as fulfilling all the educational requirements for eligibility to sit for the Certified Public Accountant (CPA) examination. Students planning to sit for the exam should review the specific educational requirements of the state for which they intend to sit. There are state specific requirements, such as Mississippi's requirement to complete governmental accounting prior to being allowed to sit. The Bachelor of Accountancy degree is also recognized as meeting educational requirements to sit for the Certificate in Management Accountant (CMA) and the Certified Internal Auditor (CIA) examinations. Graduates are encouraged to seek professional certification in one or more areas by passing these examinations.

The American Institute of Certified Public Accountants (AICPA) which prepares and grades the CPA examination, has urged the requirement of five years of academic preparation and has reflected this in the CPA examination. Students who aspire to become certified public accountants should consider the Master of Professional Accountancy or Master of Taxation programs herein described, in addition to the BACC.

Admission

Bachelor of Accountancy (BACC) - Admission to the University is equivalent to admission to Pre-Accountancy. International students need a 575 TOEFL score to be admitted.

Junior Screen: In addition to the College of Business criteria, students must meet the following criteria before taking selected 3000- or 4000-level accounting courses:

1. a grade of "B" or better in Principles of Financial Accounting (ACC 2013) and Principles of Managerial Accounting (ACC 2023).
2. a grade of "C" or better in the following five courses (or equivalent): BIS 1012, EC 2113, EC 2123, BQA 2113, BL 2413.
3. A minimum 2.6 overall GPA and a minimum 2.6 GPA in the seven courses (20 hours) described in number 1 and 2 above.

Transfer Students

Transfer students and MSU students wishing to change their major to accounting, must meet a minimum grade point average requirement. Freshmen must have a minimum 2.0 overall, sophomores must have a minimum 2.25 overall, and juniors must have a minimum 2.6 overall GPA.

Graduation

Bachelor of Accountancy (BACC) - Requirements for a BACC Degree from the Adkerson School of Accountancy are listed below. It is the student’s responsibility to complete the requirements of the BACC curriculum before applying for a degree.

1. A student must be a BACC candidate and complete the required curriculum and a minimum of 123 semester hours.
2. A student must achieve at least a 2.5/4.00 GPA in upper-division business, economics, and statistics courses.
3. A student must achieve at least a 2.5/4.00 GPA in upper-division accounting courses with at least a C in each upper-division accounting course. A student who makes less than a C in an upper-division accounting course must repeat that course the next regular semester that the student is enrolled and the course is offered. Students will be permitted to repeat an upper-division accounting course only once in an effort to make a C in the course. If they make less than a C in two attempts in a specific course, they will no longer be able to continue in the accounting program.
4. Take a minimum of 32 upper level business hours at MSU.
5. Complete the last 32 hours in resident at MSU.

BACC Program of Study

General Education Requirements

English Composition		
EN 1103	English Composition I	3
or EN 1163	Accelerated Composition I	
EN 1113	English Composition II	3
or EN 1173	Accelerated Composition II	
Mathematics & Statistics		
MA 1313	College Algebra	3
MA 1613	Calculus for Business and Life Sciences I	3
See Major Requirements		
Natural Science		
2 courses with labs from General Education courses		6
Humanities		
See General Education		6
Fine Arts		
See General Education		3
Social/Behavioral Sciences		
PS 1113	American Government	3
See General Education (excluding: AEC and EC)		3
Accounting Major Requirements		
Oral Communication Requirement		
CO 1003	Fundamentals of Public Speaking	3
or CO 1013	Introduction to Communication	
Computer Literacy		
Requirement met through BIS 1012 (Junior Screen)		
International Elective		
See Adkerson School of Accountancy for list		3
Junior Screen		
BIS 1012	Introduction to Business Information Systems	2
ACC 2013	Principles of Financial Accounting [1]	3
ACC 2023	Principles of Managerial Accounting [1]	3
BQA 2113	Business Statistical Methods I	3
EC 2113	Principles of Macroeconomics	3
EC 2123	Principles of Microeconomics	3
BL 2413	The Legal Environment of Business	3
Business Ethics		
PHI 3013	Business Ethics	3
Writing/Communication Course		
Choose one of the following:		3
EN 3303	Creative Writing	
EN 4223	Principles of Legal Writing	
CO 2253	Fundamentals of Interpersonal Communication	
CO 3213	Small Group Communication	
EN 3313	Writing for the Workplace	
EDF 3413	Writing for Thinking	
Upper-level Business Courses		
MGT 3113	Principles of Management	3
MGT 3213	Organizational Communications	3
BQA 3123	Business Statistical Methods II	3
BL 3223	The Law of Commercial Transactions	3
MKT 3013	Principles of Marketing	3
BIS 3233	Management Information Systems	3
FIN 3123	Financial Management	3
BUS 4853	Business Policy	3
Upper-level Accounting Courses [2]		
ACC 3003	Accounting Information Systems I	3
ACC 3013	Cost Accounting	3
ACC 3023	Intermediate Accounting I	3
ACC 3033	Intermediate Accounting II	3
ACC 3053	Accounting Information Systems II	3
ACC 4013	Income Tax I	3
ACC 4033	Auditing	3
ACC 4023	Advanced Accounting	3
ACC 4043	Municipal and Governmental Accounting	3
Free Electives (Consult Advisor)		7
Total Hours		123

[1] A grade of B or better is required in these courses.

[2] A grade of C or better is required in ALL upper-level Accounting courses.

Accounting Minor

Students may obtain a minor in accounting by completing 15 hours of upper-level accounting courses with a C or better as follows:

ACC 3023	Intermediate Accounting I	3
ACC 3033	Intermediate Accounting II	3
ACC Electives		9

Double Degree in Accounting and Another Field

Combined curricula leading to a BACC degree and a degree in another field are available in the Adkerson School of Accountancy and the other colleges of Mississippi State University. Such curricula may be designed with a major in accounting combined with a major in any non-accounting field. This program requires that a student satisfy the normal graduation requirements in the other major as well as meet the GPA and course requirements of the BACC Degree.

The BACC as a Second Baccalaureate Degree

The curriculum is available to students who hold a baccalaureate degree in any recognized field of study from a regionally accredited institution. The candidate's combined undergraduate program must include the same course and GPA requirements as required of anyone who receives the BACC degree. A minimum or 30 semester hours of upper division work must be earned in residence at Mississippi State University after the first degree has been conferred. Consult Krystle Dixon, Academic Coordinator, Richard C. Adkerson School of Accountancy, P.O. Drawer EF, Mississippi State, MS 39762 or email:kdixon@business.msstate.edu for specific details.

Masters Programs in Accounting

Kelly Walker, Graduate Coordinator, Master of Professional Accountancy (MPA) and Master of Taxation (MTX)
Departmental Office : McCool 300
662-325-3710

The Adkerson School of Accountancy offers two graduate programs in Accounting - Master of Professional Accountancy (MPA) and Master of Taxation (MTX). Additional information can be found in the Graduate Bulletin.

College of Education

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Telephone: (662) 325-3717 Fax: (662) 325-8784
Mailing Address: Box 9710, Mississippi State, MS 39762

General Information

The faculty of the College of Education are committed to fulfilling the following four major functions:

1. to provide undergraduate and graduate professional preparation for teachers, administrators, school professionals, and others who assume positions in a variety of settings including P-12 schools, higher education, and an array of industry and business environments;
2. to collaborate with school personnel, educational agencies, professional groups, and others interested in the evaluation and improvement of educational opportunities, programs, and services at both the P-12 and higher education levels;
3. to provide meaningful service and promote and conduct scholarly activity, including experimental and other research studies designed to improve educational practice, to advance educational theory, and to advance science in the kinesiology and technology fields; and
4. to foster student development so that students emerge from our programs enriched in theory and practice and become agents of change in the education, sports, technology, music, counseling, and leadership fields.

In addition to being accredited by the National Council for Accreditation of Teacher Education/Council for the Accreditation of Educator Preparation and the Southern Association of Colleges and Schools, the College of Education is a member of the American Association of Colleges for Teacher Education. It is the objective of this College to provide excellence in education while at the same time exhibiting a friendly attitude toward students. The teacher education programs are approved by the Mississippi State Department of Education, thereby enabling graduates to satisfy the certification requirements for the State of Mississippi.

Vision:

Changing Tomorrow Through Education Today

Mission:

The mission of the College of Education is to prepare highly qualified professionals to serve as teachers, administrators, supervisors, counselors, and other professionals in educational settings, industry, and human service agencies.

Values:

• The College of Education values outstanding teaching and is dedicated to offering nationally accredited programs that are based on essential knowledge, sound practice, relevant research, and realistic clinical training in the preparation of its students.
• The College is committed to providing diverse professional development opportunities at the baccalaureate, master's, educational specialist and doctoral degrees.
• Through its leadership in teaching, service, research, recruitment, and international activities, the College of Education prepares professionals who contribute substantially to the improvement of the lives of an increasing diverse group of individuals in our changing, technologically complex, and diverse society.

Administrative Organization

The College of Education consists of six departments: Counseling, Educational Psychology, and Foundations; Curriculum, Instruction, and Special Education; Educational Leadership; Instructional Systems and Workforce Development; Kinesiology; and Music.

Counseling, Educational Psychology, and Foundations. This department prepares individuals at the undergraduate and graduate levels to function in a variety of professional settings that include K-12 schools, community counseling centers, human services agencies, business settings, rehabilitation agencies, community colleges, four-year colleges, and universities. The department offers the Bachelor's, Master of Science, Educational Specialist, and Doctor of Philosophy degrees. Special areas of interest in the department are educational psychology, school psychology, community counseling, school counseling, vocational rehabilitation counseling, and educational foundations.

Curriculum, Instruction, and Special Education. This department is responsible for instruction in professional pedagogy courses of a general nature and in professional courses that focus specifically on teaching in special education, elementary education, and in the secondary fields of English, social studies, mathematics, and science. In addition to organizing and administering the curricula for educating teachers in the fields of elementary education, special education, and secondary education, the department is responsible for the direction and immediate supervision of teacher candidates in these fields.

Through this department, the Bachelor of Science, Master of Science, Master of Arts in Teaching, Educational Specialist, and Doctor of Philosophy degrees are offered. The department also offers areas of emphasis in elementary, secondary, and special education for the Educational Specialist and the Doctor of Philosophy degrees.

Educational Leadership. This department provides programs in educational leadership, teacher leadership, community college leadership, workforce education leadership, higher education leadership, and student affairs. Programs are designed to prepare administrators, supervisors, teachers, and other educational personnel for positions of leadership in school district offices; P-12 schools; business and industry settings; community colleges; and universities. The department offers the Master of Science, Master of Arts in Community College Teaching, Educational Specialist, and Doctor of Philosophy degrees.

Instructional Systems and Workforce Development. This department offers the Bachelor of Science degree in industrial technology and

information technology services, as well as the Master of Science in Instructional Technology, Educational Specialist, and Doctor of Philosophy degrees. It also offers a non-degree veterans certificate program, as well as minors in industrial technology and information technology services. Information technology services students receive training in the use of computer-based information systems, particularly software applications and hardware, and the creation and execution of technology user support. Industrial technology is involved with the education of supervisors or managers in advanced manufacturing and maintenance. Graduates are prepared with marketable technology skills to pursue careers in a variety of professional settings, including K-12 schools, higher education, and an array of industry and business environments.

Kinesiology. This department offers the Bachelor of Science degree with concentration areas in performance fitness, neuromechanics, clinical exercise physiology, sport administration, and physical education and coaching. Physical education and coaching majors may also pursue an add-on teaching endorsement in health education and driver's education by taking additional coursework. The department also offers Master of Science and Doctor of Philosophy degrees.

Music. This department offers the Bachelor of Music Education degree, with concentrations in vocal, instrumental, keyboard, and guitar. The department also offers a Bachelor of Arts degree in music for non-teaching majors (see the Arts & Sciences section for details on the B.A. in Music degree). The Famous Maroon Band, the University Chorus, and the Philharmonia Orchestra are university-wide organizations, and are integral parts of the Department of Music. The department also offers the Master of Music Education degree (M.M.E.). The M.M.E. is a 32-hour practitioner's degree focused, on advancing the knowledge and skills of the music educator in one of three specific tracks: Choral Music, Elementary Music, or Instrumental Music

Services

America Reads - Mississippi. America Reads - Mississippi is an AmeriCorps program that has approximately 90 AmeriCorps members in levels 1 and 2 school districts that provide additional assistance to children in grades K-3 in the area of reading. Divided into teams, these AmeriCorps members recruit volunteers to assist in the schools, promote parental involvement, and perform various community service projects throughout the year.

Mississippi Migrant Education Service Center. The Mississippi Migrant Education Service Center sets out to ensure that migrant students and youth are receiving appropriate educational services to enable them to achieve high academic standards by overcoming the obstacles created by cultural and language differences and the educational disruption stemming from frequent moves. A variety of services are available to migrant students in addition to the educational services provided by the school district. All services provided are free of charge. Some of the services that can be provided are: distribution of school supplies; inclusion in summer and after-school programs; academic assistance, such as tutoring; adult education (GED and ESL classes); referrals to medical or dental services; summer programs; assistance with applications for Medicaid/Food Stamps; and assistance with interpretation at doctors' offices.

Mississippi World Class Teaching Program. The MSU World Class Teaching Program is a university-based initiative designed to recruit and mentor teachers seeking advanced certification through the National Board for Professional Teaching Standards (NBPTS) process.

Writing/Thinking Institute. The mission of the Mississippi Writing/Thinking Institute is to improve writing and learning in Mississippi schools. The Mississippi Writing/Thinking Institute is an affiliate of the National Writing Project (NWP). Since its inception in 1985, the mission of the Institute has been to transform education for students and teachers in Mississippi by implementing the mission and goals of the NWP. The Mississippi Writing/Thinking Institute offers what Mississippi teachers need most to help their students: high quality professional development that blends best practices and theory; research-based, sustained programs aligned with state and national standards; and outstanding teacher consultants who serve as teachers of their colleagues.

Office of Clinical/Field-Based Instruction, Licensure, and Outreach. This office collaborates with partner school districts to provide practicum and teaching clinical laboratory experiences for those enrolled in teacher education programs at MSU. Such experiences are supervised jointly by the faculty of the P-12 schools and the faculty of the College of Education.

The National Research and Training Center on Blindness and Low Vision. This is the only federally-funded center that focuses on employment-related research for people who are blind or visually impaired. The center serves as a national resource center on employment for people who are blind or visually impaired, and provides training and technical assistance to people across the country on this topic.

The T.K. Martin Center for Technology and Disability. This center provides comprehensive, multi-disciplinary evaluations to assist with limitations through the application of assistive technology, allowing individuals to participate in educational, vocational, and leisure activities to the fullest degree they choose. The center provides transdisciplinary play based assessments for infants and toddlers ages birth to three. The center provides intervention for children ages two to five. The center provides assessment and intervention for individuals experiencing difficulty with reading, writing, and spelling.

Requirements for Teacher Education Students

A four-phase admission procedure is designed to assure a logical progression through the entire professional education process.

Enrollment in the College of Education (Phase I – pertains only to Teacher Education majors in the College of Education): Phase I identifies students who have enrolled in Teacher Education programs prior to official admission into Teacher Education. This early identification ensures that the necessary counseling, screening, and advisement is provided for students aspiring to become teachers. To enroll in the College of Education, students must be admitted to Mississippi State University; select a major within a department that has a basic teacher preparation program; meet with an assigned advisor in the College of Education; and become familiar with the current College of Education Undergraduate Handbook, curriculum check sheet, and current university catalog.

Admission to Teacher Education (Phase II – including Teacher Education majors in the College of Agriculture and Life Sciences): To be admitted to Teacher Education and enroll in upper level professional education courses, students must complete Phase II by achieving a

minimum of 44 semester credit hours (which includes the 36 hour general education requirements but excludes remedial and intermediate courses) with a 2.75 GPA and a 2.5 minimum overall GPA. Students must also complete 6 semester credit hours of English composition and 3 semester credit hours of mathematics (Algebra or higher) with a grade of "C" or higher in each course, and present either an ACT score of 21 (or SAT equivalent) or obtain the minimum passing scores on the Praxis Core Academic Skills for Educators Tests as defined by the Mississippi Department of Education (prior to 9-1-19 Reading 5712: 156, Math 5732: 150, Writing 5722: 162; 9-1-19 and after - Reading 5713: 156, Writing 5723: 162, Math 5733: 135).

Students are advised to keep the original copies of their Praxis Core test scores in a safe place since these scores are necessary for admission to Teacher Education. Students should request that ETS send a copy of their scores to Mississippi State University (Code RA1480). Students attending the Meridian campus should have their scores sent to both Mississippi State University (Code RA1480) and the Meridian campus (Code RA3336). Students are encouraged to take the Praxis Core exam by the end of the second semester of their freshman year if they do not meet the ACT/SAT requirement in the previous paragraph.

The student must also submit two recommendation forms from educators and verification of 40 hours of work experience with children or youth; complete a criminal background check and an orientation module; sign the Teacher Education Professional Dispositions form; and have proof of liability insurance; sign the licensure information form; and sign up for a 7 year subscription to Taskstream by Watermark. The student should apply for a preservice teacher license through OCFBI. See advisor for more information.

Students should begin the application to Teacher Education during preregistration or orientation. Confidential recommendation forms must be sent to the Dean of the College of Education, Mailstop 9710, Mississippi State, MS 39762. *All students must satisfy Phase II requirements before registering for upper level professional education courses*. *Students who have not been admitted to Teacher Education cannot register for restricted professional education courses. The student must meet with the advisor to complete the Phase II form. The faculty advisor is responsible for submitting the Phase II form to the Dean's Office, 309 Allen Hall.*

Admission to Teaching Internship (Phase III – including Teacher Education majors in the College of Agriculture and Life Sciences): A student must complete Phase III by submitting an Application for Admission to Teaching Internship form, which can be found online at *ocfbi.msstate.edu/teaching/index.php*, to the Director of the Office of Clinical/Field-Based Instruction, Licensure, and Outreach one semester prior to the teaching internship. To be eligible for teaching internship, the student must have been admitted to Teacher Education and meet current requirements, must have taken both the Principles of Learning and Teaching and the Subject assessment exams (Praxis II), maintained an overall GPA of 2.5 or higher at the time of beginning internship, and have no grade below a C in major, concentration, and professional education courses. Final eligibility (2.5 GPA overall) is determined through screening at the end of the semester prior to the teaching internship. The student must also have completed all professional education and content major and concentration courses with a minimum grade of "C" prior to teaching internship. No coursework other than the 15 teaching internship/ classroom management/seminar hours can be taken during the teaching internship semester, without prior approval. Elementary Education majors must also have taken Pearson's Foundations of Reading Test prior to beginning internship.

Students seeking a degree in Teacher Education and an educator license are expected to schedule the teaching internship during the last semester of the senior year. Graduate students seeking admission to Teacher Education and teaching internship are expected to meet the same requirements as undergraduate students prior to their teaching internship experience. All teacher intern placements and other communications with schools are directed through the Office of Clinical/Field-Based Instruction, Licensure, and Outreach.

Exit Requirements (Phase IV): To be eligible for graduation, students in Teacher Education programs must have a "C" or better in all professional education courses, all courses in their majors and concentration areas, completed no more than half of their hours at a community college, satisfied residence requirements, and have a 2.0 overall GPA at Mississippi State University.

For more detailed information about Teacher Education admission procedures, see the current College of Education Undergraduate Handbook (*educ.msstate.edu/academics/forms/*). Application forms are available in the student's academic department and in the Office of the Dean of the College of Education (309 allen Hall).

Teacher Education Policies

"D" Policy. Students in Teacher Education must make grades of "C" or better in all professional education courses, in all courses in their academic major and concentration areas, in English Composition I and II, and College Algebra (or higher math). All other majors should check with their advisors for the policy for non-teaching majors.

Probation/Dismissal for Teacher Education Students. After the completion of 60 hours, Teacher Education students (enrolled or admitted) whose GPAs fall below 2.50 will be placed on academic probation. This policy applies to transfer students as well. Teacher Education students whose GPAs are below 2.50 after a year of probation will be dismissed from Teacher Education. If their GPAs later improve to 2.5 or higher, they may re-enroll or reapply for admission.

Teacher Licensure

In accordance with statutory provisions, the Mississippi Department of Education has adopted the rules and regulations on issuing and renewing teaching licenses which are set forth in Guidelines for Mississippi Educator Licensure. The licensure program is applicable to all teacher licenses. Satisfactory completion of any teaching curriculum offered by the College of Education will enable the graduate to apply for a teaching license in Mississippi, but this institution can neither waive any licensure requirements nor authorize substitutions for mandatory courses. Mississippi State University has submitted and received approval for its programs. Consequently, students who plan to transfer from other universities or another college to the College of Education should consult with the director of the Office of Clinical/Field-Based Instruction, Licensure, and Outreach or an advisor in the College of Education to ascertain the general education, professional education, and specialized education courses which must be completed to obtain a teaching license in the field or fields of their choice. Since teacher licenses are issued by the Mississippi Department of Education only and not by the Teacher Education institutions, applications for licensure and original test scores must be filed with the Mississippi Department of Education by the

applicant. Information concerning teacher licensure can be obtained from the Office of Clinical/Field-Based Instruction, Licensure, and Outreach.

As part of securing a Mississippi teacher's license, students must pass the Principles of Learning and teaching (PLT) test, the Specialty Area test, and attain the required minimum scores. Students must request that ETS send a copy of their scores to Mississippi State University (Code RA1480). Students attending the Meridian campus should have their scores sent to both Mississippi State University (Code RA1480) and the Meridian campus (Code RA3336). *It is very important that students keep the originals of all their test scores in a safe place since they will need the originals of these scores when they apply for a Mississippi educator's license.*

Student Code of Conduct Violations

Any violations of the Mississippi State University Student Code of Conduct as delineated in the student handbook, The Bulldog, and at *students.msstate.edu/studentconduct/code.php*, including academic misconduct, may place completion of the student's degree/licensure program in jeopardy.

Curricula

Organization. All curricula in the College of Education are organized on the lower- and upper-division basis. The lower division consists of the first two years and corresponds to the community college level. The upper division consists of the last two years, normally the junior and senior years.

Selection of Teaching Fields. Students who enroll in the Teacher Education program in the College of Education are expected to pursue a program of study which will enable them to qualify for a teaching license in the field of their choice.

Degree Program Modifications. Changes to the licensure requirements by the Mississippi Department of Education may mandate curricular modification. Appropriate programmatic changes for graduation, licensure, and accreditation will be made as this process evolves. These Teacher Education program changes will become applicable as students are officially admitted to programs and/or as new graduation requirements are adopted. For updated degree program modifications, please check with your departmental office.

Sequence of Courses. Students should schedule their courses in consultation with their faculty advisor.

Directed Individual Study Courses. A directed individual study course is an experience designed to further the educational and/or career development of an individual that is equal or greater than the equivalent hours for a regularly scheduled course. This experience should be used only in special circumstances as deemed appropriate by the faculty of record, student's advisor, and department head. Unless otherwise designated by the student's advisor and department head, the experience shall be limited to 3 credit hours of undergraduate work. Every student should make an agreement with the faculty of record to fulfill the course objectives and outcomes specified in the course syllabus. This policy applies to students entering MSU Fall 2001 and thereafter.

Transfer from Community College. Lower-division curricula (1000-2000 level) in the College of Education closely parallel the corresponding curricula offered in the community colleges of the state. Therefore, students majoring in a given area at a community college should be able to transfer to a like area in the College of Education and complete their last two years of college work without loss of time or credit.

Fields of Training. Baccalaureate programs are offered for the education of teachers in the following fields: elementary education, biology education, chemistry education, English education, mathematics education, music education, physics education, social studies education, special education, and physical education/coaching through the College of Education. Agricultural education and family/consumer sciences teacher education are offered in the College of Agriculture and Life Sciences.

Non-teaching bachelor's programs are offered in the following areas: educational psychology; industrial technology; information technology services; kinesiology with concentrations in clinical exercise physiology, health fitness studies, or sport studies; and music.

Requirements for Graduation. The requirements for graduation with a Bachelor of Science degree in the College of Education are a minimum of 124 semester hours and 256 quality points (or higher for some curricula).

Graduate Programs in Education

Master's Degrees. The following departments within the College of Education offer curricula leading to the degree of Master of Science: Counseling, Educational Psychology, and Foundations; Curriculum, Instruction, and Special Education; Educational Leadership; Instructional Systems and Workforce development; and Kinesiology. Students should check with specific departments for information on the concentrations offered by these departments. The Master of Arts in Teaching is offered for secondary education and special education teachers by the department of Curriculum, Instruction, and Special Education and for community college education by the department of Educational Leadership. The Master of Music Education is offered by the Department of Music.

Educational Specialist Degree. The Educational Specialist degree is a planned program of a minimum of 30 semester hours above the Master's degree under the direction of a major advisor. It is designed to broaden leadership training by providing courses in other fields and disciplines supplementary to the basic core in the major field. It is offered with program emphases in agriculture and extension education, counselor education, elementary education, school administration, teacher leadership, school psychology, secondary education, special education, and technology.

Doctoral Degrees. The Doctor of Philosophy degrees are offered with program emphases in counselor education, community college leadership, P-12 leadership, higher education leadership, educational psychology, elementary education, exercise science, instructional systems and workforce development, school counseling, school psychology, secondary education, special education, and sport studies. Minors may be taken in various related disciplines.

For more information on graduate programs in the College of Education, see the Graduate catalog. A copy may be secured by writing to the Office of the Graduate School, P.O. Box G, Mississippi State, MS 39762.

College of Education Conceptual Framework

All Teacher Education programs in the College of Education at Mississippi State University adhere to a conceptual framework.

The overarching theme for the unit's conceptual framework is "Educators/ Professionals – Dedicated to Continual Improvement of All Students' Educational Experiences." The framework is aligned with the mission and goals of both the College of Education and the university. It is depicted graphically by a shield that contains a burning torch which signifies the necessary knowledge, skills, and dispositions of educators and other education professionals. It includes a globe, symbolizing the dedication of teachers and other education professionals to the improvement of all students' educational experiences. Encircling the globe are the concepts of technology and diversity, a depiction of the integration of technology and the incorporation of diversity throughout the curricula. Along the border of the shield appear the four areas of study that constitute the separate components of the educative process. These areas include the institution's general education curriculum, specialty professional and pedagogical studies, content or specialty area studies, and field-based and clinical experiences. Implicit in the four areas of study are four essential tenets: knowledge, collaboration, reflection, and practice.

Department of Counseling, Educational Psychology, and Foundations

Department Head: David Morse
Office: 508 Allen Hall

The Department of Counseling, Educational Psychology, and Foundations prepares individuals at the undergraduate and graduate levels to function in a variety of professional settings that include K-12 schools, community counseling centers, human services agencies, business settings, rehabilitation agencies, community colleges, four-year colleges, and universities. The department offers the Bachelor's degree, Master of Science degree, the Educational Specialist degree, and the Doctor of Philosophy degree. Special areas of interest in the department are psychometry, educational psychology, school psychology, clinical mental health counseling, school counseling, and rehabilitation counseling.

1. Undergraduate Degree. The B.S. degree in Educational Psychology is a non-teaching option. This program provides students with a general background of psychological topics and principles as they relate to education. Additionally, students complete an emphasis or a minor. Students who enroll in this program pursue a diversity of careers. Some of the vocational areas for which this program can prepare students are as follows: child care centers, seminary, the armed services (ROTC students), business settings, mental health agencies, and graduate work in counselor education, educational psychology, and school psychology. Students majoring in Educational Psychology have to earn a grade of "C" or better on all EPY major core courses (43 hours of the curriculum). Students must have a GPA of 2.25 for acceptance into the program (except Freshmen) and a GPA of 2.25 to graduate from the program.
2. Minor (for non-majors). For the 18 hour minor in EPY, students may choose to complete any 18 hours from the following: EPY 2513, EPY 3063, EPY 3143, EPY 3253, EPY 3503, EPY 3543, EPY 4033, EPY 4073, EPY 4313, EPY 4513, EPY 4553, EPY 4683.
3. Undergraduate Educational Foundations courses required in teacher education programs in the College of Education are offered in the Department of Counseling, Educational Psychology, and Foundations. Courses include the following: EDF 3333, EDF 3413, EDF 3423, and EDF 4243.
4. Graduate Degrees. The Department offers M.S., Ed.S., and Ph.D. degrees in Counselor Education with areas of emphasis in five concentrations: Clinical Mental Health Counseling, Rehabilitation Counseling, and School Counseling. The department also offers M.S. and Ph.D. degrees in Educational Psychology and a Specialist degree in School Psychology. Preparation in Educational Psychology can be obtained in the concentration areas of School Psychometry and general Educational Psychology at the Master's (M.S.) level; School Psychology at the specialist (Ed.S.) level; and in the areas of general Educational Psychology (college teaching) and School Psychology at the doctoral (Ph.D.) level.
5. Student Retention Procedures: Professions engaged in protection of the public health and welfare charge their members with the responsibility of monitoring potential new members. Therefore, the Counselor Education, Educational Psychology, and Foundations faculty believe a component of their responsibility to their students, their professions, and the eventual consumers of services provided by graduates, is the necessity to monitor not only students' academic progress but also the personal characteristics of students that will affect their performance in therapy. These characteristics should be of a quality so as to NOT interfere with the students' professionalism or helping capacity. Accordingly, the department has adopted a policy outlining student retention procedures. This policy is printed in the Department of Counselor Education, Educational Psychology, and Foundations Graduate Program Handbook.
6. Financial Assistance for Graduate Students. Many students hold assistantships in the Department, the Division of Student Affairs, the Office of Housing and Residence Life, Social Science Research Center, College of Education, and the Rehabilitation Research and Training Center on Blindness and Low Vision.

Educational Psychology Major (EPY) (Non-teaching Option)

Major Advisors: Anastasia Elder, Dinetta Karriem, Kasia Gallo, Nicole Leach, Tianian (Elaine) Wei
Office: 508 Allen Hall

General Education Requirements

English Composition		
EN 1103	English Composition I	3
or EN 1163	Accelerated Composition I	
EN 1113	English Composition II	3
or EN 1173	Accelerated Composition II	
Mathematics		
MA 1313	College Algebra	3
Math above College Algebra excluding:		3
MA 1413	Structure of the Real Number System	
MA 1423	Problem Solving with Real Numbers	
MA 1433	Informal Geometry and Measurement	
Science		
BIO 1123	Animal Biology	3
Lab science from General Education courses		3
Math/Science Elective		
Choose one of the following:		3
Math above College Algebra excluding		
MA 1413	Structure of the Real Number System	
MA 1423	Problem Solving with Real Numbers	

MA 1433	Informal Geometry and Measurement	
OR		
Science from General Education courses		
Humanities		
History course		3
Literature course		3
Fine Arts		
See General Education courses		3
Social Sciences		
SO 1003	Introduction to Sociology	3
General Education course excluding EPY prefixes		3
Major Core		
PSY 1013	General Psychology	3
EPY 2513	Human Growth and Development	3
EPY 3063	Psychology of Individual Differences and Exceptional Ability	3
EPY 3503	Principles of Educational Psychology	3
EPY 3543	Psychology of Adolescence	3
EPY 4033	Application of Learning Theories in Educational and Related Settings	3
EPY 4073	Personal and Motivational Factors in Education	3
EPY 4214	Educational and Psychological Statistics	4
EPY 4313	Measurement and Evaluation	3
EPY 4553	Creativity/Innovation	3
EPY 4513	Introduction to Research in Educational Psychology	3
EPY 4683	Advanced Issues in Educational Psychology	3
PSY 3623	Social Psychology	3
PSY or SO elective above 3000		3
Human/Cultural Diversity Elective		
Choose one of the following:		3
SO 2203	Cultural and Racial Minorities	
SO 3013	Society and the Individual	
SO 1103	Contemporary Social Problems	
SO 3323	Contemporary Woman	
SO 3333	Society and Religion	
AN 2203	Cultural and Racial Minorities	
AN 3113	Societies of the World	
Oral Communication Requirement		
CO 1003	Fundamentals of Public Speaking	3
Computer Literacy		
See advisor for computer literacy requirements.		
Writing Requirement		
EPY 3513	Writing in the Behavioral Sciences	3
Additional Requirements		
Humanities		6
General Electives [1]		12

[1] In addition to the University and Major cores above, a choice of one special interest area of 18 hours(see below) and 12 hours of electives are required for the degree total to reach 124 hours.

Selected Interest Areas

Available in counseling/clinical applications, the developing child, kinesiology, human resources and industrial applications, law and order, youth and teen studies, and speech/language pathology. See advisor for details.

Department of Curriculum, Instruction, and Special Education

Department Head: Linda Cornelious
Office: 310 Allen Hall

The Department of Curriculum, Instruction, and Special Education at Mississippi State University is a collaborative community of scholars and educators. We are committed to the belief that education is the primary vehicle for equity and justice in the state of Mississippi and beyond. In keeping with the land grant and research-extensive mission of Mississippi State University, and in support of the mission of the College of Education, the Department of Curriculum, Instruction, and Special Education is committed to academic excellence, intellectual rigor, and lifelong learning. It is our mission to contribute to teaching and learning P-12 and beyond through teaching and learning, research and inquiry, and service and outreach. Faculty and staff in the department of Curriculum, Instruction, and Special Education believe that accomplished educators possess in-depth knowledge of content and teaching practices, including discipline-specific practices, that allow them to create engaging, relevant experiences for all students. The goal of the department is to meet the needs of all students through the preparation of effective, responsive scholars and practitioners who use theory, research, and a wide variety of tools, including technology, to enhance their work in a global, diverse, and changing society.The measure of our success is improved outcomes for diverse students, P-12 and beyond.

Undergraduate degree programs in the department of Curriculum, Instruction and Special Education prepare teacher candidates for positions as teachers in classrooms from pre-K through twelfth grade. These programs include coursework and experiences that focus on subject matter knowledge, foundations of education, instruction and assessment, practice and reflection, and field experiences in diverse classrooms. Persons interested in degrees offered by the department are advised to obtain a copy of advising worksheets, available in 310 Allen Hall, from any departmental advisor, or at our website, www.cise.msstate.edu.

Elementary Education Major (ELED)

All elementary education majors receive certification to teach at the elementary (pre-K-3 or pre-K-6) grade levels and additional endorsement in either early childhood or middle school content areas. The first two years of the degree program focus on developing subject matter knowledge in mathematics, English language arts, science, and social sciences. The junior year includes two mini-blocks of courses: one that emphasizes teaching at the early childhood levels (pre-K–3rd grade), and one that emphasizes teaching at the middle school levels (4th-8th grades). The senior year includes the senior methods block – four co-requisite courses with extensive field experiences that prepare graduates for the teaching of subject matter. The Elementary Education curriculum culminates in the teaching internship, a semester-long field experience in public schools. Students choose either a middle school concentration or an early childhood concentration. The middle school concentration

leads to pre-K-6 general certification with 4th-8th grade subject area certification. The early childhood concentration leads to pre-K-3 general certification with N-1 (nursery-1st grade) early childhood/special education certification. Some students may wish to enroll in additional coursework to obtain licensure in elementary, special education, reading, or other areas. See an advisor for more information.

Secondary Education Major (SEED)

The purpose of the Secondary Education major is to prepare students to teach the academic subjects in grades 7-12 by providing professional courses and experiences for those desiring to teach at the middle and high school levels. The Secondary Education program is designed to lead teacher candidates to 7-12 licensure in English, Mathematics, Biology, Chemistry, Physics, or Social Studies. Degree programs include pedagogy courses that require field experiences in middle and high schools, as well as opportunities to master content area pedagogy. The secondary education degree culminates in a semester-long student teaching internship in a middle or high school classroom.

Special Education Major (EXED)

The program in Special Education is designed to prepare teachers to teach children and youth with learning disabilities, intellectual disabilities, and other areas of exceptionality. The curriculum in special education is designed to meet the requirements for the endorsements in the areas of specialization. The degree program includes extensive field experiences working in schools and classrooms. Courses in the degree program provide students with methods for teaching early childhood, elementary, and secondary students with special needs. The degree program culminates in a semester-long teaching internship in a K-12 setting.

Master of Arts in Teaching (MAT-S and MAT-X)

Individuals who have already earned a bachelor's degree in another discipline and are eligible for graduate studies can obtain initial teaching licensure and the Master's degree by completing the Master of Arts in Teaching program. The MAT-Secondary degree prepares teachers of content areas for secondary classrooms in a variety of content areas. The MAT-Special Education prepares teachers for self-contained and inclusion K-12 classrooms. Both MAT programs are offered online and include courses in pedagogy, assessment, classroom management, and internship courses completed after the student is hired as a classroom teacher.

Graduate Programs in CISE

The department offers Master's and Educational Specialist degree programs in Elementary, Secondary, and Special Education. These programs provide coursework and field experiences for classroom teachers and other educators wishing to improve their practice. The department also offers the PhD in Curriculum and Instruction with concentrations in elementary education, secondary education, and special education.

Elementary Education Major (ELED)

Major Advisors: Kathleen Alley, Kenneth Anthony, Stephanie Lemley, Kristin Javorsky, Nicole Miller, and Rebecca Robichaux-Davis
Office: 310 Allen Hall

General Education Requirements

English Composition		
EN 1103	English Composition I	3
EN 1113	English Composition II	3
or EN 1173	Accelerated Composition II	
Mathematics		
MA 1313	College Algebra	3
MA 1413	Structure of the Real Number System	3
MA 1423	Problem Solving with Real Numbers	3
MA 1433	Informal Geometry and Measurement	3
Science		
See General Education courses (must be lab-based courses)		6
Humanities		
Choose one of the following:		3
HI 1063	Early U.S. History	
HI 1163	World History Before 1500	
HI 1213	Early Western World	
Choose one of the following:		3
HI 1073	Modern U.S. History	
HI 1173	World History Since 1500	
HI 1223	Modern Western World	
Fine Arts		
See General Education courses		3
Social Sciences		
GR 1123	Introduction to World Geography	3
PS 1113	American Government	3
or SO 1003	Introduction to Sociology	
or SO 1203	Sociology of Families	
Additional Core		
Natural Science courses		6
English Literature Elective (see General Education courses)		
English Grammar Elective OR English course above EN 1113		
Major Core		
EDE 2521	Introduction to Elementary Education	1
RDG 3113	Early Literacy Instruction I [1]	3
RDG 3123	Early Literacy Instruction II [1]	3
EDE 3123	Early Childhood Education [1]	3
EDX 3213	Individualizing Instruction for Exceptional Children	3
RDG 3413	Middle Level Literacy I [1]	3
RDG 3423	Middle Level Literacy II [1]	3
EDE 3223	Middle Level Education [1]	3
EDF 3333	Social Foundations of Education	3
EDF 3423	Exploring Diversity Through Writing [1]	3
EDE 3443	Creative Arts for Elementary and Middle Levels [1]	3
EDE 3523	Foundations of Elementary & Middle Level Mathematics Education [1]	3
EDE 4113	Teaching Elementary and Middle Level Science [1]	3
EDE 4123	Teaching Elementary and Middle Level Mathematics [1]	3

RDG 4133	Integrating Literacy Instruction in the Content Areas [1]	3
EDE 4143	Teaching Elementary and Middle Level Social Studies [1]	3
EDE 4883	Managing the Elementary and Middle Level Classroom [1]	3
EDE 4886	Elementary and Middle Level Teaching Internship [1]	6
EDE 4896	Elementary and Middle Level Teaching Internship [1]	6

Early Childhood Concentration (ECHD)

Leads to K-3 general certification with N-1 (nursery - 1st grade) early childhood/special education certification.

HDFS 2803	Prenatal and Infant Development	3
HDFS 2813	Child Development	3
HDFS 3803	Creativity & Play in Young Children	3
EDX 4113	Methods and Materials for Early Childhood Students with Disabilities	3
EDX 4413	Working with Families of Students with Disabilities	3
or HDFS 4803	Parenting	

Students choosing the Early Childhood Education concentration may obtain K-6 certification by taking, in addition to the K-3 requirements, EDE 3223 and any two of the following: 3 hours of English, 3 hours of math, 3 hours of social studies, and/or 3 hours science.

Middle School Concentration (MDSC)

Leads to K-6 general certification with 4th-8th grade subject area certification.

EDE 3223	Middle Level Education	3
Twelve hours certification endorsement area electives.		
Two 21-hour endorsement areas required. See Advisor.		
Total Hours		123

Many courses have co-requisites. See catalog or advisor.

[1] Requires admission to Teacher Education.

Secondary Education Major (SEED)

English Education Concentration (ENED)

Major Advisor: Missy Hopper; Office: 310 Allen

The curriculum in English Language Arts is offered to prepare students to teach English Language Arts in high schools and middle schools and has been designed based on the Standards of the National Council of Teachers of English. A minimum of 42 hours in English beyond freshman composition is required.

General Education Requirements

English Composition		
EN 1103	English Composition I	3
EN 1113	English Composition II	3
or EN 1173	Accelerated Composition II	
Mathematics		
MA 1313	College Algebra	3
MA higher than Algebra		3
Science		
BIO Science with lab (see General Education courses)		3
Physical Science with lab (see General Education courses)		3
Math/Science Elective		
See General Education courses		3
Humanities		
HI 1063	Early U.S. History	3
HI 1073	Modern U.S. History	3
Fine Arts		
CO 1503	Introduction to the Theatre	3
Social/Behavioral Sciences		
See General Education courses		6
Major Core		
EDS 3411	Practicum in Secondary Education	1
EDF 3333	Social Foundations of Education	3
EDX 3213	Individualizing Instruction for Exceptional Children	3
RDG 3513	Developing Reading Strategies in the Secondary School Content Areas [1]	3
EDE 3343	Teaching Adolescent Literature	3
EPY 3143	Human Development and Learning Strategies in Education [1]	3
EDF 4243	Planning for the Diversity of Learners [1]	3
EPY 3253	Evaluating Learning [1]	3
EDS 3673	Secondary Language Arts Education [1]	3
EDS 4673	Methods of Teaching Language Arts [1]	3
EDS 4873	Seminar in Managing the Secondary Classroom [1]	3
EDS 4886	Teaching Internship in Secondary Education [1]	6
EDS 4896	Teaching Internship in Secondary Education [1]	6
Content Area		
EN 2213	English Literature Before 1800	3
EN 2223	English Literature After 1800	3
EN 2243	American Literature Before 1865	3
EN 2253	American Literature After 1865	3
EN 2273	World Literature Before 1600	3
or EN 2283	World Literature After 1600	
EN 2434	Literature and Film	3-4
or EN 3523	Shakespeare and Film	
EN 3414	Critical Writing and Research in Literary Studies	4
EN 3423	Descriptive English Grammar	3
EN 4503	Shakespeare	3
or EN 4513	Shakespeare	
EN 4413	History of the English Language	3
or EN 4403	Introduction to Linguistics	
or EN 4633	Language and Society	
or EN 4623	Language and Culture	

EN 4323	Literary Criticism from Plato-Present	3
or EN 4353	Critical Theory Since 1900	
EN Electives - 3000/4000 level		9
Oral Communication Requirement		
Satisfied by successful completion of EDS 3673		
Computer Literacy Requirement		
Satisfied by successful completion of EDS 4673 and EDF 4243		
Writing Requirement		
Satisfied by successful completion of EN 3414		
Total Hours		122-123

[1] Requires admission to Teacher Education.

Mathematics Education Concentration (MAED)

Major Advisor: Dana Franz; Office: 310 Allen Hall

This curriculum is offered for the education of prospective teachers of mathematics in grades 7-12. The degree program has been designed based on standards developed by the National Council of Teachers of Mathematics. A minimum of 36 semester hours of mathematics is required.

General Education Requirements

English Composition		
EN 1103	English Composition I	3
EN 1113	English Composition II	3
or EN 1173	Accelerated Composition II	
Mathematics		
MA 1713	Calculus I	3
MA 1723	Calculus II	3
Science		
Biological Science w/lab (see General Education)		3
Physical Science [1]		6
Humanities		
HI 1063	Early U.S. History	3
HI 1073	Modern U.S. History	3
Fine Arts		
See General Education courses		3
Social/Behavioral Sciences		
PSY 1013	General Psychology	3
SO 1003	Introduction to Sociology	3
Additional Core		
PS 1113	American Government	3
EN Literature Electives (see General Education)		6
Oral Communication Requirement		
CO 1003	Fundamentals of Public Speaking	3
Computer Literacy Requirement		
Choose one of the following:		3
CSE 1233	Computer Programming with C	
CSE 1273	Computer Programming with Java	
Writing Requirement		
EDF 3413	Writing for Thinking	3
Major Core		
EDF 4243	Planning for the Diversity of Learners [2]	3
EDF 3333	Social Foundations of Education	3
EDX 3213	Individualizing Instruction for Exceptional Children	3
EPY 3143	Human Development and Learning Strategies in Education [2]	3
EPY 3253	Evaluating Learning [2]	3
RDG 3513	Developing Reading Strategies in the Secondary School Content Areas [2]	3
EDS 3411	Practicum in Secondary Education [2]	1
EDS 3633	Secondary Mathematics Education [2]	3
EDS 4633	Methods of Teaching Mathematics [2]	3
EDS 4873	Seminar in Managing the Secondary Classroom [2]	3
EDS 4886	Teaching Internship in Secondary Education [2]	6
EDS 4896	Teaching Internship in Secondary Education [2]	6
Content Area		
MA 2733	Calculus III	3
MA 2743	Calculus IV	3
MA 3053	Foundations of Mathematics	3
MA /ST 3123	Introduction to Statistical Inference	3
MA 3113	Introduction to Linear Algebra	3
MA 3163	Introduction to Modern Algebra	3
MA 3253	Differential Equations I	3
MA 3463	Foundations of Geometry	3
MA 3513	History of Mathematics	3
MA 4523	Introduction to Probability	3
Total Hours		124

[1] Calculus-based PH 2213 or CH 1213 or higher

[2] Requires admission to Teacher Education.

Biology Education Concentration (BIED)

Major Advisor: Ryan Walker; Office: 310 Allen Hall

The Biology Education Curriculum is designed in accordance with the recommendations of the National Science Teachers Association and the National Science Education Standards for prospective teachers at the secondary level (grades 7-12). Courses designed for non-science majors will not count toward a degree in any area of science education.

General Education Requirements

English Composition		
EN 1103	English Composition I	3
EN 1113	English Composition II	3
or EN 1173	Accelerated Composition II	
Mathematics		
MA 1313	College Algebra	3
ST 3123	Introduction to Statistical Inference	3
Science		
See Science Content Area		6
Math/Science Elective		
See Sciences Content Area		3

Humanities		
See General Education courses		6
Fine Arts		
See General Education courses		3
Social/Behavioral Sciences		
See General Education courses		6
Major Core		
EDF 3333	Social Foundations of Education	3
EDF 4243	Planning for the Diversity of Learners [1]	3
EDS 3411	Practicum in Secondary Education [1]	1
EDX 3213	Individualizing Instruction for Exceptional Children	3
EPY 3143	Human Development and Learning Strategies in Education [1]	3
EPY 3253	Evaluating Learning [1]	3
EDS 3653	Secondary Science Education [1]	3
EDS 4653	Methods of Teaching Science [1]	3
EDS 4873	Seminar in Managing the Secondary Classroom [1]	3
EDS 4886	Teaching Internship in Secondary Education [1]	6
EDS 4896	Teaching Internship in Secondary Education [1]	6
RDG 3513	Developing Reading Strategies in the Secondary School Content Areas [1]	3
Concentration Courses		
Choose 57 hours of approved coursework within concentration area. Must include the required subject area core. [2]		57
Required Subject area core (32 hrs)		
BIO 1134	Biology I	
BIO 1144	Biology II	
BIO 2103	Cell Biology	
BIO 3103	Genetics I	
BIO 3104	Ecology	
BIO 3304	General Microbiology	
BIO 4113	Evolution	
BCH 4013	Principles of Biochemistry	
CH 1213	Chemistry I	
CH 1211	Investigations in Chemistry I	
Electives approved by advisor that result in a double major or an additional are of licensure (25 hrs)		
Oral Communication Requirement		
Satisfied by the successful completion of EDF 4243		
Computer Literacy Requirement		
Satisfied by the successful completion of EDS 3653		
Writing Requirement		
Satisfied by the successful completion of EDF 4243 and EDS 3653		
Total Hours		124

[1] Requires Admission to Teacher Education.

[2] At least 21 hours of BIO courses must be 3000-4000 level.

Chemistry Education Concentration (CHED)

Major Advisor: Ryan Walker; Office: 310 Allen Hall

The Chemistry Education Curriculum is designed in accordance with the recommendations of the National Science Teachers Association and the Next Generation Science Standards for prospective teachers at the secondary level (grades 7-12). Courses designed for non-science majors will not count toward a degree in any area of science education.

No grades of “D” will be accepted. Science courses designed for non-science majors will not be accepted.

General Education Requirements

English Composition		
EN 1103	English Composition I	3
EN 1113	English Composition II	3
or EN 1173	Accelerated Composition II	
Mathematics		
MA 1713	Calculus I	3
ST 3123	Introduction to Statistical Inference	3
Science		
See Content Area		9
Humanities Electives		
See General Education courses		6
Fine Arts		
See General Education courses		3
Social/Behavioral Sciences		
See General Education courses		6
Major Core		
EDF 4243	Planning for the Diversity of Learners [1]	3
EDF 3333	Social Foundations of Education	3
EDS 3411	Practicum in Secondary Education [1]	1
EDX 3213	Individualizing Instruction for Exceptional Children	3
EPY 3143	Human Development and Learning Strategies in Education [1]	3
EPY 3253	Evaluating Learning [1]	3
EDS 3653	Secondary Science Education [1]	3
EDS 4653	Methods of Teaching Science [1]	3
EDS 4873	Seminar in Managing the Secondary Classroom [1]	3
EDS 4886	Teaching Internship in Secondary Education [1]	6
EDS 4896	Teaching Internship in Secondary Education [1]	6
RDG 3513	Developing Reading Strategies in the Secondary School Content Areas [1]	3
Concentration Courses		
Choose 57 hours of approved coursework within concentration area. Must include the required subject area core.		57
Required subject area core (26 hours)		
CH 1213	Chemistry I	
CH 1211	Investigations in Chemistry I	
CH 1223	Chemistry II	
CH 1221	Investigations in Chemistry II	

CH 2311	Analytical Chemistry I Laboratory	
CH 2313	Analytical Chemistry I	
CH 3213	Inorganic Chemistry	
or CH 4213	Advanced Inorganic Chemistry I	
CH 4511	Organic Chemistry Laboratory I	
CH 4513	Organic Chemistry I	
CH 4523	Organic Chemistry II	
CH 4521	Organic Chemistry Laboratory II	
BCH 4013	Principles of Biochemistry	
Electives approved by advisor that result in a double major or an additional area of licensure (31 hours)		
Oral Communication Requirement		
Satisfied by the successful completion of EDF 4243		
Computer Literacy Requirement		
Satisfied by the successful completion of EDF 4243		
Writing Requirement		
Satisfied by the successful completion of EDF 4243 and EDS 3653		
Total Hours		124

[1] Requires admission to teacher education.

Physics Education Concentration (PHED)

Major Advisor: Ryan Walker; Office: 310 Allen Hall

The Physics Education Curriculum is designed in accordance with the recommendations of the National Science Teachers Association and the National Science Education Standards for prospective teachers at the secondary level (grades 7-12). Courses designed for non-science majors will not count toward a degree in any area of science education.

General Education Requirements

English Composition		
EN 1103	English Composition I	3
EN 1113	English Composition II	3
or EN 1173	Accelerated Composition II	
Mathematics		
MA 1713	Calculus I	3
ST 3123	Introduction to Statistical Inference	3
Science		
See Content Area		9
Humanities Electives		
See General Education courses		6
Fine Arts		
See General Education courses		3
Social/Behavioral Sciences		
See General Education courses		6
Major Core		
EDF 4243	Planning for the Diversity of Learners [1]	3
EDF 3333	Social Foundations of Education	3
EDS 3411	Practicum in Secondary Education [1]	1
EDX 3213	Individualizing Instruction for Exceptional Children	3
EPY 3143	Human Development and Learning Strategies in Education [1]	3
EPY 3253	Evaluating Learning [1]	3
EDS 3653	Secondary Science Education [1]	3
EDS 4653	Methods of Teaching Science [1]	3
EDS 4873	Seminar in Managing the Secondary Classroom [1]	3
EDS 4886	Teaching Internship in Secondary Education [1]	6
EDS 4896	Teaching Internship in Secondary Education [1]	6
RDG 3513	Developing Reading Strategies in the Secondary School Content Areas [1]	3
Concentration Courses		
Choose 57 hours of approved coursework within concentration area. Must include the rquired subject area core		57
Required Subject area core (28 hours)		
PH 1063	Descriptive Astronomy	3
PH 2213	Physics I	3
PH 2223	Physics II	3
PH 2233	Physics III	3
PH 4213	Intermediate Mechanics I	3
PH 4143	Intermediate Laboratory	3
CH 1213	Chemistry I	3
CH 1211	Investigations in Chemistry I	1
MA 1723	Calculus II	3
MA 2733	Calculus III	3
or MA 3113	Introduction to Linear Algebra	
Electives approved by advisor that result in a double major or an additional area of licensure (29 hours)		
Oral Communication Requirement		
Satisfied by the successful completion of EDF 4243		
Computer Literacy Requirement		
Satisfied by the successful completion of EDF 4243		
Writing Requirement		
Satisfied by the successful completion of EDF 4243 and EDS 3653		
Total Hours		124

[1] Requires admission to teacher education.

Social Studies Education Concentration (SSED)

Major Advisor: Paul Binford; Office: 310 Allen Hall

The Social Studies Education curriculum is designed based on standards developed by the National Council for the Social Studies. With a minimum of 54 hours required in history and the social sciences, the program of study provides a broad-based preparation for prospective social studies teachers of grades 7-12.

General Education Requirements

English Composition		
EN 1103	English Composition I	3
or EN 1163	Accelerated Composition I	
EN 1113	English Composition II	3
or EN 1173	Accelerated Composition II	

Mathematics		
MA 1313	College Algebra	3
Any Math above MA 1313		3
Natural Sciences		
Biological Science w/lab (see General Education courses)		3
Physical Science w/lab (see General Education courses)		3
Math/Science Elective		
Approved Science (no lab) or Math		3
Humanities		
See General Education courses		6
Fine Arts		
See General Education courses		3
Social/Behavioral Sciences		
PSY 1013	General Psychology	3
SO 1003	Introduction to Sociology	3
Courses Required for Teacher Education Curriculum		
EDF 4243	Planning for the Diversity of Learners [1]	3
EDF 3333	Social Foundations of Education	3
EDS 3411	Practicum in Secondary Education [1]	1
EDX 3213	Individualizing Instruction for Exceptional Children	3
EPY 3143	Human Development and Learning Strategies in Education [1]	3
EPY 3253	Evaluating Learning [1]	3
RDG 3513	Developing Reading Strategies in the Secondary School Content Areas [1]	3
EDS 3643	Secondary Social Studies Education [1]	3
EDS 4643	Methods of Teaching Social Studies [1]	3
EDS 4873	Seminar in Managing the Secondary Classroom [1]	3
EDS 4886	Teaching Internship in Secondary Education [1]	6
EDS 4896	Teaching Internship in Secondary Education [1]	6
Content Area with Courses Required		
EC 2113	Principles of Macroeconomics	3
EC 2123	Principles of Microeconomics	3
GR 1114	Elements of Physical Geography (or approved 3000 or 4000 level GR elective)	4
GR 1123	Introduction to World Geography	3
HI 1063	Early U.S. History	3
HI 1073	Modern U.S. History	3
HI 1163	World History Before 1500	3
HI 1173	World History Since 1500	3
HI 3333	Mississippi History	3
HI 4403	The Ancient Near East	3
or HI 4903	The Far East	
PS 1113	American Government	3
PS 1513	Comparative Government	3
or PS 1313	Introduction to International Relations	
or PS 2703	Introduction to Public Policy	
3000 or 4000 level history elective		3
3000 or 4000 level HI/PS/EC/GR elective		3
3000 or 4000 level HI/PS/EC/GR elective		3
3000 or 4000 level HI/PS/EC/GR/PSY/SO elective		3
Oral Communication Requirement		
CO 1003	Fundamentals of Public Speaking	3
Computer Literacy Requirement		
TKT 1273	Computer Applications	3
or BIS 1012	Introduction to Business Information Systems	
Writing Requirement		
Satisfied by successful completion of EDS 4643		3
Total Hours		124

[1] Admission to Teacher Education required

Special Education Major (EXED)

Major Advisors: Kent Coffey, Kellie Fondren, Brecken McGinnis, and Kim Mattox
Office: 310 Allen Hall

General Education Requirements

English Composition		
EN 1103	English Composition I	3
or EN 1163	Accelerated Composition I	
EN 1113	English Composition II	3
or EN 1173	Accelerated Composition II	
Mathematics & Natural Sciences		
MA 1313	College Algebra (or higher; C or better)	3
Math above MA 1313		3
Natural Science w/lab (see General Education courses)		3-4
Natural Science w/lab (see General Education courses)		3-4
Math or Science elective		3
Humanities		
Any core humanities		6
Fine Arts		
Any core fine arts		3
Social & Behavioral Sciences		
Any core social science		6
Professional Core		
EDF 4243	Planning for the Diversity of Learners [1]	3
EDF 3333	Social Foundations of Education	3
EPY 2513	Human Growth and Development	3
EPY 3253	Evaluating Learning [1]	3
EDX 3203	Introduction to Learning Disabilities	3
EDX 3213	Individualizing Instruction for Exceptional Children	3
EDX 3223	Introduction to Emotional/Behavioral Disorders	3
EDX 3233	Contingency Management	3
EDX 4103	Introduction to Teaching Students with Intellectual and Developmental Disabilities	3
EDX 4113	Methods and Materials for Early Childhood Students with Disabilities [1]	3
EDX 4123	Methods and Materials for Elementary Students with Disabilities [1]	3

EDX 4133	Methods and Materials for Secondary Students with Disabilities [1]	3
EDX 4353	Assistive Technology in Special Education	3
EDX 4413	Working with Families of Students with Disabilities	3
EDX 4886	Teaching Internship in Special Education [1]	6
EDX 4896	Teaching Internship in Special Education [1]	6
EDX 4873	Professional Seminar in Special Education	3
Collateral Core Electives		21-24
Literacy Electives [1]		6
Oral Communication Requirement		
EDX 4353	Assistive Technology in Special Education	3
EDX 4413	Working with Families of Students with Disabilities	3
EDX 4133	Methods and Materials for Secondary Students with Disabilities	3
Computer Literacy Requirement		
EDX 4353	Assistive Technology in Special Education	3
EDX 4413	Working with Families of Students with Disabilities	3
EDX 4133	Methods and Materials for Secondary Students with Disabilities	3
Writing Requirement		
EDX 4353	Assistive Technology in Special Education	3
EDX 4413	Working with Families of Students with Disabilities	3
EDX 4133	Methods and Materials for Secondary Students with Disabilities	3
Total Hours		123

1 Requires admission to Teacher Education.

2 A math course higher than MA 1313 must be completed.

Department of Educational Leadership

Department Head: Dr. Eric Moyen
Office: 245 Allen Hall

The department offers ten graduate programs: M.S. in Educational Leadership with concentrations in (1) School Administration, (2) Teacher Leadership, and (3) Student Affairs and Higher Education; M.S. in (4) Workforce Education Leadership; (5) M.A.T. in Community College Education; Educational Specialist in Education with concentrations in (6) School Administration and (7) Teacher Leadership; Ph.D. in Educational Leadership with concentrations in (8) P-12 Leadership and (9) Higher Education Leadership; and (10) Ph.D. in Community College Leadership.

The goals of the Department of Educational Leadership are to:

1. Provide graduate programs of study in which students pursue advanced degrees in P-12 educational leadership, student affairs and higher education leadership, and community college teaching and leadership;
2. Immerse graduate students in coursework which provides the theoretical foundation, practical skils, and research knowledge required to be effective leaders in educational settings.;
3. Provide rigorous, relevant, and empirically supported instruction which engages students in acquiring knowledge and in solving problems critically, analytically, and ethically;
4. Conduct research that is significant, driven by theory, and methodologically rigorous, in order that students and faculty participate as active consumers and producers of knowledge; and
5. Provide service to our community, our state, and the global community, as well as our department, college, university, and profession.

Department of Instructional Systems and Workforce Development

Department Head: Dr. Trey Martindale
Office: 103-A Industrial Education Building
Website: iswd.msstate.edu

The Department of Instructional Systems and Workforce Development prepares students with marketable technology skills to pursue careers in a variety of professional settings, including K-12 schools, higher education, and an array of industry and business environments. The department offers two undergraduate bachelor's degrees, Master of Science in Instructional Technology, Educational Specialist, and Doctor of Philosophy degrees.

Students may also complete the Veterans' Certificate Program (http://iswd.msstate.edu/current-students/programs/veterans) that consists of 15 semester hours of coursework designed for anyone at any level who would like to serve veterans. Two minors consisting of 18 hours are also offered to students interested in either industrial technology or information technology services.

Information Technology Services Major (ITS) non-teaching

Major Advisor: Wei-Chieh Yu, 102 IED Building

This curriculum is designed to prepare students for the use of computer-based information systems, particularly software applications and hardware, development and implementation of information technology end-user support, information technology project management, and technology training.

By completing the business requirements for the ITS degree, students may be eligible to receive a minor in Business Administration from the College of Business. ITS majors interested in a minor in business administration should contact an academic coordinator in room 106 McCool Hall.

The MSU Bulletin is not the final source of information; department advisement is critically important for course sequence and selection. Students should always get advisement and approval from their MSU advisor for course scheduling.

Industrial Technology Major (INDT) non-teaching

Major Advisors: John Wyatt and Mickey Giordano
Office: 110 IED Building

The industrial education curriculum is designed for students who want to prepare for employment leading to supervisory and management positions in the production, automation, maintenance, or logistics areas of industry. The role of the Industrial Technology graduate is that of a facilitator of ideas from senior management to the production floor. Successful completion of the four-year curriculum would provide an excellent background in science, mathematics, design and human relations. This is coupled with the practical use of both manual and automated machinery and the associated tools, as well as knowledge of industrial manufacturing processes, materials and logistics.

To this extent the curriculum is divided into three concentrations:

- Industrial Automation
- Industrial Distribution
- Manufacturing & Maintenance Management

These concentrations are designed to give students a specialization that they can take into the workforce and build upon throughout their industrial career. Graduates should quickly become proficient in both the supervisory and administrative roles of dealing with personnel, and depending upon the concentration selected, the graduate should become adept in the various aspects of the manufacture, distribution and automation of industrial products and processes. Employment opportunities are excellent for this degree.

The MSU Bulletin is not the final source of information. Departmental advisement is critically important for the course sequence and selection. Students should always get advisement and approval from their MSU advisor for course scheduling.

Upper division courses (3000 level and up) must be taken at a senior college or university. See a faculty advisor for prerequisites and proper course sequence.

NOTE: This curriculum lends itself well to a minor in Business Administration or Marketing.

Information Technology Services Major (ITS) non-teaching

General Education Requirements

English Composition		
EN 1103	English Composition I	3
or EN 1163	Accelerated Composition I	
EN 1113	English Composition II	3
or EN 1173	Accelerated Composition II	
Mathematics		
MA 1313	College Algebra	3
ST 2113	Introduction to Statistics	3
or BQA 2113	Business Statistical Methods I	
Science		
Natural Science w/lab - see General Education courses		3
Natural Science w/lab - see General Education courses		3
Math/Science Elective		
See General Education courses		3
Humanities		6
see General Education requirement		
Fine Arts		
See General Education requirement		3
Social/Behavioral Science		
See General Education requirement		6
College Core		
Oral Communication Requirement		
CO 1003	Fundamentals of Public Speaking	3
or CO 1013	Introduction to Communication	
Computer Literacy Requirement		
TKT 1273	Computer Applications (or other approved course)	3
Writing Requirement		
MGT 3213	Organizational Communications	3
Major Core		
Business Courses		
ACC 2013	Principles of Financial Accounting	3
ACC 2023	Principles of Managerial Accounting	3
BL 2413	The Legal Environment of Business	3
EC 2113	Principles of Macroeconomics	3
EC 2123	Principles of Microeconomics	3
MGT 3114	Principles of Management and Production	4
MGT 3513	Introduction to Human Resource Management	3
BIS 1523	Web Development I	3
BIS 3233	Management Information Systems	3
Technology Courses		
TKB 2123	Database Management	3
TKB 2133	Spreadsheet Design and Analysis	3
TKB 3133	Administrative Management and Procedures	3
TKB 4543	Information Processing	3
TKB 4563	Introduction to Data Networks	3
TKB 4573	Data Networks II	3
TKB 4583	Graphics and Web Design	3
TKT 3213	Call Center Management	3
TKT 3463	Computer Repair and Maintenance	3
TKT 3623	Designing Technology Training	3
TKT 4203	Emerging Technologies	3
TKT 4343	Information Technology Project Management	3
TKT 4623	Delivery and Evaluation of Technology Training	3
TKT 4683	Senior Seminar in Information Technology Services	3
TKT 4743	Elements of Electronic Desktop Publishing	3
TKT 4753	Media for Presentations, Instruction and Gaming	3
Approved Elective		3
Total Hours		124

Minor in Information Technology Services

The Information Technology Services minor is for students who wish to learn technology, yet are not majoring in ITS. A minor in ITS will aid students in becoming familiar with the general concepts of information

technology services and sub-components such as instructional technology, computer repair, and multimedia development and design.

To obtain this minor, a minimum of 18 hours must be taken from the following courses:

TKB 3133	Administrative Management and Procedures	3
TKB 4283	Advanced Office Systems	3
TKB 4543	Information Processing	3
TKB 4563	Introduction to Data Networks	3
TKB 4583	Graphics and Web Design	3
TKT 3463	Computer Repair and Maintenance	3
TKT 4343	Information Technology Project Management	3
TKT 4743	Elements of Electronic Desktop Publishing	3
TKT 4753	Media for Presentations, Instruction and Gaming	3
TKT 4813	Introduction to Instructional Systems	3

Industrial Technology Major (INDT) non-teaching

Major Advisors: Dr. John Wyatt and Mickey Giordano
Office: 110 IED Building

General Education Requirements

English Composition		
EN 1103	English Composition I	3
or EN 1163	Accelerated Composition I	
EN 1113	English Composition II	3
or EN 1173	Accelerated Composition II	
Mathematics		
MA 1323	Trigonometry	3
MA 1613	Calculus for Business and Life Sciences I	3
or MA 1713	Calculus I	
BQA 2113	Business Statistical Methods I [1]	3
or MA 2113	Introduction to Statistics	
or ST 2113	Introduction to Statistics	
Science		
CH 1043	Survey of Chemistry I	3
CH 1051	Experimental Chemistry	1
PH 1013 & PH 1011	Physical Science Survey I and Physical Science Laboratory I	4
PH 1023	Physical Science Survey 2	3
Humanities		
See General Education courses		6
Fine Arts		
See General Education courses		3
Social/Behavioral Science		
See General Education courses [2]		6
Major Core		
INDT 1203	Industrial Drafting & Print Reading	3
INDT 1814	Basic Industrial Electricity and Electronics	4
INDT 2113	Introduction to PLC Programming	3
INDT 2123	Introduction to CNC Programming	3
INDT 2323	Welding Technology	3
INDT 2613	Industrial Fluid Power	3
INDT 3044	Industrial Safety	4
INDT 3063	Industrial Human Relations	3
INDT 3104	Advanced Industrial Electricity and Electronics	4
INDT 3223	Industrial Materials	3
INDT 3243	Industrial Metrology	3
INDT 3343	3D Modeling for Manufacture	3
INDT 3363	Motion and Time Study	3
INDT 3373	Forecasting and Cost Modeling	3
INDT 3683	CNC Machining Processes	3
INDT 3813	Writing for Industry	3
INDT 4213	Survey of Energy Sources and Power Technology	3
INDT 4224	Quality Assurance	4
INDT 4801	Senior Seminar	1
Writing Requirement		
fulfilled by TKI 3813		

Footnotes

[1] Required for General Business Administration minor

[2] EC 2113 and EC 2123 recommended for business minors

Choose one of the following concentrations:

Industrial Distribution Concentration (IDIS)

The industrial distribution concentration is designed for students who wish to pursue a career in the transportation of goods both nationally and internationally. This concentration is concerned with a logistical approach to the movement of products. The industrial distribution concentration lends itself to gaining a marketing minor.

MKT 3013	Principles of Marketing	3
MKT 4113	Personal Selling	3
MKT 4123	Advertising	3
Marketing (MKT) electives - See advisor		6
INDT Electives- See advisor		9
Total Hours		124

Industrial Automation Concentration (IAUT)

The industrial automation concentration is designed for students who wish to enter a career in the automation of manufacturing processes. This concentration is concerned with fixed automation, robotics, and the trouble shooting of automated systems and their role in the manufacturing environment. This concentration lends itself to a general business administration minor.

ACC 2013	Principles of Financial Accounting	3
or ACC 2203	Survey of Accounting	
BL 2413	The Legal Environment of Business	3
INDT 4103	Industrial Control Systems	3
INDT 4203	Automated Systems	3
INDT 4233	Maintenance Management	3

INDT 4303	Industrial Robotics	3
INDT 4403	Automated Systems II	3
INDT Electives - See advisor		3
Total Hours		124

Manufacturing & Maintenance Management Concentration (MFMA)

The manufacturing and maintenance management concentration is designed for students who want to enter a career in the manufacturing sector. This concentration is concerned with the management, maintenance, and day-to-day operation and improvement of manufacturing processes. This concentration lends itself to a general business administration minor.

ACC 2013	Principles of Financial Accounting	3
BL 2413	The Legal Environment of Business	3
INDT 4103	Industrial Control Systems	3
INDT 4233	Maintenance Management	3
INDT 4263	Manufacturing Technology and Processing	3
INDT 4373	Lean Six Sigma	3
INDT 4463	Manufacturing Technology & Processes II	3
INDT Electives - See advisor		3
Total Hours		124

Minor in Industrial Technology

A minor in Industrial Technology will help non-industrial technology students who wish to enter the field of manufacturing. Students will become familiar with the basic concepts of industrial practices and the machines and components that make up many manufacturing companies. This is combined with laboratory work to enhance these concepts and to give an understanding of how the many manufacturing systems are integrated. Academic advising is available from the Industrial Technology program in the Industrial Education Building.

A minimum of 21 hours must be taken to obtain the INDT minor. A minimum of 12 hours must be taken at MSU to receive the minor. Note that some choices requires others as prerequisites.

Required Courses		
INDT 1203	Industrial Drafting & Print Reading	3
INDT 2113	Introduction to PLC Programming	3
INDT 2123	Introduction to CNC Programming	3
INDT 2613	Industrial Fluid Power	3
Electives - Select any three:		
INDT 3044	Industrial Safety	
INDT 3223	Industrial Materials	
INDT 4224	Quality Assurance	
INDT 4233	Maintenance Management	
INDT 4263	Manufacturing Technology and Processing	
INDT 4303	Industrial Robotics	

Veterans' Certificate Program

Major Adviser: Dr. Trey Martindale
Office: 103-A Industrial Education Building

The Veterans' Certificate Program, which is offered at the undergraduate and graduate levels, consists of 15 semester hours of coursework (3 hours prerequisite and 12 hours required core courses). The certificate is designed for anyone at any level who would like to serve veterans. Employees of colleges and universities, corporations, government at all levels, and other professionals who are interested in serving veterans should obtain this certificate.

As part of the University's ongoing commitment to veterans, the certificate provides the knowledge, skills, and competencies that individuals will need to support veterans as they transition to civilian life.

The curriculum is designed to increase the capabilities of individual within the federal and state governments, educational institutions, and private corporations who work with veterans' issues. Individuals working in the educational benefits area will find this program of particular value. The attainment of the Veterans' Certificate could be used as a precursor to position advancement within any government agency, federal or state, that deals with matters relevant to veterans.

Prerequisite Course:		
TKB 3133	Administrative Management and Procedures	3
Required Program Courses:		
TKT 4403	Strategies for Campus Transition and Success for Veterans	3
or TKT 6403	Strategies for Campus Transition and Success for Veterans	
TKT 4413	Veterans' Benefits and Certification-Policies and Procedures	3
or TKT 6413	Veterans' Benefits and Certification-Policies and Procedures	
TKT 4423	History of Administration of Veterans' Benefits	3
or TKT 6423	History of Administration of Veterans' Benefits	
TKT 4433	The Development of Veterans' Benefits, Laws and Policies	3
or TKT 6433	The Development of Veterans' Benefits, Laws and Policies	
Total Hours		15

Department of Kinesiology

Department Head: Stanley P. Brown
Office: 216 McCarthy Gym

Division of Exercise Science Coordinator: John Lamberth
Office: 235 McCarthy Gym

Division of Sport Studies Coordinator: Brad Vickers
Office: 123 McCarthy Gym

The Department of Kinesiology offers five undergraduate concentrations: Physical Education and Coaching (PEC), Neuromechanics (NM), Performance Fitness (PF), Clinical Exercise Physiology (CLEP), and Sport Administration (SA).

Community college transfer hours not to exceed 62 semester hours may be applied to the Kinesiology degree program.

All concentrations require the specified course requirements cited within the General Education and major core listings below. Specified area content courses vary among the five concentrations and are listed following the core section. Pre-Occupational Therapy and Pre-

Physical Therapy curricula have different core and program requirements. Students electing to pursue Pre-OT or Pre-PT should consult their advisor.

Physical Education and Coaching Concentration (PECO)

Major Advisors: J.J. Chen, Debby Funderburk, Elizabeth Palmer, Brad Vickers, and Glen Young

The physical education and coaching concentration requires 124 semester hours of prescribed courses to complete the Bachelor of Science in Kinesiology. The curriculum is designed to meet the need of students interested in becoming physical education teachers in public and private schools. The teaching block of courses must be included in the on-campus requirement of 32 semester hours of junior and senior courses. Students who complete the program will be eligible for teacher licensure by the Mississippi Department of Education.

Neuromechanics Concentration (NRMC)

Major Advisors: Harish Chander, J.J. Chen, Adam Knight, Elizabeth Palmer, and Zhujun Pan

The Neuromechanics concentration requires 124 semester hours of prescribed courses to complete a Bachelor of Science in Kinesiology. The Neuromechanics concentration combines the disciplines of "neuroscience" and "biomechanics" and deals with the study of human movement accomplished by the interaction of the nervous, muscular, and skeletal systems of the human body. Students learn concepts of the neuromechanical basis of kinesiology in the development, learning, control, and production of human movement. This enhances their knowledge and understanding of neural, biomechanical, cognitive, and behavioral mechanisms underlying human movements to help improve performance and prevent injuries in a variety of populations ranging from recreational, athletic, occupational, geriatric, and special populations such as Downs' syndrome, autism, and Parkinson's disease. The curriculum provides students a foundation in the mechanisms underlying human movement to prepare them for careers in physical therapy, occupational therapy, medicine/physician assistance, neuromechanics, human factors ergonomics, sport science, and disability and rehabilitation science.

Performance Fitness Concentration (PRFT)

Major Advisors: Megan Holmes, Elizabeth Palmer, and JohnEric Smith

The Performance Fitness concentration provides students with the necessary knowledge to incorporate exercise physiology concepts into activates that enhance fitness and performance. This concentration covers everything from the development of plans to enhance fitness in apparently healthy populations to improving performance in elite athletes. Performance Fitness takes into consideration a combination of the physiological, biomechanical, and psychological aspects of training in the development of individual and team needs for customized programming. The concentration serves as the foundation for students to become sport scientists, strength and conditioning coaches, personal trainers, and specialists within corporate fitness/wellness programs.

Clinical Exercise Physiology Concentration (CLEP)

Major Advisors: Stamatis Agiovlasitis, Harish Chander, Erin Grant-Butler, Megan Holmes, Lee Ann Joe, Adam Knight, John Lamberth, Elizabeth Palmer, Zhujun Pan, JohnEric Smith, Ben Wax, and Holly Wiley

The clinical exercise physiology concentration is designed as a professional preparation program of study that enables students to work in clinical settings as exercise physiologists in cardiac and pulmonary rehabilitation, or other clinical rehabilitation settings, such as those for individuals with diabetes, orthopedic limitations, arthritis, cancer, osteoporosis, renal failure, obesity, and in programs dealing with issues of aging. The clinical exercise physiology concentration also provides students with the necessary background to pursue graduate health professions, such as physical or occupational therapy, physician assistant studies, medicine, or other graduate level educational programs.

Sport Administration Concentration (SPAD)

Major Advisors: Younghan Lee, Soyoun Lim, Matthew Rye, Matthew Zimmerman, and Greggory Twietmeyer

The Sport Administration concentration provides students with knowledge and skills necessary for careers in the sport industry. A concentration in Sport Administration helps prepare students to work in such fields as sport marketing & promotions, sporting event and/or facility management & operations, sport communication & media relations, and other administrative areas at the professional, collegiate, and recreational levels of the industry. The program seeks to combine classroom education with hands-on experience, as all students will complete an internship in the sport industry prior to graduation. Students choosing a concentration in Sport Administration choose either the Business, Communication, or Foreign Language cognate field.

Choose one of the following concentrations:

Physical Education and Coaching Concentration (PECO)

English		6
EN 1103	English Composition I	
or EN 1163	Accelerated Composition I	
EN 1113	English Composition II	
or EN 1173	Accelerated Composition II	
Fine Arts		3
PE 1323	History and Appreciation of Dance (or other approved Fine Art elective)	
Natural Sciences		10
BIO 1023	Plants and Humans (or any core approved lab science)	
BIO 1004	Anatomy and Physiology	
BIO 1123	Animal Biology (or any core approved lab science)	
Math		6
MA 1313	College Algebra (or higher)	
ST 2113	Introduction to Statistics (or math above MA 1313)	
Humanities [1]		6

EN 2203	Introduction to Literature (or other approved humanities course)	
or EN 2243	American Literature Before 1865	
or EN 2253	American Literature After 1865	
HI 1063	Early U.S. History (or other approved humanities course)	
or HI 1073	Modern U.S. History	
Social/Behavioral Sciences [1]		6
PSY 1013	General Psychology	
SO 1203	Sociology of Families (or other approved Gen Ed course)	
Major Core Courses		31
EP 3304	Exercise Physiology	
PE 1243	Methods of Teaching Games and Sports	
PE 1253	Methods of Teaching Lifetime Activities	
PE 1263	Methods of Teaching Rhythms	
PE 3133	Adapted Physical Education	
PE 3153	Methods of Elementary Physical Education	
PE 3223	Motor Development and Movement	
PE 3533	Coaching Sports	
PE 4533	Developing Coaching Expertise	
PE 4283	Sport Biomechanics	
Kinesiology Core Courses		11
PE 1000	Play, Fitness & Physical Activity (or any 2 PE activity courses)	
PE 3163	Sport Psychology	
EP 2013	Fundamentals of Kinesiology	
EP 3233	Anatomical Kinesiology	
Select one of the following:		3
KI 3273	Athletic Training	
KI 2213	Emergency Health Care	
Professional Education Courses		6
EDF 3333	Social Foundations of Education	
EDX 3213	Individualizing Instruction for Exceptional Children	
Courses Required for Admission into Teacher Ed		21
PE 4163	Principles and Methods of Secondary School Health and Physical Education	
PE 4173	Tests and Measurements in Health and Physical Education	
PE 4853	Motor Learning and Skill Analysis	
PE 4883	School Health Education	
EPY 3143	Human Development and Learning Strategies in Education	
EPY 3253	Evaluating Learning	
EDF 4243	Planning for the Diversity of Learners	
Final Semester: Teaching Internship		15
PE 4873	Professional Seminar in Physical Education	
PE 4886	Teaching Internship in Physical Education	
PE 4896	Teaching Internship in Physical Education	
Total Hours		124

Neuromechanics (NRMC)

English		6
EN 1103	English Composition I	
or EN 1163	Accelerated Composition I	
EN 1113	English Composition II	
or EN 1173	Accelerated Composition II	
Fine Arts		3
Any Gen Ed course		
Natural Sciences		8
Biology	BIO 1134 or other four credit hour approved Gen Ed BIO Lab Science course above or equivalent [1]	
Chemistry	CH 1213/1211 or other four credit hour approved Gen Ed CH Lab Science course above or equivalent [1]	
Natural Science (if appropriate) [1]		3
Any Gen Ed course		
Math		6
MA 1313	College Algebra (or higher)	
ST 2113	Introduction to Statistics	
Humanities [1]		6
Any Gen Ed course(s)		
Social/Behavioral Sciences [1]		6
PSY 1013	General Psychology (or other approved Gen Ed course)	
SO 1003	Introduction to Sociology (or other approved Gen Ed course)	
Exercise Science Core		27
KI 2023	Foundations of Health Education	
EP 3304	Exercise Physiology	
EP 3643	Applied Anatomy and Pathophysiology	
EP 4113	Fitness Programs and Testing Procedures	
EP 4183	Exercise and Weight Control	
EP 4504	Mechanical Analysis of Movement	
EP 4603	Physical Activity Epidemiology	
EP 4814	Exercise Science Internship	
Kinesiology Core Courses		12
PE 1000	Play, Fitness & Physical Activity (or any 3 PE activity courses)	
SS 4003	Philosophy of Sport & Physical Activity	
or SS 4303	Globalization and Sport	
or PE 3163	Sport Psychology	
or EP 3183	Exercise Psychology	
EP 2013	Fundamentals of Kinesiology	
EP 3233	Anatomical Kinesiology	
Concentration Courses		15
EP 4143	Aging and Disability	
EP 4703	Neural Control of Human Movement	
PE 3223	Motor Development and Movement	
PE 4283	Sport Biomechanics	
PE 4853	Motor Learning and Skill Analysis	
Electives		15
See advisor for approved list of courses		

Additional Requirements		11
BIO 3004	Human Anatomy (or equivalent Gen Ed Bio/Lab Science course)	
BIO 3014	Human Physiology (or equivalent Gen Ed Bio/Lab Science course)	
KI 2603	Medical Terminology	
Oral Communication Requirement		
CO 1003	Fundamentals of Public Speaking	3
or CO 1013	Introduction to Communication	
or CO 2253	Fundamentals of Interpersonal Communication	
Computer Literacy Requirement		
Satisfied by successful completion of EP 4803		
Writing Requirement		
EDF 3413	Writing for Thinking	3
or MGT 3213	Organizational Communications	
or BIO 3013	Professional Writing for Biologists	
Total Hours		124

Performance Fitness Concentration (PRFT)

English		6
EN 1103	English Composition I	
or EN 1163	Accelerated Composition I	
EN 1113	English Composition II	
or EN 1173	Accelerated Composition II	
Fine Arts		3
Any Gen Ed course		
Natural Sciences		8
Biology	BIO 1134 or other four credit hour approved Gen Ed BIO Lab Science course above or equivalent [1]	
Chemistry	CH 1213/1211 or other four credit hour approved Gen Ed CH Lab Science course above or equivalent [1]	
Natural Science (if appropriate) [1]		3
Any Gen Ed course		
Math		6
MA 1313	College Algebra (or higher)	
ST 2113	Introduction to Statistics	
Humanities [1]		6
Any Gen Ed course(s)		
Social/Behavioral Sciences [1]		6
PSY 1013	General Psychology (or other approved Gen Ed course)	
SO 1003	Introduction to Sociology (or other approved Gen Ed course)	
Exercise Science Core		27
KI 2023	Foundations of Health Education	
EP 3304	Exercise Physiology	
EP 3643	Applied Anatomy and Pathophysiology	
EP 4113	Fitness Programs and Testing Procedures	
EP 4183	Exercise and Weight Control	
EP 4504	Mechanical Analysis of Movement	
EP 4603	Physical Activity Epidemiology	
EP 4814	Exercise Science Internship	
Kinesiology Core Courses		12
PE 1000	Play, Fitness & Physical Activity (or any 3 PE activity courses)	
SS 4003	Philosophy of Sport & Physical Activity	
or SS 4303	Globalization and Sport	
or PE 3163	Sport Psychology	
or EP 3183	Exercise Psychology	
EP 2013	Fundamentals of Kinesiology	
EP 3233	Anatomical Kinesiology	
Concentration Courses		15
FNH 4223	Sports Nutrition	
PE 3313	Sport Physiology	
EP 4153	Training Techniques for Exercise and Sport	
PE 4283	Sport Biomechanics	
PE 4533	Developing Coaching Expertise	
Electives		15
See advisor for approved list of courses		
Additional Requirements		11
BIO 3004	Human Anatomy (or equivalent Gen Ed Bio/Lab Science course)	
BIO 3014	Human Physiology (or equivalent Gen Ed Bio/Lab Science course)	
KI 2603	Medical Terminology	
Oral Communication Requirement		
CO 1003	Fundamentals of Public Speaking	3
or CO 1013	Introduction to Communication	
or CO 2253	Fundamentals of Interpersonal Communication	
Computer Literacy Requirement		
Satisfied by successful completion of EP 4803		
Writing Requirement		
EDF 3413	Writing for Thinking	3
or MGT 3213	Organizational Communications	
or BIO 3013	Professional Writing for Biologists	
Total Hours		124

Clinical Exercise Physiology Concentration (CLEP)

English		6
EN 1103	English Composition I	
or EN 1163	Accelerated Composition I	
EN 1113	English Composition II	
or EN 1173	Accelerated Composition II	
Fine Arts		3
Any Gen Ed course		
Natural Sciences		8
Biology	BIO 1134 or other four credit hour approved Gen Ed BIO Lab Science course above or equivalent [1]	
Chemistry	CH 1213/1211 or other four credit hour approved Gen Ed CH Lab Science course above or equivalent [1]	
Natural Science (if appropriate) [1]		3

Any Gen Ed course		
Math		6
MA 1313	College Algebra (or higher)	
ST 2113	Introduction to Statistics	
Humanities [1]		6
Any Gen Ed course(s)		
Social/Behavioral Sciences [1]		6
PSY 1013	General Psychology (or other approved Gen Ed course)	
SO 1003	Introduction to Sociology (or other approved Gen Ed course)	
Exercise Science Core		27
KI 2023	Foundations of Health Education	
EP 3304	Exercise Physiology	
EP 3643	Applied Anatomy and Pathophysiology	
EP 4113	Fitness Programs and Testing Procedures	
EP 4183	Exercise and Weight Control	
EP 4504	Mechanical Analysis of Movement	
EP 4603	Physical Activity Epidemiology	
EP 4814	Exercise Science Internship	
Kinesiology Core Courses		12
PE 1000	Play, Fitness & Physical Activity (or any 3 PE activity courses)	
SS 4003	Philosophy of Sport & Physical Activity	
or SS 4303	Globalization and Sport	
or PE 3163	Sport Psychology	
or EP 3183	Exercise Psychology	
EP 2013	Fundamentals of Kinesiology	
EP 3233	Anatomical Kinesiology	
Concentration Courses		15
EP 3803	Advanced Exercise Physiology	
EP 3613	Exercise Electrocardiography	
EP 4123	Aging and Physical Activity	
EP 4133	Exercise Programs for Clinical Populations	
EP 4143	Aging and Disability	
Electives		15
See advisor for approved list of courses		
Additional Requirements		11
BIO 3004	Human Anatomy (or equivalent Gen Ed Bio/Lab Science course)	
BIO 3014	Human Physiology (or equivalent Gen Ed Bio/Lab Science course)	
KI 2603	Medical Terminology	
Oral Communication Requirement		
CO 1003	Fundamentals of Public Speaking	3
or CO 1013	Introduction to Communication	
or CO 2253	Fundamentals of Interpersonal Communication	
Computer Literacy Requirement		
Satisfied by successful completion of EP 4803		
Writing Requirement		
EDF 3413	Writing for Thinking	3
or MGT 3213	Organizational Communications	
or BIO 3013	Professional Writing for Biologists	
Total Hours		124

Sport Administration Concentration (SPAD)

English		6
EN 1103	English Composition I	
or EN 1163	Accelerated Composition I	
EN 1113	English Composition II	
or EN 1173	Accelerated Composition II	
Fine Arts		3
PE 1323	History and Appreciation of Dance (or any approved Fine Arts Gen Ed course)	
Natural Sciences (2 labs required from Gen Ed)		8
BIO 1004	Anatomy and Physiology	
Any 3-4 hour Gen Ed lab science course		
Extra Science [1]		3
Any Gen Ed course		
Math		6
MA 1313	College Algebra (or higher)	
MA 1613	Calculus for Business and Life Sciences I	
Humanities [1]		6
PHI 1123	Introduction to Ethics (or other approved Humanities Gen Ed course)	
See Gen Ed course list for an additional 3 hour course		
Social/Behavioral Sciences [1]		6
SO 1003	Introduction to Sociology	
EC 2113	Principles of Macroeconomics	
Kinesiology Core Courses		12
EP 2013	Fundamentals of Kinesiology	
PE 1000	Play, Fitness & Physical Activity (or any 3 PE activity courses)	
SS 4003	Philosophy of Sport & Physical Activity	
or SS 4303	Globalization and Sport	
or PE 3163	Sport Psychology	
or EP 3183	Exercise Psychology	
EP 3233	Anatomical Kinesiology	
Concentration Courses		30
SS 2003	Foundations of Sport Industry	
SS 2103	Sport Careers and Practicum	
SS 3103	Sport Sponsorship	
SS 3203	Sport Law	
SS 3403	Facility and Event Management in Sport	
SS 4103	Ethics in Sport Management	
SS 4203	Funding of Sport	
SS 4396	Sports Studies Internship	
SS 4803	Seminar in Sports Studies	
Concentration Electives		15
SS 3303	Communication Management in Sport	
SS 3503	Sport and Recreational Leadership	
SS 3603	Program Planning in Sport and Recreation	
SS 3703	Contemporary Issues in Intercollegiate Athletics	
SS 3903	Ancient and Medieval Sport History	

SS 4000	Directed Individual Study in Sport Studies
SS 4003	Philosophy of Sport & Physical Activity
SS 4403	Gender and Sport
SS 4503	Sport Promotion and Sales Management
PE 3163	Sport Psychology
PE 3313	Sport Physiology
PE 4283	Sport Biomechanics
KI 2213	Emergency Health Care
SO 4333	Sociology of Sport
Cognate Courses	24-26
Choose one of the following cognates to complete the concentration requirements:	
--Business (25 hrs)	
ACC 2013	Principles of Financial Accounting
ACC 2023	Principles of Managerial Accounting
MA 2113	Introduction to Statistics
EC 2123	Principles of Microeconomics
MKT 3013	Principles of Marketing
FIN 3113	Financial Systems
FIN 3123	Financial Management
MGT 3114	Principles of Management and Production
7 hours of Free Electives	
--Communication (24 hrs)	
CO 1223	Introduction to Communication Theory
CO 1403	Introduction to the Mass Media
CO 2333	Television Production
CO 2413	Introduction to News Writing and Reporting
CO 3313	News Writing for the Electronic Media
CO 3423	Feature Writing
CO 3713	Digital Communication
CO 3803	Principles of Public Relations
8 hours of Free Electives	
--Foreign Language (26 hours)	
FLS 1113	Spanish I
or FLF 1113	French I
or FLG 1113	German I
FLS 1123	Spanish II
or FLF 1123	French II
or FLG 1123	German II
FLS 2133	Spanish III
or FLF 2133	French III
or FLG 2133	German III
FLS 2143	Spanish IV
or FLF 2143	French IV
or FLG 2143	German IV
FLS 3113 & FLS 3111	Advanced Spanish Composition and Advanced Spanish Laboratory
or FLF 3114	Advanced French Composition
or FLG 3114	Advanced German Composition
FLS 3233 & FLS 3121	Advanced Spanish Conversation and Advanced Spanish Conversation Practicum
or FLF 3124	Advanced French Conversation
or FLG 3124	Advanced German Conversation
FLS 3143	Hispanic Civilization
or FLF 3143	French Civilization
or FLG 3143	German Civilization
FLS 3313	Economics of the Spanish-Speaking World
or FLF 3313	Business French I
or FLG 3313	Business German I
6 hours of Free Electives	
Total Hours	124

Department of Music

Department Head: Barry E. Kopetz
Department Office:
Music Building A
Telephone: (662) 325-3070
Fax: (662) 325-0250
http://music.msstate.edu/

Mailing Address:
Department of Music
PO Box 6240
Mississippi State, MS 39762

University Bands
Ms. Elva Kaye Lance, Director of Bands
Telephone: (662) 325-2713
http://msuband.msstate.edu

University Choirs
Dr. Gary Packwood, Director of Choral Activities
Telephone: (662) 325-7801
http://www.statesings.com/

University Philharmonia Orchestra
Dr. Barry E. Kopetz, Director
Telephone: (662) 325-3070

Mission
The mission of the Department of Music at Mississippi State University is to contribute to the development of broadly acculturated citizens in our state and region through enhanced musical understanding and enriching musical experiences, providing access and opportunity to our diverse population through programs of teaching, research, and service.

Bachelor of Music Education
The Bachelor of Music Education is a 130-hour professional degree program that leads to licensure to teach music in the State of Mississippi. The Department of Music offers four concentrations of the BME: Guitar, Instrumental, Keyboard and Vocal.

The Instrumental concentration qualifies the student for a Music Instrumental (K-12) teaching license. The Vocal, Keyboard, and Guitar concentrations qualifies the student for a Music Choral (K-12) teaching license.

The Vocal concentration qualifies the student for a K-12 Choral Music teaching license, allowing graduates to teach General, Instrumental and Choral music in all grades in the state of Mississippi.

For suggested course sequence for all concentrations, visit the Department of Music website: http://www.music.msstate.edu/academics/bme/

Students are required to earn a "C" or better in all required (non-elective) Applied Music (MUA), Music (MU), and Music Education (MUE) courses.

Auditions

All potential music majors and minors are required to audition for appropriate faculty in order to determine their preparedness to enter the program, participate in ensembles, and determine eligibility for a scholarship or service award.

Although alternate dates are available, the preferred audition date for music majors and minors in all areas is the third Saturday in February. Other audition dates are available by contacting the applied faculty of your area of concentration, the department office (662) 325-3070, or the major ensemble offices. (Choir (662) 325-3490; Band (662) 325-2713; Orchestra (662) 325-3070).

Transfer Information

After successful admission to the University, and in addition to the music major audition, transfer students are required to complete a music theory and aural skills entrance exam to determine preparedness for upper division study. For more information see the Department of Music website at http://www.music.msstate.edu/students/transfers/ or call 662-325-3070.

Music Minor

Mississippi State University offers MSU students the opportunity to complete a minor in music. The Music Minor is a comprehensive set of courses designed to increase student musicianship and knowledge.

Students must audition and be accepted as a music minor before the minor may be declared. Acceptance in any given studio area is on a space available basis. The requirements for the music minor cannot be completed after graduating from MSU.

For information and required courses, visit the Department of Music website: http://www.music.msstate.edu/academics/minorinmusic/

General Education Requirements

English Composition		
EN 1103	English Composition I	3
or EN 1163	Accelerated Composition I	
EN 1113	English Composition II	3
or EN 1173	Accelerated Composition II	
Mathematics [1]		
MA 1313	College Algebra	3
Math Elective at a level above MA 1313		3
Math Elective at a level above MA 1313 or Science Elective		3
Science [1]		
Biological Science with Lab		3
Science Elective with Lab		3
Humanities		
Literature Elective		3
History Elective		3
Fine Arts		
Fine Arts		
MU 3013	Survey of Western Music History I	3
Social Science		
PSY 1013	General Psychology	3
Social/Behavioral Science Elective		3
Major Core		
EDF 3333	Social Foundations of Education	3
EPY 3143	Human Development and Learning Strategies in Education	3
EDX 3213	Individualizing Instruction for Exceptional Children	3
MUE 1151	Technology for Music Education	1
MUE 2153	Foundations of Music Education	3
MUE 2163	Elementary Music Methods	3
MUE 4152	Secondary Music Methods	2
MUE 4873	Professional Seminar in Music Education	3
MUE 4886	Teaching Internship in Music Education	6
MUE 4896	Teaching Internship in Music Education	6
Public Speaking		
Satisfied through music history courses, upper division proficiency exam, music education courses and student teaching.		
Upper Level Writing Requirement		
Satisfied through music theory, music history, music education courses and the upper division proficiency exam.		
Computer Literacy Requirement		
Satisfied through MUE 1151 and the music theory sequence.		0
Music Requirements		
MU 1213	Music Theory I	3
MU 1321	Ear Training I	1
MU 1413	Music Theory II	3
MU 1521	Ear Training II	1
MU 2613	Music Theory III	3
MU 2721	Ear Training III	1
MU 2813	Music Theory IV	3
MU 2921	Ear Training IV	1
MU 2012	World Music	2
MU 3023	Survey of Western Music History II	3
MU 3412	Conducting	2
MU 3442	Advanced Conducting	2
MU 4313	Form and Analysis	3
MU 1010	Recital Hour (7 semesters of C or better)	0
Major Ensemble (7 semesters of study)		7
Piano Proficiency Exam		
Music Theory & Aural Skills Proficiency Exam		
Upper Division Performance Exam		
Degree Recital		

[1] A total of 15 hours in Math and Science

Choose one of the following concentrations:

Instrumental Concentration (MUI)

Piano Class or Functional Skills: choose 4 hours from the following		4
MU 2111	Piano Class	
MU 2121	Piano Class	

MU 3111	Piano Class	
MU 3121	Piano Class	
MU 3112	Functional Skills of Piano I	
MU 3122	Functional Skills of Piano II	
MUE 1141	Voice Methods	1
MUE 3212	Brass Methods	2
MUE 3222	Woodwind Methods	2
MUE 3231	String Methods	1
MUE 3242	Percussion Methods	2
MU 4322	Band Arranging	2
Applied Lessons – (6 semesters of study)		12
Total Hours		130

Vocal Concentration (MUV)

Piano Class or Functional Skills: choose 4 hours from the following:		4
MU 2111	Piano Class	
MU 2121	Piano Class	
MU 3111	Piano Class	
MU 3121	Piano Class	
MU 3112	Functional Skills of Piano I	
MU 3122	Functional Skills of Piano II	
MU 1141	Song Literature	1
MU 1151	Vocal Pedagogy	1
MU 1241	Diction I	1
MU 1251	Diction II	1
MUE 3262	Instrumental Methods	2
Applied Voice – (6 semesters of study)		12
Applied Piano – (2 Semesters of Study)		2
Directed Electives		2
Total Hours		130

Keyboard Concentration (MUP)

MU 3112	Functional Skills of Piano I	2
MU 3122	Functional Skills of Piano II	2
MUE 3262	Instrumental Methods	2
MUE 3333	Introduction to Piano Pedagogy	3
MUE 1141	Voice Methods	1
Applied Voice – (2 semesters of study)		2
Applied Piano – (6 semesters of study)		12
Directed Electives		2
Total Hours		130

Guitar Concentration (GUIT)

Piano class or Functional Skills: choose 4 hours from the following		4
MU 2111	Piano Class	
MU 2121	Piano Class	
MU 3111	Piano Class	
MU 3121	Piano Class	
MU 3112	Functional Skills of Piano I	
MU 3122	Functional Skills of Piano II	
MUE 1141	Voice Methods	1
MUE 3231	String Methods	1
MUE 3233	Guitar Pedagogy	3
MUE 3262	Instrumental Methods	2
Applied Guitar - (6 semesters of study)		12
Applied Voice - (2 semesters of study)		2
Directed Electives		1
Total Hours		130

James Worth Bagley College of Engineering

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General Information

The James Worth Bagley College of Engineering is a professional college whose purposes are to provide both undergraduate and graduate education, to conduct basic and applied research, and to engage in outreach and public service activities. The Bagley consists of the following academic departments:

- Department of Aerospace Engineering
- Department of Agriculture and Biological Engineering
- Dave C. Swalm School of Chemical Engineering
- Department of Civil and Environmental Engineering
- Department of Computer Science and Engineering
- Department of Electrical and Computer Engineering
- Department of Industrial and Systems Engineering
- Department of Mechanical Engineering

In addition to these academic departments, the Bagley College offers opportunities for faculty and student research in the following centers:

- Alliance for System Safety of UAS through Research Excellence (ASSURE)
- Center for Advanced Vehicular Systems (CAVS)
- CAVS Extension
- Center for Computer Security Research
- Center for Cyber Innovation
- Center of Biomedical Research Excellence
- Distributed Analytics and Security Institute (DASI)
- Energy Institute
- Geosystems Research Institute (GRI)
- High Voltage Laboratory
- High Performance Computing Collaboratory (HPCC)
- Institute for Clean Energy Technology (ICET)
- Institute for Computational Research in Engineering and Science (ICRES)
- Institute for Genomics, Biocomputing, and Biotechnology (IGBB)
- Institute for Imaging and Analytical Technologies
- Institute for Neurocognitive Science and Technology
- Institute for Systems Engineering Research (ISER)
- Mississippi Transportation Research Center
- Mississippi Water Resources Research Institute
- National Strategic Planning and Analysis Research Institute
- Northern Gulf Institute (NGI)
- Raspet Flight Research Laboratory
- Sustainable Energy Research Center

The vision of the Bagley College of Engineering is to be known for excellence in scholarly achievement, innovative engineering solutions, and economic and educational outreach that enhances the quality of life across the globe.

It is the mission of the Bagley College of Engineering to provide a world-class research, outreach and educational environment that supports, cultivates and fosters the talents of students, faculty and staff to discover new knowledge and technology for the benefit of society. To accomplish this mission the College has established the following goals:

1. Foster a professional environment that cultivates and enhances our faculty members' scholarly knowledge base and supports them in building an accomplished academic reputation for themselves and the college.
2. Provide engineering graduates who, through their excellent technical and leadership skills, cultural awareness, and social responsibility, will solve the challenges of the 21st century.
3. Increase engineering opportunities for underrepresented groups to support and serve the diverse demographic of the state of Mississippi and the nation to ensure that the college encourages a variety of input, influences and participation in all its endeavors.
4. Conduct cutting edge research to enhance the quality of human life and earth's sustainability.
5. Provide engineering expertise, engagement and outreach to create positive change and economic development in Mississippi and the region.

The Bagley College is dedicated to providing an extraordinarily rich environment where engineering students can gain the skills that will allow them to become leaders and builders in commerce, industry, and government. Through innovations in and enhancements to the curriculum housed in the Center for Engineering Student Excellence, Bagley engineering graduates will:

1. Develop effective communications skills;
2. Fully utilize the computer as a productivity tool;
3. Develop effective leadership and teamwork abilities;
4. Understand the entrepreneurial process; and
5. Comprehend the global business environment.

These enhancements ensure that Bagley engineering graduates are highly sought after by employers, well prepared for graduate and professional schools, and will continue to be successful throughout their careers.

The Bagley College also includes a study abroad program which provides students with an opportunity to take courses in another country and experience different cultures. This experience broadens the vision

of those who participate and increases their awareness of the global environment in which engineers work. Engineering students also have the opportunity to apply for Congressional internships. Currently internships are in place for the U.S. Congress in Washington, D.C.

In addition to study abroad and Congressional internships, the Bagley College offers its own minor in Global Engineering Leadership and fully participates in the university's Leadership Studies minor. Through these programs, engineering students are provided an opportunity to develop their leadership and management skills through both general leadership courses and courses focused on skills specific to leadership in the engineering profession. More information on each of these can be found in this catalog. Students pursuing either of these minors should should consult with their academic advisor as early as possible so that course work can be adequately planned.

The Bagley College is dedicated to producing outstanding graduates who are capable of achieving excellence. With a strong focus on engineering fundamentals and an attitude among the faculty of helping each student achieve his or her best, Bagley engineering graduates are ready to obtain positions with the leading companies or further their educations at the finest graduate and professional schools in the nation.

Basic-level professional programs leading to the Bachelor of Science degree are offered in Aerospace Engineering, Biological Engineering, Biomedical Engineering, Chemical Engineering, Civil Engineering, Computer Engineering, Computer Science, Electrical Engineering, Industrial Engineering, Mechanical Engineering, Petroleum Engineering, and Software Engineering. The Bachelor of Science programs in aerospace, biological, chemical, civil, computer, electrical, industrial, mechanical and software engineering are accredited by the Engineering Accreditation Commission of ABET, http://www.abet.org, and the B.S. in computer science is accredited by the Computing Accreditation Commission of ABET, http://www.abet.org.

All basic-level engineering programs are designed to give the student an understanding of the fundamental principles underlying engineering science and engineering practice. Each curriculum consists of four sequences: Basic Sciences and Mathematics; a general education component; Engineering Sciences; and Engineering Analysis, Design and Systems.

Included in the Basic Sciences and Mathematics sequence are Biology, Chemistry, Physics, and Mathematics, through Calculus and other advanced mathematics topics.

There is also a General Education component required for graduation which is also published in this bulletin.

The sequence in Engineering Sciences consists of studies in engineering mechanics, thermodynamics, transfer and rate mechanisms, electrical theory, the nature and properties of materials, and computer science.

The Engineering Analysis, Design and Systems sequence is directed toward the creative and practical phases of economic design, involving analysis, synthesis, and engineering research and development. This sequence is the most distinctive feature of the engineering curricula, since it is the element of creative and economic design which distinguishes the engineer from the pure scientist.

Engineers and Computer Scientists must develop communication skills through courses in English composition, public speaking, and upper level writing. These skills are reinforced throughout the curricula.

The curriculum in Computer Science consists of general studies, mathematics, science, computer science, and electives.

Entrance Requirements

Prospective students are encouraged to take as many courses as possible in mathematics, science, English, social studies, and foreign languages while in high school. One unit of computer-aided graphics is recommended for engineering students and at least one-half unit of keyboarding and one-half unit of computer programming are recommended.

The level of high school preparation needed to be successful in engineering or computer science degree programs as measured by ACT or SAT scores and high school academic core grade point average has been identified. The following guidelines are established to help high school students understand the level of preparation required for engineering and computer science. These guidelines are established to help MSU students at risk who want to pursue engineering or computer science.

Math Prerequisites

In order to be successful in engineering, a student must develop good math skills through courses in calculus, differential equations, and other math topics. In engineering and computer science, the first math course that applies to a degree is calculus. Taking calculus requires that a student have an adequate preparation in algebra, geometry, and trigonometry.

To provide students with the best possible opportunity for success in calculus, the Department of Mathematics and Statistics has established the following guidelines for placing students in math courses:

- MA 1713 Calculus I - have an ACT math sub-score of 26 or higher, or have grades of C or better in MA 1313 College Algebra and MA 1323 Trigonometry or a C or better in MA 1453 Precalculus with Graphing Calculators.
- MA 1453 Precalculus with Graphing Calculators - have an ACT math sub-score of 24 or higher, or have a grade of C or better in MA 1313 College Algebra
- MA 1313 College Algebra - have an ACT math sub-score of 19 or higher.

Students who are not prepared for Calculus I will be required to first complete Precalculus or a sequence of College Algebra and Trigonometry before taking calculus. This may delay a student from taking some engineering courses until they have developed the proper math background, but this should not discourage a student from pursuing an engineering degree. Improving math skills early in their academic career will result in a student having greater academic success.

Students who do not meet the guidelines for enrolling in Calculus I should consider completing Precalculus or a sequence of College Algebra and Trigonometry during the summer prior to attending Mississippi State. These courses may be taken either at Mississippi State, at a Mississippi Community or Junior College, or at any other accredited two-year or four-year institution. Only grades of C or better will be accepted as satisfying these pre-requisites. Courses taken during high school will not count for this credit unless they were taken as part of a dual enrollment program and appear on a separate transcript from a two-year or four-year institution of higher learning. A combination of College Algebra and Trigonometry may be substituted for Precalculus.

New Freshmen Admission

For regular admission to one of the Bagley College of Engineering's degree-granting programs as a freshman, students must be admitted to MSU, complete the following high school academic core: 4 units of English, 4 units of mathematics (algebra, geometry, trigonometry), 3 units of science (chemistry and either biology or physics), 3 units of social studies and/or foreign languages and 2 units of electives, and meet any one of the following criteria:

- Have a composite score greater than or equal to 23 on the ACT or 1130 on the SAT
- Have a composite score of 20, 21, or 22 on the ACT or between 1030 and 1120 on the SAT with a high school GPA of 3.0 or greater on academic core courses listed above
- Have any ACT or SAT score with a high school GPA of 3.5 or greater on academic core courses listed above.

These criteria are essential for the success of a student beginning an engineering or computer science curriculum at the level shown in the following pages of this Bulletin. Applicants with justifiable circumstances may petition the Dean of Engineering for special admission.

New freshmen applicants who do not meet these requirements, are otherwise admitted to MSU, and want to pursue an engineering degree should join the undeclared major. These students will be advised for the first 30 hours by the University Academic Advising Center.

All students who are classified as Undeclared but plan to eventually move into enginering must enroll in an appropriate math course each semester they are enrolled in this major.

Students with course work deficiencies will be required to schedule preparatory course work. This course work will be in addition to that shown in the engineering and computer science curricula and will, in general, extend the time to graduation.

Internal Transfers

Undeclared and other students at Mississippi State University may transfer into an engineering degree-granting program if they satisfy any one of the following criteria:

- Meet engineering new freshmen requirements listed above.
- Have completed at least 30 hours with a cumulative GPA greater than or equal to 2.0 and passed Calculus I (MA 1713), English Composition I (EN 1103), and Chemistry I (CH 1213) with grades of C or better.

Internal transfer students should discuss the transfer with the appropriate department head or program coordinator before completing a Change of Major form. Some departments have additional admission requirements for internal transfers.

Students admitted to one engineering or computer science degree program may transfer to another engineering or computer science program at any time so long as they meet departmental transfer requirements.

External Transfers

Students may transfer from other colleges or universities into MSU engineering degree programs if they meet all requirements to transfer to MSU and satisfy any one of the following criteria:

- Meet engineering new freshmen admission standards listed above.
- Have completed at least 30 hours with a cumulative GPA greater than or equal to 2.0 and passed courses equivalent to Calculus I (MA 1713), English Composition I (EN 1103), and Chemistry I (CH 1213) with grades of C or better.

Applicants with justifiable circumstances may petition the Dean of Engineering for special admission.

Coursework taken elsewhere will not be applied toward a degree in the Bagley College of Engineering until it is determined that it is equivalent to required coursework or is an acceptable substitute. Also, only coursework taken elsewhere on which a grade of C or better has been earned will be considered for application toward a degree. No more than one-half of the hours of an engineering or computer science curriculum from two-year community or junior colleges may be applied towards graduation.

For admission to undergraduate programs, international students must earn a minimum paper-based TOEFL score of 550 or a computer-based minimum score of 213.

Personal Computer Requirement

All engineering students are required to own or lease a personal laptop computer. Minimum specifications for a computer will be developed and posted on the Bagley College of Engineering home page by July of each year. A computer meeting these minimum specifications should suffice for the entirety of a students program of study as long as normal progress is made each semester. Transfer students are required to have a computer that meets the minimum specifications in place at the time their cohorts would have been freshmen. For example, a student transferring as a junior in the Fall of 2019 is required to have a computer that meets the minimum specifications in place for freshmen who entered the Bagley College in the Fall of 2017.

Information on the computer specifications and special pricing which may be available, can be found by visiting the Web site at http://www.bagley.msstate.edu.

Computers are used by students to solve engineering problems, write papers, and develop presentations for classes. Computer technology improves communication between students and faculty and develops the computational skills demanded of engineering graduates by employers. Further, email is an official means of communication with students per university policy.

Students applying for or receiving financial aid should notify the office of Student Financial Aid and Scholarships that they are entering the Bagley College of Engineering and are required to have a personal computer. The cost of the personal computer can then be added to the total cost of education and financial aid may be awarded accordingly. The full cost of the computer will not necessarily be covered by financial aid or scholarships depending on the total amount of aid received and other regulations.

Graduation Requirements

Graduation requirements are the courses and hours shown in the individual programs. Some majors require a grade of C or better in certain courses. This information is available from the department in which the student is enrolled. All students are required to study these requirements together with the course prerequisites, and to be sure that they are taking the proper courses in the curriculum in which they expect to graduate. Students should discuss their programs with their academic advisors

each semester, particularly before course registration. To graduate with a baccalaureate degree from the Bagley College of Engineering, in addition to meeting the requirements as specified in the Mississippi State University Academic Operating Policy 12.11, candidates must have earned at least a 2.00 cumulative grade point average on all courses scheduled and rescheduled (average on all attempts) at Mississippi State University that are applied toward meeting degree requirements. Departments within the College may have requirements in addition to those specified above. It is the student's responsibility to be sure that requirements are fulfilled in a particular program before applying for a degree.

Independent study credit up to a maximum of six semester hours will be accepted, with the prior approval of the department head and the dean. In no case will engineering courses taken by independent study be approved.

No courses taken under the pass/fail option may be used to satisfy degree requirements.

Advanced-Level, Graduate and Certificate Programs

Environmental Engineering

The field of Environmental Engineering is a broad, interdisciplinary area that applies engineering, science and design to improve the quality of the environment, prevent environmental damage, and remediate damage that has occurred. Although a degree in Environmental Engineering is not offered in the Bagley College of Engineering, it is possible to major in Civil Engineering and specify a concentration in Environmental Engineering. More information on this option can be found under the Civil and Environmental Engineering section.

For those not interested in pursuing the environmental engineering concentration but would like to get some knowledge of the area, there are several courses that can be taken in the disciplines of Biological Engineering, Civil and Environmental Engineering, and Chemical Engineering. Courses are offered by these departments that cover many different areas of environmental engineering including: management of natural resources; air pollution control; soil and water quality modeling; drinking water production and distribution; wastewater collection and treatment; food quality assurance; management of agricultural lands and wastes; minimization and management of industrial, municipal, and agricultural wastes; and design sustainability.

Furthermore, students, in consultation with their academic advisors, may take courses to develop an emphasis in environmental engineering. There are related courses taught in the College of Arts and Sciences in environmental chemistry, organic chemistry, biochemistry, microbiology, and geological sciences. Courses related to environmental engineering taught within the Bagley College of Engineering are listed below:

ABE 3513	The Global Positional System and Geographic Information Systems in Agriculture and Engineering	3
ABE 4263	Soil and Water Management	3
ABE 4313	Biological Treatment of Nonpoint Source Pollutants	3
ABE 4803	Biosystems Simulation	3
CHE 4613	Air Pollution Control Design: Theory and Practice	3
CE 2803	Environmental Engineering Issues	3
CE 3501	Water Resource Engineering Lab	1
CE 3503	Water Resource Engineering	3
CE 3801	Environmental Engineering and Water Resources Engineering Lab	1
CE 3823	Environmental Engineering	3
CE 4513	Engineering Hydrology	3
CE 4523	Open Channel Hydraulics	3
CE 4533	Computational Methods in Water Resources Engineering	3
CE 4563	Sedimentation Engineering	3
CE 4583	Stream Reconnaissance	3
CE 4843	Environmental Engineering Chemistry	3
CE 4863	Water and Wastewater Engineering	3
CE 4883	Engineered Environmental Systems	3
CE 4893	Hazardous Waste Management	3

In summary, the Bagley College of Engineering provides several avenues for students to prepare themselves for a career in environmental engineering. While there is no single best avenue for all students, there is a best avenue for a particular student. Working with an academic advisor is the best way to ensure your career goals are met and we recommend they discuss the various options with academic advisors in the college's participating departments.

Graduate Study

The Bagley College of Engineering offers graduate degrees at both the Master of Science (M.S.) and Doctor of Philosophy (Ph.D.) levels. Some undergraduate programs also offer a process by which promising undergraduate students may be directly admitted to the Ph.D. program following graduation. Students interested specifically in a graduate program should consult the Graduate Bulletin or contact the department of interest directly.

The Bagley College has an accelerated program which is designed to allow highly qualified undergraduate students to take up to 9 credit hours of applicable courses at the graduate level and use them to satisfy requirements for both their B.S. degree and their M.S. degree. This option is available for students interested in pursuing M.S. degrees in aerospace, chemical, computer, electrical, industrial, mechanical, and software engineering as well as computer science and a Master of Engineering. Students must be accepted into these programs prior to taking the courses. For additional information and admissions requirements, contact Ms. Josie Guerry at josie@bagley.msstate.edu or contact the department directly.

Master of Science degrees are offered in Aerospace Engineering, Biological Engineering, Biomedical Engineering, Chemical Engineering, Civil Engineering, Computer Engineering, Computer Science, Computational Engineering, Electrical Engineering, Industrial Engineering, and Mechanical Engineering. The Master of Science degree requires 24 semester hours of coursework and six semester hours of thesis research. The Master of Science non-thesis option is also offered and requires 33 semesters of coursework. Computer Science also requires two semester hours of seminar for Computer Science. For more information on these programs, interested students should contact the graduate coordinator in the department of interest.

For those students seeking a Master of Science degree in a flexible on-line format, the Bagley College offers an interdisciplinary program

consisting of 33 semester hours of coursework. This program culminates in a Master of Engineering degree. More information can be found at www.bcoelearning.msstate.edu or by contacting Ms. Josie Guerry at josie (josie@bagley.msstate.edu)@bagley.msstate.edu (josie@bagley.msstate.edu).

The Doctor of Philosophy degree is available in all engineering departments, either through a composite interdisciplinary program or a specific major. In addition to these, Ph.D. degrees are offered in interdisciplinary programs in Computational Engineering and Applied Physics.

Most teaching departments are able to offer teaching assistantships to qualified graduate students. Additionally, many departments are also able to offer research assistantships. Bagley, Barrier, and Honda graduate Fellowships are also awarded each year. Because Mississippi State University is a member of the National Consortium for Graduate Degrees for Minorities in Engineering and Science, Inc. (GEM), students with GEM Fellowships are eligible to study in the Bagley College.

Students interested in pursuing a graduate education should consult with the graduate coordinators in each academic department, the Associate Dean for Research and Graduate Studies, and The Office of the Graduate School.

Engineering Study Abroad Programs

(See International Study Programs)

MINOR IN GLOBAL ENGINEERING LEADERSHIP

To remain competitive in today's highly competitive global economy and become a leader in companies and organizations that span multiple companies, it is imperative for engineers to have special knowledge and skills. Engineering leaders need to have an understanding of other cultures, the ways of doing business in other countries, and how to effectively collaborate with others across the globe. To be effective, engineering leaders in this global economy must not only have a strong engineering background, but they must also have experience in working across cultures and skills in management and leadership.

The Bagley College of Engineering's minor in Global Engineering Leadership is designed to provide motivated students with the skills and experiences necessary to put them on the path towards leading engineering activities around the world. Through this program students will develop a proficiency in a foreign language and culture, understanding a different culture through living and studying in a foreign country, and understand leadership and management skills needed in engineering.

The Global Engineering Leadership minor requires to complete 18 hours of coursework from the following areas:

GE 3813	Challenges in Global Engineering	3
Foreign Language		6
Relevant Overseas Engineering Experience [1]		3
Leadership Electives		6
BL 4273	International Business Law	
CE 4703	Construction Engineering and Management	
CE 4743	Analysis and Mitigation of Conflicts, Claims and Disputes	
CE 4903	Civil Engineering Comprehensive	
CSE 3981	Social and Ethical Issues in Computing	
CSE 4223	Managing Software Projects	
GE 2713	Introduction to Engineering and Public Policy	
GE 3011	Engineering Entrepreneurship Seminar	
IB 4103	International Business	
EC 4303	International Economic Development	
EC 4323	International Economics	
IE 3913	Engineering Economy I	
IE 4513	Engineering Administration	
IE 4533	Project Management	
IE 4553	Engineering Law and Ethics	
ISE 4103	Cross-Cultural Leadership	
MGT 3823	Socially Responsible Leadership	
MGT 4613	Cross-Cultural Management	
MKT 3323	International Logistics	
MKT 4033	International Transportation	
MKT 4333	International Supply Chain Management	

[1] Examples include: MSU Faculty-led Study Abroad in an engineering course, International Engineering Internship, Semester-long Engineering Exchange Program, or Overseas Service Learning (e.g. Engineers Without Borders)

For more information on the Global Engineering Leadership minor, please contact:

Galyna Melnychuk
International Programs Coordinator
Bagley College of Engineering,
250 McCain Engineering Bldg.
Box 9544
Mississippi State, MS 39762
gm2@bagley.msstate.edu
(662) 325-5878

Certificate Programs

Automotive Engineering Certificate

This certificate will enable students enrolled in a variety of engineering degree programs to enhance their education in topical subject matter related specifically to automotive engineering.

The 15 hours of academic credit required for this certificate may be earned by completing selected courses from a list of qualifying designated by a representative faculty committee. These courses include one from the Level I list; two courses from the Level II list; Automotive Engineering (cross-listed as CHE, ECE, IE or ME 4193/ME 6193); plus a directed individual study course related to a team experience in automotive engineering.

Additionally, at least six hours taken for the certificate must be in addition to the courses required for the student's graduation requirements for his or her major. Students should see an advisor for a list of approved courses. In the case of graduate students, the student's graduate committee will determine how many of the courses taken for the certificate fulfill course requirements for the student's degree.

Computational Biology Certificate

The availability of entire genomes of both simple and complex organisms has made advances in the life sciences critically dependent upon computing. The field of computational biology combines computer science and biology to address questions of how biological systems work by analyzing and synthesizing the data made available with high throughput biology. This certificate program will allow undergraduate and graduate students in the computational and life sciences to pursue a well-defined program where they will gain fundamental skills in computing integrated with biology and will become competitive for high-end employment in emerging technical fields. Students will learn how to apply computational techniques to understand structures, functions, dynamics, and evolution of living organisms.

The certificate program is ideal for students working toward or possessing a BS or MS degree in computer science, computer engineering, mathematics, statistics, biological engineering, or one of the life sciences. A Computational Biology certificate will be issued jointly by the Bagley College of Engineering and the College of Agriculture and Life Sciences upon a candidate's successful completion of the requirements of the program.

Certificate Requirements:

CSE 4623/6623	Computational Biology (required of all students)	3
CSE 4613/6613	Bio-computing (required of students in the life sciences)	3
BCH 4113/6113	Essentials of Molecular Genetics (required of students in computer science, computer engineering and biological engineering.)	3
3 additional relevant courses as approved by the Certificate Advisory Board – required of all students		

The Jack Hatcher Engineering Entrepreneurship Program

The role of the engineering entrepreneur in the expansion of the economy is self-evident. Engineers with entrepreneurial spirit and skills are the locomotives of the technology-based startup company and, perhaps more importantly, of the evolution of established industry. Developing entrepreneurial thinking in our graduates is one of the primary learning goals of the Bagley College of Engineering at Mississippi State University. Through an endowment by alumnus Jack Hatcher, we have established a multi-level engineering entrepreneurship program to serve students with different degrees of interest. The primary mission of the program is to expose our students to the broader elements of running a business and the general managerial skills required to prepare them for opportunities in management. For a more limited number, our mission is to equip technologically creative students to recognize opportunities and help instill the confidence to start entrepreneurial businesses.

The basic and broadest element of the entrepreneurship program is a weekly seminar series in which successful entrepreneurs present case histories. Also business leaders discuss specific items, such as patents, hiring employees, and venture capital.

Engineering Entrepreneurship Certificate

For students with higher levels of interest, a formal course of study leading to an Entrepreneurship Certificate is available. The certificate program is a joint program with the College of Business that requires a minimum of 15 semester hours. Students gain knowledge in finance, marketing, and accounting followed by a management course in entrepreneurship where the capstone project is a business plan.

All undergraduate engineering and computer science students in good standing are eligible to join the program. Each student must have a faculty mentor from both engineering and business. To join the program, a student must submit an application that has been signed by both mentors to the Associate Dean of Engineering .

The Entrepreneurship Certificate Program is comprised of three major parts:

1. Completing 15 hours of business and engineering classes:

ACC 2013	Principles of Financial Accounting	3
EC 2123	Principles of Microeconomics	3
IE 3913	Engineering Economy I	3
MKT 3013	Principles of Marketing	3
MGT 3323	Entrepreneurship	3

2. The Seminars Series

GE 3011	Engineering Entrepreneurship Seminar	1

3. The "company" or project experience.

By utilizing electives, students in most engineering disciplines can complete the course requirements with a maximum of six to nine hours of additional work above the degree program. Also, much of the coursework will apply toward the prerequisites for an MBA degree at a later time should the student decide to pursue that path.

A GPA of 2.25 is required on all coursework, and no grade less than a C can be applied toward the certificate. A maximum of two courses can be transfer courses, and correspondence courses will not be accepted. In addition, a passing grade must be obtained for three semesters of GE 3011 Engineering Entrepreneurship Seminar.

The "company" or project experience is the real-world engineering experience of developing a marketable product or service. In most cases, the certificate candidate can get academic credit through the senior design course or a technical elective. For example, Electrical Engineering and Computer Engineering majors can receive credit for the senior design project requirement (ECE 4512/ECE 4522). The "company" experience may be a concept developed by students or faculty members. To complete the requirements for the project experience, the candidate submits a report to the Associate Dean, which has been approved by both mentors. This report usually takes the form of a Business Plan and is developed as part of the entrepreneurship course MGT 3323.

Upon completion of the Entrepreneurship Certificate Program requirements, the Associate Dean will review the student's records. If all requirements are met satisfactorily, the Associate Dean will submit the candidate to the Deans of Business and of Engineering for issuance of the certificate. The Associate Dean will notify the Registrar to have a statement placed on the candidate's transcript. The certificate will be issued concurrently with the B.S. Degree in Engineering or Computer Science.

For more information contact:
Mr. Eric Hill
Program Coordinator
Box 5282, Mississippi State University, MS 39762
Phone: (662) 325-3521
email: ehill@oett.msstate.edu

Information Assurance Certificate

MSU is certified by the National Security Agency as a Center of Academic Excellence in information assurance (IA) education. The IA certificate program is designed for but not limited to, students of the following backgrounds:

- Students participating in the Department of Defense IA Scholarship Program at MSU
- Students participating in the National Science Foundation's Scholarship for Service at MSU
- Government employees interested in IA who desire to take advantage of education support available from their employer
- Government students on campus as part of the National Defense University educational partnership with MSU who are studying IA topics
- MSU students with a desire to focus on IA topics and wish to demonstrate to perspective employers a competency in this area.

Requirements

Admission to the program is managed by the Department of Computer Science and Engineering. All candidates must:

- Be enrolled as a full-or part-time student at MSU
- Demonstrate mastery of computer science, computer engineering, electrical engineering or management information systems fundamentals
- Exhibit knowledge of discrete mathematics, algorithms and data structures at the level of an undergraduate course
- Demonstrate a practical knowledge of computer organization

A minimum of 15 hours must be completed for the Information Assurance certificate.

Required courses		
CSE 4243/6243	Information and Computer Security	3
CSE 4273/6273	Introduction to Computer Forensics	3
CSE 4383/6383	Network Security	3
Choose two of the following:		6
BIS 4513/6513	Microcomputers and Networks	
BIS 4113/6113	Business Information Systems Security Management	
CSE 4153/6153	Data Communications and Computer Networks	
CSE 4733/6733	Operating Systems I	
CSE 4503/6503	Database Management Systems	
MIS students may substitute:		
BIS 3753	Business Database Systems	
BIS 8313	Advanced Database Design Administration	
Any advanced (4000-level or above) IA course approved by the program administrator.		
Total Hours		15

Materials Certificate Program

The Materials Science and Engineering Certificate Program, administered through the Bagley College of Engineering, is available to qualified students who complete an organized plan of study in the interdisciplinary field of Materials Science and Engineering at Mississippi State University.

The University's various departments offer a range of materials-related courses in both the science and engineering fields, such as biomaterials, electronic and semiconductor materials, metals, composites, polymers, ceramics, and construction materials. We also have a wide range of supporting courses in the areas of materials modeling, mechanics, processing, and characterization, along with special topics in tribology, fatigue, fracture, and corrosion. Faculty participating in these course offerings are organized as the Materials Working Group (MWG).

As part of an organized plan of study, including Directed Individual Study courses under the direction of a MWG member, materials-based courses allow students to pursue an interdisciplinary education and training program tailored to individual interests.

The Materials Science and Engineering Certificate Program is available to both traditional and non-traditional students. This allows industry to offer employees further training in materials, as well as provide current university students the opportunity to pursue an interdisciplinary materials specialty.

To apply for this program, the candidate must submit the initial application for the certificate to a MWG Faculty in their home department. The MWG Faculty will validate the proposed courses and forward the package to the MWG Chair. Upon successful completion of the required courses, the MWG will recommend award of the certificate by the Dean of Engineering.

Admission to the Certificate Program:

Students pursuing a materials certificate typically fall into one of the following categories:

1. Persons possessing at least a bachelor's degree in engineering or science; or
2. Persons working towards either a bachelor's or master's degree in engineering or science

Minimum admission requirements:

To be admitted to the program a student must have satisfactorily completed

Chemistry		
CH 1213 & CH 1211	Chemistry I and Investigations in Chemistry I	4
CH 1223 & CH 1221	Chemistry II and Investigations in Chemistry II	4
Calculus		
MA 1713	Calculus I	3
MA 1723	Calculus II	3
Physics		
PH 2213	Physics I	3
PH 2223	Physics II	3

In addition, the student is responsible for meeting all prerequisites for each course taken towards the materials certificate.

Candidates in categories (1) and (2) automatically will meet the program requirements, either upon entrance to the program or in parallel.

For those lacking the prerequisites, additional course work must be completed successfully.

In all cases, it is the responsibility of the student to provide an official transcript of all courses taken prior to admission into the program. An application form including a proposed course of study must be completed by the student and an official transcript must be provided for admission to the program. A member of Materials Engineering Working Group will review the application and agree to the program of study.

Certificate Requirements:

To receive a materials certificate, students must complete at least one course from Level I, at least two courses from Level II, at least one course from level III, and a three-hour Directed Individual Study that incorporates a materials-related research project and is under the direction of a MWG faculty member. Students must obtain a grade of “C” or better in each class taken.

Level I: Fundamental materials course. This course may be part of the student’s home curriculum. Student must take at least ONE course.		3
ABE 3813	Biophysical Properties of Materials	
CE 3313	Construction Materials	
CHE 3413	Engineering Materials	
ME 3403	Materials for Mechanical Engineering Design	
Level II: Intermediate material courses. These courses extend and enrich the basic materials topics introduced in the Level I courses. Students must take at least TWO courses.		6
CE 4633	Concrete Structures	
CHE 4143/6143	Advanced Polymeric and Multicomponent.	
ECE 4243/6243	Introduction to Physical Electronics	
ECE 3213	Introduction to Solid State Electronics	
EM 4133/6133	Mechanics of Composite Materials	
PH 3613	Modern Physics	
ME 4133/6133	Mechanical Metallurgy	
Elective	Special topics: Courses under development related to basic materials properties such as: Ceramics, Crystallography, Polymers, Composites and Electronic Materials.	
Note: Only one of the two courses in Level II maybe a special topic.		
Level III: Advanced or Applied materials courses. Students must take at least ONE course.		3
ABE 4523/6523	Biomedical Materials	
ABE /CHE /ME 4624/6624	Experimental Methods in Materials Research	
CHE 4423/6423	Fundamentals of Industrial Corrosion	
CHE 4153/6153	Introduction to Particle and Crystallization Technology	
CHE 4163/6163	Nanotechnology in Chemical Applications	
ECE 4283/6283	Microelectronics Device Design	
EPP /ME 8144	Transmission Electro Microscopy	
EPP 8223	Scanning Electron Microscopy	
ME 4413/6413	Casting and Joining	
ME 4123/6123	Failure of Engineering Materials	
PH 4813/6813	Introduction to Solid State Physics	

For further details about the program and a current listing of allowed courses, please contact the Office of the Dean of Engineering at (662) 325-2270 or visit www.bagley.msstate.edu.

Energy Certificate

The Energy Certificate is designed to permit students in an MSU engineering discipline to designate a five-course sequence leading to a well-defined program in energy. The Energy Certificate utilizes courses in most MSU engineering programs plus a required course in alternate energy sources. Students who successfully complete the Energy Certificate will have acquired significant energy engineering expertise in their and related engineering disciplines, as well as an interdisciplinary overview of energy and sustainable energy concepts.

The Energy Certificate is open to undergraduate students in good standing at MSU. Each student who wishes to participate in the program must provide a letter of intent outlining the proposed course of study to the Chair of the BCoE Energy Working Group.

In order to meet the requirements of the Energy Certificate, a student must complete with a grade of "C" or better at least 15 hours of courses as designated in the Level I, Level II, and Level III categories. Additionally, two of the Level I, II, or III courses must be above the degree requirements of the student.

The list of courses for the Energy Certificate is given below:

Level I		
Thermodynamics		
CHE 3113	Chemical Engineering Thermodynamics I	3
or ME 3513	Thermodynamics I	
or ASE 3333	Aerothermodynamics	
Circuits		
ABE 3413	Bioinstrumentation I	3
or ECE 3183	Electrical Engineering Systems	
or ECE 3413	Introduction to Electronic Circuits	
Level II		
ME 4353	Alternate Energy Sources	3
Level III		
Two senior-level energy courses. See advisor for approved list.		

Dave C. Swalm School of Chemical Engineering

Director: Bill Elmore
Office: 330 Swalm Chemical Engineering Building

Chemical Engineering

Chemical Engineering is a profession where a diverse group of individuals contribute to the invention, development, and deployment of an incredible range of processes and products in a variety of industries including chemical, petrochemical, environmental, pharmaceutical, environmental, and materials. Chemical engineering is the branch of engineering that deals with the chemical and physical processes used to develop and manufacture many different products of greater value from lesser valued chemicals and feedstocks. Without question,

chemical engineers are making major contributions to the technological infrastructure of modern society.

The mission of the Swalm School of Chemical Engineering is to produce graduates who have the ability to apply the principles of the physical sciences, together with the principles of economics and human relations, to fields that pertain directly to processes and process equipment that treat material to effect a change in state, energy content, or composition.

Graduates will receive a broad education that will enable them to become leaders in industry, the profession, and the community. Those graduates who excel academically will be prepared for entry to graduate or professional school.

To achieve our mission, Program Educational Objectives have been established to help us assess the degree to which we have achieved these objectives.

Program Educational Objectives

Mississippi State University Chemical Engineering graduates will:

1. Successfully work in the chemical engineering profession as design, process, and research engineers (and related designations) with prominent companies in chemical process, petroleum and petro-chemical, environmental, government agencies, consulting, or other, related industries.
2. Demonstrate an ability to address unstructured problems specific to chemical engineering technical specialties by identifying and implementing solutions using the proper tools, practical approaches, addressing health safety and environmental issues, and flexible thinking.
3. Be involved in professional development that may include pursuit of post-baccalaureate degrees in chemical engineering and related fields, business and professional programs including medicine and law -- advancing in their chosen fields to technical leadership, supervisory and management roles and by obtaining professional licensure where appropriate.

Students choosing to major in Chemical Engineering will select one of three concentration areas within the Chemical Engineering Program:

1. Chemical Engineering Practice Concentration;
2. Chemical Engineering Research/Development Concentration; or
3. Biomolecular Engineering Concentration.

Chemical Engineering Practice Concentration. This concentration area prepares the graduate to enter industry upon graduation well-prepared to function as a chemical engineer, in a variety of industries as well as in a variety of job functions. Students pursuing this option are also well prepared for graduate studies in chemical engineering or professional school. A combination of 12 hours of technical electives, chemical engineering elective, and chemistry elective allows a student to emphasize an area of interest, including materials, environmental, energy (including alternative energy), or traditional chemical engineering.

Chemical Engineering Research/Development Concentration. This concentration area prepares the chemical engineering graduate for further educational endeavors at the graduate level and for opportunities in research and development by providing them with additional training in mathematics and chemical engineering topics. Focused selection of technical, chemistry, and basic engineering electives provides the opportunity to develop the depth required for post-graduate research activities in chemical engineering.

Biomolecular Engineering Concentration. This concentration area prepares the graduate for a career in the biotechnology industry. The concentration area also provides students the opportunity to fulfill prerequisites for medical, dental, or veterinary school upon completion of their chemical engineering degree. Focused selection of technical, chemistry, and basic engineering electives provides the opportunity to develop the depth required in biology, biochemistry, and microbiology for students interested in this concentration. While students regularly enter medical school via the Chemical Engineering Practice concentration, the biomolecular engineering concentration offers students not only a bachelor's degree in chemical engineering, but also highlights those topics encountered in biotechnology, medical school or in veterinary school.

The Chemical Engineering program is accredited by the Engineering Accreditation Commission of ABET, http://www.abet.org.

Petroleum Engineering

This curriculum is designed to educate students on the foundational principles required for success in the petroleum industry. Graduates will be prepared to enter the workforce and manage the human and energy resources in the petroleum industry. Students will develop hands-on, communication, and critical thinking skills to be successful. The program offers unique training with a particular emphasis on petroleum reservoir engineering, enhanced petroleum recovery methods, and thorough economic analysis. the degree is houses within the Swalm School of Chemical Engineering, and offers a student-focused curriculum with one-on-one advising and professional development opportunities.

The petroleum industry is one of the world's largest industries and is relied upon in numerous ways for sustaining a modern and ever-advancing energy-driven, technologically-based society.

Program Educational Objectives

Mississippi State University Petroleum Engineering graduates will:

1. Obtain gainful employment and hold positions of increasing responsibility in the field of Petroleum Engineering as a Reservoir, Production or Drilling engineer
2. Apply effective communications, leadership and teaming skills in the field of petroleum engineering in industry, academia or government.
3. Continue to improve technical skills through continued education, professional licensure, Certifications etc.

Chemical Engineering

General Education and Degree Requirements

English Composition		
EN 1103	English Composition I	3
or EN 1163	Accelerated Composition I	
EN 1113	English Composition II	3
or EN 1173	Accelerated Composition II	
Mathematics		
See Major Core		
Science		
See Major Core		
Humanities		

See General Education courses		6
Fine Arts		
See General Education courses		3
Social/Behavioral Sciences		
See General Education courses		6
Major Core		
Math and Basic Science		36
MA 1713	Calculus I	
MA 1723	Calculus II	
MA 2733	Calculus III	
MA 2743	Calculus IV	
MA 3253	Differential Equations I	
CH 1213	Chemistry I	
CH 1211	Investigations in Chemistry I	
CH 1223	Chemistry II	
CH 1221	Investigations in Chemistry II	
CH 4511	Organic Chemistry Laboratory I	
CH 4513	Organic Chemistry I	
CH 4523	Organic Chemistry II	
PH 2213	Physics I	
PH 2223	Physics II (or accepted substitutions)	
Engineering Topics		49
CHE 1101	Introduction to Chemical & Petroleum Engineering	
CHE 2114	Mass and Energy Balances	
CHE 2213	Chemical Engineering Analysis	
CHE 3113	Chemical Engineering Thermodynamics I [1]	
CHE 3123	Chemical Engineering Thermodynamics II	
CHE 3203	Fluid Flow Operations [1]	
CHE 3213	Heat Transfer Operations [1]	
CHE 3222	Chemical Engineering Laboratory I	
CHE 3223	Separation Processes	
CHE 3232	Chemical Engineering Laboratory II	
CHE 3413	Engineering Materials	
CHE 4113	Chemical Reactor Design	
CHE 4134	Process Design	
CHE 4223	Process Instrumentation and Control	
CHE 4233	Chemical Plant Design	
CHE 4633	Chemical Process Safety	
IE 3913	Engineering Economy I	
Oral Communication Requirement		
Fulfilled in CHE 3222, CHE 3232, CHE 4134 and CHE 4233		
Writing Requirement		
GE 3513	Technical Writing	3
Computer Literacy		
Fulfilled in CHE 2213 and CHE 4134		
Choose one of the following sets of courses to complete the degree:		19
Chemical Engineering Practice Concentration (CHEP)		
EM 2413	Engineering Mechanics I	
or ECE 3183	Electrical Engineering Systems	
CHE 3331	Professional Development Seminar	
CH 4413	Thermodynamics and Kinetics	
Chemical Engineering Elective [2]		
Chemistry Elective [3]		
Technical Electives [3]		
(It is strongly recommended that CHE 4313 Transport Phenomena be used as a technical elective)		
Chemical Engineering Research/Development Concentration (CERD)		
CHE 4313	Transport Phenomena	
CHE 3331	Professional Development Seminar	
MA 3113	Introduction to Linear Algebra	
MA 3353	Differential Equations II	
MA /ST 4543	Introduction to Mathematical Statistics I (MA/ST 4543 is a cross-listed course, but the student should choose MA 4543 if a minor in mathematics is desired.)	
or IE 4613	Engineering Statistics I	
CH 4413	Thermodynamics and Kinetics	
Chemistry Elective [3]		
Biomolecular Engineering Concentration (BIOM)		
BIO 1134	Biology I	
BIO 1144	Biology II	
BIO 3304	General Microbiology	
BCH 4603	General Biochemistry I	
CH 4521	Organic Chemistry Laboratory II	
Choose one of the following:		
PH 2233	Physics III (pre-medical students)	
Advanced biology course (pre-veterinary students)		
Biotechnology course from an engineering dept. (Biomolecular engineering practice)		
Total Hours		128

[1] With consent of student's advisor, the following course substitutions are acceptable:
- EM 3313 Fluid Mechanics for CHE 3203
- ME 3513 Thermodynamics I for CHE 3113
- ME 3313 Heat Transfer for CHE 3213

[2] CHE 4000 Directed Individual Study will generally be disallowed for the required chemical engineering elective but may be used as a technical elective.

[3] The Chemistry and Technical Electives are to be chosen from an approved list available online and from the student's advisor.

Petroleum Engineering

General Education and Degree Requirements

English Composition		
EN 1103	English Composition I	3
EN 1113	English Composition II	3
Mathematics (see Major core)		
Science (see Major core)		
Humanities (see General Education list)		6
Fine Arts (see General Education list)		3
Social/Behavioral Sciences (see General Education list)		6

Major Core-Math and Basic Science		
MA 1713	Calculus I	3
MA 1723	Calculus II	3
MA 2733	Calculus III	3
MA 2743	Calculus IV	3
MA 3253	Differential Equations I	3
CH 1211	Investigations in Chemistry I	1
CH 1213	Chemistry I	3
CH 1221	Investigations in Chemistry II	1
CH 1223	Chemistry II	3
PH 2213	Physics I	3
Geology & Geography Electives (Choose two - at least one must be a Geology Elective; a second can be Geography selected from the list below)		6
GG 4063	Earth and Atmospheric Energy Resources	
GG 4233	Applied Geophysics	
GG 4304	Principles of Sedimentary Deposits I	
GG 4413	Structural Geology	
GG 4443	Principles of Sedimentary Deposits II	
GG 4633	Introduction to Geochemistry	
GR 4303	Principles of GIS	3
GR 4313	Advanced GIS	3
GR 4323	Cartographic Sciences	3
Major Core - Engineering Topics		
PTE 1101	Introduction to Petroleum Engineering	1
CHE 2114	Mass and Energy Balances	4
CHE 2213	Chemical Engineering Analysis	3
CHE 3113	Chemical Engineering Thermodynamics I	3
CHE 3203	Fluid Flow Operations	3
CHE 3213	Heat Transfer Operations	3
CHE 3413	Engineering Materials	3
EM 2413	Engineering Mechanics I	3
EM 3213	Mechanics of Materials	3
IE 3913	Engineering Economy I	3
IE 4613	Engineering Statistics I	3
PTE 3902	Petroleum Engineering Lab 1	2
PTE 3903	Petroleum Reservoir Fluid Properties	3
PTE 3912	Petroleum Engineering Lab 2	2
PTE 3953	Petroleum Reservoir Rock Properties and Fluid Flow	3
PTE 3963	Drilling	3
PTE 3973	Petroleum Production Operations	3
PTE 4903	Petroleum Reservoir Engineering 1	3
PTE 4913	Petroleum Reservoir Engineering 2	3
PTE 4923	Completion Design	3
PTE 4953	Formation Evaluation	3
PTE 4963	Oil Recovery Methods	3
PTE 4983	Petroleum Engineering Capstone Design	3
PTE 4993	Petroleum Economic Analysis	3
Writing Requirement		
GE 3513	Technical Writing	3
Oral Communication Requirement - Fulfilled in PTE 3902, PTE 3912, and PTE 4993		
Computer Literacy - Fulfilled in CHE 2213 and PTE 4993		
Technical Electives		6
Total Hours		128

Department of Aerospace Engineering

Department Head: Professor Davy Belk
Academic Coordinator: Ms. Machaunda Bush
Office: 330 Walker Engineering Building

The Department of Aerospace Engineering at Mississippi State University provides an accredited undergraduate curriculum with the mission of preparing students to enter the workplace as qualified entry-level aerospace engineers or to enter any aerospace engineering graduate program adequately prepared for advanced study. This mission is accomplished by a strong foundation in mathematics and physical and engineering sciences upon which student problem-solving and application skills are developed. The curriculum stresses analytical and communication skills, with particular emphasis placed on engineering design throughout the curriculum. A capstone design experience in the senior year provides the opportunity to integrate design, analytical, and problem-solving skills along with communication skills in a team environment that emulates aerospace engineering practice.

The mission is accomplished by the following educational objectives, which describe the career and professional accomplishments we are preparing our graduates to achieve. Our graduates will:

1. Be involved in solving unstructured engineering problems within their organization that will allow them to successfully advance in the engineering profession.
2. Be engaged in lifelong learning and pursue professional development through actions such as persistent study of the current literature in the field, participation in graduate education, professional education or continuing education opportunities, attainment of professional licensure, or membership in professional societies.
3. Be professionally and ethically responsible to the profession, society, and the environment incumbent on an engineering professional.
4. Collaborate successfully and positively on multi-disciplinary, culturally-diverse teams in support of their organizational goals.
5. Communicate effectively in various settings and contexts by activities such as writing technical reports and peer-reviewed articles and presenting at technical interchanges.

These objectives are accomplished in two different concentrations in the aerospace engineering curriculum, an aeronautics concentration and an astronautics concentration. The concentration in aeronautics focuses on the analysis and design of aircraft and other vehicles that operate primarily within the earth’s atmosphere, and the concentration in astronautics focuses on the analysis and design of spacecraft and other vehicles that operate primarily outside the earth’s atmosphere. A student in aerospace engineering will choose one of these two concentrations upon choosing the aerospace engineering major.

The aerospace engineering program is accredited by the Engineering Accreditation Commission of ABET, http://www.abet.org.

General Education Requirements

English Composition		
EN 1103	English Composition I	3
or EN 1163	Accelerated Composition I	
EN 1113	English Composition II	3
or EN 1173	Accelerated Composition II	
Mathematics		
See Major Core		9
Science		
See Major Core		6
Humanities		
See General Education courses		6
Fine Arts		
See General Education courses		3
Social/Behavioral Sciences		
See General Education courses		6
Major Core		
Math and Basic Science		
MA 1713	Calculus I	3
MA 1723	Calculus II	3
MA 2733	Calculus III	3
MA 2743	Calculus IV	3
MA 3113	Introduction to Linear Algebra	3
MA 3253	Differential Equations I	3
Math/Science Elective [1]		3
CH 1213	Chemistry I	3
CH 1211	Investigations in Chemistry I	1
PH 2213	Physics I	3
PH 2223	Physics II	3
CSE 1233	Computer Programming with C	3
Engineering Topics		
ECE 3413	Introduction to Electronic Circuits	3
EM 2413	Engineering Mechanics I	3
EM 2433	Engineering Mechanics II	3
EM 3213	Mechanics of Materials	3
EM 3313	Fluid Mechanics	3
EM 3413	Vibrations	3
ASE 1013	Introduction to Aerospace Engineering	3
ASE 2013	Astrodynamics, Propulsion and Structures	3
ASE 2113	Introduction to Aircraft and Spacecraft Performance	3
ASE 3233	Aerospace Structural Analysis I	3
ASE 3243	Aerospace Structural Analysis II	3
ASE 3333	Aerothermodynamics	3
ASE 4113	Aerospace Engineering Laboratory I	3
ASE 4123	Aerospace Controls	3
ASE 4343	Compressible Aerodynamics	3
ASE 4623	Aerospace Structural Design	3
ASE 4721	Aerospace Engineering Laboratory II	1
Technical Electives [2]		6
Oral Communication Requirement		
Satisfied by successful completion of ASE 2013, ASE 4513/ ASE 4523 or ASE 4533/ASE 4543, ASE 4623, ASE 4721 and GE 3513.		
Writing Requirement		
GE 3513	Technical Writing	3
Computer Literacy		
Satisfied by successful completion of ASE 1013, ASE 2013, and ASE 2113.		
Choose one of the following concentrations:		15
Aeronautics Concentration (ARO)		
ASE 3123	Aircraft Attitude Dynamics	
ASE 3313	Incompressible Aerodynamics	
ASE 4413	Aircraft Propulsion	
ASE 4513	Aircraft Design I	
ASE 4523	Aircraft Design II	
Astronautics Concentration (ASO)		
ASE 3813	Introduction to Orbital Mechanics	
ASE 3823	Spacecraft Attitude Dynamics	
ASE 4443	Spacecraft Propulsion	
ASE 4533	Spacecraft Design I	
ASE 4543	Spacecraft Design II	
Total hours		128

1 The department maintains a list of pre-approved math/science electives on its website. Other courses may be selected upon approval of the department.

2 Technical electives may be selected from any of the department's listing of Advanced Undergraduate/Graduate Courses, plus EM 4123, EM 4133 and EM 4143. Other courses may be selected upon approval of the department. All required courses in one concentration qualify as technical electives for students in the other concentration.

Department of Agricultural and Biological Engineering

Department Head: Professor Jonathan Pote
Office: 150 Agricultural and Biological Engineering Building

Biological Engineering (BE)

Biological Engineering is that branch of the engineering profession which deals with engineering problems encountered in biological systems. The responsibilities of the Biological Engineer may include finding solutions to address the need for more complex food-producing systems, controlling and monitoring the deterioration of the earth's environment, the replacement of living organs, design and testing of artificial and engineered tissues, the use of new technologies to assist the disabled, and the creation of new engineering designs based on the inherently creative characteristics of living systems.

The curriculum in Biological Engineering is designed to give the student a thorough grounding in the basic sciences of mathematics, physics, chemistry, taken with and followed by a series of courses in the engineering and biological sciences and biological engineering.

The educational objectives of the program are as follows:

1. To educate students in the academic discipline of Biological Engineering so that they can formulate and solve engineering problems involving biological systems.
2. To ensure that students develop effective written and oral communication skills.
3. To educate students in the use of the latest computer-based technology in engineering and engineering tools.
4. To develop the students' ability to work individually and in teams to complete engineering and design projects.
5. To prepare students for employment in engineering jobs or for study in graduate and professional schools and for continual professional development.

Ecological and Envrionmental Engineering Emphasis. This emphasis addresses environmental problems through the application of basic engineering in concert with principles of ecology and biology. Man has shown repeatedly that working opposition to natural processes leads either to failure or to expensive and energy-intensive temporary solutions. Ecological engineering attempts to apply and emulate the rules that govern natural systems in order to meet human needs in ways that are sustainable.

Bioenergy Emphasis. Biological engineers can engage in environmental conservation and Bioenergy technologies use renewable biomass resources to produce an array of energy-related products including electricity, liquid, solid, and gaseous fuels, heat, chemicals, and other high volume materials. Students in this emphasis area gain knowledge in the fundamentals of energy production, thermodynamics, alternative energy sources and biomass conversion into biofuels. The Bioenergy program prepares students to take up a career in the energy sector industry or government agencies, as well as pursue research in energy production from renewable sources.

Premedical Emphasis. The Biological Engineering curriculum offers a premedical emphasis which not only leads to a degree in Biological Engineering but also prepares students for acceptance into most medical, dental, and veterinary schools. Students completing this program have demonstrated their ability to tackle tough subjects, perform well under stressful conditions, work together in teams, learn new material, and achieve ambitious goals - characteristics desired by the best medical, dental, and veterinary schools.

Biomedical Engineering (BME)

Biomedical Engineering is a growing interdisciplinary field of engineering that integrates engineering and life sciences to solve problems associated with the human body and human health. The curriculum is built on a core of fundamental math/physics/engineering courses which is similar across all engineering disciplines. It is distinguished by a wide range of life science courses and specialized biomedical engineering courses such as computational modeling, biomechanics, biomaterials, and bioinstrumentation. The curriculum also includes a two-semester capstone design course. It is designed to comply with current requirements for ABET accreditation. Apart from preparing students to work in biomedical industry, the B.S. in Biomedical Engineering is an excellent foundation for graduate study in many fields, including further study of biomedical engineering. It is also good preparation for entry into professional schools, including medical school, dental school, veterinary school, and law school. Although there are no concentrations, a student may emphasize in an area of interest through deliberate selection of engineering electives.

The Biological Engineering and the Biomedical Engineering curricula are offered by the Department of Agricultural and Biological Engineering which is jointly administered by the College of Engineering and the College of Agricultural and Life Sciences.

The Biological Engineering is accredited by the Engineering Accreditation Commission of ABET, http://www.abet.org.

Biological Engineering

English Composition		
EN 1103	English Composition I	3
EN 1113	English Composition II	3
or EN 1173	Accelerated Composition II	
Mathematics		
See Major Core		
Science		
See Major Core		
Humanities		6
See approved list of Humanities electives		
Fine Arts		3
See approved list of Fine Arts electives		
Social/Behavioral Sciences		6
See approved list of Social/Behavioral electives		
Major Core		
Math and Basic Science		40
MA 1713	Calculus I	
MA 1723	Calculus II	
MA 2733	Calculus III	
MA 2743	Calculus IV	
MA 3253	Differential Equations I	
CH 1213	Chemistry I	
CH 1211	Investigations in Chemistry I	
CH 1223	Chemistry II	
CH 1221	Investigations in Chemistry II	
CH 2503	Elementary Organic Chemistry	
or CH 4513	Organic Chemistry I	
CH 2501	Elementary Organic Chemistry Laboratory	
or CH 4511	Organic Chemistry Laboratory I	
PH 2213	Physics I	
PH 2223	Physics II	
BIO 3304	General Microbiology	
BCH 4013	Principles of Biochemistry	
Engineering Topics		39
ABE 1911	Engineering in the Life Sciences	
ABE 1921	Introduction to Engineering Design	
ABE 4803	Biosystems Simulation	
ABE 3413	Bioinstrumentation I	
ABE 3303	Transport in Biological Engineering	
ABE 4423	Bioinstrumentation II	
ABE 3813	Biophysical Properties of Materials	
ABE 4813	Principles of Engineering Design	

ABE 4833	Practices of Engineering Design	
ABE 4911	Engineering Seminar	
MA 3123	Introduction to Statistical Inference	
EM 2413	Engineering Mechanics I	
EM 2433	Engineering Mechanics II	
EM 3213	Mechanics of Materials	
EM 3313	Fluid Mechanics	
Oral Communication Requirement		
Satisfied by successful completion of GE 3513		
Writing Requirement		
GE 3513	Technical Writing	3
Computer Literacy		
Fulfilled in Engineering Topics courses		
Major Requirements and Engineering Electives for non-BME Concentration		25
ABE 4313	Biological Treatment of Nonpoint Source Pollutants	
or ABE 4323	Physiological Systems in Biomedical Engineering	
BIO Science Elective		
BIO Science Elective or Engineering elective		
Approved Engineering Electives		
ABE Elective		
Major Requirements and Engineering Electives for Biomedical Engineering Concentration (BME)		25
ABE 4323	Physiological Systems in Biomedical Engineering	
BIO 1134	Biology I	
Restricted BIO Science Elective [1]		
12 hours of Restricted Engineering Elective (at least 6 hours MUST BE ABE electives) [2]		
3 Hours of Restricted Engineering Electives or Retricted Math/ Physics Electives [3]		
Total Hours		128

1 Restricted BIO Science Electives. Select from: BIO 2103, BIO 3504, BIO 4114, BIO 4405, BIO 4413, BIO 4433, BIO 4503, BIO 4504, BIO 4514, ADS 4613, BCH 4113, CVM 2443.

2 Restricted Engineering Electives. Select from: ABE 4523, ABE 4533, ABE 4613, ABE 4624, ABE 4723, EM 4123, EM 4133, EM 4213, ME 3113, ME 3163, ME 3313, ME 4123, ME 4743, ME 4833, EG 1143, CSE 4613, CSE 4623, IE 4113, IE 4173, IE 4553, IE 4733, IE 4743, ECE 3714, ECE 3443

3 Restricted Math/Physics Electives. Select from: MA 3113, MA 3353, MA 4143, MA 4373, PH 2233

Biomedical Engineering

English Composition		6
EN 1103	English Composition I	
or EN 1163	Accelerated Composition I	
EN 1113	English Composition II	
or EN 1173	Accelerated Composition II	
Fine Arts		3
See General Education courses		
Natural Science		
See Major Core		
Extra Science (if appropriate)		
See Major Core		
Mathematics		
See Major Core		
Humanities		6
See General Education courses		
Social/Behavioral Sciences		6
See General Education courses		
Major Core		
Math and Basic Science		44
MA 1713	Calculus I	
MA 1723	Calculus II	
MA 2733	Calculus III	
MA 2743	Calculus IV	
MA 3253	Differential Equations I	
CH 1213	Chemistry I	
CH 1211	Investigations in Chemistry I	
CH 1223	Chemistry II	
CH 1221	Investigations in Chemistry II	
CH 2503	Elementary Organic Chemistry	
or CH 4513	Organic Chemistry I	
CH 2501	Elementary Organic Chemistry Laboratory	
or CH 4511	Organic Chemistry Laboratory I	
PH 2213	Physics I	
PH 2223	Physics II	
BIO 1134	Biology I	
BIO 3304	General Microbiology	
BCH 4013	Principles of Biochemistry	
or BCH 4603	General Biochemistry I	
Engineering Topics		42
ABE 1911	Engineering in the Life Sciences	
ABE 1921	Introduction to Engineering Design	
ABE 4803	Biosystems Simulation	
ABE 3413	Bioinstrumentation I	
ABE 3303	Transport in Biological Engineering	
ABE 4323	Physiological Systems in Biomedical Engineering	
ABE 4423	Bioinstrumentation II	
ABE 3813	Biophysical Properties of Materials	
ABE 4813	Principles of Engineering Design	
ABE 4833	Practices of Engineering Design	
ABE 4911	Engineering Seminar	
MA 3123	Introduction to Statistical Inference	
EM 2413	Engineering Mechanics I	
EM 2433	Engineering Mechanics II	
EM 3213	Mechanics of Materials	
EM 3313	Fluid Mechanics	
Oral Communication Requirement		
Satisfied by successful completion of GE 3513		
Writing Requirement		3
GE 3513	Technical Writing	
Computer Literacy		

Fulfilled in Engineering Topics courses	
Restricted Electives	
Biological Science Elective [1]	
Engineering Electives (at least 6 hours must be ABE electives) [2]	12
Engineering Elective OR Math/Physics Elective [3]	3
Total Hours	128

[1] Biological Science Electives. Select from: BIO 2103, BIO 3004, BIO 3014, BIO 3103, BIO 3504, BIO 3524, BIO 4113, BIO 4114, BIO 4133, BIO 4143, BIO 4405, BIO 4413, BIO 4433, BIO 4503, BIO 4504, BIO 4514, ADS 4613, BCH 4113, CVM 2443.

[2] Engineering Electives. Select from: ABE 4523, ABE 4613, ABE 4723, ABE 4624, ABE 4533, EM 4123, EM 4133, EM 4213, ME 3113, ME 4123, ME 4743, ME 4833, EG 1143, CSE 4613, CSE 4623, IE 3913, IE 4113, IE 4173, IE 4553, IE 4733, IE 4743, ECE 3714, ECE 3443

[3] **Math/Physics Electives. Select from**: MA 3113, MA 3353, MA 4143, MA 4373, PH 2233, PH 3613, PH 4113

Department of Civil and Environmental Engineering

Department Head: Professor Dennis D. Truax
Office: 235 Walker Engineering Building

Civil and Environmental Engineers plans, designs, and supervises construction of almost every facility essential to modern life. Roads, bridges, buildings, water supply and waste disposal systems, transit systems, airfields, dams and irrigation projects are examples of the creative efforts of Civil and Environmental Engineers. The field of Civil and Environmental Engineering offers limitless employment opportunities that range from high-tech computer-aided design to hands-on field engineering. Civil and Environmental Engineers find rewarding careers in government, military, industry or private practice to meet the challenges of pollution control, energy, transportation, housing and other problems that face modern society.

The mission of the Department of Civil and Environmental Engineering is to proactively utilize teaching, research, and service to educate baccalaureate, masters, and doctoral students so they can become competent, dynamic, and ethical engineers of the future. To complement the classroom experience, students are encouraged to reinforce instruction by participating in cooperative education programs, assisting faculty with research, or becoming involved in professional societies. Students are expected to develop an appreciation for life-long learning and pursue professional engineering licensure. The ultimate goal is to prepare students to be future leaders who will positively impact their profession and society.

Furthermore, students should become prepared to combine research and classroom experiences to solve complex interdisciplinary problems. The overall goal of the program is to challenge students to study and innovatively solve the global sustainability challenges that they encounter. Finally, faculty, students, and staff will be engaged in professional organizations, campus committees, consultancy, student organizations, and continuing education. Through these service activities, the department will be a reliable professional resource for the University, alumni, and society.

The educational objectives of the Department of Civil and Environmental Engineering are to enable graduates to achieve career and professional accomplishments that include:

1. Demonstrate a broad knowledge of principles and fundamentals of civil engineering and their application, through their successfully practice as professional civil engineers, their pursuit of graduate or professional degrees, or their engagement in other professional careers that involve the application of the engineering method.
2. Achieve success in the multidisciplinary environment of the 21st century, and demonstrate their ability to adapt to emerging and evolving technologies, social conditions, professional standards, and career opportunities, by attaining leadership, managerial, administrative, supervisory, or other positions of responsibility within their organization.
3. Demonstrate an understanding and appreciation of the ethical, societal and professional responsibilities of a civil engineer, through professional registration and active membership in professional organizations.
4. Demonstrate an appreciation for lifelong learning and for the value of continuing professional development in maintaining their professional competence, through participation in graduate and continuing education activities.

The department offers a Bachelor of Science in Civil Engineering. For those interested in Environmental Engineering, the department offers an Environmental Engineering concentration within the Bachelor of Science in Civil Engineering. The civil engineering degree program is accredited by the Engineering Accreditation Commission of ABET, http://www.abet.org.

General Education Requirements

English Composition		
EN 1103	English Composition I	3
or EN 1163	Accelerated Composition I	
EN 1113	English Composition II	3
or EN 1173	Accelerated Composition II	
Mathematics		
See Major Core		
Science		
See Major Core		
Humanities		
See General Education courses		6
Fine Arts		
See General Education courses		3
Social/Behavioral Sciences		
See General Education courses		6
Major Core		
Math and Basic Science		
MA 1713	Calculus I	3
MA 1723	Calculus II	3
MA 2733	Calculus III	3
MA 2743	Calculus IV	3
MA 3253	Differential Equations I	3
CH 1213	Chemistry I	3
CH 1211	Investigations in Chemistry I	1

CH 1223	Chemistry II	3
CH 1221	Investigations in Chemistry II	1
PH 2213	Physics I	3
Engineering Topics		
EG 1143	Graphic Communication	3
IE 3913	Engineering Economy I	3
ST 3123	Introduction to Statistical Inference	3
ME 3513	Thermodynamics I	3
EM 2413	Engineering Mechanics I	3
EM 2433	Engineering Mechanics II	3
EM 3213	Mechanics of Materials	3
EM 3313	Fluid Mechanics	3
CE 1001	Introduction to Civil Engineering	1
CE 2213	Surveying	3
CE 2803	Environmental Engineering Issues	3
CE 3113	Transportation Engineering	3
CE 3311	Construction Materials Lab	1
CE 3313	Construction Materials	3
CE 3411	Soil Mechanics Laboratory	1
CE 3413	Soil Mechanics	3
CE 3501	Water Resource Engineering Lab	1
CE 3503	Water Resource Engineering	3
CE 3603	Structural Mechanics	3
CE 3801	Environmental Engineering and Water Resources Engineering Lab	1
CE 3823	Environmental Engineering	3
CE 4903	Civil Engineering Comprehensive	3
Oral Communication Requirement		
Fulfilled in GE 3513 and various CE courses		
Writing Requirement		
GE 3513	Technical Writing	3
Computer Literacy		
Fulfilled in various Engineering Topics courses		
Civil Engineering Electives		12
Choose one course from each of the following two lists:		
List A		
CE 4513	Engineering Hydrology	
CE 4523	Open Channel Hydraulics	
CE 4863	Water and Wastewater Engineering	
CE 4883	Engineered Environmental Systems	
List B		
CE 4963	Steel Structures I	
CE 4973	Concrete Structures I	
Choose one course from two of the following four lists:		
List C		
CE 4133	Geometric Design of Highways	
CE 4143	Traffic Engineering	
List D		
CE 4103	Pavement Design	
List E		
CE 4433	Foundations	
List F		
CE 4703	Construction Engineering and Management	
Basic Science Elective [1]		3
Additional Civil Engineering Electives		6
Any CE course, except CE 4233 or CE 4243, not applied to another curriculum requirement.		
Technical Elective		
GR 4303	Principles of GIS	3
Total Hours		130
Environmental Engineering Concentration Electives (in place of Civil Engineering Electives above)		
Environmental Engineering Concentration Electives	Choose one course from each of the following three lists:	12
List A:		
CE 4513	Engineering Hydrology	
CE 4523	Open Channel Hydraulics	
List B:		
CE 4883	Engineered Environmental Systems	
CE 4863	Water and Wastewater Engineering	
List C:		
CE 4963	Steel Structures I	
CE 4973	Concrete Structures I	
Choose one course from the following list:		
List D:		
CE 4133	Geometric Design of Highways	
CE 4143	Traffic Engineering	
CE 4103	Pavement Design	
CE 4433	Foundations	
CE 4703	Construction Engineering and Management	
Environmental Engineering Concentration Basic Science Elective [2]		3
Restricted Environmental Engineering Concentration Electives [3]		6
Environmental Engineering Concentration Technical Electives [4]		3
Total hours		130

1 Civil Engineering Basic Science Electives: GG 4153, GG 4433, GG 4503

2 Environmental Engineering Concentration Basic Science Electives: BIO 1123, BIO 1134, BIO 1144, BIO 3304, GG 4523, GG 4613, GG 4623

3 Restricted Environmental Engineering Concentration Electives: CE 4000, CE 4513, CE 4523, CE 4533, CE 4563, CE 4583, CE 4843, CE 4863, CE 4883, CE 4893, CE 4990

4 Environmental Engineering Concentration Technical Electives: ABE 4313, ABE 4803, ABE 4843, BIO 3304, BIO 4324, BL 4263, CHE 4613, GG 4613, GR 4303

Minor in Civil Engineering

Civil engineers design, build, and maintain the infrastructure, the very foundation of any civilization. All undergraduate students at Mississippi State University, with the exception of those already majoring in civil engineering, are eligible to pursue a minor in civil engineering.

Civil engineering is an incredibly broad field, and students have a choice of five specialty tracks to match interests and career objectives:

Construction Engineering and Management, Environmental and Water Resources Engineering, Geotechnical and Materials Engineering, Structural Engineering, and Transportation Engineering. The civil engineering minor requires at least 15 credit hours of undergraduate coursework, typically at the junior and senior levels. Students develop a program of study in consultation with CEE faculty members.

Students interested in pursuing a civil engineering minor should consult with a CEE advisor for specific information regarding specialty tracks, prerequisites, and other requirements.

Department of Computer Science and Engineering

Department Head: Dr. Shahram Rahimi
Assistant Department Head and Undergraduate Coordinator: Dr. Sarah Lee
Graduate Coordinator: Dr. T. J. Jankun-Kelly
Office: 300 Butler Hall

The Department of Computer Science and Engineering is dedicated to maintaining quality programs in undergraduate teaching, graduate teaching, and research, and to the fruitful interaction between teaching and research. In research, we wish to maintain our present emphasis on applications (often pursued with colleagues from other disciplines), and upon the synergistic relationships between theory and applications in which the most meaningful advances often result. The department has identified six core competency areas in which we shall seek national prominence: artificial intelligence, computational science, human centered computing, graphics, systems, and software engineering. These core competencies support research applications in areas such as bio-informatics, high performance computing, computer security, computer forensics, computer science education, human-robotic interaction, and visualization. The Department of Computer Science and Engineering offers degree programs leading to the Bachelor of Science degree in Computer Science, Software Engineering, and (jointly with the Department of Electrical and Computer Engineering) Computer Engineering and the Master of Science in Cybersecurity and Operations. The department also offers study leading to the Master of Science and the Doctor of Philosophy degrees in Computer Science. An accelerated BS/MS program is also available.

Computer Science Major (CS)

Computer Science is the study of the principles, applications, and technologies of computing and computers. It involves the study of data and data structures and the algorithms to process these structures; principles of computer architecture-both hardware and software; problem solving and design methodologies; and language design, structure and translation techniques. Computer Science provides a foundation of knowledge for students with career objectives in a wide range of computing and computer-related professions.

The objectives for the department with respect to the Bachelor of Science Degree in Computer Science are as follows:

1. The graduate will demonstrate an understanding of computer science principles and an ability to solve unstructured computer science problems through the successful entrance into and advancement in the computer science profession.
2. The graduate will demonstrate an appreciation for lifelong learning and for the value of continuing professional development through participation in graduate education, professional education or continuing education opportunities, attainment of professional licensure, or membership in professional societies.
3. The graduate will demonstrate an understanding of professional and ethical responsibilities to the profession, society and the environment incumbent on a computer science professional.
4. The graduate will successfully interact with others of different backgrounds, educations, and cultures.
5. The graduate will demonstrate effective communication skills in their profession.

Computer Science graduates begin careers as computer programmers, system analysts, programmer/analysts, software engineers, systems programmers, computer system engineers and in a number of other computer-related jobs. A minor in computer science is available to students with major programs of study in other fields at the University.

The Bachelor of Science degree requires the completion of a total of 128 credit hours of general studies, computer science, mathematics and science, and supporting technical courses. To graduate, a student must have a “C” average in all MSU computer science and engineering courses attempted.

The computer science program is accredited by the Computing Accreditation Commission of ABET, http://www.abet.org.

Software Engineering Major (SE)

Software Engineering is the application of engineering practices to the design and maintenance of software. The Software Engineering degree program prepares students for careers in the engineering of large complex software systems and products. These systems often involve millions of lines of code and frequently operate in safety-critical environments. The Software Engineering major contains courses related to the study of software engineering in practice necessary to manage these development processes. The faculty for the Software Engineering program is drawn from the Department of Computer Science and Engineering and the Department of Industrial Engineering.

The objectives for the department with respect to the Bachelor of Science Degree in Software Engineering are as follows:

1. The graduate will demonstrate an understanding of engineering principles and an ability to solve unstructured engineering problems through the successful entrance into and advancement in the engineering profession.
2. The graduate will demonstrate an appreciation for lifelong learning and for the value of continuing professional development through participation in graduate education, professional education or continuing education opportunities, attainment of professional licensure, or membership in professional societies.
3. The graduate will demonstrate an understanding of professional and ethical responsibilities to the profession, society and the environment incumbent on an engineering professional.
4. The graduate will successfully interact with others of different backgrounds, educations, and cultures.
5. The graduate will demonstrate effective communication skills in their profession.

A minor in software engineering is available to students with major programs of study in other fields at the University.

The Bachelor of Science degree in Software Engineering requires the completion of a total of 128 credit hours of general studies, computer science, industrial engineering, mathematics and science, supporting technical courses, and free electives. To graduate, a student must have a “C” average in all MSU computer science and engineering courses attempted.

The software engineering program is accredited by the Engineering Accreditation Commission of ABET, http://www.abet.org.

Computer Science Major (CS)

English Composition		
EN 1103	English Composition I	3
or EN 1163	Accelerated Composition I	
EN 1113	English Composition II	3
or EN 1173	Accelerated Composition II	
Mathematics		
See Major Core		
Science		
See Major Core		
Humanities		
See General Education courses		6
Fine Arts		
See General Education courses		3
Social/Behavioral Sciences		
See General Education courses		6
Major Core		
Math and Basic Science		
MA 1713	Calculus I	3
MA 1723	Calculus II	3
MA 3113	Introduction to Linear Algebra	3
Math elective		3
MA 2733	Calculus III	
or MA 3053	Foundations of Mathematics	
or MA 4143	Graph Theory	
or MA 4173	Number Theory	
IE 4613	Engineering Statistics I	3
BIO 1134	Biology I	4
CH 1213	Chemistry I	3
CH 1211	Investigations in Chemistry I	1
PH 2213	Physics I	3
Science elective		3
PH 2223	Physics II	
or CH 1223 & CH 1221	Chemistry II and Investigations in Chemistry II	
or BIO 1144	Biology II	
Engineering and Computer Science Topics		
CSE 1002	Introduction to CSE	2
CSE 1284	Introduction to Computer Programming	4
CSE 1384	Intermediate Computer Programming	4
CSE 2383	Data Structures and Analysis of Algorithms	3
CSE 2813	Discrete Structures	3
CSE 3324	Distributed Client/Server Programming	4
CSE 3813	Introduction to Formal Languages and Automata	3
CSE 3981	Social and Ethical Issues in Computing	1
CSE 4503	Database Management Systems	3
CSE 4713	Programming Languages	3
CSE 4733	Operating Systems I	3
CSE 4833	Introduction to Analysis of Algorithms	3
ECE 3714	Digital Devices and Logic Design	4
ECE 3724	Microprocessors	4
ECE 4713	Computer Architecture	3
Computer Science Electives: select two of the following:		6-7
CSE 4153	Data Communications and Computer Networks	
CSE 4163	Designing Parallel Algorithms	
CSE 4214	Introduction to Software Engineering	
CSE 4413	Principles of Computer Graphics	
CSE 4453	Game Design	
CSE 4633	Artificial Intelligence	
CSE 4743	Operating Systems II	
Computer Science electives (upper level) - see advisor		6
Technical Electives - see advisor		6
Free elective		7
Oral Communication Requirement		
CO 1003	Fundamentals of Public Speaking	3
or CO 1013	Introduction to Communication	
Writing Requirement		
GE 3513	Technical Writing	3
Computer Literacy		
Fulfilled in Engineering & Computer Science Topics courses		
Total Hours		128

Software Engineering Major (SE)

English Composition		
EN 1103	English Composition I	3
or EN 1163	Accelerated Composition I	
EN 1113	English Composition II	3
or EN 1173	Accelerated Composition II	
Mathematics		
See Major Core		
Science		
See Major Core		
Humanities		
See General Education courses		6
Fine Arts		
See General Education courses		3
Social/Behavioral Sciences		
See General Education courses		6
Major Core		
Math and Basic Science		
MA 1713	Calculus I	3
MA 1723	Calculus II	3
MA 3113	Introduction to Linear Algebra	3

Math elective		3
MA 2733	Calculus III	
or MA 3053	Foundations of Mathematics	
or MA 4143	Graph Theory	
or MA 4173	Number Theory	
IE 4613	Engineering Statistics I	3
BIO 1134	Biology I	4
CH 1213	Chemistry I	3
CH 1211	Investigations in Chemistry I	1
PH 2213	Physics I	3
Science elective		3
PH 2223	Physics II	
or CH 1223 & CH 1221	Chemistry II and Investigations in Chemistry II	
or BIO 1144	Biology II	
Engineering Topics		
CSE 1002	Introduction to CSE	2
CSE 1284	Introduction to Computer Programming	4
CSE 1384	Intermediate Computer Programming	4
CSE 2383	Data Structures and Analysis of Algorithms	3
CSE 2813	Discrete Structures	3
CSE 3324	Distributed Client/Server Programming	4
CSE 4214	Introduction to Software Engineering	4
CSE 3981	Social and Ethical Issues in Computing	1
CSE 4733	Operating Systems I	3
CSE 4503	Database Management Systems	3
CSE 4833	Introduction to Analysis of Algorithms	3
CSE 4233	Software Architecture and Design Paradigms	3
CSE 4153	Data Communications and Computer Networks	3
CSE 3213	Software Engineering Senior Project I	3
CSE 4283	Software Testing and Quality Assurance	3
CSE 3223	Software Engineering Senior Project II	3
ECE 3714	Digital Devices and Logic Design	4
ECE 3724	Microprocessors	4
IE 4533	Project Management	3
CSE Security Elective		3
Technical elective - see advisor		6
Free electives		3
Oral Communication Requirement		
CO 1003	Fundamentals of Public Speaking	3
or CO 1013	Introduction to Communication	
Writing Requirement		
GE 3513	Technical Writing	3
Computer Literacy		
Fulfilled in Engineering Topics courses		
Total Hours		128

Computer Science Minor

Computer science has application in a broad range of disciplines, and students with majors in other fields of study may wish to complement their studies with a minor in computer science. Completion of the minor requirements should prepare the student to pursue a career as a computer applications specialist within his/her field of study or as an entry-level computer programmer in the general computing environment. The minor in computer science is not available to students majoring in computer engineering or software engineering since significant parts of these majors consist of computer science courses.

A minor in computer science consists of:

CSE 1284	Introduction to Computer Programming	4
CSE 1384	Intermediate Computer Programming	4
CSE 2383	Data Structures and Analysis of Algorithms	3
CSE 2813	Discrete Structures	3
Nine hours of approved upper-division courses		9

A list of approved courses is available from the Department of Computer Science and Engineering.

Software Engineering Minor

Software Engineering practices and skills are valuable in a wide range of disciplines, and students with majors in other fields of study may wish to complement their studies with a minor in software engineering. Completion of the minor requirements should prepare the student to pursue careers that involve the application and development of software systems in their field of study.

A minor in software engineering consists of

CSE 1284	Introduction to Computer Programming	4
CSE 1384	Intermediate Computer Programming	4
CSE 2383	Data Structures and Analysis of Algorithms	3
CSE 4214	Introduction to Software Engineering	4
Approved upper-division software engineering courses		9

A list of approved courses is available from the Department of Computer Science and Engineering.

Department of Electrical and Computer Engineering

Department Head: Dr. Nicolas Younan
Major Advisor: Kylie Crosland
Office: 216 Simrall Engineering Building

Alumni, employers, faculty and students participate in a process used to develop educational objectives for the undergraduate programs in Electrical Engineering and Computer Engineering. Within a few years of graduation, program graduates completing the baccalaureate degree in Electrical or Computer Engineering will:

- Be recognized by their peers as fundamentally sound in the application of mathematics, science, computing, and engineering.
- Be engaged in the practice of Electrical or Computer Engineering as innovative problem solvers with a strong work ethic, by identifying and implementing solutions using the proper tools, practical approaches, and flexible thinking.
- Be productive and demonstrate leadership in the practice of Electrical or Computer Engineering, both individually and within multidisciplinary teams, using effective oral and written

communication skills when working with peers, supervisors, and the public.
- Be responsible in the practice of Electrical or Computer Engineering, relying on sound engineering ethics, a commitment to lifelong learning and a genuine concern for society and the environment.

Computer Engineering Major (CPE)

Major Advisor: Ms. Kylie Crosland
Office: 216 Simrall Engineering Building

With the origin of the modern computer dating back to the late 1940's and the growth of computer hardware fueled by the availability of digital integrated circuits starting in the late 1960's, computer engineers have enjoyed a pivotal role in technology that now permeates our entire society. Whether the end product is an integrated circuit, a system of networked embedded computers, or any system that relies on digital hardware or computer software, its development requires the skills of a computer engineer. While computing systems include both hardware and software, it is the optimal combination of these components that is the unique realm of the computer engineer. Today, computer engineers are a driving force in the technological and economic development of the digital age.

The curriculum requirements for computer engineering are built around a substantial engineering core curriculum and required courses in electrical engineering and computer science. The requirements in mathematics, the basic sciences, and engineering sciences provide the breadth of exposure required for all engineering disciplines. Basic electrical engineering requirements include circuit theory, electronics and digital devices which are supplemented by upper-level courses in computer architecture, and computer aided design of digital systems. Basic computer science courses include a coordinated sequence providing fundamental knowledge in data structures, algorithms, object oriented programming, software engineering, real-time application and software development tools. These courses are developed across multiple platforms and are based on the Python and Java language. Upper-level courses in data communications and computer networks, algorithms and operating systems are also provided. Students wishing to gain depth of coverage in communications, parallel computing, VLSI, embedded systems or signal processing can achieve this with the availability of technical electives selected from an approved list or in consultation with a faculty advisor. Required courses in communications skills, social sciences and humanities provide studies in non-technical areas that are traditional in a broad-based education. A capstone senior design course requires students to apply newfound knowledge and explore entrepreneurship. Students research and identify a problem and work in teams applying a combination of hardware and software to develop a solution. Critical and Final Design Reviews enable students to develop their professional presentation skills.

Students expecting to graduate from Mississippi State University with a bachelor of science degree in computer engineering, in addition to satisfactorily completing the CPE curriculum requirements, must meet the following minimum GPA requirements for graduation:

- make an overall C average on all hours scheduled and rescheduled at all institutions attended, including MSU (2.00 or better cumulative GPA)
- make a C average on all hours scheduled and rescheduled at MSU (2.00 or better MSU GPA)
- earn at least a 2.5/4.0 average on all hours with ECE or CSE course prefixes scheduled and rescheduled at all institutions attended, including MSU

The computer engineering program is accredited by the Engineering Accreditation Commission of ABET, http://www.abet.org.

This program is offered through joint efforts of faculty in the Department of Electrical and Computer Engineering and the Department of Computer Science and Engineering.

Electrical Engineering Major (EE)

Major Advisor: Ms. Kylie Crosland
Office: 216 Simrall Engineering Building

The electrical engineer is a principal contributor to the modern technological age in which we live today. Following in the footsteps of inventors such as Thomas Edison and Alexander Graham Bell, the electrical engineer is developing technology that improves the quality of life. Developments in microelectronics, telecommunications, and power systems have had a profound effect on each of us. Electrical engineers have affected all segments of our society such as transportation, medicine, and the entertainment industry, to name only a few. Indeed, the electrical engineer has principally been responsible for the advent of the computer age in which we live today as well as the computer's miniaturization and rapid expansion in computational power.

The curriculum in electrical engineering has a foundation based on the principles of the electrical and physical sciences and uses mathematics as a common language to facilitate the solution of engineering problems. The core curriculum consists of a sequence of courses in digital devices, circuits and electronics, electromagnetic field theory, and modern energy conversion. In the senior year, students have the opportunity to take additional course work in one or more technical areas that include: telecommunications, electromagnetics, power systems, high voltage, feedback control systems, microelectronics, signal processing, and computer systems. Supporting course work outside electrical engineering consists of a strong background in mathematics, physical sciences, computer programming, social sciences, fine arts, humanities, and personal communication skills. Computers are used extensively throughout the curriculum, and students are expected to become proficient in higher-order programming languages and several application software tools. Although the concept of design is stressed throughout the program so as to emphasize the problem-solving skills of the engineer, the senior year includes a capstone design experience where much of the previous study is culminated. Through this two-semester design course sequence, students are required to integrate design and analytical problem-solving skills together with communication skills in a team environment.

Students expecting to graduate from Mississippi State University with a bachelor of science degree in electrical engineering, in addition to satisfactorily completing the EE curriculum requirements, must meet the following minimum GPA requirements for graduation:

- make an overall C average on all hours scheduled and rescheduled at all institutions attended, including MSU (2.00 or better cumulative GPA)
- make a C average on all hours scheduled and rescheduled at MSU (2.00 or better MSU GPA)

- earn at least a 2.5/4.0 average on all hours with ECE or CSE course prefixes scheduled and rescheduled at all institutions attended, including MSU

The electrical engineering program is accredited by the Engineering Accreditation Commission of ABET, http://www.abet.org.

Computer Engineering Major (CPE)

General Education Requirements

English Composition		
EN 1103	English Composition I	3
or EN 1163	Accelerated Composition I	
EN 1113	English Composition II	3
or EN 1173	Accelerated Composition II	
Mathematics		
See Major Core		
Science		
See Major Core		
Humanities		
See General Education courses		6
Fine Arts		
See General Education courses		3
Social/Behavioral Sciences		
See General Education courses		6
Major Core		
Math and Basic Science		
MA 1713	Calculus I	3
MA 1723	Calculus II	3
MA 2733	Calculus III	3
MA 2743	Calculus IV	3
MA 3113	Introduction to Linear Algebra	3
MA 3253	Differential Equations I	3
IE 4613	Engineering Statistics I	3
CH 1213	Chemistry I	3
CH 1211	Investigations in Chemistry I	1
PH 2213	Physics I	3
PH 2223	Physics II	3
Engineering Topics		
CSE 1284	Introduction to Computer Programming	4
CSE 1384	Intermediate Computer Programming	4
CSE 2383	Data Structures and Analysis of Algorithms	3
CSE 2813	Discrete Structures	3
CSE 3324	Distributed Client/Server Programming	4
CSE 4733	Operating Systems I	3
CSE 4833	Introduction to Analysis of Algorithms	3
ECE 1013	Introduction to ECE Design I	3
ECE 1022	Introduction to ECE Design II	2
ECE 3413	Introduction to Electronic Circuits	3
ECE 3424	Intermediate Electronic Circuits	4
ECE 3434	Advanced Electronic Circuits	4
ECE 3443	Signals and Systems	3
ECE 3714	Digital Devices and Logic Design	4
ECE 3724	Microprocessors	4
ECE 4723	Embedded Systems	3
or ECE 4263	Principles of VLSI Design	
ECE 4532	CPE Design I	2
ECE 4542	CPE Design II	2
ECE 4713	Computer Architecture	3
ECE 4743	Digital System Design	3
ECE 4833	Data Communications and Computer Networks	3
CPE Technical Electives [1]		6
Oral Communication Requirement		
Fulfilled in ECE 1013, ECE 1022, ECE 4532, ECE 4542, and GE 3513		
Writing Requirement		
GE 3513	Technical Writing	3
Computer Literacy		
Fulfilled in Engineering Topics courses		
Total Hours		128

[1] See advisor for approved courses.

Electrical Engineering Major (EE)

General Education Requirements

English Composition		
EN 1103	English Composition I	3
or EN 1163	Accelerated Composition I	
EN 1113	English Composition II	3
or EN 1173	Accelerated Composition II	
Mathematics		
See Major Core		
Science		
See Major Core		
Humanities		
See General Education courses		6
Fine Arts		
See General Education courses		3
Social/Behavioral Sciences		
See General Education courses		6
Major Core		
Math and Basic Science		
MA 1713	Calculus I	3
MA 1723	Calculus II	3
MA 2733	Calculus III	3
MA 2743	Calculus IV	3
MA 3113	Introduction to Linear Algebra	3
MA 3253	Differential Equations I	3
IE 4613	Engineering Statistics I	3
CH 1213	Chemistry I	3
CH 1211	Investigations in Chemistry I	1
PH 2213	Physics I	3
PH 2223	Physics II	3
Engineering Topics		
CSE 1284	Introduction to Computer Programming	4

CSE 1384	Intermediate Computer Programming	4
CSE 2383	Data Structures and Analysis of Algorithms	3
ECE 1013	Introduction to ECE Design I	3
ECE 1022	Introduction to ECE Design II	2
ECE 3213	Introduction to Solid State Electronics	3
ECE 3413	Introduction to Electronic Circuits	3
ECE 3424	Intermediate Electronic Circuits	4
ECE 3434	Advanced Electronic Circuits	4
ECE 3443	Signals and Systems	3
ECE 3313	Electromagnetics I	3
ECE 3323	Electromagnetics II	3
ECE 3614	Fundamentals of Energy Systems	4
ECE 4512	EE Design I	2
ECE 4522	EE Design II	2
ECE 3714	Digital Devices and Logic Design	4
ECE 3724	Microprocessors	4
EM 2413	Engineering Mechanics I	3
or ME 3513	Thermodynamics I	
EE technical electives [1]		9
Engineering Science elective [1]		3
Professional Enrichment elective [1]		3
Oral Communication Requirement		
Fulfilled in ECE 1013, ECE 1022, ECE 4512, ECE 4522, and GE 3513		
Writing Requirement		
GE 3513	Technical Writing	3
Computer Literacy		
Fulfilled in Engineering Topics courses		
Total Hours		128

[1] See advisor for approved courses.

A minor in Electrical Engineering (EE) will prepare students for additional study or employment in electrical engineering fields. Students will become familiar with basic theory and techniques necessary for analyzing electrical and electronics systems and informing their design decisions involving electrical and electronics systems. Academic advising toward the EE mionor is available from the ECE Undergraduate Program Coordinator located in 216 Simrall.

Students majoring in Electrical Engineering and Computer Engineering are not eligible.

A minimum of 16 hours must be taken to obtain the EE minor. All courses used to earn the EE minor must be taken at MSU. A grade of "C" or better must be earned in all courses for the EE minor. A minimum grade point average of 2.0/4.0 is required in all courses taken as a part of the EE minor.

For all eligible MSU majors, the EE minor consists of three required courses and two restricted elective courses. Note that some course choices may require other courses as prerequisites.

Required Courses		
ECE 3413	Introduction to Electronic Circuits	3
ECE 3424	Intermediate Electronic Circuits	4
ECE 3443	Signals and Systems	3
Select two of the following courses:		6
ECE 3213	Introduction to Solid State Electronics	
ECE 3313	Electromagnetics I	
ECE 3323	Electromagnetics II	
ECE 3434	Advanced Electronic Circuits	
ECE 3614	Fundamentals of Energy Systems	
ECE 4263	Principles of VLSI Design	
ECE 4293	Nano-electronics	
ECE 4313	Antennas	
ECE 4323	Electromagnetic Compatibility	
ECE 4333	RF and Microwave Engineering	
ECE 4413	Digital Signal Processing	
ECE 4433	Introduction to Radar	
ECE 4613	Power Transmission Systems	
ECE 4633	Power Distribution Systems	
ECE 4653	Introduction to Power Electronics	
ECE 4673	Fundamentals of High Voltage Engineering	
ECE 4813	Communications Theory	
ECE 4913	Feedback Control Systems I	
ECE 4923	Feedback Control Systems II	
ECE 4933	State Space Design and Instruments	
Total Hours		16

Department of Industrial and Systems Engineering

Head: Dr. John M. Usher
Undergraduate Coordinator: Dr. Lesley Strawderman
Office: 260 McCain Engineering Building

Industrial and systems engineering is the application of engineering methods and the principles of scientific management to the design, improvement, and installation of integrated systems of people, materials, information, equipment, and energy. The industrial and systems engineer is concerned with the design of total systems, and is the leader in the drive for increased productivity and quality improvement.

The industrial and systems engineering profession uses a variety of specialized knowledge and skills. These include communications, economics, mathematics, physical and social sciences, together with the methods of engineering analysis and design.

The industrial and systems engineer is often involved in designing or improving major systems that encompass the total organization. Consequently, he/she is often in contact with individuals from many segments of the organization. From his/her education and these experiences, the industrial and systems engineer develops a global view of the many inter-related operations necessary to deliver a firm’s goods and services. Because of their management skills and global view of the organization, a large proportion of industrial and systems engineers move into management, and later advance into top management positions.

Although industrial and systems engineering is especially important to all segments of industry, it is also applied in other types of organizations, such as transportation, health care, public utilities, agriculture, defense, government, merchandising, distribution, logistics, and other service sectors. With increasing emphasis on quality and productivity for

successful international competition, it is expected that industrial and systems engineers will be in increasing demand in the coming decades.

The objectives of the Department of Industrial and Systems Engineering are founded in Mississippi State University's educational philosophy and in the industrial engineering profession. They were developed to satisfy the needs of the department's constituents: students, employers, alumni, faculty, and the industrial engineering profession.

The Industrial Engineering program aim is to graduate students having a broad education, with emphasis in industrial and systems engineering fundamentals and practices, which enables them to function effectively in systems involving people, materials, information, energy, and money.

The four educational objectives of the Bachelor of Science degree in Industrial Engineering are stated below.

1. Graduates of the Department of Industrial and Systems Engineering are versed in math, science, and engineering theory, know how to apply that theory, and are capable of functioning effectively producing solutions in a broad range of organizations.
2. Graduates of the Department of Industrial and Systems Engineering lead and interact cooperatively in professional situations with individuals having diverse backgrounds, cultures, training, education, and interests.
3. Graduates of the Department of Industrial and Systems Engineering think independently, critically examine ideas, and make discerning professional judgments, whether intellectual, ethical, or aesthetic.
4. Graduates of the Department of Industrial and Systems Engineering are professionally mature, responsible, and informed citizens who pursue lifelong learning.

Because of the importance of systems design in the many facets of industrial and systems engineering, instruction of the principles and methods of design is integrated throughout the curriculum of industrial engineering, and culminates in a major design experience in the student's senior year.

The Industrial Engineering Program is accredited by the Engineering Accreditation Commission of ABET, http://www.abet.org.

General Education Requirements

English Composition		
EN 1103	English Composition I	3
or EN 1163	Accelerated Composition I	
EN 1113	English Composition II	3
or EN 1173	Accelerated Composition II	
Mathematics		
See Major Core		
Science		
See Major Core		
Humanities		
See General Education courses		6
Fine Arts		
See General Education courses		3
Social/Behavioral Sciences		
PSY 1013	General Psychology	3
EC 2123	Principles of Microeconomics	3
Major Core		
Math and Basic Science		
MA 1713	Calculus I	3
MA 1723	Calculus II	3
MA 2733	Calculus III	3
MA 2743	Calculus IV	3
MA 3113	Introduction to Linear Algebra	3
CH 1213	Chemistry I	3
CH 1211	Investigations in Chemistry I	1
CH 1223	Chemistry II	3
PH 2213	Physics I	3
PH 2223	Physics II	3
Math/Science Elective		
Choose one of the following:		3
PH 2233	Physics III	
MA 3253	Differential Equations I	
Engineering Topics		
ECE 3413	Introduction to Electronic Circuits	3
EM 2413	Engineering Mechanics I	3
IE 1911	Introduction to Industrial Engineering [1]	1
IE 3121	Industrial Ergonomics Laboratory [1]	1
IE 3123	Industrial Ergonomics	3
IE 3323	Manufacturing Processes	3
IE 3913	Engineering Economy I	3
IE 4333	Production Control Systems I	3
IE 4513	Engineering Administration	3
IE 4543	Logistics Engineering	3
IE 4613	Engineering Statistics I	3
IE 4623	Engineering Statistics II	3
IE 4653	Industrial Quality Control	3
IE 4733	Linear Programming	3
IE 4753	Systems Engineering and Analysis	3
IE 4773	Systems Simulation I	3
IE 4915	Design of Industrial Systems	5
IE 4934	Information Systems for Industrial Engineering [1]	4
ACC 2023	Principles of Managerial Accounting	3
EG 1142	Engineering Graphics	2
IE Design Elective [2]		3
Engineering Science Elective [3]		6
Materials Elective [4]		3
Oral Communication Requirement		
CO 1003	Fundamentals of Public Speaking	3
Writing Requirement		
GE 3513	Technical Writing	3
Computer Literacy		
Fulfilled in Engineering Topics courses		
Total Hours		128

1 A grade of C or better must be made in the course.

2 Any three-hour industrial engineering course not required in curriculum

3 Courses that can be used for the Engineering Science Elective are EM 2433, EM 3213, EM 3313, ECE 3424, and ME 3513.

[4] Courses that can be used for the Materials Elective are CHE 3413 and ME 3403.

Industrial engineering is an academic discipline with applicability to a broad range of students from other majors. Engineering majors specifically may wish to complement their degree programs with a minor in industrial engineering to demonstrate knowledge and competence in industrial engineering areas. Completion of the minor requirements should prepare students to apply fundamental principles of industrial engineering, such as production control, operations improvement, and engineering management, to their chosen career field.

Only students with the Bagley College of Engineering are eligible for a minor in industrial engineering. Students majoring in industrial engineering are not eligible.

A minor in industrial engineering consists of three required courses for all student pursuing the minor and two restricted elective courses.

Required Courses		
IE 3913	Engineering Economy I	3
IE 4613	Engineering Statistics I	3
IE 4333	Production Control Systems I	3
Students will select two of the following:		
IE 3123 & IE 3121	Industrial Ergonomics and Industrial Ergonomics Laboratory	4
IE 4113	Human Factors Engineering	3
IE 4173	Occupational Safety Engineering	3
IE 4513	Engineering Administration	3
IE 4533	Project Management	3
IE 4543	Logistics Engineering	3
IE 4553	Engineering Law and Ethics	3
IE 4573	Process Improvement Engineering	3
IE 4653	Industrial Quality Control	3
IE 4733	Linear Programming	3
IE 4753	Systems Engineering and Analysis	3
Total Hours		15-16

Department of Mechanical Engineering

Department Head: Dr. Pedro Mago
Major Advisor: Ms. Tammy Abbott
Office: 210 Carpenter Engineering Building

Mechanical Engineering is the application of science and mathematics to the design, development, and operation of mechanical and energy systems. Examples of these systems include mechanical devices ranging from simple linkages and gears to complex automated robots and energy systems ranging from basic water pumps to high-performance jet engines. Since the range of applications is so broad, virtually all industries employ Mechanical Engineers in various capacities. Some of the major areas of employment are the manufacturing, chemical, paper, aerospace, utility, construction, transportation, petroleum, electronics, and computer industries.

The mission of the Department of Mechanical Engineering is to educate students in fundamental engineering principles, thus enabling the understanding of existing and next generation technologies relevant to research and engineering practice. All graduates will receive a broad education that will enable them to be successful in industry or academia, the profession and the community.

To carry out this mission, the Mechanical Engineering faculty, with input from other constituencies, has established the following objectives that describe the expected accomplishments of graduates during the first few years following graduation:

1. Apply fundamental engineering knowledge, industry perspective and research skills to become experts or leaders within a chosen engineering career path.
2. Exhibit life-long learning and develop personal and teamwork skills in order to effectively solve real-life problems and clearly communicate their results.
3. Practice ethical responsibility and accountability in professional activities and actively participate in professional development.

The Mechanical Engineering curriculum is designed to meet these objectives. The basic courses in mechanics, materials, thermodynamics, electrical engineering systems, and dynamics prepare the student for the comprehensive design courses in the senior year culminating in major design experiences in energy systems and in mechanical systems. Throughout the curriculum there is significant use of the computer to solve realistic engineering problems. All entering ME juniors are required to have a portable computer that they will use interactively in the classroom. The ME laboratory sequence stresses the planning, design, and operation of experiments. The curriculum also places a strong emphasis on technical communications. Senior technical electives allow the student to study particular areas of interest.

The Mechanical Engineering Program is accredited by the Engineering Accreditation Commission of ABET, http://www.abet.org.

General Education Requirements

English Composition		
EN 1103	English Composition I	3
or EN 1163	Accelerated Composition I	
EN 1113	English Composition II [1]	3
or EN 1173	Accelerated Composition II	
Mathematics		
See Major Core		
Science		
See Major Core		
Humanities		
See General Education courses		6
Fine Arts		
See General Education courses		3
Social/Behavioral Sciences		
See General Education courses		6
Major Core		
Math and Basic Science		
MA 1713	Calculus I [1]	3
MA 1723	Calculus II [1]	3
MA 2733	Calculus III [1]	3
MA 2743	Calculus IV [1]	3
MA 3113	Introduction to Linear Algebra [1]	3

MA 3253	Differential Equations I [1]	3
CH 1213	Chemistry I [1]	3
CH 1211	Investigations in Chemistry I [1]	1
CH 1223	Chemistry II [1]	3
PH 2213	Physics I [1]	3
PH 2223	Physics II [1]	3
PH 2233	Physics III	3
Engineering Topics		
IE 3913	Engineering Economy I	3
EM 2413	Engineering Mechanics I [1]	3
EM 2433	Engineering Mechanics II [1]	3
EM 3313	Fluid Mechanics [1]	3
EM 3213	Mechanics of Materials [1]	3
ECE 3413	Introduction to Electronic Circuits [1]	3
ME 1111	Introduction to Mechanical Engineering	1
ME 2133	Modeling and Manufacturing	3
ME 3103	Experimental Measurements and Techniques	3
ME 3113	Engineering Analysis [1]	3
ME 3313	Heat Transfer	3
ME 3403	Materials for Mechanical Engineering Design	3
ME 3423	Mechanics of Machinery	3
ME 3513	Thermodynamics I [1]	3
ME 3523	Thermodynamics II	3
ME 3613	System Dynamics	3
ME 4111	Professional Development Seminar	1
ME 4301	Thermo-Fluids Laboratory	1
ME 4333	Energy Systems Design	3
ME 4401	Solid Mechanics Laboratory	1
ME 4403	Machine Design	3
ME 4443	Mechanical Systems Design	3
ME 4643	Introduction to Vibrations and Controls	3
Technical Elective [2]		6
Oral Communication Requirement		
Satisfied by successful completion of ME 2133, ME 4443, and GE 3513		
Writing Requirement		
GE 3513	Technical Writing	3
Computer Literacy		
CSE 1233	Computer Programming with C (or equivalent programming course)	3
Total Hours		128

1 A grade of C or better must be made in these courses.

2 A list of Mechanical Engineering technical electives is maintained by the Mechanical Engineering Department. Substitutions may be approved by writing the ME Dept.

College of Forest Resources

GEORGE M. HOPPER, Dean
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Introduction

The College of Forest Resources (CFR) was founded in 1954 as the School of Forest Resources to provide teaching, research, and service opportunities about forests and associated renewable natural resources for the state, region, and nation. Since then, the CFR has earned a national and an international reputation as a center for science and education programs in natural resources management and conservation. The vision of the CFR is to be recognized as preeminent in research, teaching, service, and outreach in forest products, forestry, wildlife, fisheries and aquaculture in the United States.

The CFR has unique responsibilities to fulfill the goals of Mississippi State University through programs focused on Mississippi's most important renewable natural resources: forests and their products, fisheries and aquaculture, wildlife, and water. In doing so, the CFR's mission is to promote the professional and intellectual development of its students; expand through research the fundamental knowledge upon which the natural resource disciplines are based; and assist with development and utilization of the natural resources of the state and nation through research, teaching, service, and technology transfer.

General Information

Organization. The CFR is composed of the Departments of Forestry; Sustainable Bioproducts; and Wildlife, Fisheries and Aquaculture. The CFR is a part of the Division of Agriculture, Forestry, and Veterinary Medicine.

Graduates receive a Bachelor of Science degree in Forestry; Natural Resources and Environmental Conservation; Wildlife, Fisheries and Aquaculture; or Sustainable Bioproducts. Within the Forestry major, there are curricular concentrations in Forest Management, Environmental Conservation, Urban Forestry, Wildlife Management, and Forest Products. Each of the curricular concentrations in the forestry major meets the requirements for the professional degree in Forestry. Within the Wildlife, Fisheries and Aquaculture major, there are curricular concentrations in Conservation Law Enforcement; Human-Wildlife Conflicts; Wildlife Agriculture Conservation; Wildlife, Fisheries & Aquaculture Science; Wildlife Veterinary Science; and Wildlife Pre-Veterinary Medicine (3+1). Each of the curricular concentrations meets requirements for the professional degree in Wildlife by The Wildlife Society or in Fisheries by the American Fisheries Society. Within the National Resource and Environmental Conservation major, there are curricular concentrations in Natural Resource Law and Administration, Resource Conservation Science, and Natural Resource Technology.

Graduate Programs in Forest Resources. Graduate programs leading to an M.S. and Ph.D. degree are offered in the CFR's Departments of Forestry, Sustainable Bioproducts, and Wildlife, Fisheries and Aquaculture. For detailed information about graduate study, see the Graduate Bulletin. Copies of the Graduate Bulletin may be secured by contacting the Office of the Graduate School, P.O. Box G, Mississippi State, Mississippi 39762-5726, or by going online to the Graduate School, Mississippi State University.

Research. Research is conducted within the Forest and Wildlife Research Center by the Department of Forestry; the Department of Sustainable Bioproducts; and the Department of Wildlife, Fisheries and Aquaculture. Faculty members generally are employed jointly as educators and scientists. There is opportunity for students to gain valuable professional experience by working part-time as research assistants. The experimental work often provides valuable demonstrations for the teaching program. Forestry-related research also is conducted in other departments of the University, and there are cooperative research arrangements with federal agencies, notably the Southern Forest Experiment Station of the USDA Forest Service, which operates research programs in Mississippi. Wildlife and Fisheries research also is conducted by a USGS Cooperative Fish and Wildlife Research Unit which is located in Thompson Hall. All these activities enrich the teaching program.

Facilities. The classrooms and many laboratories and offices of the CFR are located in Thompson Hall, a building with excellent facilities for teaching and research in forestry, sustainable bioproducts, and wildlife, fisheries and aquaculture. The facilities used for research— instruments, apparatuses, literature, experimental forests and lands, greenhouses, captive animal facilities and fish ponds—also are valuable for the teaching program. Additional classroom and laboratory facilities are available within the Sustainable Bioproducts building complex, including the Franklin Center for Furniture Manufacturing and Management. The John W. Starr Memorial Forest of 8,200 acres is conveniently located close to campus and managed and regularly used for demonstration and research. Adjoining the Starr Memorial Forest are the Sam D. Hamilton Noxubee National Wildlife Refuge and Tombigbee National Forest, which also are used for student instruction and research. The Sharp Forest, 1,600 acres in Tishomingo County, was given to the University by Jack, Mollie, and Kate Sharp to be used for forest resources education and research with part of the income designated for scholarships.

Academic Unit Administrators

Andrew Ezell
Forestry
Department Head
105 Thompson Hall

Stephen C. Grado
Forestry
Undergraduate Program Coordinator
357 Thompson Hall

Rubin Shmulsky
Sustainable Bioproducts
Department Head
203 Franklin Center

Mike Barnes
Sustainable Bioproducts
Undergraduate Program Coordinator

5102 Sustainable Bioproducts Lab (Building 5)
201 Locksley Way

Andy Kouba
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Wildlife, Fisheries and Aquaculture
Undergraduate Program Coordinator
229 Thompson Hall

Lanna Miller
Student Services Coordinator
CFR Student Services
129 Thompson Hall

Cory Bailey
Admissions Coordinator
135 Thompson Hall

Undergraduate Student Services

CFR Student Services
129 Thompson Hall
662.325.9376

CFR Recruiting
135 Thompson Hall
662.325.7873

Prospective Students. The CFR encourages prospective students to visit the college and MSU to learn more about our programs. A visit to campus can include, but is not limited to, appointments with current students and faculty, tours of campus and facilities, attending lecture classes, talks with other academic units, and visits with financial aid and MSU housing. A prospective student should contact the CFR Recruiting Office two weeks ahead of a planned visit to ensure a productive visit. New students are encouraged to complete the online scholarship application when applying for admission to MSU.

Entrance Requirements. Transfer students with less than a 2.0 quality point average may not be admitted automatically to the College of Forest Resources' degree programs. Permission to enroll will be granted on an individual basis, depending on specific circumstances and requirements of the major for which the student seeks to enroll.

Student Academic Responsibility. The ultimate responsibility for meeting graduation requirements and decisions on course selection resides with the student. Specifically, responsibilities of the student are to:

- be aware of and understand degree requirements of his or her chosen major and concentration;
- be aware of and understand the MSU, CFR, and departmental policies, procedures, and academic calendar and meet all relevant deadlines;
- meet all requirements of the degree program for the curriculum year being pursued; and
- maintain regular contact with his or her faculty advisor.

The responsibility of the faculty advisor is to provide effective counsel to the student on academic matters regarding curriculum and career decisions.

The CFR Undergraduate Handbook is available at www.cfr.msstate.edu and contains curricula, policies, and other important information for a student to use to progress toward graduation. This handbook may include changes or requirements not found in the MSU Bulletin. Each student should retain a copy of the MSU Bulletin and the CFR Undergraduate Handbook that contains the curriculum year he or she is following.

The CFR Student Services Office provides academic services to students and faculty. Official academic records of CFR students are maintained in the office. The Student Services Coordinator represents the Dean and Associate Dean on all academic paperwork such as graduation clearance, coursework evaluation, change of majors, off-campus requests, withdrawals, drop/adds, and registration overrides and overloads.

Department of Sustainable Bioproducts

Major Advisor: Dr. Mike Barnes
Office: Room 5102, Building 5 Sustainable Bioproducts Laboratory at 201 Locksley Way

The bioproducts industry is one of the largest economic contributors to Mississippi, as well as in the United States. Employment in timber conversion, engineered composites, pulp and paper, logging, and furniture manufacturing is widely available. Mississippi's bioproducts industry recognizes the need for well-trained employees to help increase the conversion efficiencies and alter manufacturing processes to allow compatibility with a changing raw material base. The industry and its allied disciplines are large in terms of employment in Mississippi and nationwide.

The mission of the Department of Sustainable Bioproducts is to enhance the intellectual, cultural, social, and professional development of its students by providing them with knowledge and skills needed to utilize and conserve diverse forest and other resources effectively. In this regard, the Department's primary teaching responsibility is to provide high quality educational opportunities necessary to adequately prepare students for professional and scientific careers in sustainable bioproducts manufacturing, technology, business, and related fields.

The Department of Sustainable Bioproducts' physical plant consists of five laboratory/office buildings and other special purpose buildings and the Franklin Center for Furniture Manufacturing and Management, with a combined floor space in excess of 90,000 square feet. These buildings house the analytical and testing equipment, laboratories, pilot plants, and support facilities required for a comprehensive research program involving wood and biobased products.

Presently, students interested in a sustainable bioproducts curriculum have the option of the Sustainable Bioproducts undergraduate or graduate program.

Sustainable Bioproducts Major

Students majoring in sustainable bioproducts will develop a strong foundation in properties, manufacturing, environmental implications, sales, and trading of products derived from wood and non-wood materials that come from agricultural residues and other natural fibers. Besides

structural materials, specialty chemicals such as polymers and adhesives from natural resources, and bio-based energy such as wood pellets, bio-oil and alcohols are increasingly important with respect to sustainable industrial production. In addition to utilizing timber and agricultural residues, the discipline seeks to make materials last longer and enhance sustainability via preservative treatments and improved design.

Sustainable Bioproducts Minor

A Sustainable Bioproducts minor is available to non-majors to provide students with the knowledge of wood products, and bio-based composites, polymers, chemicals and fuels. The courses focus on material properties, environmental issues, and manufacturing principles, as well as their marketing and sales. The topics complement many fields that deal with natural materials: construction, design, business and production management, and scientific fields such as chemistry, engineering and environmental and biotechnology. A minor in Sustainable Bioproducts will also provide non-major students an excellent background for entering a graduate degree program in Sustainable Bioproducts. Academic advising is available in the Department of Sustainable Bioproducts located at 201 Locksley Way. A total of 18 hours is required to obtain a Sustainable Bioproducts minor.

English (General Education)		
EN 1103	English Composition I	3
or EN 1163	Accelerated Composition I	
EN 1113	English Composition II	3
or EN 1173	Accelerated Composition II	
Fine Arts (General Education)		
Any General Education course		3
Natural Sciences		
BIO 1134	Biology I	4
BIO 1144	Biology II	4
Additional Science		
CH 1043	Survey of Chemistry I	3
CH 1053	Survey of Chemistry II	3
CH 1051	Experimental Chemistry	1
Math (General Education)		
MA 1313	College Algebra	3
MA 1323	Trigonometry	3
ST 2113	Introduction to Statistics	3
or ST 3123	Introduction to Statistical Inference	
Humanities (General Education)		
Any Gen Ed courses		6
Social/Behavioral Sciences (General Education)		
Any course from Gen Ed list		3
Choose one of the following Economics courses:		3
AEC 2713	Introduction to Food and Resource Economics	
or EC 2113	Principles of Macroeconomics	
or FO 4113	Forest Resource Economics	
Oral Communicaton Requirement		
CO 1003	Fundamentals of Public Speaking	3
Writing Requirement		
AELC 3203	Professional Writing in Agriculture, Natural Resources, and Human Sciences	3
or MGT 3213	Organizational Communications	
or BIO 3013	Professional Writing for Biologists	
Major Core Courses (Required)		
SBP 1103	Introduction to Sustainable Bioproducts	3
SBP 2012	Introduction to Bioproduct Industries	2
SBP 2123	Materials and Processing of Structural Bioproducts	3
SBP 3113	Biomaterial Phys Mech	3
SBP 3123	Biomass to Bioproducts	3
SBP 4253	Quantitative Methods in Sustainable Bioproducts	3
SBP 4313	Bioproducts and the Environment	3
SBP 4333	Bioproducts and Environmental Biotechnology	3
SBP 4443	Capstone Sustainable Bioproducts	3
Major Courses Professional Electives		
SBP 3143	Biomass Characteristics and Production	3
SBP 4000	Directed Individual Study	6
SBP 4023	Lignocellulosic Biomass Chemistry	3
SBP 4113	Adhesives and Biocomposites	3
SBP 4133	Biorefinery Processes	3
SBP 4144	Biocomposite Application and Manufacturing	4
SBP 4153	Biological Conversion of Biomass	3
SBP 4213	Deterioration and Preservation of Biomaterials	3
SBP 4243	Sustainable Bioproducts	3
SBP 4450	Undergraduate Research in Sustainable Bioproducts	1-6
Professional Electives		
Choose any class that is 3000 level or above from the following subjects: ABE, AEC, ARC 2713, BCH, BCS, BIO, BIS, BL, CE, CH, EC, EE, EG, EM, EPP, FIN, FO, GR, IE, TKI, LA, MGT, MKT, MA, ME, NREC, PH, PS, PSS, SBP, ST, WFA		18
Free Electives		8
Total Hours		124

Department of Forestry

Forestry Major

Major Advisor: Dr. Stephen C. Grado
Office: 357 Thompson Hall

The Objective. The Forestry Major prepares its graduates for professional, science-based careers in the management and use of forested ecosystems. By combining courses offering a broad general education with specialized professional courses, the curriculum of the Forestry Major is designed to produce professionally competent graduates who have appropriate development in interpersonal relations, written and oral communications, cultural understanding, environmental awareness, and professional ethics.

Accreditation. Educational programs in the Forest Management, Wildlife Management, Urban Forestry, Environmental Conservation, and Forest Products concentrations lead to a professional degree in Forestry at Mississippi State University and are accredited by the Society

of American Foresters (SAF). The Forest Products concentration is also accredited by the Society of Wood Science and Technology (SWST).

The Major. The core curriculum of the Forestry Major is comprised of specifically selected and intentionally designed courses which must be completed satisfactorily by each student who intends to graduate in this major. In addition to completing the core curriculum, each student must complete one of the five academic concentrations for specialized study offered by the Forestry Major. The five academic concentrations are Forest Management, Wildlife Management, Urban Forestry, Environmental Conservation, and Forest Products. Each concentration is an integral part of the Forestry Major and accredited by SAF. The Forest Products concentration is also accredited by SWST. Graduates of the major are qualified to become a Registered Forester in Mississippi after completing an examination for this purpose from the Board of Registration for Foresters in Mississippi. Graduates in the Wildlife Management concentration are eligible to become Associate Wildlife Biologists under the Wildlife Society.

The Forestry Major is designed for completion in four academic years which includes a nine-week Summer Field Program between the sophomore and junior years. The Summer Field Program contains many of the prerequisites needed to enroll in junior/senior level professional courses in the Forestry Major and students should plan their schedules accordingly. Correspondence courses are not accepted toward the forestry degree.

Transfer Students. Transfer students are encouraged to enter the Forestry Major at MSU by Spring semester of their sophomore year to complete their academic programs in the normal four-year period of study. Transfer students should be aware that course work taken elsewhere may not be accepted toward a degree in forestry. Only course work that is determined by the Forestry Department to be equivalent to required course work will be accepted. In addition, no course work will be considered for acceptance unless a grade of C or better has been earned.

Degree Requirements: In addition to General Education and College requirements, students must attain a minimum grade of C in Forestry major core courses listed in the CFR Undergraduate Handbook.

Natural Resource and Environmental Conservation Major

Major Advisor: Dr. Stephen C. Grado
Office: 357 Thompson Hall

The Objectives. The Natural Resource and Environmental Conservation major objectives are to prepare its graduates for professional careers by: 1) providing the broader general education fundamentals of written and oral communication; mathematics; biological, social, and physical sciences; and humanities which are critical to the development and advancement of well-qualified professionals; 2) providing both the relevant domains of knowledge and their application to the solution of real-world problems and achievement of defined objectives, including in-depth coverage of ecology and biology; measurement and evaluation of natural resource environmental components, properties, and functioning; management of ecosystems; and legal, regulatory, policy, and economic aspects of ecosystem administration and management; 3) establishing awareness of historical and current issues and policies affecting ecosystem management and conservation; and 4) providing a variety of educational experiences including lectures, discussion, simulations, computer applications, individual and group projects in laboratories and field experiences, and a capstone course teaching students to conduct environmental impact assessments. The purpose of these experiences is to ensure that graduates of the program can knowledgeably develop, apply, facilitate, and/or execute natural resource and environmental management plans that adequately address matters of ownership/public goals and objectives, ecosystem health and sustainability, and the legal and regulatory environment.

Accreditation. Educational programs in the Natural Resource Law and Administration, Resource Conservation Science, and Natural Resource Technology concentrations lead to a professional degree in Forestry at Mississippi State University and are accredited by the Society of American Foresters (SAF).

The Major. The core curriculum of the Natural Resource and Environmental Conservation major is comprised of specifically selected and intentionally designed courses that provide students with a broad background in the science, technology, and social aspects of natural resource and environmental science. In addition to general education and major core requirements, students will complete one of three concentrations: Natural Resource Law and Administration, Resource Conservation Science, or Natural Resource Technology.

Transfer students. Transfer students are encouraged to enter the Natural Resource and Environmental Conservation major at MSU in the Spring semester of their sophomore year to complete their academic programs in the normal four-year period of study. Transfer students should be aware that course work taken elsewhere may not be accepted toward the degree. Only course work that is determined by the Department of Forestry to be equivalent to required course work will be accepted. In addition, no course work will be considered for acceptance unless a grade of C or better has been earned.

Degree Requirements. In addition to General Education and College requirements, students must attain a minimum grade of C on the Natural Resource and Environmental Conservation Major Core courses taught within the CFR.

Forestry

General Education Requirements

English Composition		
EN 1103	English Composition I	3
or EN 1163	Accelerated Composition I	
EN 1113	English Composition II	3
or EN 1173	Accelerated Composition II	
Mathematics		
See concentration for requirements		3
ST 2113	Introduction to Statistics	3
or BQA 2113	Business Statistical Methods I	
Natural Science		
CH 1043	Survey of Chemistry I	3
BIO 1134	Biology I	4
Humanities		
See General Education courses		6
Fine Arts		
See General Education courses		3
Social/Behavioral Sciences		
FO 4113	Forest Resource Economics [1]	3

Choose one of the following:		3
AEC 2713	Introduction to Food and Resource Economics	
EC 2113	Principles of Macroeconomics	
EC 2123	Principles of Microeconomics	
Major Core [2]		
BIO 1144	Biology II	4
EPP 3124	Forest Pest Management	4
FO 1101	Forest Resources Survey	1
FO 2113	Dendrology	3
FO 2213	Forest Measurements	3
FO 3012	Introduction to Forest Communities	2
FO 3015	Forest Description and Analysis	5
FO 4123	Forest Ecology	3
FO 4213	Forest Biometrics	3
FO 4221	Practice of Silviculture Laboratory	1
FO 4223	Practice of Silviculture	3
FO 4231	Introduction to Wood Supply Systems	1
FO 4233	Forest Operations and Harvesting	3
FO 4313	Spatial Technologies in Natural Resources Management	3
FO 4323	Forest Resource Management	3
FO 4413	Natural Resources Policy	3
FO 4423	Professional Practice	3
PSS 3303	Soils	3
WFA 3031	Introductory Wildlife/Fisheries Practices	1
WFA 4153	Principles of Wildlife Conservation and Management	3
Oral Communication Requirement		
CO 1003	Fundamentals of Public Speaking	3
Computer Literacy Requirement		
FO 3103	Computer Application in Forest Resources	3
Writing Requirement		
Choose one of the following:		3
AELC 3203	Professional Writing in Agriculture, Natural Resources, and Human Sciences	
MGT 3213	Organizational Communications	
BIO 3013	Professional Writing for Biologists	

[1] This course is also part of the Major Core

[2] Note: Prerequisites and co-requisites are strictly enforced in the College of Forest Resources. It is the student's responsibility to be aware of prerequisites and co-requisites for all courses required in his or her program; prerequisites and co-requisites are identified in the Course Description section of this Bulletin.

Choose one of the following concentrations:

Academic concentrations within the Forestry Major are offered to encourage the student to design a program with the assistance of a faculty advisor that will fit his or her interests and aptitudes. Each concentration has been constructed by substituting restricted, or in some cases directed, electives for what otherwise would appear as Business, Science, Free, or Professional electives in the major. Concentrations are intended to provide opportunities for the student to focus beyond the fundamental education provided by the core curriculum of the Forestry Major.

Forest Management Concentration (FOMG)

Advisor: Dr. Donald L. Grebner
Office: 329 Thompson Hall

The Forest Management Concentration provides the basic education necessary to enter the profession of forestry with the Bachelor of Science degree, yet permits a wide choice of electives. The student may elect courses in almost any subject of interest, if prerequisites are met; however, credit toward the degree will not be allowed for remedial courses, nor for courses covering substantially the same material as courses already passed, or covering only part of the subject matter of required courses.

Faculty advisors are assigned to assist students in selecting electives to meet their personal objectives. A program of study leading to a degree in forestry and a number of business minors are available.

Courses to be taken in addition to those in the core curriculum of the Forestry Major are as follows:

MA 1313	College Algebra	3
PH 1113	General Physics I	3
or PH 2213	Physics I	
SBP 1103	Introduction to Sustainable Bioproducts	3
FO 3113	Forest Recreation Management	3
Business/Science Electives [1]		9
Professional Electives [1]		9
Free Elective		3
Total Hours		128

[1] Professional electives and Business/Science electives are chosen from a list approved by the Department of Forestry.

Wildlife Management Concentration (WFMG)

Advisor: Dr. Heather D. Alexander
Office: 327 Thompson Hall

Undergraduate students who wish to prepare for careers in wildlife management may do so by completing the Wildlife Management Concentration of the Forestry Major. This concentration is designed for forestry students who intend to pursue careers that emphasize wildlife management within the context of multiple-use management of forest land. In addition, the Wildlife Management Concentration prepares the student for a number of wildlife management positions and fulfills the course requirements for certification as a Professional Wildlife Biologist by The Wildlife Society. Graduates of this concentration may undertake graduate studies in forestry or wildlife ecology and related areas.

Courses to be taken in addition to those in the core curriculum of the Forestry Major are as follows:

MA 1313	College Algebra	3
BIO 3524	Biology of Vertebrates	4
FO 3213	Tree Physiology	3
or BIO 4214	General Plant Physiology	
or WFA 4223	Wildlife Plant Identification	
or BIO 4203	Taxonomy of Spermatophytes	

FO 4353	Natural Resource Law	3
WFA 3133	Applied Aquatic and Terrestrial Ecology	3
WFA 4243	Wildlife Techniques	3
WFA 4433	Mammalogy	3
WFA 4443	Ornithology	3
Professional Elective [1]		3
Physical Science Elective		3
Total Hours		126

[1] Professional electives are chosen from a list approved by the Department of Forestry.

Environmental Conservation Concentration (ENCO)

Advisor: Dr. Heidi J. Renninger
Office: 313 Thompson Hall

The Envrionmental Conservation Concentration prepares students for careers dealing with complex environmental issues in the realm of forest resource management. Courses to be taken in addition to those in the core curriculum of the Forestry major are as follows:

MA 1313	College Algebra	3
PH 1113	General Physics I	3
or PH 2213	Physics I	
WFA 3133	Applied Aquatic and Terrestrial Ecology	3
FO 3113	Forest Recreation Management	3
FO 4463	Forest Hydrology and Watershed Management	3
FO 4472 & FO 4471	GIS for Natural Resource Management and GIS for Natural Resource Management Lab	3
or FO 4453	Remote Sensing Applications	
Emphasis Electives [1]		14
Total Hours		127

[1] See Department Advisor for list of currently approved Emphasis Electives.

Urban Forestry Concentration (URBN)

Advisor: Dr. Stephen C. Grado
Office: 357 Thompson Hall

The Urban Forestry Concentration addresses an emerging need for the management of trees in towns and cities. Urban and community foresters manage trees along city streets, in municipal parks, private wood lots, and utility right-of-ways. Employers include federal, state, and municipal governments, private consultants, and industry.

Courses to be taken in addition to those in the core curriculum of the Forestry major are as follows:

MA 1313	College Algebra (or equivalent)	3
FO 3113	Forest Recreation Management	3
FO 4353	Natural Resource Law	3
FO 4471 & FO 4472	GIS for Natural Resource Management Lab and GIS for Natural Resource Management	3
or FO 4453	Remote Sensing Applications	
FO 4683	Introduction to Urban and Community Forestry	3
LA 3623	Urban Planning Theory	3
FO 4453	Remote Sensing Applications	3
PS 1113	American Government	3
PSS 2423	Plant Materials I	3
PSS 4353	Arboriculture and Landscape Maintenance	3
REF 3333	Principles of Real Estate	3
Total Hours		128

Forest Products Concentration (FP)

Advisor: Dr. Joshua J. Granger
Office: 321 Thompson Hall

The Forest Products Concentration is designed for students interested in the forest products industry. Courses to be taken in addition to those in the core curriculum of the Forestry Major are as follows:

MA 1613	Calculus for Business and Life Sciences I	3
or MA 1713	Calculus I	
CH 1053	Survey of Chemistry II	3
PH 1113	General Physics I	3
SBP 1103	Introduction to Sustainable Bioproducts	3
SBP 3113	Biomaterial Phys Mech	3
FP 4013		3
FP/SBP Processing Elective [1]		3
FP/SBP Electives [1]		12
Total Hours		128

[1] See Departmental Advisor for list of current approved electives.

Natural Resources and Environmental Conservation

General Education Requirements

English		
EN 1103	English Composition I	3
or EN 1163	Accelerated Composition I	
EN 1113	English Composition II	3
or EN 1173	Accelerated Composition II	
Fine Arts		
LA 1803	Landscape Architecture Appreciation	3
Natural Sciences		
BIO 1134	Biology I	4
BIO 1144	Biology II	4
GR 1114	Elements of Physical Geography	4
PSS 3303	Soils	3
PSS 3301	Soils Laboratory	1
Math		
MA 1313	College Algebra	3
ST 2113	Introduction to Statistics	3
or ST 3123	Introduction to Statistical Inference	
Humanities		
PHI 1123	Introduction to Ethics	3

Any General Education Humanities course		3
Social/Behavioral Sciences		
AEC 2713	Introduction to Food and Resource Economics	3
or EC 2123	Principles of Microeconomics	
SO 1003	Introduction to Sociology	3
Major Core		
Chemistry - See Concentration for requirements		
FO 1101	Forest Resources Survey	1
FO 2113	Dendrology	3
FO 3113	Forest Recreation Management	3
FO 4213	Forest Biometrics	3
FO 4313	Spatial Technologies in Natural Resources Management	3
FO 4343	Forest Administration and Organization	3
FO 4353	Natural Resource Law	3
FO 4413	Natural Resources Policy	3
GR 2313	Maps and Remote Sensing	3
NREC 3213	Environmental Measurements	3
NREC 4423	Environmental Assessment	3
WFA 3133	Applied Aquatic and Terrestrial Ecology	3
Oral Communication Requirement		
CO 1003	Fundamentals of Public Speaking	3
or CO 1013	Introduction to Communication	
Computer Literacy Requirement		
FO 3103	Computer Application in Forest Resources	3
Writing Requirement		
Choose one of the following:		3
AELC 3203	Professional Writing in Agriculture, Natural Resources, and Human Sciences	3
MGT 3213	Organizational Communications	3
BIO 3013	Professional Writing for Biologists	3
Concentration Courses - See Concentration Requirements		38
Total Hours		124

Natural Resource Law and Administration Concentration (NRLA)

Advisor: Dr. Changyou Sun
Office: 317 Thompson Hall

There are numerous laws, regulations, and policies affecting natural resource administration and management that have created a need for professionals with an understanding of the complex interactions between the science of managing natural resources and laws, regulations, policies, and processes involved in their utilization and protection. This Concentration will provide students with a background in the science of natural resource management as well as a foundation in the legal, regulatory, and administrative environment in which this management occurs. Students completing this program will be prepared for post-graduate studies in law, public policy administration, and a wide range of natural resource disciplines, as well as employment with private and public organizations and agencies.

Natural Resource Law and Administration Core Courses

CH 1043	Survey of Chemistry I	3
PHI 1113	Introduction to Logic	3
BL 2413	The Legal Environment of Business	3
PS 3063	Constitutional Powers	3
Professional Electives - See Department Advisor for list of approved electives		20
Free Electives		6
Total Concentration Hours		38

Resource Conservation Science Concentration (RCS)

Advisor: Dr. Courtney M. Siegert
Office: 347 Thompson Hall

There is a need for expertise in resource conservation that relies on a science-based education and an understanding of effective applications of this knowledge to solve problems in natural resource settings. This Concentration promotes learning and skill sets in resource conservation and science that will meet this objective. Universities and employers are looking for natural resource professionals who have the necessary tools to be able to attend graduate school or become employed by private organizations, private industry, and state and federal agencies whose primary mission is environmental protection and resource conservation. This is particularly important since these organizations and agencies are under increasing demands to document and verify their activities in both protecting natural resources (i.e., aquatic and terrestrial) and assessing impacts on human, floral, and faunal populations relying on these environments.

Resource Conservation Science Core Courses

MA 1713	Calculus I	3
or MA 1613	Calculus for Business and Life Sciences I	
CH 1211	Investigations in Chemistry I	1
CH 1213	Chemistry I	3
CH 1221	Investigations in Chemistry II	1
CH 1223	Chemistry II	3
FO 4463	Forest Hydrology and Watershed Management	3
or FO 4483	Forest Soils	
Emphasis Electives - Choose Terrestrial or Aquatic - See advisor for list of approved electives		15
Professional Electives - See Department Advisor for list of approved electives		6
Free Electives		3
Total Concentration Hours		38

Natural Resource Technology Concentration (NRT)

Advisor: Dr. Jia Yang
Office: 319 Thompson Hall

Modern protocols for natural resource monitoring and management are highly dependent on utilization of spatial technologies such as remote sensing and geographic information systems (GIS). Spatial technologies and allied measurement and quantitative disciplines, combined with general knowledge needed for resource management, are essential in public- and private-sector natural resource professions. Students will also be amply prepared to continue with graduate studies in this area. This Concentration is specifically designed to provide students

with the fundamental background to meet the rapidly growing need for professionals who can collect, manage, and manipulate complex geospatial and ancillary data used in natural resource management.

Natural Resource Technology Core Courses		
MA 1323	Trigonometry	3
CH 1043	Survey of Chemistry I	3
FO 2213	Forest Measurements	3
FO 4453	Remote Sensing Applications	3
FO 4471	GIS for Natural Resource Management Lab	1
FO 4472	GIS for Natural Resource Management	2
Professional Electives - See Department Advisor for list of approved elective		20
Free Electives		3
Total Concentration Hours		38

Department of Wildlife, Fisheries and Aquaculture

Major Advisors: Andy Kouba, Department Head; Leslie Burger, Undergraduate Coordinator
Office: A205 Thompson Hall; 259 Thompson Hall

Sustainable management of wildlife and fisheries resources by private and public sectors requires knowledgeable and technically competent people. The Department of Wildlife, Fisheries and Aquaculture offers a major in Wildlife, Fisheries and Aquaculture (WFA) designed to provide students with a foundational curriculum grounded on biology, ecology, habitat and population management, social sciences, mathematics, and other contemporary educational needs for natural resources professionals. Six concentrations are available to students: wildlife, fisheries and aquaculture science; conservation law enforcement; wildlife veterinary medicine; conservation biology; wildlife agriculture conservation; and human-wildlife interactions. The curriculum will prepare students for employment in natural resource professions within private, federal, or state wildlife, fisheries, or aquaculture sectors. Additionally, the curriculum ensures students are academically prepared for post-graduate studies. Students are also strongly encouraged to garner professional experience in conversation-related disciplines to enhance employability & professional development.

Students seeking to apply to veterinary school should choose the wildlife veterinary medicine concentration curriculum. The wildlife veterinary medicine concentration allows students to fulfill the academic requirements for entrance into veterinary school while completing a baccalaureate program in wildlife-related science.

A student may use their curriculum coursework to fulfill the coursework requirements necessary to become a Certified Associate Wildlife Biologists by The Wildlife Society and/or an Associate Fisheries Scientist by the American Fisheries Society.

The Wildlife, Fisheries and Aquaculture Major is designed for completion within four years, but some students may not complete the program in that time because of course scheduling or other constraints. Transfer students are encouraged to contact the College of Forest Resources Student Support Services after completing their freshman year to get assistance in course planning that will enable graduation from MSU in four years. Transfer students should be aware that coursework taken elsewhere may not necessarily be accepted toward a degree in Wildlife, Fisheries and Aquaculture. Only coursework determined by the Registrars' Office and the Wildlife, Fisheries and Aquaculture Department to be equivalent to required coursework will be accepted. Additionally, no coursework will be considered for acceptance unless a grade of C or better has been earned. Correspondence courses will not be accepted. Transfer students with a grade point average less than or equal to 2.0 may not be admitted automatically into the WFA major. In addition to University and College requirements, students must attain a minimum grade of C in WFA Major Core courses. Students interested in pursuing the Veterinary Medicine program must meet all admission requirements by the College of Veterinary Medicine.

Conservation Law Enforcement Concentration (CLE)

Advisor: Dr. Kevin M. Hunt
Room 1203 Sustainable Bioproducts Lab (Building 1)

This concentration is designed for undergraduate students who wish to seek employment immediately following receipt of a B.S. degree and wish to obtain positions related to natural resource law enforcement (e.g., conservation officers, park rangers) or wildlife managers (not biologists). Students seeking careers in conservation law enforcement should be aware that application and acceptance into enforcement training programs will still be necessary upon completion of a B.S. degree. Students may, upon graduation within this concentration, continue on to graduate school in the human dimensions, law enforcement, or wildlife arenas.

Wildlife, Fisheries and Aquaculture Science Concentration (WLFS)

Advisor: Dr. Leslie Burger
Room 259 Thompson Hall

This concentration is designed for undergraduate students who wish to pursue one or more advanced degrees (M.S., Ph.D.), as it prepares students for graduate school. Employment following this B.S. program is possible, but competition for jobs may be keen. This concentration is intended for serious, academically strong students who can maintain an A-B grade record (GPA 3.0), which is the minimum required for admittance into most graduate schools.

Wildlife Veterinary Medicine Concentration (WLVM)

Advisor: Dr. Peter Allen
Room 261 Thompson Hall

This academically rigorous curriculum provides students with solid training in wildlife and fisheries science that allows them to meet veterinary school entry requirements as well as prepares them for employment or graduate school. Acceptance to veterinary medicine schools is a highly competitive process and successful completion of the WLVM curriculum with an A-B academic recird will be necessary to improve the likelihood of acceptance to a veterinary medicine school.

Wildlife Agriculture Conservation Concentration (WLAC)

Advisors: Dr. Mark McConnell
Room 251 Thompson Hall

This curriculum provides the educational background for students pursuing careers as wildlife biologists or conservationists in agricultural areas, which require a strong background in both wildlife biology and agricultural science. Successful graduates of this program will meet minimum educational requirements for NRCS conservationist positions. Students completing this concentration may seek employment immediately following graduation. Students will be equally prepared to pursue one or more graduate degrees (M.S., Ph.D.) in wildlife biology and related natural resource fields.

Human-Wildlife Interactions Concentration (HWI)

Advisor: Dr. Ray Iglay
Room 271 Thompson Hall

This curriculum provides the educational background for those students wishing to pursue a career as a wildlife biologist with a strong background in addressing human-wildlife interactions, including conflict resolution. Students completing this concentration may seek employment immediately following graduation; however, competition for positions may be intense. Students will be equally prepared to pursue one or more graduate degrees (M.S., Ph.D.).

Conservation Biology Concentration (CONB)

Advisor: Dr. Kristine O. Evans
Room 265 Thompson Hall

This curriculum provides undergraduate students with a comprehensive background necessary for regional, national, and international careers in conservation biology. Students will be equipped with skill sets to address population ecology, imperiled and at-risk species, global threats to biodiversity, in situ and ex situ conservation, conservation genetics, conservation planning, and sociocultural elements of conservation. This concentration is intended for serious, academically strong students, who can maintain an A-B grade record (GPA 3.0), which is the minimum required for admittance into graduate schools. Students will be equally prepared for entry-level employment.

General Education Requirements

English Composition		
EN 1103	English Composition I	3
or EN 1163	Accelerated Composition I	
EN 1113	English Composition II	3
or EN 1173	Accelerated Composition II	
Mathematics and Statistics		
see concentrations		6
Natural Science		
BIO 1134	Biology I	4
BIO 1144	Biology II	4
Humanities		
PHI 1123	Introduction to Ethics (required for CLE)	3
Any Gen Ed course; 1 for CLE, 2 for all other concentrations		3-6
Fine Arts		
Any General Education course		3
Social/Behavioral Sciences		
PSY 1013	General Psychology (required for CLE)	3
SO 1003	Introduction to Sociology (required for CLE)	3
WFA Social/Behavioral Sciences (all concentrations except CLE) [1]		3
Any Gen Ed course (all concentrations except CLE)		3
Major Core [2]		
WFA 1102	Wildlife and Fisheries Profession	2
WFA 3133	Applied Aquatic and Terrestrial Ecology	3
WFA 4153	Principles of Wildlife Conservation and Management	3
WFA 4223	Wildlife Plant Identification	3
WFA 4243	Wildlife Techniques	3
WFA 4353	Fish and Wildlife Policy and Law Enforcement	3
WFA 4473	Wildlife and Fisheries Practices	3
Plant Elective [1]		3
Aquatics Elective [1]		3
WFA 4173	Fish Physiology (required for WLVM concentration)	
Natural Resources Policy Elective [1]		3
Oral Communication Requirement		
Choose One:		
CO 1003	Fundamentals of Public Speaking	3
or CO 1013	Introduction to Communication	
or AELC 3333	Professional Presentations in Agriculture and Life Sciences	
Writing Requirement [1]		3
Total		35

1. All electives chosen from a list approved by the Department of Wildlife, Fisheries and Aquaculture.
2. Note: Pre-requisites and co-requisites are strictly enforced in the College of Forest Resources. It is the student's responsibility to be aware of pre-requisites and co-requisites identified in the Course Description section of the Bulletin.

Choose one of the following concentrations:

The Concentrations: The academic concentrations within the Wildlife, Fisheries, and Aquaculture Major are offered to enable students to develop an academic background that is suited to their professional career goals. Each concentration has been developed to supplement the core curriculum which provides the basis for the wildlife and fisheries science major, regardless of the area of expertise desired by the student.

Conservation Law Enforcement Concentration (CLE)

Advisor: Dr. Kevin M. Hunt, 1203 Sustainable Bioproducts Bldg. 1
Courses[2] to be taken in addition to those of the core curriculum include:

CH 1043	Survey of Chemistry I [3]	3
or CH 1213	Chemistry I	
CH 1053	Survey of Chemistry II	3
or CH 1223	Chemistry II	
CRM 1003	Crime and Justice in America	3
MA 1313	College Algebra [3]	3
or MA 1613	Calculus for Business and Life Sciences I	
ST 2113	Introduction to Statistics [3]	3

or ST 3123	Introduction to Statistical Inference	
PHI 1123	Introduction to Ethics [3]	3
PSY 1013	General Psychology [3]	3
SO 1003	Introduction to Sociology [3]	3
SO 3313	Deviant Behavior	3
or CRM 3313	Deviant Behavior.	
Computer Applications Elective [1]		3
CLE Elective [1]		18
Natural Resources Mgt Elective [1]		17
Zoology requirement		4
BIO 3524	Biology of Vertebrates	
Total Hours		124

1 All electives are chosen from a list approved by the Department of Wildlife, Fisheries and Aquaculture.

2 It is the student's responsibility to be aware of pre-requisites and co-requisites identified in the Course Description section of the Bulletin.

3 Course meets MSU General Education requirements

Wildlife, Fisheries and Aquaculture Science Concentration (WLFS)

Advisor: Dr. Leslie Burger, 259 Thompson Hall
Courses[2] to be taken in addition to those of the core curriculum include:

BIO 3103	Genetics I	3
CH 1043	Survey of Chemistry I [3]	3
or CH 1213	Chemistry I	
CH 1053	Survey of Chemistry II	3
or CH 1223	Chemistry II	
MA 1613	Calculus for Business and Life Sciences I [3]	3
or MA 1713	Calculus I	
PSS 3301	Soils Laboratory	1
PSS 3303	Soils	3
ST 2113	Introduction to Statistics [3]	3
or ST 3123	Introduction to Statistical Inference	
WFA 4123	Wildl & Fish Biometrics	3
WFLS Professional Electives [1]		21
Wildlife Biology Electives [1]		6
Life Science elective [1]		4
Computer Application Elective [1]		3
Zoology elective		3
Free elective		1
Total Hours		124

1 All electives are chosen from a list approved by the Department of Wildlife, Fisheries and Aquaculture.

2 It is the student's responsibility to be aware of pre-requisites and co-requisites identified in the Course Description section of the Bulletin.

3 Course meets MSU General Education requirements

Wildlife Veterinary Medicine Concentration (WLVM)

Advisor: Dr. Peter Allen, 261 Thompson Hall

Courses[2] to be taken in addition to those of the core curriculum include:

BCH 4013	Principles of Biochemistry	3
BIO 3103	Genetics I	3
BIO 3304	General Microbiology	4
CH 1213	Chemistry I [3]	3
CH 1211	Investigations in Chemistry I	1
CH 1223	Chemistry II	3
CH 1221	Investigations in Chemistry II	1
CH 4513	Organic Chemistry I	3
CH 4511	Organic Chemistry Laboratory I	1
CH 4523	Organic Chemistry II	3
CH 4521	Organic Chemistry Laboratory II	1
MA 1613	Calculus for Business and Life Sciences I [3]	3
or MA 1713	Calculus I	
ST 2113	Introduction to Statistics [3]	3
or ST 3123	Introduction to Statistical Inference	
PH 1113	General Physics I	3
PH 1123	General Physics II	3
Aquatics Requirement		3
WFA 4173	Fish Physiology	
Zoology requirement		3
BIO 2103	Cell Biology	
WFA 4123	Wildl & Fish Biometrics [4]	3
Free elective		1
Wildlife Biology Elective [1]		6
WLVM Professional Electives [1]		9
Wildlife / Veterinary Internship		
Total Hours		124

1 All electives are chosen from a list approved by the Department of Wildlife, Fisheries and Aquaculture.

2 It is the student's responsibility to be aware of pre-requisites and co-requisites identified in the Course Description section of the Bulletin.

3 Course meets MSU General Education requirements

4 Fulfills computer application requirement

Wildlife Agriculture Conservation Concentration (WLAC)

Advisors: Dr. Mark McConnell, 251 Thompson Hall
Courses[2] to be taken in addition to those of the core curriculum include:

BIO 3103	Genetics I	3
CH 1043	Survey of Chemistry I [3]	3
or CH 1213	Chemistry I	
CH 1053	Survey of Chemistry II	3
or CH 1223	Chemistry II	
MA 1613	Calculus for Business and Life Sciences I [3]	3
or MA 1713	Calculus I	
ST 2113	Introduction to Statistics [3]	3
or MA 3123	Introduction to Statistical Inference	
PSS 3301	Soils Laboratory	1
PSS 3303	Soils	3
WFA 4123	Wildl & Fish Biometrics [4]	3

WFA 4373	Principles and Practice of Conservation in Agriculture Landscapes	3
GIS Elective [1]		3
Crop Science elective [1]		6
Animal Science elective [1]		3
Zoology elective		3
Free elective		1
Wildlife Biology Elective [1]		6
WLAC Professional Electives [1]		9
Life Science elective [1]		4
Total Hours		124

1 All electives are chosen from a list approved by the Department of Wildlife, Fisheries and Aquaculture.

2 It is the student's responsibility to be aware of pre-requisites and co-requisites identified in the Course Description section of the Bulletin.

3 Course meets MSU General Education requirements

4 Fulfills computer application requirement

Human-Wildlife Interactions Concentration (HWI)

Advisor: Dr. Raymond Iglay, 271 Thompson Hall

Courses[2] to be taken in addition to those of the core curriculum include:

CH 1043	Survey of Chemistry I [3]	3
or CH 1213	Chemistry I	
CH 1053	Survey of Chemistry II	3
or CH 1223	Chemistry II	
MA 1613	Calculus for Business and Life Sciences I [3]	3
or MA 1713	Calculus I	
ST 2113	Introduction to Statistics [3]	3
or ST 3123	Introduction to Statistical Inference	
PSS 3301	Soils Laboratory	1
PSS 3303	Soils	3
WFA 4123	Wildl & Fish Biometrics	3
WFA 4273	Ecology and Management of Human-Wildlife Conflicts	3
WFA 4283	Human-Wildlife Conflict Techniques	3
WFA 4513	Current Topics in Human-Wildlife Interactions	3
Zoology elective [1]		3
HWI Professional Electives [1]		12
Life Science Electives [1]		7
Wildlife Biology Electives [1]		6
Computer Application Elective [1]		3
Free elective		1
Total Hours		124

1 All electives are chosen from a list approved by the Department of Wildlife and Fisheries

2 It is the student's responsibility to be aware of pre-requisites and co-requisites identified in the Course Description section of the Bulletin.

3 Course meets MSU General Education requirements

Conservation Biology Concentration (CONB)

Advisor: Dr. Kristine O. Evans, 265 Thompson Hall

Courses[2] to be taken in addition to those of the core curriculum include:

BIO 3103	Genetics I	3
BIO 4113	Evolution	3
CH 1211	Investigations in Chemistry I	1
CH 1213	Chemistry I [3]	3
CH 1221	Investigations in Chemistry II	1
CH 1223	Chemistry II	3
CH 2503	Elementary Organic Chemistry	3
MA 1613	Calculus for Business and Life Sciences I [3]	3
ST 2113	Introduction to Statistics [3]	3
or ST 3123	Introduction to Statistical Inference	
WFA 4123	Wildl & Fish Biometrics	3
WFA 4253	Application of Spatial Technologies to Wildlife and Fisheries Management	3
WFA 4623	Conservation Biology	3
WFA 4633	Problem Solving in Conservation Biology	3
WFA 4881	Current Topics in Conservation Biology	1
Computer Application Elective [1]		3
Organismal elective [1]		6
CONB Professional Electives [1]		15
Total Hours		124

1 All electives are chosen from a list approved by the Department of Wildlife and Fisheries

2   It is the student's responsibility to be aware of pre-requisites and co-requisites identified in the Course Description section of the Bulletin.

3 Course meets MSU General Education requirements

Shackouls Honors College

Christopher A. Snyder, Dean

Office: 210 Griffis Hall
Telephone: (662) 325-2522

Mailing Address: P.O. Box EH, Mississippi State, MS 39762

http://www.honors.msstate.edu

The Shackouls Honors College is a university-wide program that reports to the Provost. It serves all undergraduate majors and cooperates with academic departments in tailoring programs for talented students. The Shackouls Honors College allows many undergraduate students throughout the University to enrich their academic experiences. There are Honors sections of many required and elective courses; these are generally small sections, and they are always taught by highly qualified faculty. There are also Honors courses in addition to these sections of regular courses. To enroll in Honors courses, one must have been admitted to the College or obtain permission from the Dean. Requirements for joining the College and a full explanation of its offerings are explained below.

Honors students have the opportunity to compete for research grants from the Shackouls Honors College allowing them to participate in groundbreaking research under the supervision of a faculty mentor. Furthermore, students can also obtain travel grants to allow them to present their research at regional and national meetings, giving them invaluable experience and networking opportunities for future graduate work or careers. Students are also encouraged to participate in one of Mississippi State University's twice annual undergraduate research symposia, which are sponsored by the Shackouls Honors College.

The Honors College strongly encourages Mississippi State students to develop a global perspective through foreign language study and study abroad. Our Honors students have studied in Spain, Italy, Germany, Quebec, and Australia. Beyond the exposure to other peoples and other cultures, the Honors College also seeks to connect our students to international universities and agencies of the highest caliber. Our unique Shackouls Summer Study at the University of Oxford places Honors students in the top Oxford colleges and gives them the true Oxford experience by having them taught by Oxford faculty. Our students are eligible for Honors-only scholarships to support their study abroad.

The Shackouls Honors College plays an important role in the cultural and social lives of students and faculty members, through Honors Forum and also through programs co-sponsored with the Holmes Cultural Diversity Center, the Stennis Institute, the Women's Studies Program, the Institute for the Humanities, the Model United Nations, and the Center for International Security and Strategic Studies, as well as every one of the University's colleges.

Honors College-sponsored exhibitions and gallery talks have included the Roger Ogden collection that now forms the Museum of Southern Art in New Orleans and the works of such artists as Walter Anderson, Marie Hull, William Wegman, William Dunlap, and Maude Gatewood. The Honors College has provided performances and lecture-recitals by notables such as the National Shakespeare Company, the Vienna Chamber Trio, Ballet Mississippi, and the Alvin Ailey Dance Company. Speakers at Honors Forum include former U.S. Poet Laureate and Pulitzer Prize-winner Ted Kooser, jazz guitarist Earl Klugh, vocalist Jane Monheit, philosopher Michael Boylan, classicist Philip Freeman, and archaeologist Eric Cline. The Orators Series, begun in 2018, invites speakers from various disciplines to engage and enrich the campus and local communities through public forums, panel discussions, seminars, course work, research, and public lectures. Speakers in the Series included classicist Norma Thompson, sociologist Corey Keyes, and political scientist Melvin Rogers.

The Honors College is student-centered. Honors students elect their peers to the eighteen-member Honors Council, which advises the Dean and plans activities. At the end of each academic year, outstanding students are honored at an awards ceremony, including those who have completed the Cursus Honorum ("Path of Honors").

The Shackouls Honors College is a residential College where students live together in the living-learning communities of Griffis Hall, Nunnelee Hall, and Hurst Hall. Housing assignments are made through the Office of Housing and Residence Life.

The Honors College invites applications from incoming freshmen, current MSU students, and transfer students with outstanding academic records. To remain in the College, a student must maintain a 3.40 GPA, earn credit for at least one 3-hour Honors course per academic year, and complete a senior capstone experience.

The Cursus Honorum

To be recognized as an Honors College Scholar at graduation, and to receive the Honors designation (*Collegium Honorum*) on the diploma, a student must complete the Cursus Honorum. This distinctive and rigorous curriculum includes at least 27 Honors credits with a 3.4 average in Honors courses and

1. complete the English composition requirement within the first year of admission to the College;
2. complete the first-year Honors "Quest" sequence (6 credits);
3. complete two interdisciplinary Honors courses (6 credits);
4. complete three discipline-specific Honors courses or tutorials (9 credits);
5. complete a for-credit Study Abroad or additional foreign language course (3 credits); and
6. successfully write and defend an Honors thesis (3-6 credits).

All Honors students are required to complete a senior capstone experience. This can be a Senior Seminar in their major field of study, with a substantial presentation to the class; an internship with a presentation to a group of professionals; or a research project culminating in an Honors Thesis, with formal defense.

Those students intending to graduate as an Honors College Scholar should, at the beginning of their junior year, identify a faculty mentor and a thesis topic. The student may register for Honors Thesis credit during their junior and/or senior years, depending on the complexity of the research project.

First-year Honors sequence [1]

HON 1163	The Quest Begins	3
HON 1173	The West and the Wider World	3

[1] Students who complete the first-year sequence earning a grade of C or higher will receive General Education credits: 3 Humanities, 3 Social Sciences, and will have met the Fine Arts requirement.

Interdisciplinary Courses

Honors students will be encouraged to take innovative courses designed by faculty recruited by the Honors College. These courses will often be interdisciplinary, some revolving around a defined problem, and some team-taught. Students will receive the appropriate General Education credit for these courses.

Discipline-Specific Courses

Honors students will by their nature seek challenging courses in their major/discipline. These courses can be Honors sections of existing courses, newly designed Honors courses, or Oxbridge tutorials.

Honors Students in Good Standing

To be considered a student in good standing in the Honors College a student must complete one Honors course during the first semester at MSU and at least one 3 credit hour course per academic year, plus the Senior Capstone Experience. All students must also keep a cumulative GPA of 3.4 or above to be in good standing. In order to be in good standing after 3 semesters, each student must file with the Honors College Office a declaration of intent to complete the Senior Capstone Experience with a tentative selection of their chosen path.

Veterinary Medicine

KENT H. HOBLET, Dean

Office: College of Veterinary Medicine (Wise Center)
Telephone: (662) 325-3432

Mailing Address: Box 6100, Mississippi State, MS 39762-6100

General Information

The College of Veterinary Medicine was established in 1974 by an act of the Mississippi Legislature. The first class was admitted during the 1977-78 academic year and graduated in May of 1981.

The permanent College facilities, completed in the fall of 1981, include the learning resources center, the animal health center, and the research facility. College programs, faculty, students, and staff are located in these facilities.

The primary objective of the College is to serve the needs of Mississippi. In quest of this objective, the College will provide training in the sciences required for a career in veterinary medicine and veterinary medical technology. The Doctor of Veterinary Medicine curriculum focuses on the skills of the veterinary practitioner who will serve the animal-owning public of Mississippi while the veterinary medical technology curriculum focuses on the skills necessary to facilitate the work of veterinarians.

Students seeking a degree in either veterinary medicine or veterinary technology should acquire a sound foundation in the biological and physical sciences and a general knowledge of the humanities in high school and college. Because of the increasing use of information technology in veterinary medicine, students are strongly encouraged to acquire familiarity with computers. They must have a demonstrated aptitude for scientific study, and, in addition, experience with animals. An awareness of the requirements and characteristics of the practice of veterinary medicine is desirable in reaching a mature decision to pursue a career in either veterinary medicine or veterinary technology.

Early Entry Program for the College of Veterinary Medicine

The Early Entry Program is offered on a competitive basis to high school seniors who have demonstrated exceptional academic achievement. Applications are available by October 1st of each year and are due for return by January 5th. Online applications are available at www.cvm.msstate.edu. Questions should be addressed to the Office of Student Admissions, College of Veterinary Medicine at (662) 325-1326 or msu-cvmadmissions@cvm.msstate.edu.

The Program is designed so an individual has the opportunity to obtain both a B.S. degree and a D.V.M. degree in seven to eight years. Those accepted into the Early Entry Program are pre-accepted into the professional program at the College of Veterinary Medicine contingent upon their maintaining predetermined qualifications throughout their college career and providing documentation of no less than 480 hours veterinary experience.

Traditional Entrance Requirements

A Test of English as a Foreign Language (TOEFL®) score of 213 is required for applicants whose primary language is not English, also due September 15. Three (3) completed LOR (Letter of Recommendation) forms are required with the completed VMCAS application. At least one evaluator must be a veterinarian. To apply, applicants must have a minimum overall grade point average of 2.80. Minimum GPAs must be maintained throughout the application process. No grade lower than a C- is acceptable in any required course. Remediated and repeated courses must be completed before the application is submitted. Prerequisite courses for entrance into the college must include specific courses:

English composition	6
Speech or Technical Writing	3
Mathematics (college algebra or higher)	6
Biological science with lab	8
Microbiology with lab	4
Inorganic chemistry with lab	8
Organic chemistry with lab	8
Biochemistry	3
Physics (can be Trig-based)	6
Advanced Upper-level Science electives	12
Humanities/fine arts/social and Behavioral sciences	15
Total Hours	79

Science and mathematics courses must be completed or *updated* within six calendar years prior to the anticipated date of enrollment.

Admission Procedure

Applications are accepted through September 15 each year for the upcoming academic year. Admissions, interviews, and decisions take place in the spring, with new students beginning classes around July 1. All applicants apply electronically through the Veterinary Medical College Application Service (VMCAS) at www.aavmc.org (http://www.aavmc.org). Applications are available online from May 15 to September 15 each year.

Further information may be obtained from:

Office of Student Admissions
College of Veterinary Medicine
Mississippi State University
Box 6100, Mississippi State, MS 39762-6100
662-325-1326; msu-cvmadmissions@cvm.msstate.edu

DVM Curriculum

The professional curriculum is divided into two phases - Phase 1 (DVM 1 and DVM 2 years) and Phase 2 (DVM 3 and DVM 4 years).

Phase 1 is conducted in a lecture/lab based format.

DVM 1 Courses		
Freshmen Fall Courses		
CVM 5011	Professional Development I	1
CVM 5013	Veterinary Neuroscience	3
CVM 5023	Infectious Agents I	3
CVM 5033	Immunology	3
CVM 5036	Veterinary Physiology	6
CVM 5046	Veterinary Anatomy I	6
CVM 5073	Veterinary Histology	3
Freshmen Spring Courses		
CVM 5021	Professional Development II	1

CVM 5022	Veterinary Epidemiology	2
CVM 5044	Veterinary Pathology	4
CVM 5072	Veterinary Anatomy II	2
CVM 5163	Veterinary Parasitology	3
CVM 5193	Veterinary Agents of Infectious Disease II	3
CVM 5223	Veterinary Pharmacology I	3
Total Hours		43

DVM 2 Courses

Sophomore Fall Courses		
CVM 5111	Professional Development III	1
CVM 5123	Veterinary Clinical Pathology	3
CVM 5143	Theriogenology	3
CVM 5153	Equine Medicine & Surgery I	3
CVM 5152	Toxicology	2
CVM 5186	Small Anim Med & Surgery I	6
CVM 5213	Introduction to Veterinary Anesthesiology	3
CVM 5553	Pharmacology II	3
Sophomore Spring Courses		
CVM 5121	Professional Development IV	1
CVM 5133	Veterinary Preventive Medicine	3
CVM 5173	Equine Medicine & Surgery II	3
CVM 5162	Diagnostic Imaging	2
CVM 5175	Food Animal Medicine and Surgery	5
CVM 5183	Special Species	3
CVM 5196	Small Animal Medicine and Surgery II	6
Total Hours		47

Clinical and Elective

Phase 2, (DVM3 and DVM4 years) is conducted in a clinical and elective format. Students participate in fourteen required clinical rotations of two to six weeks duration each. In these rotations students actively participate in the clinical diagnosis and management of patients admitted to the Animal Health Center.

During the fourth year (DVM4) students have 7 months of elective options. The options include elective clinical rotations, externship experiences, small group or discussion based courses, and special problems (directed individual study) opportunities. In essence, each student, working closely with a faculty advisor, designs a schedule which most uniquely meets the student's needs and career preferences.

Conducted in an experiential-learning mode, the clinical rotations and many of the electives continue to make the student responsible for his or her own education. The clinical cases or elective courses provide the environment for continued student growth and development. Students must be mature and responsible learners to obtain the maximum benefit from these courses.

DVM3 Courses

Services and Practices		
CVM 5214	Laboratory Services	4
CVM 5224	Radiology	4
CVM 5234	Anesthesiology	4
CVM 5246	Community Veterinary Services	6
CVM 5256	Small Animal Surgery	6
CVM 5266	Equine Medicine & Surgery	6
CVM 5273	Population Medicine	3
CVM 5276	Food Animal Practice	6
Total Hours		39

DVM4 Courses

CVM 5000	Directed Individual Study in CVM	1-6
CVM 5182	Veterinary Disaster Management	2
CVM 5222	Small Animal Clinical Nutrition	2
CVM 5282	Ambulatory/Large Animal Primary Care [1]	2
CVM 5292	Flowood/MVRDL Externship [1]	2
CVM 5301	Clinicopathological Conference [1]	1
CVM 5310	Small Animal Emergency and Critical Care Medicine [1]	4-6
CVM 5364	Veterinary Specialty Center Rotation [1]	4
CVM 5380	Small Animal Internal Medicine	6-8
CVM 5420	Advanced Rotation in Radiology	2-4
CVM 5430	Advanced Rotation in Anesthesiology	2-4
CVM 5452	Small Animal Physical Rehabilitation	2
CVM 5454	Advanced Rotation in Small Animal Surgery	4
CVM 5464	Adv Rot Eq Med & Surg	4
CVM 5474	Advanced Rotation in Food Animal Practice	4
CVM 5510	Veterinary Medicine/Animal Industry Externship 1	2-6
CVM 5520	Veterinary Medicine/Animal Industry Externship 2	2-6
CVM 5530	Veterinary Medicine/Animal Industry Externship 3	2-6
CVM 5540	Veterinary Medicine/Animal Industry Externship 4	2-6
CVM 5550	Veterinary Medicine/Animal Industry Externship 5	2-6
CVM 5560	Advanced Clinical Rotation 1 (ACR 1)	2-6
CVM 5570	Advanced Clinical Rotation 2 (ACR 2)	2-6
CVM 5580	Advanced Clinical Rotation 3 (ACR 3)	2-6
CVM 5602	Comparative Endocrinology	2
CVM 5640	Shelter Medicine Spay Neuter	2-6
CVM 5652	Equine Podiatry	2
CVM 5662	Clinical Neurology	2
CVM 5672	Veterinary Dentistry	2
CVM 5682	Veterinary Ophthalmology	2
CVM 5692	Veterinary Art and Business Management	2
CVM 5702	Clin Hematology & Immunology	2
CVM 5722	Small Ruminant Production Medicine	2
CVM 5754	Advanced Small Animal Surgery	4
CVM 5764	Advanced Equine Reproduction	4
CVM 5772	Canine Theriogenology	2
CVM 5802	Practical Small Animal Oncology	2
CVM 5812	Behavior for the Companion Animal Veterinarian	2
CVM 5814	The Feline Patient	4
CVM 5854	Aquarium Health Management	4
CVM 5862	Equine Lameness	2

CVM 5864	Bovine Production Medicine	4
CVM 5874	Bovine Theriogenology	4
CVM 5990	Special Topics in CVM	2-6
Total Hours		81-128

[1] Required

Students must take 26 hours of electives during their senior year. Electives can be selected from the above listed CVM courses or from University courses upon advisor's approval.

Veterinary Medical Technology (VMT)

The Veterinary Medical Technology program (VMT) prepares students for multiple career opportunities. Upon completion of this program, graduates will positively contribute to the veterinary health care team regardless of the area/specialty graduates wish to pursue. Potential work environments for VMTP graduates include but are not limited to private veterinary practice, biomedical research, pharmaceutical industry, zoological parks, humane societies, nutrition companies, United States Department of Agriculture, U.S. military and academic institutions. Students interested in the Veterinary Medical Technology Program will have the option of selecting Undeclared with a Vet Tech concentration as their major at the time of their admission to Mississippi State University. Once students are admitted into the third year of the program, they will be classified as VMT majors.

During the first two years of the curriculum, students are enrolled as Undeclared with a Vet Tech concentration. The first two years of the curriculum are mainly composed of general education courses. Students can apply as early as the spring semester of their sophomore year for entry into the junior year of the VMTP if not already accepted under the Pre-admission policy. The third year of the curriculum is competitive and enrollment is limited to 30 students. Entry into the third year of the program requires successful completion of either the Pre-admission or Regular Admission application process. Students will be allowed a maximum of two times to apply to the VMTP. At that point, if they are not successful, they will be required to seek another major.

Accepted students will begin classes the fall semester following acceptance. The fourth year mainly consists of clinical experiences and begins the fall semester following successful completion of the third year. Students will be evaluated by exams throughout the curriculum for successful program advancement.

Pre-admission Policy

Pre-admission to the junior year is offered on a competitive basis to high school seniors and college students who have only reisded on a college campus for a semester or less. Applicants must have demonstrated significant academic achievement including an overall GPA of 2.8 (80% or higher) for high school seniors or an overall GPA of 2.8 for college freshmen. There is also an ACT requirement of 21 or an SAT requirement of 1470. Complete admissions requirements and online applications are available at www.cvm.msstate.edu. Those granted pre-admission into the VMTP are pre-accepted into the junior year of the VMTP contingent upon maintaining predetermined qualifications during their freshman and sophomore years. The application window for preadmission is October 1st - November 1st.

Regular Admission Policy

Applications are available online January 15 - March 1. Admission procedures include a critique of each applicant's academic record, an evaluation of each applicant's references, and a personal interview of selected applicants. Futher information may be obatined from Veterinary Medical Technology Program, College of Veterinary Medicine, Mississippi State University, PO Box 6100, Mississippi State, MS, 39762; 662-325-1103; msuvmt@cvm.msstate.edu

Entrance Requirements to the Junior Year

An applicant to the junior year of the VMTP must successfully complete prerequisite courses by the end of the spring semester prior to beginning the junior year. Three (3) letters of recommendation are required. To apply, applicants must have a minimum grade point average of 2.5 (regular admission) or 2.8 (pre-admission) on a 4.00 scale with no grade less than "C" in any prerequisite course. The minimum GPA must be maintained throughout the application process. Prerequisite courses for entrance into the VMTP must include specific courses:

English Composition		6
Mathematics (college algebra or higher)		6
Inorganic Chemistry		7
Humanities		6
Social/Behavioral Sciences		6
Public Speaking		3
Microbiology with lab		4
Biological Science with lab		8
Fine Arts		3
ADS 1113 & ADS 1121 or VS 3014	Animal Science and Animal Science Laboratory Anatomy and Physiology	4
VS 1012	Introduction to Veterinary Medicine Careers	2
CVM 3101	Veterinary Technology Medical Terminology	1
Total Hours		56

Further information may be obtained from:

Veterinary Medical Technology Program
College of Veterinary Medicine
Mississippi State University
PO Box 6100, Mississippi State, MS 39762-6100
662-325-1103; www.msuvmt@cvm.msstate.edu

Veterinary Medical Technology

General Education Requirements

English Composition		
EN 1103	English Composition I	3
or EN 1163	Accelerated Composition I	
EN 1113	English Composition II	3
or EN 1173	Accelerated Composition II	
Mathematics		
MA 1313	College Algebra	3
MA 1323	Trigonometry	3
or ST 2113	Introduction to Statistics	

Natural Science		
BIO 1134	Biology I	4
BIO 1144	Biology II	4
Humanities		
See General Education courses		6
Fine Arts		
See General Education courses		3
Social/Behavioral Sciences		
See General Education courses		6
Other courses		
CH 1043	Survey of Chemistry I (or higher)	3
CH 1051	Experimental Chemistry (or higher)	1
CH 1053	Survey of Chemistry II (or higher)	3
BIO 3304	General Microbiology	4
CO 1003	Fundamentals of Public Speaking	3
or CO 1013	Introduction to Communication	
Major Core		
ADS 1113 & ADS 1121	Animal Science and Animal Science Laboratory	4
or VS 3014	Anatomy and Physiology	
VS 1012	Introduction to Veterinary Medicine Careers	2
CVM 3112	Animal Handling, Husbandry, and Nutrition	2
CVM 3243	Basics of Practice Procedures and Management	3
CVM 3101	Veterinary Technology Medical Terminology	1
CVM 3014	Applied Anatomy and Physiology for Veterinary Technologists	4
CVM 3013	Small Animal Diseases and Management	3
CVM 3022	Small Animal Technical Skills & Nursing Care	2
CVM 3032	Food Animal Diseases and Management	2
CVM 3031	Food Animal Technical Skills & Nursing Care	1
CVM 3042	Equine Diseases and Management	2
CVM 3041	Equine Technical Skills & Nursing Care	1
CVM 3232	Pharmacology & Toxicology for Veterinary Technologists	2
CVM 3111	Parasitology for Veterinary Technologists	1
CVM 3121	Hematology for Veterinary Technologists	1
CVM 3132	Clinical Pathology Laboratory Techniques	2
CVM 3212	Anesthesiology for Veterinary Technologists	2
CVM 3051	Laboratory Animal Health Management	1
CVM 3061	Laboratory Animal Technical Skills	1
CVM 3201	Dental Principles for Veterinary Technologists	1
CVM 3202	Diagnostic Imaging for Veterinary Technologists	2
CVM 3222	Surgical Skills & Nursing Care for Veterinary Technologists	2
CVM 3221	Surgical Nursing & Anesthetic Management Laboratory	1
CVM 3141	Anatomical Pathology Laboratory Techniques	1
CVM 4103	Large Animal Clinical Experience	3
CVM 4113	Large Animal Clinical Elective	3
or CVM 4223	Small Animal Clinical Elective	
CVM 4333	Emergency/ICU Clinical Experience	3
CVM 4213	Small Animal Surgery & Anesthesia Clinical Experience	3
CVM 4102	Professional Development for Veterinary Technologists	2
CVM 4701	Application & Process for VTNE	1
CVM 4206	Small Animal Clinical Experience	6
CVM 4003	Internship Experience	3
CVM 4601	Animal Emergency & Referral Center Elective	1
Elective Experiences		
Choose two of the following:		2
CVM 4101	Veterinary Technology Academic Elective	
CVM 4201	Clinical Experience Elective	
CVM 4501	Diagnostic Laboratory Experience	
CVM 4511	Biomedical Research Experience Elective	
Total Hours		120

Graduate Program

The College of Veterinary Medicine (CVM) at Mississippi State University (MSU) provides the following graduate programs:

MS – Veterinary Medical Science (MS-VMS) with Concentrations in:

Population Medicine Non-Thesis (PMNT)

Requires: 35 hours of coursework

Population Medicine Thesis (POPM)

Requires: 24 hours of coursework including 1 seminar, ST 8114 Statistical Methods, CVM 8333 Food Safety, CVM 8513 Applied Veterinary Epidemiology, CVM 8503 Epidemiology and Biostatistics + 6 hours research

Veterinary Medical Research (VMRC)-default

Requires: 24 hours of coursework including 1 seminar and 1 statistics + 6 hrs research

Computational Biology (VCBC)

Requires: 24 hours of coursework including 1 seminar, 1 statistics, BCH/PSS 8653 Genomes and Genomics, CSE 6613 Bio-computing, CSE 6623 Computational Biology + 6 hrs research

Infectious Diseases (VIDC)

Requires: 24 hours of coursework including 1 seminar, 1 statistics, CVM 8303 Advanced Immunology, BCH 6013 Principles of Biochemistry or BCH 6713 Molecular Biology + 6 hrs research

Toxicology (VTOX)

Requires: 24 hours of coursework including 1 seminar, 1 statistics, CVM 8543 Mechanisms Toxic Action and CVM 6513 Environmental Toxicology + 6 hours research

PhD – Veterinary Medical Science (PhD-VMS) with Concentrations in:

General CVM PhD Requirements: All PhD programs require 60 hours beyond the M.S. degree or 90 hours beyond the B.S. degree. Students with a M.S. are required to take at least 20 hours of research, 3 seminar courses, and two statistics courses. The remaining 31 hours can be met by a combination of graduate coursework and research/dissertation (CVM 9000) as approved by the student's doctoral committee.

Students with a B.S. degree admitted without a M.S. are required to take a minimum of 24 hours of graduate coursework, at least 20 hours of research, three seminar courses, and two statistics courses. The remaining 46 hours of credit can be met by a combination of graduate coursework and research/dissertation (CVM 9000) as approved by the student's doctoral committee.

Veterinary Medical Research (VMRC)

Default concentration. See general requirements above.

Computational Biology (VCBC)

See general requirements above. Coursework must include BCH/PSS 8653 Genomes and Genomics, CSE 6613 Biocomputing, and CSE 4623/6623 Computational Biology

Infectious Diseases (VIDC)

See general requirements. Coursework must include CVM 8303 Advanced Immunology, BCH 6013 Principles of Biochemistry or BCH 6713 Molecular Biology

Population Medicine (POPM)

See general requirements. Coursework must include ST 8114 Statistical Methods, CVM 8333 Food Safety, CVM 8513 Applied Veterinary Epidemiology, CVM 8503 Epidemiology and Biostatistics

These graduate programs provide advanced educational opportunities for students in a broad range of biomedical and veterinary sciences. The goal of the VMS and ENVT programs is to provide training for the next generation of scientists and educators who will be leaders in biomedical and veterinary research and education. Faculty in CVM's Department of Basic Sciences, (http://www.cvm.msstate.edu/index.php/academics/departments-centers/basic-sciences) Department of Clinical Sciences (http://www.cvm.msstate.edu/index.php/academics/departments-centers/clinical-sciences), and Department of Pathobiology & Population Medicine (http://www.cvm.msstate.edu/index.php/academics/departments-centers/pathology-population-medicine) lead each student's graduate education. Involvement in ongoing research projects conducted by the faculty is an important part of each degree program.

Students pursuing admission to one of the MS or PhD programs in CVM must complete all admission requirements of the MSU Office of Graduate Studies (http://www.grad.msstate.edu) (OGS). From the MSU Office of Graduate Studies page, students should click on "Apply Online Now (http://www.apply.msstate.edu/grad)" to be directed to the MSU Graduate Admission Online Application site. In addition to the MSU OGS application, the CVM Graduate Faculty would like to evaluate prospective student's research interests using the CVM Graduate Student – Background and Interest Form (http://www.cvm.msstate.edu/images/pdfs/backgroundform.pdf). Students interested in the CVM graduate program should complete the form and submit to the CVM ORGS Office by emailing the form to tia.perkins@cvm.msstate.edu. The Background and Interest Form will be used to evaluate the student's research interests and place students within the appropriate research program when admitted to the CVM Graduate Program. The form is also used to determine/award available graduate research assistantships/grants.

In addition to the traditional MS and PhD programs in the College, there is a path within the DVM program in which students may pursue a DVM-PhD or DVM-MS Dual Degree. Information concerning the DVM Dual Degree programs can be found at the Combined DVM-Graduate Degree Programs (http://www.cvm.msstate.edu/index.php/academics/degree-programs-research/combined-dvm-graduate-degree-programs) site.

If you have additional questions or need assistance concerning CVM graduate education, please call 662-325-1417 or email the ORGS Office at tia.perkins@cvm.msstate.edu.

Office of Academic Affairs

Office: 3501 Lee Hall
662-325-3742
P.O. Box BQ; Mississippi State, MS 39762

Center for Student Success

Executive Director: Dr. Rodney Pearson
Assistant Director: Mrs. Laura Dunn
Coordinator: Mr. Nick Hyer

126 Magruder Street; Mail Stop 9661
Web site http://studentsuccess.msstate.edu
Telephone: (662) 325-3181
P.O. Box 6246
Mississippi State, MS 39762

Mission

The Center for Student Success works with all MSU students – especially incoming freshmen – to help assure their smooth transition to the university and success on their road to graduation. The Center promotes student learning and an enriched MSU student experience by providing services, programs, and resources that:

- assist the student with his or her transition into university life;

- aid the student's decision-making, especially during the freshman year; and

- help achieve personal and academic progress and growth, targeted toward graduation.

The Center's strategic goals are to:

- offer services, programs, and classes that assist the student's transition to MSU;

- support student academic planning and progress through high-quality academic advising and timely feedback;

- provide informative and engaging first-year classes and programs;

- provide academic support for all students;

- develop programs and take actions that are informed by analyses of relevant data; and

- engage the university in the support of students in their progress toward graduation.

The Center for Student Success operates the College Ready program, a summer program through which an incoming freshman can take two college classes prior to their first fall semester at discounted cost. The primary goal of College Ready is to smooth the student's transition to their new living and learning environment. The Center also includes the Freshman Year Navigator program, hiring 20 or more students each year to work as Navigators and help their assigned freshmen throughout their first year at MSU. The Center also works with the Center for Teaching and Learning to offer a wide range of First Year Experience classes, including True Maroon. Like so many of the Center's programs, these classes are designed to help the freshman student's transition to college and path to academic success.

The Center works closely with the Learning Center to provide Supplemental Instruction in 20 or more challenging classes each semester. It also works closely with the University Academic Advising Center, which provides all advising for the freshman class's largest major, Undeclared. Finally, the Center works with the Pathfinders program to emphasize the importance of class attendance – class attendance is the #1 predictor of student success.

University Academic Advising Center (UAAC)

Undeclared (UND)

Director: Lynda K. Moore
Professional Academic Coordinators: Tim Fancher, Jermaine Jackson, Katy Richey, and Natoya Sanders

25 Morgan Ave.; Mail Stop 9729
Web site at http://www.uaac.msstate.edu/
Telephone (662) 325-4052; Fax (662) 325-4026
P.O. Box 6117, Mississippi State, MS 39762

UAAC Mission to Undeclared Students

The University Academic Advising Center was established to meet the needs of those students who have competing interests in more than one major area, as well as those who are uncertain of their career and educational goals. The professional staff at the center offer one-on-one advising services to traditional and non-traditional undergraduate students and provide accurate information concerning general curriculum requirements, university policies and procedures, campus resources and various programs of study. The center is committed to assisting students with the development of educational plans consistent with their life goals, objectives and abilities. Students normally remain Undeclared for no more than three semesters during which time advisors recommend courses that meet basic core requirements in relation to "majors of interest" for each individual student. Students must declare a major before completing 75 hours.

UAAC advisors traditionally recommend that Undeclared students enroll in 15-18 hours each fall and spring semester with careful considerations given to courses required in each student's majors of interest. It is the goal of the center to assist each Undeclared student in enrolling in courses that satisfy the minimum core requirements for any major the student may later choose with respect to each department's right to specify more stringent requirements than the University as a whole. However, ultimate responsibility for taking the UAAC staff's advice rests with the student.

UAAC urges students to make appointments with advisors at the center to establish a plan of action. The University Academic Advising Center staff encourages all Undeclared majors to utilize services offered by the Career Center, the Counseling Center, the Learning Center, Center for Student Success, Student Support Services and other support programs offered by various units at MSU.

The UAAC advises for the University Studies degree and the Complete to Compete Program.

University Studies - Complete to Compete Program (C2C)

Major C2C Coaches: Lynda Moore, Kristi Dearing, Kali Dunlap, and Natoya Sanders

The Bachelor of Science in University Studies is housed in the Office of the Provost and Executive Vice President (Academic Affairs). A student who wishes to pursue the major in University Studies must enroll in the Complete to Compete (C2C) program (http://www.msc2c.org) and be eligible for admission to the degree program. To be eligible, the student must meet the criteria of an adult learner, i.e. must be at least 21 years old, have earned at least 90 semester credit hours, have not earned a baccalaureate degree, and must not have attended a postsecondary institution within the last twenty-four months.

The University Studies degree is designed to provide eligible adult learners who have not completed a baccalaureate degree a pathway to return to Mississippi State University to complete a degree. The curriculum is individualized to meet the needs and career goals of the returning adult learner. An eligible student will meet with a C2C Coach and work with faculty to develop the best degree plan possible.

Degree Requirements

English Composition		
EN 1103	English Composition I	3
EN 1113	English Composition II	3
Humanities		
See General Education Core		6
Mathematics		
See General Education Core		3
Fine Arts		
See General Education Core		3
Natural Sciences		
See General Education Core. Two labs required.		6
Social Sciences		
See General Education Core		6
Oral Communication Requirement		
CO 1003	Fundamentals of Public Speaking	3
or CO 1013	Introduction to Communication	
Or other approved speech course		
Computer Literacy		
TKT 1273	Computer Applications	2-3
or BIS 1012	Introduction to Business Information Systems	
Or other approved technology course		
Extra University Core		
See General Education Core or Advisor Approved Upper Level Courses		24
Junior/Senior Writing Requirements		
Consult with C2C Coach and/or Faculty Advisor		3
Major Core Emphasis Areas		
Consult C2C Coach and/or Faculty Advisor		
Upper Level Courses (one, two, or three emphasis areas)		30
General Electives		25-28
Total Hours		120

Environment and Sustainability Minor

The Environment and Sustainability Minor is a 17 credit hour, multi-disciplinary program open to all undergraduate majors in good standing. From accountants to zoologists, and all majors in between, this minor is designed to enhance your understanding of the complex environmental challenges humanity faces in the 21st century. It will also give students an opportunity to gain hands-on experience in an environmental area of interest. Students will study the technical aspects of issues such as climate change and energy, and learn how values, beliefs and policies affect how these issues are addressed. Students will also learn about sustainable practices and lifestyle choices that can reduce your own ecological footprint.

Two courses are required of all students: Introduction to Environmental Science (ENS 2103) and Environmental Science Practicum (ENS 4102). Of the remaining 12 hours, at least three must be taken from each of the three categories: Humanities, Social Sciences, and Science & Engineering. The remaining three credit hours must be taken from a category not directly related to the student's major course of study.

Course Work

ENS 2103	Introduction to Environmental Science	3
ENS 4102	Practicum	2
Approved Humanities course		3
Approved Social Sciences course		3
Approved Science & Engineering course		3
Consult with Program Coordinator		3

Enrollment in ENS 4102 must be arranged with the Program Coordinator. The student may arrange to work with a faculty member conducting research in the environment and sustainability field, or the student may propose a project of relevance to the certificate. This must be arranged in consultation with the Program Coordinator prior to enrolling in ENS 4102.

For further information and enrollment forms, please contact the ENS minor program coordinator:

Dr. Te-Ming Tseng
Department of Plant and Soil Sciences
117 Dorman Hall
662-325-2311; tt1024@msstate.edu

Geospatial and Remote Sensing Minor

Technology revolutions have driven the expectations of remote sensing and geospatial technologies to an all-time high for a new generation of users across a vast number of disciplines. Advances in computational technologies, visualization products, and sensor technologies have led to the development of unprecedented capabilities in geospatial technologies, such as remote sensing and geographic information systems. With the plethora of remote sensing technologies, the industry is poised to develop operational remote sensing applications that fundamentally impact management of resources. Mississippi State University has developed broad, multi-disciplinary efforts in spatial technologies of many types, and is a leader among universities in education and outreach activities to prepare the next generation for utilizing these technologies. One of the primary limitations in the development of this industry is the need for a better-educated workforce that can understand and utilize the tools of these spatial technologies. Education in geospatial and remote sensing technologies is by nature multi-disciplinary; therefore, a minor program that crosses departmental

and college boundaries has been developed to address these needs. This undergraduate minor can thus serve the needs of MSU students with diverse backgrounds from a variety of disciplines. Students may strategically assess which courses within their disciplinary academic program can be used for the minor, thus satisfying the needs of both and maximizing their education experience.

The minor should represent a student's mastery of basic GIS and Remote Sensing coursework. A minimum of 3 hours of coursework is required in each of these areas:

- Geographic Information Systems
- Remote Sensing
- Advanced Geospatial Technologies

Students are required to complete 6 hours of additional coursework within the category of Geospatial Applications. A list of geospatial application electives is listed, and it includes courses that are offered by several MSU departments.

Due to the multi-disciplinary nature of this program, the Office of the Academic Affairs is the resident office for admission and administration. Thus, the program is not focused on a single college or department. A program coordinator, appointed by the Provost, advises students seeking the GRS minor, and assists departmental advisors. The coordinator is also responsible for conducting the necessary transcript audits and authorizing the awarding of the minor.

For further information and enrollment information, contact the GRS program coordinator:

Dr. John Rodgers
Department of Geosciences
355 Lee Blvd, 108 Hilbun Hall
Mississippi State, MS 39762
662-325-3915, jcr100@msstate.edu

A total of 15 semester hours are required: nine selected from the list of required courses, and six selected from the list of elective courses.

Required Courses		
Remote Sensing		
Choose one of the following:		3
ABE /PSS 4483/6483	Introduction to Remote Sensing Technologies	
ECE 4423/6423	Introduction to Remote Sensing Technologies	
GR 4333/6333	Remote Sensing of the Physical Environment	
FO 4453/6453	Remote Sensing Applications	
GIS		
Choose one of the following:		3
GR 4303/6303	Principles of GIS	
WFA 4253/6253	Application of Spatial Technologies to Wildlife and Fisheries Management	
FO 4472/6472	GIS for Natural Resource Management	
AND		
FO 4471/6471	GIS for Natural Resource Management Lab	
Advanced Geospatial Coursework		
Choose one of the following:		3
FO 4313/6313	Spatial Technologies in Natural Resources Management	
FO 8313	Spatial Statistics for Natural Resources	
FO 8353	Ecological Modeling in Natural Resources	
FO 8173	Advanced Spatial Technologies	
GR 4313/6313	Advanced GIS	
GR 4343/6343	Advanced Remote Sensing in Geosciences	
GR 8303	Advanced Geodatabase Systems	
ST 4313	Introduction to Spatial Statistics	
Geospatial Applications		
Choose two of the following:(Courses must be different from the ones taken from the above categories. A course may not be used to satisfy more than one requirement)		6
ABE 3513	The Global Positional System and Geographic Information Systems in Agriculture and Engineering	
ECE 3443	Signals and Systems	
ECE 4413	Digital Signal Processing	
ECE 8401	Current Topics in Remote Sensing	
ECE 8473	Digital Image Processing	
FO 4313/6313	Spatial Technologies in Natural Resources Management	
FO 8173	Advanced Spatial Technologies	
FO 8313	Spatial Statistics for Natural Resources	
FO 8353	Ecological Modeling in Natural Resources	
GR 3303	Survey of Geospatial Technologies	
GR 4313/6313	Advanced GIS	
GR 4323/6323	Cartographic Sciences	
GR 4343/6343	Advanced Remote Sensing in Geosciences	
GR 4353/6353	Geodatabase Design	
GR 4363/6363	Geographic Information Systems Programming	
PSS 4373/6373	Geospatial Agronomic Management	
PSS /ECE 4411/6411	Remote Sensing Seminar	
FO /GR 4411/6411	Remote Sensing Seminar	
ST 4313	Introduction to Spatial Statistics	
Total Hours		15

Leadership Studies Minor

The interdisciplinary minor in Leadership Studies provides academic and experiential knowledge and skills to prepare students for future leadership positions in communities, professions, and organizations. The Leadership Studies minor is open to Mississippi State University students in all Colleges, Schools, and majors. It requires 19 hours of approved coursework, including at least one experiential internship component. No more than two courses from the same academic Department may be applied to this minor. Students in the Leadership Studies minor must maintain a grade point average of 2.00 or higher overall and a grade point average of 2.50 or higher in courses applied to the minor. Students must earn a grade of C or higher in all minor courses.

Admission and Graduation Standards: Entering freshmen may declare a Leadership Studies minor in the first semester by securing approval of a minor program of studies as outlined herein. Qualified students, including

incoming transfer students, may declare the minor during any subsequent semester. After the first semester of college, students must have a minimum overall GPA of 2.00 or higher (including all course work taken, not just in the minor) to enter or remain in the minor. To graduate with a Minor in Leadership Studies, students must meet all course requirements on their approved programs of minor study, must have an overall GPA of 2.00 or higher on all coursework attempted, and must have a 2.50 or higher GPA over all minor courses. Students must earn grades of C or higher in all courses applied to the Leadership Studies minor.

Curriculum Outline: Each student will select one core course in each of three core areas: Ethics, which are essential for any leader; Social Science, which studies leadership directly and provides knowledge of direct relevance to leadership; and Communication, which involves skills that are critically important for leaders. (For students in majors with little room for electives, judicious selection of the core courses in the Leadership Studies minor may simultaneously fulfill certain General Education requirements, College or School Core Curriculum, or Departmental Major requirements.) Each student will further select from an approved list, in consultation with his or her Leadership Studies minor advisor, at least three more courses that facilitate the student's goals. Finally, each student will register for a 1-hour (48 contact hours) experiential internship.

Area I: Ethics and Leadership		
Choose one of the following:		3
PHI 1123	Introduction to Ethics	
MGT 3823	Socially Responsible Leadership	
Area II: Leadership and Social Science		
Choose one of the following:		3
MGT 3813	Organizational Behavior	
PSY 3623	Social Psychology	
PS 3013	Political Leadership	
PS /GE 2713	Introduction to Engineering and Public Policy	
Area III: Leadership and Communication Skills		
Choose one of the following:		3
CO 1003	Fundamentals of Public Speaking	
CO 3213	Small Group Communication	
CO 3803	Principles of Public Relations	
Area IV: Experiential internship component		
EXL 1191	Leadership Studies Internship I	1
Area V: Electives		
Choose a minimum of three:		9
See advisor for a complete list of approved leadership electives. Courses listed in the Minor Core may also be taken as electives if they are not being used to satisfy the minor core requirement. Students generally take all of their electives in the same college, but doing so is not a requirement. Elective are best selected in consultation with the student's Leadership Studies Minor advisor to meet the goals and objectives of the student. Electives are available in each college which allows this minor to be applicable to any major.		

For additional information, contact Robert Green, Chair, Leadership Studies Minor committee at green@bagley.msstate.edu

Office of Graduate School

W. Brien Henry, Associate Dean of the Graduate School

Office: 617 Allen Hall
Telephone: (662) 325-7400
P.O. Box G, Mississippi State, MS 39762-5507

Administration

The mission of the Graduate School is to provide graduate students advanced academic study beyond the baccalaureate; provide graduate students opportunities to develop methods of independent and systematic investigation; and provide graduate students and faculty with an environment conducive to learning and scholarly activities. In fulfilling this mission, the Graduate School promotes, enhances, develops, and monitors graduate education at Mississippi State University, providing students with efficient and courteous assistance in admission, enrollment, academic progress and graduation. The Graduate School is guided by the academic policies recommended by the Graduate Council, the chief oversight body for all graduate programs, and approved by the Provost. For additional information about graduate education at Mississippi State University or the Graduate School, please visit http://www.grad.msstate.edu/.

Graduate Courses

Graduate courses are assigned numbers at the 6000-, 7000-, 8000-, and 9000-level.

Graduate Catalog

Published annually, the catalog contains a complete list of advanced degrees offered at Mississippi State and the requirements of each, as well as academic policy and procedures administered by the Office of the Graduate School. The catalog is available online by visiting http://catalog.msstate.edu/graduate.

Center for Distance Education

Dr. Susan D. Seal, Executive Director

Office: 301 Memorial Hall, (662) 325-3473
Mailing Address: P.O. Box 5247, Mississippi State, MS 39762
www.distance.msstate.edu

The Center for Distance Education (CDE) is a service unit of the University and extends educational opportunities to individuals through a variety of learning options in non-traditional program formats. CDE provides leadership, coordination, and assistance in implementing distance education programs offered by Mississippi State University. The mission of CDE is to engage people in achieving their lifelong educational goals through dynamic partnerships, targeted programming, innovative technology, and quality customer service.

CDE is committed to working with faculty and staff to promote distance education. CDE assists with the facilitation and delivery of distance education programs and certificates at the graduate and undergraduate levels. All distance courses and programs offered through Mississippi State University are fully accredited and possess the same rigor and standards of the traditional campus. Delivery methods offered include completely online and hybrid. Distance classes include an instructional support fee, distance fees which may vary by course, and tuition & required fees. The instructional support fee and distance fees will be collected as part of registration. CDE also specializes in customer service for all distance education students.

MSU-Meridian

Administrative Director and Head of Campus – Dr. Terry Dale Cruse

College Park Campus
1000 Hwy 19 North • Meridian, Mississippi 39307-5799
(601) 484-0100 • In State-Wats 1-800-824-5288

Riley Campus
2212 5th Street • Meridian, MS 39301
(601) 484-0150

Mississippi State University-Meridian is a regional, upper-division, degree-granting campus of Mississippi State University. Located in east-central Mississippi, MSU-Meridian's campus is non-residential and provides site-based credit and non-credit course work, as well as classes through distance learning using resident faculty, MSU-Starkville campus faculty, and part-time adjunct instructors.

A friendly atmosphere, personal attention, two convenient locations, and a diverse student population flavor the educational experience at MSU-Meridian. Through the flexibility of day and evening classes, both nontraditional adult students and traditional college-age students are able to continue employment, maintain important roles in family life, contribute to their communities, and still obtain a quality Mississippi State University education.

Mississippi State-Meridian serves as a proud symbol of the university's heritage as "the people's university" and of its commitment to providing quality higher education through the missions of learning, research, and service.

Location

Mississippi State University-Meridian is comprised of two campuses. The College Park Campus is located on 26 acres at 1000 Highway 19 North in Meridian, a short drive northwest of Exit 150 off Interstate 20/59. The Riley Campus is located in the heart of Meridian's downtown, off 22nd Avenue and 5th Street, where the Division of Business is housed in the Deen building and the Kinesiology program is housed in the Rosenbaum building. The Riley Campus is also home to the MSU-Riley Center for Education and Performing Arts.

Facilities

Overlooking a beautiful lake, the College Park campus is a 60,000 square-foot, two-story complex is nestled among hardwoods and loblolly pines. A 90-foot tower stands watch over the main entrance and serves as the focal point and official symbol of the campus. The complex contains 24 classrooms and laboratories, academic suites, study lounges, an 800-person multi-purpose auditorium for campus and community use, and ample parking. Although there are no dorm facilities at either campus, apartments are located nearby and in other locations throughout the area.

The Riley Campus, situated in the heart of downtown Meridian, includes the Deen building, a four-story historical landmark. The 20,175 square-foot facility, complete with a massive floor to roof sky light, houses MSU-Meridian's Division of Business faculty, state-of-the-art classrooms and computer lab, study rooms, conference rooms, and a stock ticker. Next to the Deen building is the Rosenbaum building, the renovated historic five-and-dime is home to the university's health sciences programs, including the developing Master of Physician Assistant Studies. The structure's approximately 26,000 square-foot space houses six classrooms, four laboratories and two computer labs, along with a lecture hall, administrative offices and conference and reception areas. It is also the home to the second Phil Hardin Foundation Library. Completing the Riley Campus is the MSU-Riley Center for Education and the Performing Arts. The multifaceted center includes a fully restored 1889 grand opera house theater that seats approximately 950, a 200-seat theater and 30,000 square feet of meeting space.

Students

Approximately one-half of the students who attend MSU-Meridian reside in Lauderdale County. The remainder commute from 32 other Mississippi counties and from Alabama, with a majority making their homes in the surrounding counties of Clarke, Jasper, Jones, Kemper, Leake, Neshoba, Newton, Scott, and Wayne. Advancements in course offerings, programs, and distance learning technology should expand the scope of service even further.

Distance Learning

Interactive video conference classrooms at both the College Park and Riley campuses allows students in Meridian and Starkville, and at downlink sites elsewhere in the world, to receive instruction and interact through two-way video and audio distance technologies. This greatly improves MSU-Meridian's ability to expand the scope of its service and maintain courses of the highest quality.

The development of Web-based (direct-to-desktop) delivery systems is also being utilized to facilitate the delivery of asynchronous and synchronous real time audio and video through computer based technologies and the Internet.

Library Facilities

The MSU University Libraries, with the Phil Hardin Foundation Library on the College Park Campus, supports the teaching, research, and service needs of the MSU-Meridian Campus community. Meridian Campus faculty, students and staff have full access to all the electronic collections offered by the University Libraries including scholarly journals, government documents, books, newspapers and reference materials. Physical items located on the Starkville campus are accessible through Interlibrary Loan and the Library Express document delivery service at no charge to MSU-Meridian community.

An "Electronic Library Room" is available so that individuals at MSU-Meridian may access these online resources and services including online workshops and podcasts.The MSU University Libraries, with a Phil Hardin Foundation Library on both the College Park Campus and Riley Campus in downtown Meridian supports the teaching, research, and service needs of the MSU-Meridian community. Meridian faculty, students and staff have full access to all the electronic collections offered by the University Libraries including scholarly journals, government documents, books, newspapers and reference materials. Physical items located on the Starkville campus are accessible through Interlibrary Loan and the Library Express document delivery service at no charge to MSU-Meridian community.

Degree Programs

Junior, senior, and graduate-level courses offered at MSU-Meridian allow students to fulfill requirements for Bachelor's, Master's, and Specialist's

degrees. They may also elect to enroll in specific classes for professional or personal growth.

Undergraduate Degrees

- Division of Arts and Sciences
  - Bachelor of Arts in Communication (Concentration in Broadcasting)
  - Bachelor of Arts in Criminology
  - Bachelor of Arts in General Liberal Arts
  - Bachelor of Arts in History
  - Bachelor of Arts in Psychology
  - Bachelor of Science in Interdisciplinary Studies
  - Bachelor of Social Work
  - Bachelor of Applied Technology in Healthcare Services
  - Bachelor of Applied Technology in Hospitality and Event Services
- Division of Business
  - Bachelor of Accountancy
  - Bachelor of Business Administration with concentrations in:
    - Business Administration
    - Healthcare Administration
      Students may also earn a minor in:
      - Management
      - Marketing
- Division of Education
  - Bachelor of Science in Education with majors in:
    - Elementary Education
    - Secondary Education
    - Special Education

Graduate Degrees

- Division of Education
  - Master of Science degree with majors in:
    - Elementary Education
    - Secondary Education
    - Counselor Education
    - School Administration
  - Master of Arts in Teaching degree with major in Comm. College Education
  - Master of Arts in Teaching - Secondary Teaching Education (Alternate Route program)
  - Educational Specialist with concentrations:
    - Elementary Education
    - Secondary Education
    - Counselor Education
    - School Administration
- Division of Business
  - Professional Master of Business Administration

Division of Arts and Sciences

Dr. Richard Damms, Division Head

Professor: Dr. James Kelley
Associate Professors: Dr. Vicki Gier and Dr. Marian Swindell
Assistant Professors: Dr. Toby Bates, Rhonda G Carr, Dr. Amanda Cook, Dr. Lin Ge, and Dr. Rodney T Wilson
Instructors: Dr. Greg Johnson, Dr. Angela Savage, and Dr. Jarrod Fogarty

The Division of Arts and Sciences offers nine degree programs: Bachelor of Arts in Criminology, English, General Liberal Arts (GLA), History, Psychology, Communication –*Concentration in Broadcasting,* Bachelor of Science in Interdisciplinary Studies (BSIS), Bachelor of Applied Technology in Healthcare Services (BAT), Bachelor of Applied Technology in Hospitality and Event Services (BAT), and Bachelor of Social Work (BSW).

Bachelor of Arts in Criminology

Advisor: Amanda Cook
The Bachelor of Arts in Criminology degree program offers students the opportunity to explore the nature and causes of crime as well as examine the social response to crime and its effect on society.

The degree emphasizes the study of types, patterns, and trends in criminal behavior, and trains students to analyze crime data, test explanations of crime and victimization, and critically evaluate crime theory and policy.

Criminology

General Education and College Requirements

English Composition		
EN 1103	English Composition I	3
or EN 1163	Accelerated Composition I	
EN 1113	English Composition II	3
or EN 1173	Accelerated Composition II	
Foreign Language		
Spanish for the Professional		3
Spanish I and Spanish II are also recommended (see Free Electives)		
Mathematics		
MA 1313	College Algebra	3
Math higher than MA 1313		3
Fine Arts		
ART 1113	Art Appreciation	3
or MU 1113	History and Appreciation of Music	
Natural Sciences		
Biological Science w/lab (BIO)		4
Physical Sciences w/lab (CH, GG, PH) [2]		4
Natural Science Elective- no lab required (BIO, PH, GG, CH) [1]		3
Humanities		
English – see General Education courses		3
History – see General Education courses		3
Philopsohy - see General Education courses		3
Humanities Electives (HI, EN, PHI, REL)		9
Communication		
CO 1003	Fundamentals of Public Speaking	3
Social Sciences		
SO 1003	Introduction to Sociology	3
AN/GR/PS/PSY/SO - See General Education		3
AN/GR/PS/PSY/SO/CO/CRM - Social Sciences Electives		12
Major Required Courses		

CRM 1003	Crime and Justice in America	3
CRM 2003	Crime, Justice, and Inequality	3
CRM 3603	Criminological Theory	3
CRM 4803	Senior Seminar in Criminology	3
SO 3213	Introduction to Social Research	3
or SW 3213	Research Methods in Social Work	
SO 4804	Social Research Practice	4
Choose two of the following:		6
CRM 3503	Violence in the United States	
CRM 4233	Juvenile Delinquency	
CRM 4243	Drugs, Crime and Control	
CRM 4253	White Collar Crime and Elite Deviance	
Choose two of the following:		6
CRM 3103	Contemporary Issues in Criminal Justice	
CRM 3113	Community Crime Prevention and Policy	
CRM 4513	Correctional Systems	
CRM 4523	Law and Society	
Choose two of the following:		6
CRM 3343	Gender, Crime, and Justice	
CRM 3353	Race, Crime and Justice	
CRM 3363	Globalization and Crime	
CRM 4323	Victimology	
Free Electives		
A&S Upper Division Elective (3000/4000-level)		3
Other electives - see advisor (Spanish I and II recommended)		18
Total Hours		125

General Liberal Arts Program (GLA)

Advisor: Dr. James Kelley

Students who prefer to specialize in more than one field of study may earn a B.A. degree in General Liberal Arts. Requirements for this degree include all of the following: satisfactory completion of the University and College Core curriculum; satisfactory completion of the College of Arts and Sciences B.A. requirements; approval of the proposed G.L.A. program; satisfactory completion of twelve hours of upper-division courses (courses numbered 3000 and above) in each of three fields of study. The three fields may all be within the College of Arts and Sciences, or one of the three may be within another school/college of the University if that field is related to the student's educational or career goals. To insure an orderly progression of work toward the degree, interested students should meet with the program's advisor as early as possible. Furthermore, admittance into the program requires a GPA of at least 2.5 and the approval of the GLA Committee and the Associate Dean of the College of Arts and Sciences. General Liberal Arts is not suitable for students who are uncertain about their choice of a major; these students should see the Undecided listing in this section.

General Education and College Requirements

English Composition		
EN 1103	English Composition I	3
or EN 1163	Accelerated Composition I	
EN 1113	English Composition II	3
or EN 1173	Accelerated Composition II	
Foreign Language		
3 semesters - one Foreign Language (see advisor)		9
Humanities		
Literature - see Major Core		3
History - see A&S listing		3
Philosophy Elective - see advisor		3
Humanities Electives - consult advisor		9
Math		
MA 1313	College Algebra	3
Above College Algebra		3
Fine Arts		
See A&S listing		3
Natural Sciences		
Physical Science w/Lab [1]		3-4
Biological Science w/Lab [2]		3-4
Natural Science Elective [3]		3-4
Social Sciences		
See A&S Listing		6
Social Sciences Electives [4]		12
Major Core		
Students must choose 3 areas with 12 upper division hours in each area. Consult advisor.		
Oral Communication Requirement		
CO 1003	Fundamentals of Public Speaking	3
Computer Requirement		
Consult advisor for approved courses		
Writing Requirement		
Consult advisor for approved courses		
Electives		
8 or more hours to equal 124		
Total Hours		124

1. CH, GG, or PH; see General Education courses.
2. BIO, EPP, or PO; see General Education courses.
3. Consult advisor.
4. Must be from 2 different areas and must cross 4 disciplines over the 18 hours. Only one Economics allowed. See advisor.

Bachelor of Arts in History

Advisor: Dr. Toby Bates

The Bachelor of Arts in History degree prepares students to think critically beyond their immediate environment, learn research skills and the proper method of collecting data, develop historical arguments, and successfully communicate their conclusions.
Students will achieve a detailed understanding of the political, cultural, economic, and racial aspects found within American history, European history, as well as Latin American history. Through a study of Mississippi history students will also find great insight into their local and state narratives.

General Education and College Requirements

English Composition		
EN 1103	English Composition I	3
or EN 1163	Accelerated Composition I	
EN 1113	English Composition II	3

or EN 1173	Accelerated Composition II	
Foreign Language		
3 semesters - one Foreign Language - see advisor		9
Humanities		
Literature - see General Education courses		3
History - see major		3
Philosophy Elective - see A&S requirements		3
Humanities Elective - see A&S core (Must be from 2 different areas. Can be upper division hours; 6 hours may be HI courses; 3 hours must be from another area.)		9
Math		
MA 1313	College Algebra	3
MA 1323	Trigonometry	3
or ST 2113	Introduction to Statistics	
Fine Arts		
See A&S requirements		3
Natural Sciences		
Physical Science w/Lab [1]		3-4
Biological Science w/Lab [2]		3-4
Natural Science Elective [3]		3-4
Social Sciences [4]		
See A&S requirements		6
Social Sciences Electives		12
Major Core		
Must choose two of the following sequences:		
World History		
HI 1163	World History Before 1500	3
HI 1173	World History Since 1500	3
Western World		
HI 1213	Early Western World	3
HI 1223	Modern Western World	3
U.S. History		
HI 1063	Early U.S. History	3
HI 1073	Modern U.S. History	3
East Asian Civ		
HI 1313	East Asian Civilizations to 1300	3
HI 1323	East Asian Civilizations since 1300	3
Students declaring a history major prior to Fall 2008		
U.S. history U/D Electives		6
African, Ancient, Asian or Latin American U/D Electives		6
European history U/D Electives		6
U/D Electives		6
Students declaring a history major after Summer 2008		
Category I History U/D Electives		6
Category II History U/D Electives		6
Category III History U/D Electives		6
U/D Electives		6
Oral Communication Requirement		
CO 1003	Fundamentals of Public Speaking	3
Writing Requirement		
HI 3903	Historiography and Historical Method	3
Computer Literacy		
BIS 1012	Introduction to Business Information Systems	2
or TKT 1273	Computer Applications	
General Electives [5]		
Consult advisor		12
Total Hours		124
(31 hours must be A&S 3000 or above)		

1. CH, GG, or PH; see General Education courses.
2. BIO, EPP, or PO; see General Education courses.
3. Consult advisor.
4. Must be from 2 different areas and must cross 4 disciplines over the 18 hours. Only one Economics allowed. Can be upper division hours. See advisor.
5. 13 hours of general electives required if BIS 1012 is chosen for computer requirement.

Bachelor of Arts in Psychology

Advisor: Dr. Rodney Wilson

The Bachelor of Arts in Psychology degree offers students the opportunity to learn unique insights into human behavior and mental processes which enable them to have a positive impact on people's day-to-day lives. Students will develop good research, writing, and problem solving skills, and the ability to analyze, synthesize, and evaluate information.
Psychology majors are encouraged to work with faculty members on research projects and to share authorship of posters and journal articles. Students also have an opportunity to experience an internship in area mental health facilities.

Required Curriculum

Undergraduate students wishing to major in psychology must have a minimum 2.0 grade point average on all college work attempted prior to entering the major. The Bachelor of Arts degree program in psychology is designated to provide training for advanced study in psychology or related fields. Advanced study is recommended for students desiring a career in psychology. Psychology majors must earn a C or better in all required psychology courses.

General Education and College Requirements

English Composition		
EN 1103	English Composition I	3
or EN 1163	Accelerated Composition I	
EN 1113	English Composition II	3
or EN 1173	Accelerated Composition II	
Foreign Language		
3 semesters - one Foreign Language - see advisor		9
Humanities		
Literature - see General Education courses		3
History - see General Education courses		3
Philosophy Elective		
Consult advisor		3
Humanities Elective		
Must be from 2 different areas - see A&S Core		9
Mathematics		

MA 1313	College Algebra	3
MA 1323	Trigonometry (or higher math)	3
or ST 2113	Introduction to Statistics	
Fine Arts		
See A&S Core List		3
Natural Sciences		
Physical Sciences w/lab (CH, GG, PH) [1]		3-4
Biological Sciences w/lab (BIO, EPP, PO) [1]		3-4
Natural Science Elective [2]		3-4
Social Sciences Core		
PSY 1013	General Psychology	3
See A&S Core listing		3
Social Sciences Electives [3]		
Social Sciences Electives		12
Major Core		
PSY 1021	Careers in Psychology	1
PSY 3314	Experimental Psychology	4
PSY 3104	Introductory Psychological Statistics	4
Choose two of the following:		6
PSY 3213	Psychology of Abnormal Behavior	
PSY 3623	Social Psychology	
PSY 3803	Introduction to Developmental Psychology	
PSY 4203	Theories of Personality	
Choose one of the following:		3
PSY 3343	Psychology of Learning	
PSY 3713	Cognitive Psychology	
Choose one of the following:		3
PSY 4403	Biological Psychology	
PSY 4423	Sensation and Perception	
Choose one unused course from the groups above		3
PSY Upper Division Electives		12
Oral Communication Requirement		
CO 1003	Fundamentals of Public Speaking	3
Writing Requirement		
PSY 3314	Experimental Psychology	4
Computer Literacy		
PSY 3314	Experimental Psychology	4
General Electives		
Consult advisor		
Total Hours		120

32 hours of course work must be A&S 3000/4000

1 See General Education courses.

2 Consult advisor.

3 Must be from 2 different areas and must cross 4 disciplines over the 18 hours (6 hours from the Social Science core and 12 hours of SS electives). Only one Economics allowed. See advisor.

Bachelor of Science in Interdisciplinary Studies (BSIS)

Advisor: Dr. Jarod Fogarty

The Bachelor of Science in Interdisciplinary Studies is a university-wide degree coordinated through the Office of Academic Affairs by the Interdisciplinary Studies Committee. This multi-discipline academic program is appropriate for students motivated by specific interests not recognized in traditional majors and is not intended to compete with existing programs. All University requirements, including 32 hours of upper division course work and a year's residence, must be met for graduation.

The Bachelor of Science in Interdisciplinary Studies is intended to allow students maximum flexibility to custom-design a curriculum to meet their personal and career goals. Such a program of study must assure depth of study as well as breadth. Therefore, it must insure that students take at least 36 upper-division hours in the areas they have chosen for emphasis and that they select a minimum of 12 hours in each of three areas or 18 hours in two. Emphasis areas must be selected from at least two colleges. General education requirements (45 hours) must be met in addition to a general studies core of 15 hours. A total of 122 semester hours is required for graduation, along with an MSU and cumulative GPA of 2.0.

To insure coherence in the program, the student must construct and explain in writing the rationale for the interdisciplinary studies program's direct relationship to the student's personal and career goals. Each student will be required to find advisors in the academic disciplines who will agree to sponsor the student in drawing up the proposed curriculum, formulating the rationale, and presenting the case in writing to the Interdisciplinary Studies Committee. This should be done prior to the senior year.

If approved, the student may proceed with the curriculum. The Committee will meet during the fall, spring and summer semesters, and students must make written application by September 15 or February 1. Application for a degree must be submitted to the Office of the Registrar. For further information, contact Dr. James Kelley, Office 088 of the MSU-Meridian Campus.

Bachelor of Social Work

Program Director: Rhonda G. Carr, MSW, LCSW

The Social Work Program at Mississippi State University Meridian Campus is accredited by the Council on Social Work Education.

The purpose of the social work profession is to promote human and community well-being. Guided by a person-in-environment framework, a global perspective, respect for human diversity, and knowledge based on scientific inquiry, the purpose of social work is actualized through its quest for social and economic justice, the prevention of conditions that limit human rights, the elimination of poverty, and the enhancement of the quality of life for all persons, locally and globally. (CSWE, 2015)

The Bachelor of Social Work (BSW) prepares students for entry-level generalist social work practice. Students learn ways to properly assess and develop therapeutic working relationships with diverse populations, utilize varying intervention approaches, identify strengths and enhance client problem-solving and coping skills, as well as program evaluation, advocacy, research, and community outreach.

The Social Work curriculum is grounded in a liberal arts perspective. This liberal arts perspective enhances the person-in-environment focus of generalist social work practice.

Although students may enroll in social work as their major, there is a formal admission process into the social work program. To be eligible for

admission to the social work program students must meet the following criteria for admission into the program:

1. Cumulative GPA of 2.0

2. Completion of the following liberal arts requirements:

    # English Composition I and II
    # College Algebra
    # Introduction to Sociology
    # American Government
    # General Psychology
    # Anatomy & Physiology
    # Principles of Economics
    # Fundamentals of Public Speech
    # Basic Computer Concepts & Applications
    # Social Work with At-Risk Populations

3. Completion of two of the following social work courses with a minimum grade of C:

- SW 3003 Social Work with At-Risk Populations
- SW 2303 Social Welfare Policy I
- SW 3013 Human Behavior in the Social Environment I

4. Completion of SW 2313 Introduction to Social Work (including 20 hours of service learning experience) with a minimum grade of B.

5. Completion of an Application for Admission to the Social Work Program.

- Students must provide three reference letters on provided forms
- Authorize a Background Check, Child Abuse/Neglect and Sex Offender Registries
- Participate in a personal interview with Social Work Program Admissions Committee.

Before enrolling in any social work classes, it is the responsibility of the student to consult with their social work advisor regarding any prerequisites for social work classes.

The criteria for remaining in the program include:

- Maintain an overall GPA of 2.0, with a 2.75 GPA for all social work courses.
- Must earn a minimum of a "C" in each social work course.
- Continue to demonstrate an aptitude for a social work career.
- Adhere to all academic expectations of the university and the social work program.
- Adhere to the National Association of Social Workers Code of Ethics.

General Education and College Requirements

English Composition		
EN 1103	English Composition I	3
or EN 1163	Accelerated Composition I	
EN 1113	English Composition II	3
or EN 1173	Accelerated Composition II	
Foreign Language		
2 semesters - one Foreign Language – see advisor		6
Humanities		
Literature – see General Education courses		3
History – see General Education courses		3
Philosophy		
PHI 1103	Introduction to Philosophy	3
or PHI 1113	Introduction to Logic	
Humanities Elective [1]		
Literature Elective		3
History Elective		3
Humanities Elective		3
Mathematics		
MA 1313	College Algebra	3
ST 2113	Introduction to Statistics	3
Fine Arts		
See Arts & Sciences Core List		3
Natural Sciences		
BIO 1004	Anatomy and Physiology	4
Physical Sciences w/lab (CH, GG, PH) [2]		3-4
Natural Science Elective [1]		3-4
Social Sciences		
SO 1003	Introduction to Sociology	3
PS 1113	American Government	3
Social Sciences Electives		
Required:		
PSY 1013	General Psychology	3
EC 2113	Principles of Macroeconomics	3
AN 1103	Introduction to Anthropology	3
AN 1143	Introduction to Cultural Anthropology	3
Major Core		
Social Work curriculum is completed as sequenced.		
SW 2313	Introduction to Social Work/Social Welfare	3
SW 2303	Social Welfare Policy I	3
SW 3003	Social Work with At-Risk Populations [1]	3
SW 3013	Human Behavior and the Social Environment I	3
Students must successfully complete a formal admissions process prior to taking the following courses:		
SW 2323	Social Welfare Policy II [3]	3
SW 3023	Human Behavior and the social Environment II [3]	3
SW 3213	Research Methods in Social Work [3]	3
SW 4613	Child Welfare Services	3
SW 3513	Social Work Practice I [3]	3
SW 3523	Social Work Practice II [3]	3
SW 3533	Social Work with Communities and Organizations [3]	3
Social Work Elective		3
Oral Communication Requirement		
CO 1003	Fundamentals of Public Speaking	3
Writing Requirement		
SW 4713	Social Work Senior Seminar [3]	3
Computer Literacy		
Consult Advisor		
General Electives		
Consult Advisor		

Field Work includes full-time placement for one semester in a supervised agency setting.		
SW 4916	Social Work Field Practicum/Seminar I [3]	6
SW 4926	Social Work Practicum/Seminar II [3]	6
Total Hours		124
32 hours of course work must be A&S 3000/4000		

1 Consult Advisor.

2 See General Education courses.

3 Course has prerequisite. Please check course description in back of catalog or consult advisor.

Bachelor of Applied Technology

Advisor: Dr. Dennis Mitchell
The Bachelor of Applied Technology (BAT) degree offers students who have completed technical course work the opportunity to apply up to twenty-eight hours of those credits toward completion of a bachelor's degree. This degree will also benefit those who are already working buy would like to further their education by earning a bachelor's degree.

The concentration in Healthcare Services is designed for students who have completed technical course work in the health professions and related programs at 2-year colleges. The concentration focuses on courses in health policy, managed care, and other pertinent topics for today's changing healthcare environment.

The concentration in Event and Hospitality Services is designed for students who have completed course work in the hospitality services, marketing, and related programs at 2-year colleges. The concentration focuses on courses in managing, marketing, and administering event and hospitality services in a diverse social and cultural environment.

English Composition		
EN 1103	English Composition I	3
or EN 1163	Accelerated Composition I	
EN 1113	English Composition II	3
or EN 1173	Accelerated Composition II	
Humanities		
See General Education courses		6
Fine Arts		
See General Education courses		3
Mathematics		
MA 1313	College Algebra	3
MA 2113	Introduction to Statistics	3
Natural Sciences		
Select 2 lab-based sciences from General Education courses		7-8
Math/Science Elective		
Math/Science elective (from Gen Ed) - Consult Advisor		3
Social Sciences		
EC 2113	Principles of Macroeconomics	3
PSY 1013	General Psychology	3
Major Core		
EN 3313	Writing for the Workplace	3
PHI 3013	Business Ethics	3
MGT 3513	Introduction to Human Resource Management	3
or MGT 4613	Cross-Cultural Management	
MGT 3323	Entrepreneurship	3
or MGT 3823	Socially Responsible Leadership	
MKT 3013	Principles of Marketing	3
BIS 3233	Management Information Systems	3
Healthcare Concentration Courses		
PSY 3503	Health Psychology	3
PSY 4223	Drug Use and Abuse	3
SW 3003	Social Work with At-Risk Populations	3
SW 4633	Social Work in Health Care	3
SO 3213	Introduction to Social Research	3
HCA 3313	Healthcare Systems	3
HCA 3813	Healthcare Regulations	3
HCA 4243	Managed Care	3
HCA 4803	Healthcare Policy	3
Event and Hospitality Services Concentration Courses		
CO 3803	Principles of Public Relations	3
SO 4503	Gender and Work	3
AN /SO 2203	Cultural and Racial Minorities	3
PSY 4813	Positive Psychology	3
HI 4243	American Life and Thought	3
MKT 4613	Services Marketing	3
MKT 4423	Strategic Brand Management	3
MKT 4513	Resort-Convention Marketing	3
MKT 3513	Marketing Internship (in MS Riley Center, Hotels, Events, etc.)	3
Oral Communication		
CO 1003	Fundamentals of Public Speaking	3
Junior/Senior Writing Requirement		
Satisfied by successful completion of EN 3313		
Computer Literacy		
Satisfied by successful completion of BIS 3233		
Technical Core		28
Arts & Sciences Upper Division Electives		
Upper Division Electives - Consult Advisor		3
General Electives		
General Electives - Consult Advisor		3-4
Total Hours		120

Division of Business

Dr. William Hill, Division Head
Professor: Dr. Seungjae Shin
Associate Professors: Dr. Kevin Ennis, Dr. Paul Spurlin, and Dr. Carlton Young
Assistant Professors: Dr. Joseph Faello, Dr. Stacey McNeil, and Dr. Yingge Qu

The mission of the College of Business is to be a nationally recognized and respected college of business equipped to focus on dynamic and collaborative learning, innovative and distinctive research, and valued research activities in the state and region.

Bachelor of Accountancy

Lower Division - Lower division hours must be completed at another educational institution.

English		
EN 1103	English Composition I	3
EN 1113	English Composition II	3
Humanities		
Humanities Elective		3
Humanities Elective		3
Fine Arts		
Choose one of the following:		3
Art Appreciation		
Music Appreciation		
Mathematics		
MA 1313	College Algebra	3
MA 1613	Calculus for Business and Life Sciences I	3
BQA 2113	Business Statistical Methods I	3
Science		
BIO, GG, CH, or PH (with laboratory)		6
Behavioral Science		
Choose one of the following:		3
Introduction to Psychology		
Introduction to Sociology		
Introduction to Anthropology		
Additional Required Lower Division Courses		
PS 1113	American Government	3
CO 1003	Fundamentals of Public Speaking	3
ACC 2013	Principles of Financial Accounting	3
ACC 2023	Principles of Managerial Accounting	3
BL 2413	The Legal Environment of Business	3
EC 2113	Principles of Macroeconomics	3
EC 2123	Principles of Microeconomics	3
Electives		7
Total lower division hours		61
Upper Division		
ACC 3003	Accounting Information Systems I	3
ACC 3013	Cost Accounting	3
ACC 3023	Intermediate Accounting I	3
ACC 3033	Intermediate Accounting II	3
ACC 3053	Accounting Information Systems II	3
ACC 4013	Income Tax I	3
ACC 4033	Auditing	3
BIS 3233	Management Information Systems	3
BIS 3713	Electronic Information Systems	3
BQA 3123	Business Statistical Methods II	3
BL 3223	The Law of Commercial Transactions	3
FIN 3123	Financial Management	3
MGT 3114	Principles of Management and Production	4
MGT 3213	Organizational Communications	3
MKT 3013	Principles of Marketing	3
PHI 3013	Business Ethics	3
EN 3303	Creative Writing	3
BUS 4853	Business Policy	3
International Elective		3
Accounting Elective		3
Non-Business Elective		2
Total hours		124

Bachelor of Business Administration

(Concentrations in Business Administration and Healthcare Administration)

Lower Division - Lower division hours must be completed at another educational institution.

English		
EN 1103	English Composition I	3
EN 1113	English Composition II	3
Humanities		
Humanities Elective		3
Humanities Elective		3
Fine Arts		
Choose one of the following:		3
Art Appreciation		
Music Appreciation		
Mathematics		
MA 1313	College Algebra	3
MA 1613	Calculus for Business and Life Sciences I	3
BQA 2113	Business Statistical Methods I	3
Science		
BIO, GG, CH, or PH (with laboratory)		6
Behavioral Science		
Choose one of the following:		3
Introduction to Psychology		
Introduction to Sociology		
Introduction to Anthropology		
Additional Required Lower Division Courses		
PS 1113	American Government	3
CO 1003	Fundamentals of Public Speaking	3
ACC 2013	Principles of Financial Accounting	3
ACC 2023	Principles of Managerial Accounting	3
BL 2413	The Legal Environment of Business	3
EC 2113	Principles of Macroeconomics	3
EC 2123	Principles of Microeconomics	3
Electives		7
Total lower division hours		61
Upper Division		
BIS 3233	Management Information Systems	3
BIS 3713	Electronic Information Systems	3
BQA 3123	Business Statistical Methods II	3
FIN 3113	Financial Systems	3
FIN 3123	Financial Management	3
MGT 3114	Principles of Management and Production	4
MGT 3213	Organizational Communications	3
MKT 3013	Principles of Marketing	3
BUS 4853	Business Policy	3

International Elective	3
Major Electives [1]	
General Electives [2]	
Total hours	124

1. Major elective hours by major: Business Administration (24), Healthcare Administration (18)
2. Choose enough general electives to bring the total number of hours to 124.

Division of Education

Dr. Kimberly Hall, Division Head
Professors: Dr. Kimberly Hall and Dr. Darren Wozny
Associate Professors: Dr. Mark Fincher, Dr. Lindon Ratliff, Dr. Penny Wallin, and Dr. Ben Wax
Assistant Professors: Dr. Jeffrey Leffler, Dr. Eric Suddeath, and Dr. Ksenia Zhbanova
Clinical Assistant Professor: Dr. Tania Hanna
Instructors: Laura Hilton, Susan May, and Brandi Sumrall

The Division of Education in Meridian offers degree programs in areas previously listed. Education programs offered at MSU-Meridian parallel those offered through the College of Education in Starkville. Specific degree program requirements may be obtained by referencing the College of Education section in this Bulletin.

Degree requirements may be found by referencing the corresponding degree program located within this general bulletin.

BS in Kinesiology - Clinical Exercise Physiology concentration

The clinical exercise physiology concentration is designed as a professional preparation program of study that enables students to work in clinical settings as exercise physiologists in cardiac and pulmonary rehabilitation, or other clinical rehabilitation settings, such as those for individuals with diabetes, orthopedic limitations, arthritis, cancer, osteoporosis, renal failure, obesity, and in programs dealing with issues of aging and female specific issues. The clinical exercise physiology concentration also provides students with the necessary background to pursue graduate health professions, such as physical or occupational therapy, physician assistant studies, medicine, or other graduate level educational programs.

English Composition		
EN 1103	English Composition I	3
or EN 1163	Accelerated Composition I	
EN 1113	English Composition II	3
or EN 1173	Accelerated Composition II	
Mathematics		
MA 1313	College Algebra	3
ST 2113	Introduction to Statistics	3
Science		
Biology	Lecture and Lab from General Education courses	4
Chemistry	Lecture and Lab from General Education courses	4
Natural Science	From General Education courses	3
Humanities		
Select from General Education courses		6
Fine Arts		
Select from General Education courses		3
Social Sciences		
Select from General Education courses		3
Major Core		
KI 2023	Foundations of Health Education	3
KI 2603	Medical Terminology	3
EP 2013	Fundamentals of Kinesiology	3
EP 3183	Exercise Psychology	3
EP 3233	Anatomical Kinesiology	3
EP 3304	Exercise Physiology	4
EP 3613	Exercise Electrocardiography	3
EP 3643	Applied Anatomy and Pathophysiology	3
EP 4113	Fitness Programs and Testing Procedures	3
EP 4133	Exercise Programs for Clinical Populations	3
EP 4183	Exercise and Weight Control	3
EP 4603	Physical Activity Epidemiology	3
EP 4803		
EP 4814	Exercise Science Internship	4
EP Electives	Choose two of the following:	6
EP 4123	Aging and Physical Activity	
EP 4143	Aging and Disability	
EP 4503		
EP 4703	Neural Control of Human Movement	
BIO 3004	Human Anatomy	4
BIO 3014	Human Physiology	4
Electives		20
Oral Communication		3
CO 1003	Fundamentals of Public Speaking	3
or CO 1013	Introduction to Communication	
or CO 2253	Fundamentals of Interpersonal Communication	
Writing		
EDF 3413	Writing for Thinking	3
or MGT 3213	Organizational Communications	
or BIO 3013	Professional Writing for Biologists	
Total Hours		124

Reserve Officers' Training Corps

Office: 1st Floor, Middleton Hall
Telephone: (662) 325-3503
www.armyrotc.msstate.edu
Mailing Address: P.O. Box 5447, Mississippi State, MS 39762

LTC Sarrette, Maj. Harris, MSG Robb, SFC Vazquez, Maj. McNutt, Maj. Acevedo, SFC Carrasquillo

Office: 2nd Floor, Middleton Hall
Telephone: (662) 325-3810
www.afrotc.msstate.edu
Mailing Address: P.O. Box AF, Mississippi State, MS 39762

Lieutenant Colonel Joseph J. Cassidy II
Professor of Aerospace Studies

The Reserve Officers' Training Corps is under the administrative and academic supervision of the College of Arts and Sciences. Army ROTC (Military Science) courses are indicated by the prefix MS; Air Force ROTC (Aerospace Studies) courses are indicated by the prefix AS. All ROTC courses are bona fide University courses. The total number of ROTC hours allowed as elective credit toward a specific degree varies. Most schools and colleges at the University accept six (6) or more hours of ROTC courses offered toward degrees conferred. The advanced ROTC courses are options for meeting social/behavioral science core requirements. A student should contact the appropriate college, school, or department to determine allowable ROTC course credit toward a particular degree.

Purposes and Objectives

The general objective of the Reserve Officers' Training Corps is to develop in each student:

1. a basic understanding of associated professional knowledge necessary to be an officer in the US Armed Forces;
2. a strong sense of personal integrity, individual responsibility and honor; and,
3. an appreciation of the requirements of national security.

The Army ROTC Basic Course is designed to give the first and second year ROTC student an introduction to the Army and its career opportunities without incurring any obligation on the part of the student. The Advanced Course (third and fourth years) stresses the military skills and knowledge, and interpersonal skills required of commissioned officers of the Active Army, Army Reserve, or Army National Guard.

The Air Force ROTC General Military Course (GMC) is a two-year course normally taken during the freshman and sophomore years. The course covers two main themes - the development of air power and the contemporary Air Force in the context of military organization. A student can enroll in the GMC without military obligation (unless on an AFROTC Scholarship). The Professional Officer Course (POC) is a two-year course of instruction, normally taken during the junior and senior years. The curriculum covers Air Force leadership and management and American Defense Policy. A minor in Aerospace Studies is available to students completing the specified requirements in Air Force ROTC.

Army Program

Army Program. The Basic and Advanced Courses consist of 4 semesters each as shown below. See the "Description of Courses" section of this catalog for further information.

Basic Courses		
MS 1112	Introduction to ROTC	2
MS 1122	Introduction to Leadership	2
MS 2113	Advanced Leadership	3
MS 2123	Tactics and Officership	3
Total		10
Advanced Courses		
MS 3113	Advanced Military Skills I	3
MS 3123	Advanced Military Skills II	3
MS 4114	Leadership Challenges and Goal-Setting	4
MS 4124	Transition to Lieutenant	4
Total Hours		14

Professional Military Education (PME). In addition to the above, each cadet must complete, as a minimum, one university approved course in each of the following subject areas; Written Communication Skills, Human Behavior, American Military History (HI 4233), Computer Literacy, and Math Reasoning. The PME requirement is normally achieved by the cadet as part of a normal course of study. Students should coordinate with a Military Science instructor to determine a course of action to complete the PME requirement.

Requirements for commissioning as a Second Lieutenant in the United States Army include thirty-three days at the Leadership Development Assessment Course (normally between the junior and senior years), completion of the Advanced Course, satisfactory academic progress, and the recommendation of the Professor of Military Science (PMS).

Entrance Requirements

Basic Course. The Army Basic Course is an elective course requiring only that the individual be a full time student and a legal U. S. citizen. ROTC credit hours earned at other universities are transferable.

Entrance into the Advanced Course is on a selective and competitive basis. The primary requirements for entry into the advanced program are satisfactory completion of the basic course or equivalent, good academic standing, demonstrated leadership ability, an approved physical examination and completion of 60 semester hours of college credit.

Two-Year Program. Equivalent credit for the basic course may be obtained by students with 54 semester hours of college credit or more for direct enrollment in the advanced course, based on any one of the following.

1. Satisfactory completion of the four week Leader's Training Course (LTC). LTC is an intensive introduction to Army life and leadership training of the Reserve Officers' Training Corps, the aim of the course is to motivate and qualify Cadets for entry into the Senior ROTC program. LTC is primarily intended for students who could not obtain the basic ROTC course during the freshman and sophomore years.

2. at least 180 days of honorable service or active duty for training with the U.S. Armed Forces or Coast Guard.
3. Substitute credit, which in varying amounts may be derived from attendance at service academies, junior ROTC courses, and National Defense Cadet Corps training.
4. Successful completion of Basic Combat Training with the Army Reserve or the National Guard.

Interested students should consult the PMS during their first sophomore semester but not later than their junior year. Graduate students should apply prior to starting graduate work.

Simultaneous Membership program (SMP). Students who are members of a National Guard or Army Reserve unit may qualify for direct entry into the Army ROTC Advanced Course. Consult the PMS for additional information concerning the financial benefits of this program.

Summer Training

The Army Leader's Training Course can be used by students desiring to enter the Advanced Course who are not eligible for advanced placement under any other process (e.g. Basic Course, veteran, four years of junior ROTC, completion of Basic Training, etc). The course is five weeks long and incurs no military obligation for attendance. The course is a substitute for the two year Basic Course. Students attending may compete for Army scholarships.

MS 3376 Advanced Leadership Course

The five-week Army Advanced Camp is required of all students enrolled in the Advanced Course and is normally attended between the junior and senior year.

Uniforms and Equipment

Uniforms and textbooks are issued without cost to students. However, all equipment and textbooks must be returned to the ROTC Department upon departure of the student, and any such article lost or damaged other than by fair wear and tear, must be paid for by the students. Each student enrolled in ROTC is responsible for the maintenance of his/her uniform. Students who fail to clear their accounts before leaving the institution will have their university records placed on hold.

Pay and Allowances

On Campus. Each student enrolled in the Army Advanced Course is paid a monthly subsistence allowance by the Federal Government of $450.00 per month for juniors and $500.00 per month for seniors.

Summer Training. While at the Leadership Training Course, the student receives pay at the rate of $26.42 per day (approximately $792.60 per month). Students attending the Leadership Development Assessment Course also receive pay at a rate of $28.19 per day (approximately $845.70 per month) less applicable taxes.

Army ROTC Scholarship Program

The Army awards ROTC scholarships to outstanding students each academic year. Army ROTC scholarships are for periods of two, three, or four years. They pay tuition, fees, books, and laboratory expenses incurred by the cadet and provide up to $500 per month subsistence allowance to the cadet for the duration of the scholarship (except during the summer). Additionally, 4-year Scholarship Winners and 3-year Designees that attend MSU may receive up to $2000 for room and board. The amount of the award depends on the number of scholarship winners and designees that attend MSU. All contracted cadets can compete for a scholarship. Both men and women are eligible to apply for these scholarships.

High school students should consult their guidance counselors early in September or October of their senior year to apply for the four year scholarship. College sophomores with a 2.5 GPA and greater who otherwise qualify may be eligible for a 2-year scholarship.

Obligations

Accepting a commission as a 2nd Lieutenant in the U.S. Army incurs a service obligation of eight years. This period may be served in a variety of ways to include: Active Duty, Reserves, National Guard, Individual Ready Reserve or a combination of these.

Air Force Program

Air Force Course Program. The General Military Course (GMC) and the Professional Officer Course (POC) consist of eight semesters as shown below. See the "Description of Courses" section of this catalog for further information. Each course has a mandatory laboratory.

General Military Courses (GMC)		
AS 1012	Foundations of U.S. Air Force-I	2
AS 1022	Foundations of U.S. Air Force-II	2
AS 2012	Air and Space Power-I	2
AS 2022	Air and Space Power-II	2
Total		8
Professional Officer Course (POC)		
AS 3013	Air Force Leadership Studies-I	3
AS 3023	Air Force Leadership Studies-II	3
AS 4013	National Security Affairs and Preparation for Active Duty-I	3
AS 4023	National Security Affairs and Preparation for Active Duty-II	3
Total Hours		12

Requirements for commissioning as a USAF Second Lieutenant include completion of a degree according to the university's rules and regulations, completion of the Professional Officer Course, completion of AFROTC Field Training (normally during the summer between the sophomore and junior years), and approval of the Professor of Aerospace Studies. Officer candidates must be between 18 and 31 years of age for commissioning.

Entrance Requirements

GMC: To enter the GMC, a student must be full-time, be a U.S. citizen, be in good physical condition, and be of good moral character. Student must also possess a minimum of 2.0 collegiate GPA.

POC: In addition to the GMC requirements, POC cadets must have passed the AFROTC Physical Fitness Test. They must be selected by a board of USAF Officers, and have completed a four-week field training encampment.

While Aerospace Studies courses are designed to prepare eligible students for commissioning as Second Lieutenants in the USAF, the AS academic courses are open to all interested students, even those who do not meet GMC or POC entry requirements. There is no armed forces service obligation for joining the GMC. AFROTC detachment personnel

will explain any commitments associated with AFROTC scholarships or POC entry.

Field Training: AFROTC cadets who have completed the GMC course work and meet other requirements for POC entry will normally attend the four-week USAF field training encampment between their sophomore and junior years. Leadership Evaluation and Development is a mentally and physically demanding period of concentrated USAF training.

Uniforms and Equipment: AFROTC issues uniforms and textbooks without cost to students. However, all equipment and textbooks remain property of AFROTC and must be returned before departure. Each student is responsible for the maintenance of his/her uniform.

Pay and Allowances: Each student enrolled in the POC is paid a monthly subsistence allowance of at least $450 while enrolled in the POC (maximum of 600 days). While at Leadership Evaluation and Development, students are paid at a rate of approximately $20 per day.

In-College Scholarship Program

Full-time students are eligible to apply for Air Force ROTC three- or two-year scholarships. The majority of scholarships pay full college tuition, laboratory and incidental fees, book costs, plus at least $350 per month, depending on academic year. Applicants are selected on the basis of college grade point average, ACT scores, and a recommendation from the Professor of Aerospace Studies. Final selection is made by a Central AFROTC selection board which considers qualified applicants nationwide. There is no maximum number of scholarships for any one school. Students who are not presently taking AFROTC courses may still apply for the in-college scholarships.

Inquiries about AFROTC scholarships may be made directly to the Recruiting Flight Commander, AFROTC Detachment 425, Box AF, Mississippi State, MS 39762.

Active Duty Obligations: Individuals who complete the AFROTC program and are commissioned a Second Lieutenant incur an active duty service commitment of four years.

ROTC Extracurricular Activities

Cadet Military Societies. Chapters of the Scabbard and Blade (Army and Air Force). Arnold Air Society (Air Force), and the Society of American Military Engineers (Army and Air Force) are chartered by appropriate national organizations. Selected Basic cadets with scholarships and Advanced cadets are eligible for membership in the Scabbard and Blade, and the Arnold Air Society, while the Society of American Military Engineers is open to all ROTC cadets and engineering students.

Drill Teams. The Blue Knights is a precision military drill team, composed of selected cadets from Air Force ROTC. The drill team participates in university and community events.

Ranger Challenge. The Army ROTC Lee's Rangers is made up of selected volunteers from the Army. This unit participates in extra training in small unit tactics and leadership under simulated combat conditions. Emphasis is placed on maintaining a high level of physical conditioning and developing self-confidence. Participants must be enrolled in Army ROTC. The Lee Ranger Company sponsors the ranger challenge team.

Silver Wings. Silver Wings is a nationwide honorary organization of college students dedicated to the interests of the United States Air Force and Air Force ROTC. Silver Wings evolved from the previously all-female auxiliary of the cadet corps, Angel Flight. Silver Wings exists to further the cause of the United States Air Force by promoting the interest of college men and women in the Air Force ROTC program. Members of Silver Wings are considered associated members of Arnold Air Society. Participation in worthwhile projects such as the Red Cross blood drives and orphanage parties, as well as hosting at Air Force ROTC functions makes these students an outstanding asset to the campus.

Bulldog Battery. The Army ROTC's Bulldog Battery exists to support military ceremonies and athletic events.

Bully Force. The Air Force ROTC's Bully Force exists to support military ceremonies and athletic events.

Color Guard. Both the Air Force and Army Programs have Color Guards. The cadets present the Colors at athletic events and various community events.

Academic Opportunities

Mississippi State offers a variety of unique academic programs that provide opportunities for scholarship, leadership training, and work experience. See the link at right for more information.

Cooperative Education Program

The Cooperative Education Program is a special way of going to college. Increasing numbers of students in various fields are taking advantage of the opportunity the program offers for combining practical experience with formal schooling in a five-year program of alternating semesters of study and gainful work with a cooperating employer. For the qualified student, the program can provide an expanded college education and a direct avenue to a career.

The work under this program is in, or closely related to, the student's field of study. Upon completing three semesters of alternating work experience in the program and becoming academically eligible for graduation, a co-op student is designated a Cooperative Education Graduate. Permanent job offers to graduates of the Cooperative Education Program often provide substantially higher starting salaries and more responsible positions than for regular four-year graduates. The co-op student is not obligated for permanent employment with his or her employer, nor is the employer obligated to hire him or her upon graduation.

A high school graduate becomes eligible to begin a work assignment after satisfactorily completing one year at Mississippi State University; during this year he or she must establish at least a 2.50 average (on a 4.00 grading system). The student must be at least 18 years of age to begin the first work semester. Co-op credit hours may not be used to satisfy **University-wide degree requirements.**

A junior-college or senior-college transfer student who has at least a 2.50 overall average (on a 4.00 grading system) is eligible for participation after satisfactorily completing one semester at Mississippi State University. A student interested in the program who plans to transfer in should communicate with the Cooperative Education office for application materials.

Qualified students majoring within the following colleges and schools are eligible to participate:

- Richard C. Adkerson School of Accountancy
- College of Agriculture and Life Sciences
- College of Architecture, Art, and Design
- College of Arts and Sciences
- College of Business and Industry
- College of Education
- James Worth Bagley College of Engineering
- College of Forest Resources

The program requires a semester-to-semester rotation. Once a student has accepted employment with one of the cooperating organizations, he or she is expected to regularly rotate each semester from work—to school—to work, etc., for a minimum of three semesters. Approximate co-op work semester dates begin on January 1, May 15, and August 15.

Co-op students are required to pay a $25 registration fee for applicable work semesters. Co-op students may optionally elect to pay a Sanderson Center usage fee during scheduled work semesters.

Final approval of all students for the program, specifically with respect to the University, rests solely with the University.

For more information, contact the Cooperative Education Program, 335 McCain Bldg., Box 6046, Mississippi State, Mississippi 39762, call the office at (662) 325-3823, or visit the Co-op Web page at www.coop.msstate.edu.

Montgomery Leadership Program

The Montgomery Leadership Program was established in 2006 as part of the Office of Student Leadership and Community Engagement to provide a select group of students unparalleled access to activities and recognized leaders to help them develop leadership potential. Participants are chosen based on their recognized academic, leadership, and character traits. During their three-semester study of leadership, students have access to local and national leaders and are able to engage in their community in a variety of ways. Program activities encourage participants to grow physically, emotionally, and intellectually so that they can become leaders of character in a rapidly changing world. For interested students who have completed at least one year of college, additional information can be found at www.MLP.msstate.edu. Online applications are accepted at the beginning of each fall semester for spring admission.

Day One Leadership Program

As part of the Office of Student Leadership and Community Engagement, Day One is designed to help incoming freshmen make a meaningful transition from home to college life and to develop leadership potential.

Day One students learn together in a special Leadership Forum. Classes focus on practical, applied, "how-to" leadership skills, along with character education and an understanding of social and civic responsibilities through community engagement.

Day One students live together, learn together, and lead together. The students bond and make friends through service-learning teams and study groups among familiar faces from their residence hall. Additional information can be found at www.DAYONE.msstate.edu

Community-Engaged Learning Program

The Center for Community-Engaged Learning (CCEL) is a shared endeavor among the Office of the Provost, the Division of Student Affairs, and MSU Extension, designed to create partnerships between the campus and the community to promote community-engaged learning. CCEL staff work with MSU faculty, staff, and students as well as members of MSU Extension including county coordinators, area agents, and research specialists.

The mission of CCEL is to provide opportunities for research, learning, and service for members of the MSU, local, statewide, and international communities. Community-engaged learning students collaborate with community partners to serve Mississippi, the region, and individuals from across the globe. These efforts enhance academic learning through hands-on experience. More information on CCEL and

community-engaged learning at MSU can be found by at www.c (http://www.servicelearning.msstate.edu)cel.msstate.edu.

CEL Designation

The CEL designation identifies academic courses that will incorporate community-engaged learning. A Community-Engaged Learning Advisory Committee (CELAC) reviews and approves community-engaged learning courses to determine which will be given the CEL designation. Students can find the CEL designation on the class schedule as they register for academic coursework. A comment will be noted on student transcripts indicating that the student participated in a community-engaged learning course.

National Student Exchange

The National Student Exchange program is a consortium of nearly 200 colleges and universities in the United States and extends beyond the borders of the United States to include some Canadian Provinces. Mississippi State University is a member of this program.

The NSE program provides the opportunity for the eligible student to attend a college or university in another state for up to one calendar year without having to pay for the high cost of out-of-state tuition. Students register, pay tuition and fees at Mississippi State University as they usually do; they do not pay tuition and fees at the host campus, but are responsible for room and board.

Mississippi State University students who participate in the National Student Exchange program remain as degree-seeking, registered students at Mississippi State University. Any financial aid that is normally available can be applied to the exchange obligations. Because NSE is an officially approved program of the university, all courses with their respective credit hours and earned grades will be recorded on the Mississippi State University transcript and will be calculated in the GPA.

For information, contact the NSE Coordinator in the Office of the Provost and Executive Vice President, 3500 Lee Hall or (662) 325-3742 or visit www.nse.org (http://www.nse.org).

Study Abroad

The Office of Study Abroad (OSA) currently offers over 1,000 study abroad programs in over 80 countries. Undergraduate and graduate students can earn credit toward their MSU degree through these study abroad programs. Study abroad can be designed to meet any academic major’s or minor's requirements. Knowledge of a foreign language is not required. Costs of the different programs vary depending on location and duration. Financial aid and scholarships are available.

Faculty-Led Study Abroad Programs

Many MSU faculty and staff from all colleges plan and implement their own study abroad programs and students receive MSU credit. These programs are held during summer, winter, and spring break, and are comprised of mostly MSU students. Faculty-led programs change annually, and updated lists are provided about six months prior to each start date.

Tuition Exchange Programs

Students who choose to study for a semester or academic year in another country can participate in a semester exchange program where the students register and pay tuition at MSU, but study at a partner university. MSU currently has more than 20 student exchange programs that are open for students in various majors. MSU is also part of the Global Engineering Education Exchange specifically designed for engineering students. Students receive transfer credit for all exchange courses.

Provider Companies

MSU has agreements with several study abroad provider companies in order to offer a wide variety of short- and long-term study abroad experiences. Students receive transfer credit for all affiliated provider company programs.

For a complete listing of all study abroad opportunities, or for more information, contact the Office of Study Abroad, at studyabroad@msstate.edu, (662) 325-8929, www.studyabroad.msstate.edu, or www.facebook.com/MSUStudyAbroad (http://www.facebook.com/MSUStudyAbroad)

Scholarships

Mississippi State University is committed to the recognition of outstanding students whose academic credentials confirm their potential for success as university students. Outstanding students may be eligible for various scholarships and honors.

Numerous privately funded scholarships support the University Scholarship Program to recognize continued academic success. Information regarding eligibility criteria and the online resume may be obtained from the Office of Admissions and Scholarships at www.admissions.msstate.edu/scholarships or (662) 325-3076. In addition to general university scholarships, most colleges and departments also have numerous scholarships available to qualified students. Colleges and departments can provide detailed information.

Coordinator of Prestigious External Scholarships

The Dean of the Shackouls Honors College and the director of the Prestigious External Scholarships identify and assist well-qualified undergraduate students who would be strong candidates for national and international awards such as the Rhodes Scholarship, the Goldwater Scholarship, the Marshall Scholarship, the Truman Scholarship, and the student Fulbright Program.

Prospective applicants are encouraged to investigate the Web sites of the major scholarship programs. For information on the opportunities, contact:

Shackouls Honors College
P.O. Box EH
210C Griffis Hall
Mississippi State, MS 39762
e-mail: shackoulshc@honors.msstate.edu
Web: http://www.honors.msstate.edu
(662) 325-2522

Academic Policies

Various policies of the University are grouped by category in the list to the right.

Degrees, Degree Requirements, and Scheduling

Student Responsibility Disclaimer

Each student is responsible for understanding and completing all requirements established for his or her degree by the University, college and department. A student's advisor or counselor may not assume that responsibility. Any substitution, waiver, or exemption from established degree requirements may be accomplished only with the approval of the student's dean. Exceptions to University requirements, including the General Education requirements, will be authorized only with the approval of the student's dean and the Office of Academic Affairs.

Degrees, Degree Requirements, and Scheduling

1. Baccalaureate Degrees.

MSU awards the following baccalaureate degrees: Bachelor of Arts (B.A.), Bachelor of Business Administration (B.B.A.), Bachelor of Fine Arts (B.F.A.), Bachelor of Science (B.S.), Bachelor of Landscape Architecture (B.L.A.), Bachelor of Music Education (B.M.E.), Bachelor of Architecture (B.ARC.), Bachelor of Accountancy (BACC), and Bachelor of Social Work (B.S.W.) Baccalaureate degrees are awarded in the following manner: Multiple programs awarded under the same degree within the same college, at the same time, are awarded as a single degree dual (multiple) major. For example, a student majoring in Sociology and Psychology awarded a Bachelor of Arts degree at the same time will be awarded a single degree (single diploma). The separate majors will be annotated on the official transcript. Degrees awarded by two or more colleges or at different times are considered separate degrees (separate diplomas). (Master's, Specialist, and Doctor's degrees are listed under Office of the Graduate School in this catalog, and in the Graduate Bulletin.)

2. University-Wide Requirements.

To complete a baccalaureate degree, a student must (1) satisfactorily complete the degree curriculum requirements, (2) make an overall C average (2.00 GPA) on all hours scheduled and rescheduled at all institutions attended, including Mississippi State University, (3) make a C average (2.00 GPA) on all hours scheduled and rescheduled at Mississippi State University, (4) complete from Mississippi State University no less than 25 percent of his/her degree program in junior and senior subjects (courses numbered 3000 through 5000) approved by the dean of the college or school in which he or she is enrolled, and (5) complete at least the last 25 percent of semester credit hours of course work taken to fulfill degree requirements from Mississippi State University. (Any exception to the 25 percent requirement must be approved in writing by the student's dean prior to taking course work at another institution.) Any course in the student's degree program that carries academic credit from Mississippi State University will fulfill these requirements. Hours earned at an approved exchange institution will count toward the 25 percent requirement. (6) Not more than 25 percent of any curriculum may be earned by Advanced Placement (AP) course, advanced standingexaminations, College-Level Examination Program (CLEP), International Baccalaureate (IB), Cambridge International, evaluated military service credits, tutorial, and extension courses. Evaluated military training courses granted academic credit are classified as MSU (institutional) academic pass/fail credit with a grade of S and annotated as "ACE Guide Military Credit." Military training courses include all branches of the United States Armed
Services, except the United States Air Force. The Air Force provides a Community College of the Air Force transcript and credit is entered as transfer courses. (7) Not more than 20 percent of any curriculum may be earned through correspondence courses. Correspondence courses must be approved by the dean before being taken by students in residence. USAFI credits are classified as correspondence work. (8) No more than 12 hours of Directed Individual Study (DIS) may be used to complete degree requirements. The creation of DIS courses must be approved in advance by the department head. (9) Prior job/ work experience alone can not count as academic credit at MSU.

a. Board of Trustees Core Curriculum.

In order to be awarded a baccalaureate degree, all students who enter Mississippi State University must complete a core curriculum approved by the Board of Trustees, Institutions of Higher Learning of the State of Mississippi. This core curriculum consists of the following:

English Composition	6
College Algebra, Quantitative Reasoning, or higher level mathematics	3
Natural Science	6
Humanities and Fine Arts	9
Social or Behavioral Sciences	6
Total Hours	30

(Note: These requirements are included in the General Education Curriculum which follows.)

b. General Education Requirements.

All students graduating from Mississippi State University must earn a minimum of 36 semester hours of credit (or equivalency) in courses making up the General Education
Curriculum. (Specific courses to satisfy the General Education Curriculum will vary by academic major.)

Students may obtain a list from their advisor or Dean's office of approved courses SELECTED from the following to meet individual degree requirements.

English Composition [1]	6
Mathematics and Natural Sciences [2]	15
Humanities/Fine Art [3]	9
Social/Behavioral Sciences [4]	6
Total Hours	36

1. Refer to General Education Requirements—Numbers and Course Titles for approved choices.
2. Mathematics: 6-9 semester hours. Consult an advisor in your major for approved choices.
   Natural Sciences: 6-9 semester hours. Consult an advisor in your major for approved choices.

[3] Six hours must be humanities and three hours must be fine art. Refer to General Education Requirements—Numbers and Course Titles for approved choices.

[4] Refer to General Education Requirements—Numbers and Course Titles for approved choices.

General Education Requirements

General Education Requirements - Numbers and Course Titles

NOTE: Students must check course descriptions of General Education classes for prerequisites and/or grade requirements.
NOTE: Honors sections may be available in selected courses.

English Composition - Freshman level (6 hours)

EN 1103	English Composition I	3
EN 1113	English Composition II	3
EN 1173	Accelerated Composition II	3

Students with **ACT English sub-scores of 28 or higher** may enroll in EN 1173 Accelerated Composition II. Those students earning a C or higher in EN 1173 will **also receive an "S" (credit) in** EN 1103 English Composition I. Those students who earn less than a C in EN 1173 must complete the EN 1103/EN 1113 sequence.

Similarly, those students who have been admitted to the **Shackouls Honors College** and have an **ACT-E sub-score of 32** or higher may enroll in Honors EN 1113H, **Honors Composition II**. After earning a C or higher in Honors EN 1113H , these students will receive an "S" (credit) in EN 1103 English Composition I. Those students who earn less than a C in Honors EN 1113H must complete the EN 1103/EN 1113 sequence.

Mathematics and Statistics (6-9 hours)

Students who place into a course higher than MA 1313 College Algebra on the mathematics Placement test may fulfill the University mathematics requirement with either MA 1713 Calculus I, MA 1613 Calculus for Business and Life Sciences I. Alone, neither MA 1323 Trigonometry nor MA 2113/ST 2113 Introduction to Statistics will satisfy this requirement.

MA 1313	College Algebra	3
MA 1323	Trigonometry (fulfills second mathematics only with credit for college algebra)	3
MA 1413	Structure of the Real Number System (Designed primarily for special and elementary education majors.)	3
MA 1423	Problem Solving with Real Numbers (Designed primarily for special and elementary education majors.)	3
MA 1433	Informal Geometry and Measurement (Designed primarily for special and elementary education majors.)	3
MA 1453	Precalculus with Graphing Calculators	3
MA 1613	Calculus for Business and Life Sciences I	3
MA 1713	Calculus I	3
MA 1723	Calculus II	3
MA 2733	Calculus III	3
MA 2743	Calculus IV	3
MA 2113	Introduction to Statistics	3
MA 3123	Introduction to Statistical Inference	3
ST 2113	Introduction to Statistics	3
ST 3123	Introduction to Statistical Inference	3
BQA 2113	Business Statistical Methods I	3

Natural Sciences (6-9 hours)

Students must complete two lab-based science courses. Check course descriptions to determine whether or not a course has a lab component.

AN 1344	Introduction to Biological Anthropology [1]	4
ARC 2713	Passive Building Systems (no lab)	3
BIO 1004	Anatomy and Physiology [1]	4
BIO 1023	Plants and Humans [1]	3
BIO 1123	Animal Biology [1]	3
BIO 1134	Biology I [1]	4
BIO 1144	Biology II [1]	4
BIO 2113	Plant Biology [1]	3
BIO 3103	Genetics I [1]	3
BIO 3304	General Microbiology [1]	4
CH 1043	Survey of Chemistry I	3
CH 1053	Survey of Chemistry II	3
CH 1051	Experimental Chemistry (Stand-alone Lab)	1
CH 1213	Chemistry I	3
CH 1211	Investigations in Chemistry I (Stand-alone Lab)	1
CH 1223	Chemistry II	3
CH 1221	Investigations in Chemistry II (Stand-alone Lab)	1
EPP 2213	Introduction to Insects	3
FNH 2293	Individual and Family Nutrition (no lab)	3
GG 1111	Earth Sciences I Laboratory	1
GG 1113	Survey of Earth Sciences I	3
GG 1121	Earth Sciences II Laboratory	1
GG 1123	Survey of Earth Sciences II	3
GNS 3103	Genetics I [1]	3
GR 1114	Elements of Physical Geography	4
GR 1604	Weather and Climate	4
HON 3163	Honors Seminar in Natural Sciences (no lab)	3
HS 2293	Individual and Family Nutrition (no lab)	3
PH 1013	Physical Science Survey I	3
PH 1011	Physical Science Laboratory I	1
PH 1023	Physical Science Survey 2	3
PH 1021	Physical Science Laboratory 2	1
PH 1063	Descriptive Astronomy (no lab)	3
PH 1113	General Physics I	3
PH 1123	General Physics II	3
PH 1133	General Physics III	3
PH 2213	Physics I (no lab)	3
PH 2223	Physics II	3
PH 2233	Physics III	3
PO 3103	Genetics I [1]	3
PSS 1313	Plant Science [1]	3

PSS 3301	Soils Laboratory	1
PSS 3303	Soils	3

[1] all courses are considered Natural Sciences; the footnote indicates those that are classified as Life Sciences; all other courses are classified as Physical Sciences

Humanities (at least 6 hours)

AAS 1063	Introduction to African American Studies	3
AAS 2363	Introduction to African American Literature	3
AAS 3013	African American History to 1865	3
AAS 3023	African American History since 1865	3
ARC 2313	History of Architecture I	3
ARC 3313	History of Architecture II	3
ARC 3323	History of Architecture III	3
EN 2203	Introduction to Literature	3
EN 2213	English Literature Before 1800	3
EN 2223	English Literature After 1800	3
EN 2243	American Literature Before 1865	3
EN 2253	American Literature After 1865	3
EN 2273	World Literature Before 1600	3
EN 2283	World Literature After 1600	3
FL 1113	Language I [1]	3
FL 1123	Language II [1]	3
FL 2133	Language III [1]	3
FL 2143	Language IV [1]	3
HI 1003	History of Science in Six Ideas	3
HI 1013	History of Technology in Six Objects	3
HI 1063	Early U.S. History	3
HI 1073	Modern U.S. History	3
HI 1163	World History Before 1500	3
HI 1173	World History Since 1500	3
HI 1213	Early Western World	3
HI 1223	Modern Western World	3
HI 1313	East Asian Civilizations to 1300	3
HI 1323	East Asian Civilizations since 1300	3
HI 4683	Europe: The First World War to Hitler	3
HON 1163	The Quest Begins	3
HON 3183	Honors Seminar in the Humanities	3
PHI 1103	Introduction to Philosophy	3
PHI 1113	Introduction to Logic	3
PHI 1123	Introduction to Ethics	3
PHI 3023	History of Western Philosophy I	3
PHI 3033	History of Western Philosophy II	3
PHI 3153	Aesthetics	3
REL 1103	Introduction to Religion	3
REL 3213	World Religions I	3
REL 3223	World Religions II	3

[1] Chinese, French, German, Greek, Italian, Japanese, Latin, Russian, and Spanish

Fine Arts (3 hours)

AAS 1103	African American Music	3
ARC 1013	Architectural Appreciation	3
ART 1013	Art History I	3
ART 1023	Art History II	3
ART 1113	Art Appreciation	3
CO 1503	Introduction to the Theatre	3
HON 3173	Honors Seminar in Fine Arts	3
ID 3643	History of Interiors I	3
LA 1803	Landscape Architecture Appreciation	3
MU 1103	African American Music	3
MU 1113	History and Appreciation of Music	3
MU 1123	History and Appreciation of American Music	3
MU 1133	The History of Rock and Roll	3
MU 1163	Introduction to Music in Film	3
MU 3013	Survey of Western Music History I	3
MU 3023	Survey of Western Music History II	3
PE 1323	History and Appreciation of Dance	3
PSS 2343	Floral Design	3
TKI 2413	History and Appreciation of the Artcrafts	3

Social/Behavioral Sciences (6 hours)

ADS 1013	Animal Agriculture & Society: Food for Thought	3
AEC 2713	Introduction to Food and Resource Economics	3
AN 1103	Introduction to Anthropology	3
AN 1143	Introduction to Cultural Anthropology	3
AN 1543	Introduction to Archaeology	3
AN 2403	Introduction to the Study of Language	3
CO 1223	Introduction to Communication Theory	3
CO 1403	Introduction to the Mass Media	3
EC 1033	Economics of Social Issues	3
EC 2113	Principles of Macroeconomics	3
EC 2123	Principles of Microeconomics	3
EN 2403	Introduction to the Study of Language	3
EPY 2513	Human Growth and Development	3
EPY 3503	Principles of Educational Psychology	3
EPY 3543	Psychology of Adolescence	3
FO 4113	Forest Resource Economics	3
GR 1123	Introduction to World Geography	3
GR 2013	Cultural Geography	3
HON 1173	The West and the Wider World	3
HON 3143	Honors Seminar in Social Science	3
HDFS 1813	Individual and Family Development through the Lifespan	3
PO 1013	Animal Agriculture & Society: Food for Thought	3
PS 1113	American Government	3
PS 1313	Introduction to International Relations	3
PS 1513	Comparative Government	3
PSY 1013	General Psychology	3

PSY 3073	Psychology of Interpersonal Relations	3
SO 1003	Introduction to Sociology	3
SO 1103	Contemporary Social Problems	3
SO 1203	Sociology of Families	3

3. General Education Competencies.

Mississippi State University baccalaureate-seeking students should demonstrate the following general education competencies:

- Students will write clearly and effectively
- Students will understand the formal elements of the fine art(s), and develop an awareness of both the values and functions of works within their historical and/or social contexts.
- Students will understand the diverse dimensions of human culture.
- Students will understand and use the basic approaches and applications of mathematics and statistics for analysis and problem solving.
- Students will apply science to natural systems and understand its impact on society.
- Students will understand and appreciate human behavior and social structures, processes, and institutions.

4. General Education Curriculum Assessment.

The General Education Committee (a subcommittee of University Committee on Courses and Curricula) utilizes the following courses to assess the General Education Curriculum student learning outcomes: AN 1143, EN 1103, EN 1113, MA 1313, ST 2113, MA 1713, BIO 1023, BIO 1134, CH 1043, CH 1211, GR 1114, HI 1063, HI 1073, HI 1163, EN 2203, ART 1013, ART 1113, MU 1113, PS 1113, SO 1003, EC 2113

5. Catalog Terms

Students must meet the graduation requirements stated in the MSU catalog under which they first enrolled or the graduation requirements in a subsequent catalog with approval, providing they graduate within seven years. If a student interrupts his/her enrollment at Mississippi State University for two consecutive years or longer, the graduation requirements stated in the catalog under which the student resumes enrollment apply. Students changing majors or programs must meet the requirements listed in the catalog that is current at the time they make such changes. Students may request fulfilling the requirements outlined in a subsequent catalog after their first enrollment. If this option is selected, then all college and major requirements in the later catalog must be met. The student must complete an approval form to switch to a more current catalog, obtain signatory approval of his/her advisor, and submit it to the office of the appropriate dean for notification of the change. In cases where course work is outdated or requirements have changed, reasonable substitutions may be required.

6. Other Degree Requirements.

College and school announcements specify additional requirements, including professional communication skills (oral, written, and computer), for the bachelor's degree in the various departments and programs.

7. Second Baccalaureate Degree Requirements.

Students should be advised that when completing a second degree, it will be simpler and easier to complete it concurrently with the first degree. A second degree completed after the awarding of the first degree will require additional hours, probably many more than completing the two degrees concurrently.

If you seek a second degree after the completing of the first degree, requirements for the second degree must be certified by the appropriate dean as having met and must include General Education requirements and 30 hours in courses numbered 3000 or above, in residence beyond requirements for the first. Students and advisors should check with the Registrar's Office before making a decision about a second degree.

8. Advisement and Registration.

Every student in the University is provided with an academic advisor. A student who has selected a specific major will find the name of the major advisor for that major listed under the name of the department or the major subject in the appropriate college or school section of this catalog. A student who is uncertain of his or her choice of major may register as Undeclared.

Before registering for any semester, each student is responsible for consulting his or her advisor to work out and secure approval for a specific schedule of courses. With the signed schedule, the student then enters his/her schedule in the computer by using the myState System, resolves conflicts, and the student is officially enrolled in each class on the perfected schedule.

A period for schedule planning and registration for the following semester is provided near the end of each regular term; registration for the summer school terms may also be accomplished in the spring registration period. Prospective new students may be advised and registered during Summer Orientation. Late registration is conducted immediately prior to the beginning of classes.

A student who for any reason has been unable to register during these scheduled registration periods may still do so up to the last day for registration and adding courses as listed in the Academic Calendar on the Web but may find the choices of courses and sections limited.

9. Readmission.

Undergraduate students who have previously attended Mississippi State University and who wish to re-enter must apply for readmission online or in the Registrar's Office and contact his/her advisor to be advised and released for registration . Former students who have attended another college for at least one quarter or semester must be eligible to re-enter that institution, if they desire to return to Mississippi State University. Students who have attended another institution are required to provide the Registrar's Office official transcripts from all other institutions attended prior to receiving a registration permit.

All readmission students must meet the academic standing guidelines outlined in the Academic Standing section of the Bulletin. If their GPA is less than the required average, they may be readmitted only on the recommendation of their dean and with the approval of the Provost.

Students readmitted with an MSU or cumulative average less than 2.0 will be readmitted on academic probation.

10. Student Course Load.

The normal load for an undergraduate student in a regular semester is 15-19 credit hours. Course load limits at Mississippi State University are noted below.

1. A student on academic probation (AOP 12.15-Academic Probation for Undergraduate Students) should be limited by his or her academic advisor to an enrollment of 16 credit hours (including ensemble and academic support/developmental classes.)

2. Students in good academic standing can take a total of up to 19 credit hours per semester without special permission. Requests to take 20 or 21 credit hours total must be approved at the level of Advisor, Department, and Dean. Requests to take 22 or more credit hours total must be approved at the levels of Advisor, Department, Dean, and Provost.

3. A student in a five week summer session may take one course in addition to the normal maximum load (two courses) if his or her cumulative MSU Grade Point Average is between 3.0 and 4.0 and if he or she secures approval at the levels of Advisor, Department, and Dean.

4. An entering freshman student with low ACT scores or sub-scores is required to take appropriate developmental and/or learning skills courses and should schedule them within the first two semesters of enrollment, and should be limited by his or her academic advisor to an enrollment of 16 credit hours (including ensemble and academic support/developmental classes.)

5. Any exceptions to points 1, 2, 3, and 4 above or special circumstances not covered by points 1, 2, 3, and 4 above would require approval at the levels of Advisor, Department, Dean, and Provost.

Independent study or extension courses will be included in determining the maximum number of hours a student may take on campus, if registration therein overlaps any period of regular enrollment at the University. Such credits earned by either independent study or extension, in excess of the loads specified above must be approved by the student's dean; these hours will count in certifying a student's full time or part time enrollment status for financial aid or other purposes.

For purposes of reporting a student as full-time to the Board of Trustees, Veterans Administration, Social Security or other similar agencies, an undergraduate student must be enrolled in at least twelve (12) semester hours and a graduate student must be enrolled in at least nine (9) or more semester hours at the time the report or certification is submitted. This applies to fall and spring semesters only.

1. A student's enrollment status is classified according to the following chart:

Regular Fall-Spring Semester

Status	Undergraduate	Graduate
Full-time	12 + sem. hrs.	9 + sem. hrs.
Half-time	6 to 11 sem. hrs.	5 to 8 sem. hrs.
Less than Half-time	less than 6 sem. hrs.	less than 5 sem.hrs.
"Regular" Load	15-19 sem. hrs.	12-15 sem. hrs.

2. **Summer School term**

Status	Undergraduate	Graduate
Full-time	6 + sem. hrs.	6 + sem. hrs.
Half-time	3 to 5 sem. hrs.	3 to 5 sem. hrs.
Less than Half-time	less than 3 sem.hrs.	less than 3 sem.hrs.
"Regular" Load	6 sem. hrs.	6 sem. hrs.

3. Concurrent enrollment in independent study, off-campus centers and other institutions will be considered as part of a student's load, and must be approved by his or her dean before it may apply toward meeting degree requirements. All MSU course hours will count in certifying a student's full time or part time enrollment status for financial aid or other purposes.

11. College/School/Campus Changes.

A student changing from one college, school or campus to another must complete all arrangements for the transfer prior to beginning the new course of study. Before making the change, the student must initiate a change form in the college or school in which the student is currently, or was last, enrolled. Transfer to a new college, school or campus is subject to approval by the new dean.

12. Schedule Changes - Fall and Spring Semesters.

A student has through the fifth class day into the semester to drop a course and through the sixth class day to add a course without being assessed a fee or academic penalty. From the fifth class day through the 30th class day, a student who elects to drop a course must receive the approval of his/her advisor, will be assigned a "W" on his/her academic record, and be assessed a fee. After the 30th class day, a student cannot drop courses except in documented cases of serious illness, extreme hardship, or failure of the instructor to provide significant assessment of his/her performance. A request to drop a course after the 30th class period must be approved by the student's advisor and academic dean. A student receiving permission to drop will receive a "W" on his/her academic record and be assessed a fee after the last day to drop a course.

Summer Terms.

A student has through the first class day into a 5-week summer term and through the second class day into a 10-week summer term to drop a course without being assessed a fee or an academic penalty. A student may not add a course after the second class day into a 5-week summer session or after the third class day into a 10-week summer session. After the first class day through the 14th class day in a 5-week summer term and the second class day through the 28th class day in a 10-week summer term, a student who elects to drop a course must receive the approval of his/her advisor, will be assigned a "W" on his/her academic record, and be assessed a fee. After the 14th class day into a 5-week summer term and after the 28th class day into a 10-week summer term, a student cannot drop a course except in documented cases of serious illness, extreme hardship, or failure of the instructor to provide significant assessment of his/her performance. A request to drop a course during this period must be approved by the student's advisor and academic dean. A student receiving permission to drop will receive a "W" on his/her academic record and be assessed a fee.

Shortened Format Classes (Intercessions).

A student has through the first class day to drop a course and through the second class day to add a course without being assessed a fee or an academic penalty. Note: A student may NOT drop his/her last or only remaining class in a semester or part of term. A student who wishes to drop the last class and add a different class or section must complete

an add/drop slip. The Registrar's Office must process this change. To drop a course after the first day through the fifth class day of a term with 10-15 class days, a student must receive approval from his advisor, will be assigned a "W" on the academic record, and will be assessed a fee. For a term with 16-24 class days, students may drop through the ninth day but must receive approval from his advisor and will be assigned a "W" on the academic record and be assessed a fee. After this period, a student cannot drop a course except in documented cases of serious illness, extreme hardship, or failure of the instructor to provide significant assessment of his/her performance. A request to drop a course after this period must be approved by the student's advisor and academic dean. A student receiving permission to drop will receive a "W" on his/her academic record and be assessed a fee after the last day to drop a course.

Undergraduate/Graduate Policy.

Regardless of these and/or other University policies, a student's dean may remove a course (or courses) from a student's schedule at any time during a period of enrollment in case of special circumstances such as accident, illness or scheduling errors. Requests for such changes should be directed to the student's dean. A student will not be permitted to drop a course after the 30th day of classes because of a heavy course load, a change of major, or the likelihood of poor grades. All requests must be documented in writing.

13. Auditing.

Upon recommendation from the relevant course instructor and subject to approval by the appropriate dean and Registrar, a student may enroll to audit a course. The approval to audit must occur prior to the official enrollment count day (10th class day for spring and fall semesters; third class day for summer school sessions). A student may not change from credit to audit or audit to credit status after the official enrollment count day. An audited course counts as part of a student's regular load. Students auditing a
class are not required to take tests and/or examinations or to prepare other written assignments. Otherwise, conformity to regular classroom rules including attendance requirements is the same as for students taking the course for credit. At the time the request for audit is approved, the professor will inform the student auditing the class of attendance expectations. Failure to meet any or all of these requirements may result in an auditor being administratively dropped from the class roll. No audited course may be counted as part of the required hours of any degree or program requirement.

14. Pass-Fail Option.

An undergraduate student who has successfully passed fifteen (15) semester hours may elect, with the approval of his or her academic dean, to schedule courses under the pass-fail option. This program is open to undergraduate students only and is limited to a maximum of four (4) courses, no more than two (2) of which may have the same course symbol.

A student may register under the pass-fail option for only one course per semester and must meet the prerequisites for the course or have permission of the instructor teaching it. A change from pass-fail enrollment to enrollment for a regular grade, or vice-versa, must be made by the deadline date for adding courses published in the University calendar.

Courses taken to satisfy General Education requirements may not be scheduled under the pass-fail option, nor may courses that are specified by course title in the curriculum in which a student is currently enrolled. In the event that a student changes majors, credit for any courses passed and required in the new major may be allowed with the approval of the student's dean. The instructor shall be informed which students are enrolled in his or her course under the pass-fail option, and he or she shall report a regular grade at the time progress grades are submitted and either S for satisfactory or U for unsatisfactory at the end of a term or semester. A grade of A, B, or C will be considered as satisfactory and a grade of I (incomplete) will be allowed. Other than a grade of I, only a grade of S, U, or W will be recorded on a student's permanent record.

The number of hours passed will be applied toward the hours required for graduation; however, neither a passing nor a failing grade will be considered in the computation of the grade point average.

15. Assessment.

Students may be required to undergo testing for the purpose of assessing institutional effectiveness.

16. ROTC Course Credit Toward Academic Degrees.

All ROTC courses are bona fide University courses. The total number of ROTC hours allowed as elective credit toward a specific degree varies. Most schools and colleges at the University accept six (6) or more hours of ROTC courses offered toward degrees conferred. A student should contact the appropriate college, school, or department to determine allowable ROTC course credit toward a particular degree.

17. Military Credit.

Mississippi State University offers credit for training and experience in the Armed Services for currently enrolled undergraduate students.

Joint Services Transcript for Army, Navy, Marines and Coast Guard

All veterans and service-members of the Army, Navy, Marines and Coast Guard who are Active Duty, National Guard or Reserve can order an official transcript through the Joint Services Transcript online system at the following link: https://jst.doded.mil/smart/welcome.do. Official Transcripts should be mailed to: University Registrar's Office, P.O. Box 5268, Mississippi State, MS 39762. The student's dean will determine applicable credit toward a degree.

Community College of the Air Force (CCAF) for Air Force

All veterans and service-members of the Air Force who are Active Duty, National Guard or Reserve can order an official transcript through the Community College of the Air Force (CCAF) online system at the following link: http://www.airuniversity.af.mil/Barnes/CCAF/Transcripts.aspx. CCAF transcripts are mailed directly to the Office of Admissions, P.O. Box 6305, Mississippi State, MS 39762.

Academic Records

Information on various University policies, including access to and confidentiality of student records, can be found in the links to the right.

Confidentiality and Disposal of Student Records

The University recognizes that the maintenance of student information and educational records is necessary and vital to assist the student's

education and development and to provide opportunities for University research and policy formulation. The University recognizes its obligation to exercise discretion in recording and disseminating information about students to insure that their rights of privacy are maintained.

The University will furnish annual notification to students of their right to inspect and review their educational records/the right to request amendment of educational records considered by them to be inaccurate or misleading or that violate privacy or other rights; and of their right to a hearing should the University decline to amend such records. The annual notice will be published in the University's bulletin. The University utilizes The Guide for Retention and Disposal of Records as published by the American Association of Collegiate Registrars and Admissions Officers as the policy for disposal of student records.
The following guidelines have been developed to insure the privacy rights of students. For the purposes of the policy statement a student is defined as an individual who has been admitted and has been in attendance in a component unit of the University. Classification as a student in one component unit of the University (e.g., an undergraduate program) does not infer that the person has been accorded the rights outlined below in other component units (i.e. graduate studies, professional schools, and branch campus).

Student Access to Records

Students have the right to be provided a list of the type of educational records maintained by the University which are directly related to the student; the right to inspect and review the contents of these records; the right to a response from the University to reasonable requests for explanation and interpretation of these records; the right to an opportunity for a hearing to challenge the content of these records; and if any material or document in the educational record of a student includes information on more than one student, the right to inspect and review only the part of such material or document as relates to the student.

Students do not have access to: financial records of their parents; confidential letters and statements of recommendation which were placed in the educational record prior to January 1, 1975, provided such letters or statements were solicited or designated as confidential and are not used for purposes other than those for which they were specifically intended; confidential recommendations, if the student signed a waiver of the right of access, respecting admission, application for employment, and the receipt of an honor or honorary recognition. See 20 U.S.C. §1232g.

Students do not have access to: instructional, supervisory, and administrative personnel records which are not accessible or revealed to any other individual except a substitute; Campus Security records which are maintained apart from educational records, which are used solely for law enforcement purposes, and which are not disclosed to individuals other than law enforcement officials of the same jurisdiction; and employment records except when such employment requires that the person be a student.

Students do not have access to physical or mental health records created by a physician, psychiatrist, psychologist or other recognized professional acting in his or her capacity or to records created in connection with the treatment of the student under these conditions which are not disclosed to anyone other than individuals providing treatment. These records may be reviewed by a physician or appropriate professional of the student's choice. See 20 U.S.C. § 1232g.

Procedures for Access

Students should contact the appropriate office to inspect and review their records. An office may require that a University official be present when a student inspects and reviews his educational records. Any questions concerning a student's access to records should be directed to the Registrar.

Release of Directory Information

The release of student directory information is governed by the University's Education Records Policy (OP 30.02). Directory information may be released by the University without the student's written consent. Directory information consists of the following items: name; addresses; telephone numbers; email address; NetID; photograph; classification or grade level (freshman, sophomore, graduate student, etc.); fields (programs) of study (includes majors, minors, certificates, degrees); dates of attendance; full- or part-time status; degrees, awards and honors, and dates awarded; and most recent previous institutions attended. Participation in recognized activities and sports, weight and height of members of athletic teams, and other similar information is considered directory information. Student directory information may be made available to non-university organizations upon request.

A student may deny the release of directory information by requesting that the information not be released. A student may restrict the directory information displayed in the electronic student directories on-line via Student Information System on the address update link. This change will be reflected in the on-line directory immediately. A student may request in writing that the Registrar restrict his/her student record so that no information may be released. The student's record will be "flagged" and no information will be released concerning this student to include honors or graduation lists or publications. A student may remove this restriction by notifying the Registrar in writing or by changing their election via Student Information System.

To deny the release of participation in recognized activities, the student must notify the Provost and the Dean of Students in writing. To deny the release of athletic information the student must notify the Director of Athletics in writing. The restrictions a student places on his/her record while a student will remain in place indefinitely. A former student, one who is not in attendance, must contact the appropriate offices above to deny the release of directory information.

Release of Educational Records

The University will release a student's educational record(s) upon the student's written request. The student must:

1. 1. Specify the records to be disclosed.
2. 2. Include the purpose or purposes of the disclosure.
3. 3. State the party or parties and the address to whom the information is to be disclosed.

The student shall, upon request, receive a copy of the record that is to be disclosed. It is University policy to furnish single copies of a student's record at no charge except for the standard transcript fee, if applicable.

The University may release students' educational records to the following without prior written consent:

1. University officials who have a legitimate educational interest in the records. University officials are defined as teachers, administrative personnel and other employees except personnel of the security or law enforcement unit of Mississippi State University who in the performance of their normal duties require access to student records. If University officials are required in the performance of their duties to review the educational records of a student, this will be considered to be a legitimate educational interest.
2. Officials of another school in which the student seeks or intends to enroll upon request of the transfer school.
3. Government representatives of the Comptroller General of the United States, the Secretary of Education, the U.S. Commissioner of Education, the Director of the National Institute of Education, the Assistant Secretary for Education, State educational authorities, and State officials to whom such information is specifically required to be reported or disclosed by State law adopted prior to November 19, 1974.
4. Appropriate authorities in connection with financial aid with the understanding that only the necessary records will be released.
5. To organizations conducting studies for, or on behalf of, the University or its agencies for the purpose of developing, validating, or administering predictive tests, administering student aid programs, and improving instruction and student life provided that the studies will not permit the personal identification of students and their parents by individuals other than representatives of the organization and provided that the personally identifiable information furnished will be destroyed when no longer needed for the purposes for which the study was conducted.
6. To accrediting organizations to carry out their accrediting functions.
7. To parents of a dependent student as defined in section 152 of the Internal Revenue code of 1986. University officials may release educational records to parents on the basis of written certification from the parent that the student is a dependent as defined under the Code.
8. To comply with a judicial order or lawfully issued subpoena with the understanding that the student will be notified in advance insofar as possible.
9. To appropriate parties to protect the health and safety of the student or other individuals in emergencies with the understanding that only information essential to the emergency situation will be released, that information will only be released to a party who would be in a position to deal with the emergency, and that the student will be notified insofar as possible of the information released, the purpose for the release, and to whom the information was released.

No personal information on a student will be released without a statement from the University to the party receiving the information that no third party is to have access to such information without the written consent of the student.

This policy is adopted pursuant to the Family Educational Rights and Privacy Act of 1974, as amended (20 U.S.C. §1232g), and is not intended to impose any restrictions or grant any rights not specifically required by this Act.

Disciplinary Suspension and Expulsion

The following information will be recorded on a student's academic record:

1. Permanent Expulsion – a "W" grade will be recorded on the permanent record for each course on the student's schedule at the time of expulsion. "Permanent Expulsion" and the effective date will also be placed on the permanent record. This will remain on the permanent record indefinitely or until an appeal is held by the Dean of Students and the expulsion is approved for removal. In a case of appeal and approval by the Dean of Students to remove the expulsion, the words "Permanent Expulsion" will be replaced by the word "Withdrew."
2. Disciplinary Suspension – a "W" grade will be recorded on the permanent record for each course on the student's schedule at the time of suspension. "Disciplinary Suspension" and the effective date will also be recorded on the permanent record. Students may petition the Dean of Students to have "Disciplinary Suspension" removed from the permanent record. If the Dean of Students approves the request, the words "Disciplinary Suspension" will be replaced by the word "Withdrew."

Credits, Grades, and Standing

All credits earned at Mississippi State University are in semester hours. In most curricula, taking an average load of 16-18 hours for a regular semester will enable a student to make normal progress toward graduation. A semester hour is defined as requiring at least the number of contact minutes as shown:

- Lecture – 750 contact minutes
- Laboratory/Studio – 1500 contact minutes
- Internship – 3000 minutes

Year or quarter hours transferred from another institution are converted into semester hours for purposes of uniformity in determining graduation requirements.

Transfer credits are accepted only from institutions accredited by or in candidate status with a regional accrediting body, such as the Southern Association of Colleges and Schools Commission on Colleges. It is the responsibility of colleges (and schools) to set the standards for transferring "D" grades.

Not more than 25 percent of any curriculum may be earned by advanced standing examinations, College-Level Examination Program (CLEP), evaluated military service credits, tutorial, extension courses, and advanced placement exams (a maximum of 20% of the total degree hours can be correspondence courses). Evaluated military service credits are classified as extension work. Correspondence courses must be approved by the dean before being taken by students in residence. USAFI credits are classified as correspondence work.

Credit by Examination

Not more than 25 percent of any curriculum may be earned by College-Level Examination Program (CLEP), evaluated military service credits, tutorial, extension courses, and advanced placement exams (a maximum of 20% of the total degree hours can be correspondence courses). Evaluated military service credits are classified as extension work. Correspondence courses must be approved by the dean before being taken by students in residence. Mississippi State University serves as an open testing center for both the General and Subject Examinations.

a. Advanced Placement Examinations.

Students entering Mississippi State University for the first time are allowed credit on the advanced placement examination administered by the College Entrance Examination Board. Grades of Satisfactory (S) appear on the transcript for courses in which advanced placement credit is earned. These courses do not affect grade-point averages. Applicability of such credit to a specific degree is to be determined by the appropriate

dean. The following table provides the details on how credit is presently assigned in the various subject areas by the deans.

AP Examination	Score	Hours	Related Course
1. ART HISTORY	3	3	ART 1013
2. BIOLOGICAL SCIENCE (no lab credit)	3	3	BIO 1023
	4	6 or 7	BIO 1123 and BIO 1134
	5	8	BIO 1134 and BIO 1144
3. CHEMISTRY	3	3	CH 1213
	4 or 5	6	CH 1213 and CH 1223
4. COMPUTER SCIENCE			
A Exam	3, 4, or 5	4	CSE 1284
5. COMPUTER SCIENCE PRINCIPLES	3, 4, or 5	2	CSE 1002
6. ECONOMICS			
Macroeconomics	3	3	EC 2113
Microeconomics	3	3	EC 2123
7. ENGLISH			
Language & Comp.	3	3	EN 1103
Language & Comp.	4 or 5	6	EN 1103 and EN 1113
Literature & Comp.	3	3	EN 1103
Literature & Comp.	4 or 5	6	EN 1103 and EN 1113
8. ENVIRONMENTA SCIENCE	3	3	ENS 2103
9. FRENCH			
Language and Culture	3	6	FLF 1123 and FLF 2133
Language and Culture	4	6	FLF 2133 and FLF 2143
Language	5	7	FLF 2143 and FLF 3114
Culture	5	6	FLF 2143 and FLF 3143
10. GERMAN			
Language and Culture	3	6	FLG 1123 and FLG 2133
Language and Culture	4	6	FLG 2133 and FLG 2143
Language	5	7	FLG 2143 and FLG 3114
Culture	5	6	FLG 2143 and FLG 3143
11. GOVERNMENT and POLITICS			
Comparative	3	3	PS 1513
United States	3	3	PS 1113
12. HISTORY			
American	3	3	HI 1063
	4 or 5	6	HI 1063 and HI 1073
European	3	3	HI 1213
	4 or 5	6	HI 1213 and HI 1223
World	3	3	HI 1163
	4 or 5	6	HI 1163 and HI 1173
13. HUMAN GEOGRAPHY	3	3	GR 2013
14. LATIN	3	6	FLL 1113 and FLL 1123
	4	6	FLL 1123 and FLL 2133
	5	6	FLL 2133 and FLL 2143
15. MATHEMATICS			
AB Exam	3, 4 or 5	3	MA 1713
BC Exam	3	3	MA 1713
	4 or 5	6	MA 1713 and MA 1723
16. STATISTICS	3	3	ST 2113
17. PHYSICS (no lab credit)			
CI Exam - MECH	3	3	PH 1113
	4 or 5	3	PH 2213
CII Exam - E & M	3	3	PH 1133
	4 or 5	3	PH 1133 or PH 2223
18. PHYSICS I	3, 4, or 5	3	PH 1113
19. PHYSICS II	3, 4, or 5	3	PH 1123
20. PSYCHOLOGY	3	3	PSY 1013
21. SPANISH			
Language and Culture	3	6	FLS 1123 and FLS 2133
Language and Culture	4	6	FLS 2133 and FLS 2143
Language and Culture	5	6	FLS 2143 and FLS 3113
Literature and Culture	5	6	FLS 2143 and FLS 3143
22. MUSIC	3	3	MU 1213

As more high schools develop Advanced Placement courses, Mississippi State University will consider their inclusion in this listing for credit.

b. College-Level Examination Program (CLEP).

Academic credit on the Subject Examinations is awarded to students who are enrolled at the University and who make a scaled score of 50 or above (see exceptions below). Credit is neither awarded nor accepted

for transfer credit for the General Examinations. Credit is considered the same as extension credit and is subject to the same limitations. The applicability of credit toward degree requirements is determined by the dean and/or department head concerned. At present, the only courses for which credit may be obtained through the CLEP Program are these:

ACC 2013	Principles of Financial Accounting	3
BIS 1012	Introduction to Business Information Systems	2
BIO 1023	Plants and Humans (requires score of 50-59)	3
BIO 1123 & BIO 1134	Animal Biology and Biology I (requires score of 60-69)	7
BIO 1134 & BIO 1144	Biology I and Biology II (requires score of 70-80)	8
CH 1213	Chemistry I	3
CH 1223	Chemistry II	3
EC 2113	Principles of Macroeconomics	3
EC 2123	Principles of Microeconomics	3
EPY 2513	Human Growth and Development	3
EPY 3503	Principles of Educational Psychology	3
FLF 1113	French I	3
FLF 1123	French II	3
FLF 2133	French III (requires score of 63)	3
FLF 2143	French IV (requires score of 63)	3
FLG 1113	German I	3
FLG 1123	German II	3
FLG 2133	German III (requires score of 63)	3
FLG 2143	German IV (requires score of 63)	3
FLS 1113	Spanish I	3
FLS 1123	Spanish II	3
FLS 2133	Spanish III (requires score of 63)	3
FLS 2143	Spanish IV (requires score of 63)	3
HI 1063	Early U.S. History	3
HI 1073	Modern U.S. History	3
HI 1213	Early Western World	3
HI 1223	Modern Western World	3
MA 1313	College Algebra	3
MA 1453	Precalculus with Graphing Calculators	3
MA 1713 & MA 1723	Calculus I and Calculus II	6
MKT 3013	Principles of Marketing	3
PS 1113	American Government	3
PSY 1013	General Psychology	3
SO 1003	Introduction to Sociology	3

For further information about CLEP and a form for application to take the tests, please write to: Computer Based Testing, P.O. Box 9747, Mississippi State, MS 39762, or call (662) 325-6610.

c. The International Baccalaureate.

The International Baccalaureate program is a comprehensive and rigorous two-year curriculum, leading to examinations, for students between sixteen and nineteen years of age. To accommodate differences among cultures regarding academic standards, it is a deliberate compromise between the specialization required in some national systems and the breadth preferred in others. The general objectives of the IB are to provide students with a balanced education; to facilitate geographic and cultural mobility; and to promote international understanding through a shared academic experience. The student who satisfies its demands demonstrates a strong commitment to learning, both in terms of the mastery of subject content and in the development of the skills and discipline necessary for success in a competitive world.

All IB Diplomas candidates are required to offer one subject from each of the groups. At least three and not more than four of the six subjects are taken at the Higher level, the others at the Subsidiary level. Each examined subject is graded on a scale of 1 (minimum) to 7 (maximum). The award of the Diploma requires a minimum total of 24 points and the satisfactory completion of three additional requirements: the Extended Essay of some 4000 words, which provides the first experience of the independent research paper; a course entitled Theory of Knowledge (ToK), which explores the relationships among the various disciplines and ensures that students engage in critical reflection and analysis of the knowledge acquired within and beyond the classroom; the compulsory participation in Creativity, Action, and Service (CAS) extracurricular and community-service activities. Bonus points may be awarded for the exceptional essay or performance in Theory of Knowledge.

Mississippi State University recognizes the IB Program. Credit will be considered for the higher level subject examinations with scores of 5, 6 or 7 pending approval of the various colleges, schools and major departments of the university. Some subject areas may consider a score of 4.

Mississippi State University awards credit in the following areas:

IB Credit	Score/Level Required	Credit to Award
ENGLISH	5, 6, or 7 HIGHER LEVEL	EN 1103 and EN 1113
CHEMISTRY	5, 6, or 7 HIGHER LEVEL	CH 1213 and CH 1223
HISTORY		
American	6 STANDARD LEVEL	HI 1063
	4 HIGHER LEVEL	HI 1063
	5 or 6 HIGHER LEVEL	HI 1063 and HI 1073
Asian	6 STANDARD LEVEL	HI 1313
	4 HIGHER LEVEL	HI 1313
	5 or 6 HIGHER LEVEL	HI 1313 and HI 1323
European	6 STANDARD LEVEL	HI 1213
	4 HIGHER LEVEL	HI 1213
	5 or 6 HIGHER LEVEL	HI 1213 and HI 1223
Islamic	4 HIGHER LEVEL	HI 1163
	5 OR 6 HIGHER LEVEL	HI 1163 and HI 1173
BIOLOGY	4 STANDARD LEVEL	BIO 1023 or BIO 1123
	5, 6, or 7 STANDARD LEVEL	BIO 1023 and BIO 1123
	6 HIGHER LEVEL	BIO 1134
	7 HIGHER LEVEL	BIO 1134 and BIO 1144
PHYSICS	5 HIGHER LEVEL	PH 1113
	6 HIGHER LEVEL	PH 1113 and PH 1123 or PH 2213

	7 HIGHER LEVEL	waiver for PH 1113 and credit for PH 1123 and PH 1133 or PH 2213 and PH 2223
ECONOMICS	5, 6, or 7 HIGHER LEVEL	EC 2113 and EC 2123
PSYCHOLOGY	5, 6, or 7 HIGHER LEVEL	PSY 1013
SPANISH	5, 6, or 7 STANDARD LEVEL	FLS 2133 and FLS 2143
	4, 5, 6, or 7 HIGHER LEVEL	FLS 2133 and FLS 2143
LATIN	5, 6, or 7 STANDARD LEVEL	FLL 2133 and FLL 2143
	4, 5, 6, or 7 HIGHER LEVEL	FLL 2133 and FLL 2143
FRENCH	5, 6, or 7 HIGHER LEVEL	FLF 1113, FLF 1123, FLF 2133, and FLF 2143
GERMAN	5, 6, or 7 HIGHER LEVEL	FLG 1113, FLG 1123, FLG 2133, and FLG 2143

A final official IB transcript will be sent by the International Baccalaureate North America (IBNA) regional office following the grade awarding and upon the request of the student. The document will indicate the level of the subjects, the grade awarded in each, the total point score and the completion of the additional Diploma requirements. Results are available in late July for May session candidates.

e. Cambridge International

Students entering Mississippi State University for the first time may be granted credit for examinations administered by Cambridge International. Courses taken as part of the AS level or A level curricula will be considered. Grades of Satisfactory (S) appear on the transcript for courses in which Cambridge credit is earned. These courses do not affect grade-point averages. Applicability of such credit to a specific degree is to be determined by the appropriate dean. Contact the Office of the Registrar for details on how credit is presently assigned in the various subject areas.

Grades and Quality Points

The class work of the student will be evaluated according to the following pattern of values:

Grade	Quality Points Per Credit Hour
A Excellent	4
B Good	3
C Satisfactory	2
D Poor	1
F Failure	0
XF Failure - Honor Code	0
GDP Grade Determination Pending	0
I Incomplete	0
S Satisfactory	—
U Unsatisfactory	—
W Withdrawn Without Penalty	—
WI Permanent Incomplete	—
*S Retakes	—
*R Repeats	—
AU Audits	—

The quality-point average shall be determined on the basis of semester hours scheduled and rescheduled in which grades of “A,” “B,” “C,” “D,” and “F” or the “XF”disciplinary sanction are recorded. However, a student may not earn credits or quality points for a course or its equivalent in which he or she has already earned a grade of “A”.

Incomplete Policy.

A grade of “I” (Incomplete) may be submitted in lieu of a final grade when the student, because of illness, death in his or her immediate family, or similar circumstances beyond his or her control, is unable to complete the course requirements or to take final examinations. A grade of “I” will not be submitted for reasons other than previously described. Except for circumstances noted above, an “I” grade will not be given to extend the semester so that a student may complete a required assignment(s).

Undergraduate students who receive an “I” grade must complete all work within thirty (30) calendar days from the date of the student’s next enrollment. A student who receives an “I” grade may make up only that part of course work not completed because of the emergency. If a grade of “I” is not resolved into a passing grade within the allotted time, the grade becomes an “F.” Once a grade of “I” has been converted to an “F” because of the student’s failure to complete the necessary course work or a lapse of the allowable time, no additional grade change will be allowed except under extreme circumstance(s) as recommended by the deans and approved by the Provost and Executive Vice President.

If an undergraduate student has not enrolled in the university within a year of receiving a grade of “I,” the “I” will be converted to a permanent grade of “WI” and the student will not have the opportunity to change that grade.

Graduate students who receive a grade of “I” must complete all work no later than the last day of class of the next semester (excluding summer) whether the student is enrolled or not. Failure of graduate students to remove an “I” grade during the specified time will result in an automatic grade of "F". Once a grade of “I” has been converted to an “F” because of a student’s failure to complete the necessary course work or a lapse of the allowable time, no additional grade change will be allowed except under extreme circumstance(s) as recommended by the relevant deans and approved by the Provost and Executive Vice President. “I” grades are not permitted for thesis and dissertation research credits.

Academic Standing

a. Undergraduate.

The University prescribes minimum standards of scholarship for determining whether a student is to be continued or discontinued. This determination is made at the end of the fall and spring semesters, at the end of the summer session, or any part of a semester in which the student has been enrolled. While the academic standing of a student is determined by the MSU Cumulative Grade Point Average (GPA), students must earn a 2.0 GPA on both the MSU and overall cumulative GPA’s to earn a degree.

1. Students with a semester GPA of less than 2.0 who have coursework at Mississippi State University AND who fail to meet the following MSU Cumulative GPA requirements will be suspended.

2.

MSU GPA Hours	MSU Cumulative GPA
67+	2.0
37-66	1.8
19-36	1.6
0-18	not subject to suspension

3. No student will be suspended for failing to achieve the required grade point average without first having had at least one semester of probationary notice (not necessarily the immediately preceding semester).

4. Students whose cumulative MSU GPA is less than 2.00 at the end of any term will enter the next term on academic probation and will remain on probation until the GPA reaches 2.00 or higher. The course load for students on academic probation is restricted to a total of 16 credit hours; a student on academic probation who enrolls concurrently in excess of this limit in correspondence courses or at another institution will not receive credit at Mississippi State University for such courses. (AOP 12.15 applies)

   After being notified of probationary status, a student must schedule an appointment with his/her academic advisor or with the departmental probationary advisor (if the department has a probationary advisor) to devise a plan to improve their academic performance.

5. Academic suspension shall be for at least one regular (fall or spring) semester. For students suspended at the end of a spring semester, the suspension precludes enrollment in any summer school session as well as the following fall semester. The student will be readmitted on academic probation following the expiration of the first suspension. A student who attends another university during a suspension from MSU must maintain a 2.0 GPA (calculated by MSU standards) on any transfer work. Students who fail to meet these criteria may be readmitted only on the recommendation of their dean and with the approval of the Provost. A student may continue in school during the second term of summer session, irrespective of his or her record during the first term.
6. A student who has already received an academic suspension who fails to earn a current GPA of 2.0 or higher, and who has less than the required MSU Cumulative GPA, will be placed on academic dismissal. A student who receives an academic dismissal will not be automatically or routinely readmitted. In addition, readmission will not normally be considered until the student has been absent from the University for one calendar year. The Provost/Executive Vice President may approve the readmission of an academically dismissed student only upon the recommendation of the student's academic dean based on a written petition by the student. Application for readmission should be filed with the student's Department Head no later than fifteen days prior to the first day of classes.
7. Appeal for a waiver of suspension or dismissal, because of unusual circumstances, should be made through the student's academic dean to the Executive Vice President or Provost for Academic Affairs. No additional appeal beyond the Executive Vice President is possible.

b. Veterans' Academic Status.

Students receiving U.S. Department of Veterans Affairs educational benefits will be governed by APO 12.21 in addition to those above.

1. A student's continued entitlement to the Department of Veterans Affairs educational benefits is determined as follows: If a student's cumulative average falls below the acceptable level as specified in AOP 12.16 (See Above), he/she will be placed on "first probation to receive VA benefits." If during the first probation semester, a student does not improve his or her cumulative GPA, VA benefits will be suspended at the end of the semester. If a student's cumulative GPA improves but an acceptable level is still not achieved, a "second probation to receive VA benefits" semester will be allowed. If the standards of progress are not achieved at the end of the second probation semester, VA benefits will be suspended. Students may not receive further benefits until approved by the VA.
2. Based on VA rules and regulations, students receiving VA educational benefits will receive benefits only for courses that apply toward a degree program. NOTE: Any change in student status, such as drops/adds, major changes or withdrawals from the University, must be reported to the Veterans Administration Supervisor.

c. Academic Amnesty.

Students who have not been enrolled in any post-secondary institution for five years may apply for admission or readmission under the academic amnesty policy through their academic dean's offices. Academic Amnesty may be applied to a student's record only once, and the new grade point average will be noted on the transcript at the end of the semester during which the request was approved.. Students admitted under this policy must complete current curriculum requirements in residence to earn a degree. (AOP 12.19 applies.)

d. Academic Fresh Start.

Students who have not been enrolled in any post-secondary institution at any time for at least 24 consecutive months may petition for admission or readmission through their academic dean's offices under the academic fresh-start policy. All college credits earned prior to being granted academic fresh start will be eliminated from the computation of the student's grade point average and may never be used toward graduation at Mississippi State University. (AOP 12.17 applies.

The student's transcript will reflect the complete academic record but will contain the notation at the appropriate point that all academic work prior to the consecutive twenty-four months absence would be declared void for the purposes of academic standing and graduation. The notation will be made upon the successful completion of at least 12 credit hours at Mississippi State University.

Students admitted under this policy must complete current curriculum requirements in residency to earn a degree. This policy may not be honored in other institutions of higher learning.

e. Academic Forgiveness (Course Retake) Policy. (AOP 12.20)

Effective fall semester 2007, for courses taken during or after fall semester 2003, an undergraduate student will be permitted to retake up to two (2) courses, not to exceed eight (8) credit undergraduate semester hours, or one (1) course not to exceed nine (9) credit undergraduate semester hours, in which he or she made a B, C, D, or F with the original

grade remaining on the transcript but not counted towards the student's GPA. The following rules apply:

1. 1. This policy will be applied only to courses that have been taken at Mississippi State University.
2. 2. After the retake, the original grade is left on the student's record but is not counted in the grade point totals. Only the second grade earned will be used in computing the GPA (in the cumulative totals), regardless of which of the two grades is the higher.
3. 3. The original grade will be used to compute the GPA until the final second grade is issued.
4. 4. Effective fall semester 2007, only courses in which a B, C, D or F grade was earned after fall 2003 are eligible for retaking.

Class Attendance

Upon registration, the student accepts the responsibility of attending all classes and completing all in class and out of class work the instructor formally assigns. When absence from class is essential, the student should inform the instructor through an official means of communication or provide satisfactory documentation of the impending absence unless prescribed otherwise in the syllabus. If possible, the instructor should be notified prior to the absence. The student should discuss and document the scope and time frame for completion of missed work with the instructor in an agreed upon timely manner. Last the student should be informed that failure to comply with a documented agreed upon procedure could result in a grade penalty.

An attendance policy is the purview of an individual instructor. A policy should include, but is not limited to, how the instructor defines class attendance, particularly as it pertains to in-class responsibilities that go beyond the student's mere presence in the classroom, the extent of credit or penalty, how excused and unexcused absences are measured, and how all absences are recorded. More information can be found in the complete Academic Operating policy 12.09.

Withdrawal

Any student leaving the University prior to the end of the period of enrollment, except for temporary absences, should initiate withdrawal procedures at his/her Academic Dean's office. By completing this procedure, the student may prevent future difficulties in obtaining transcripts or in re-entering the University, and will avoid having F's automatically recorded for all courses taken during the semester.

A student who withdraws after the 10th day of classes will receive grades of W for each course scheduled. No withdrawals will be allowed during the last two weeks before the beginning of final examinations for the fall and spring semesters, and during the last week prior to the beginning of examinations for each five-week/ten-week summer term.

The withdrawal of any student shall not be effective on a date prior to the last day of class attendance.

In highly unusual circumstances resulting from extreme hardship, a student may petition to withdraw retroactively from a semester within one calendar year. The request for withdrawal will be considered only when accompanied by appropriate documentation of the situation (e.g., medical emergency or administrative error) which was related to the student's recorded academic performance for the semester in question. Such requests must be approved by the student's advisor, department head, dean, and the Provost. For cases other than administrative error in which final grades were recorded, the student's instructors should be consulted before a final decision is rendered and should be notified after the decision is made. In no case will more than one semester's work be retroactively withdrawn during a student's matriculation at Mississippi State University.

Classification of Students

Students are classified according to the total hours earned:

Year	Semester Hours
Freshman	29 or fewer semester hours
Sophomore	30-59 semester hours
Junior	60-89 semester hours
Senior	90 or more semester hours

Undergraduate Enrollment in Graduate Courses

Accelerated programs (combined B.S./M.S.) are offered by a number of departments. These programs permit highly qualified undergraduate students to earn graduate credit druing the final year of undergraduate studies. Upon completion of the graduate credits, the students also earn undergraduate credit for the same course(s). Interested undergraduates should check with their department to see if the accelerated program is available and to inquire about the application and registration process. Information can also be found in the catalog pages pertaining to the participating departments.

An undergraduate student at Mississippi State University not in an accelerated program and who lacks 12 or fewer credit hours to complete the undergraduate degree requirements may seek approval to enroll in courses for graduate credit in the final undergraduate semester or term. The student should meet the grade point average requirement for regular admission to the particular graduate program and may take up to 9 graduate credit hours; the combination of undergraduate and graduate credit hours may not exceed 13. Any exception to the stated criteria must be approved by the Provost (per Graduate Council, May 2004). In order to register for the course(s), the MSU student must submit the Undergraduate Request to Enroll in Graduate Courses form (http://www.grad.msstate.edu/forms/) signed by the student's undergraduate department head, dean of the student's college, and instructor(s) of the graduate course(s). The department electronically submits the completed form to the Office of the Graduate School for processing.

Recognition of Academic Achievement

Recognition of Academic Achievement

Recognition for outstanding academic achievement is accorded to full-time students each regular semester (does not apply to students in College of Veterinary Medicine). For these purposes, a student must complete at least twelve (12) semester hours of course work toward graduation, with no incomplete grades nor grades lower than C. The levels of recognition are as follows:

President's Scholars.

Students who achieve a 3.80 average or above.

Dean's Scholars.

Students who achieve a 3.5 to a 3.79 average.

Graduation and Commencement

1. Commencement.

Candidates should submit formal application for degrees during the semester in which they expect to complete their degree requirements, but not later than the last day to apply, as published in the Academic Calendar. Payment of debts to the University is a requirement for the granting of degrees and awarding of diplomas. All University holds must be cleared before a student can graduate.

2. Graduation with Honors.

Students completing the requirements for baccalaureate degrees with exceptional scholastic averages and who have completed at least 60 of the total hours for their degrees at MSU and earned high grade point averages both on their cumulative and MSU coursework will receive special recognition. The levels of recognition will be recorded on the students' diplomas and permanent records.

In determining eligibility for recognition, the grade point average will be figured on the basis of all hours attempted. If a student's last period of enrollment raises his or her average to the level required for honors, or to a higher level of honors, this notation will be made on the diploma and transcript. The hours may include, not only residence credit, but also correspondence and extension credit to the extent permitted by the University regulations for graduation.

Transfer students must achieve the specified grade point average in two senses: (1) on all hours attempted at all institutions attended and (2) on all hours attempted at Mississippi State University. The level of attainment will be determined by either the overall average or the Mississippi State University average, whichever is lower. The grade point values currently in use at Mississippi State University will be used to calculate the quality point average on all transfer credits.

Students receiving a second baccalaureate degree from MSU will be recognized in the same manner for outstanding academic achievement. In such cases, all coursework (from the first and second degree) will comprise the GPA.

The levels of recognition and the grade point averages required for each are as follows: Summa Cum Laude—3.80, Magna Cum Laude—3.60, and Cum Laude—3.40.

3. S.D. Lee Scholars

Students completing the requirements for the baccalaureate degree who have earned the grade of A in all courses attempted through the end of the semester before graduation may be recognized as a S.D. Lee Scholar at the University's Commencement Exercise. Courses taken at Mississippi State University and all transfer courses will be used to determine eligibility for recognition. In order to qualify as a S. D. Lee Scholar, the student cannot invoke the following policies: academic amnesty, academic forgiveness, or academic fresh-start. Students attempting courses which are not assigned a letter grade and receive the grade of U will not be eligible.

Conduct and Discipline

Student Conduct

www.students.msstate.edu/studentconduct/

Two objectives of higher education are to develop self-reliance and to form desirable and acceptable habits of conduct among students.

Instead of designing numerous regulations to cover in detail matters of student conduct, Mississippi State University recognizes students as adults who are expected to obey the law, rules and regulations of the University, to take personal responsibility for their conduct, to respect the rights of others, and to have regard for the preservation of State and University property as well as the private property of others. Mississippi State University will not police the personal lives of students on or off campus or invade their privacy by spying or intrusive searches; however, students whose conduct threatens to cause disorder, public disturbances, danger to themselves and others, or property damage will be disciplined.

A listing of acts of misconduct which are unacceptable and may require disciplinary action is provided online at http://www.msstate.edu/web/security/ together with a detailed explanation of disciplinary processes for students in the University. Those apprehended and proven guilty of violating the law or rules and regulations of the University may receive a maximum penalty of expulsion from the University.

MSU Honor Code

Academic dishonesty is a corrosive force in the academic life of a university. It jeopardizes the quality of education and depreciates the genuine achievements of others. It is, without reservation, a responsibility of all members of the Mississippi State University community to actively deter it.

All students who are admitted to MSU agree to abide by the Honor Code which states, "As a Mississippi State University student I will conduct myself with honor and integrity at all times. I will not lie, cheat, or steal, nor will I accept the actions of those who do."

Those individuals who are reported for MSU Honor code violations will be subject to the procedures and sanctions as found at: www.students.msstate.edu/honorcode.

Behavioral Intervention Team (BIT)

www.students.msstate.edu/bit/

The BIT is made up of university representatives who work to connect the dots of problematic actions involving students that may be known to the various faculty, staff and administrators. Departments represented on the BIT include (but are not limited to): Dean of Students Office, Office of the Provost, Faculty, Housing and Residence Life, Student Health Services, Student Counseling Services, Disability Support Services, and the MSU Police Department. The goal of the BIT is to successfully engage, support, and minimize the concerns associated with students in distress. Accomplishing these goals requires a coordinated institutional response that includes all members of the MSU community.

Maroon Alert System

www.emergency.msstate.edu

Mississippi State University encourages all students, faculty and staff to sign up for the Maroon Alert System. In case of a campus emergency,

administration will activate the Maroon Alert system and begin to communicate with the university community using appropriate media including:

- The Web page at www.emergency.msstate.edu (yellow banner on the home page)
- Groupwise Instant messaging for students and employees
- Text messaging on participating cell phones
- E-mail using the students or employees official e-mail address
- Campus radio station WMSV 91.1-FM
- Mobile loudspeaker announcements by campus speakers system and police vehicles
- The HOT LINE 325-5555 (activated only during emergency)

Student Life

Student life is a very important part of the university experience. The services and activities provided by Student Affairs to promote student life are critical to helping students adjust to being away from home and to finding their place in the campus community. Many of these services and opportunities are detailed under the Student Life links to the right.

Student Housing

Mississippi State University (MSU) is committed to providing students with a comprehensive educational experience. The university has determined students living on campus has numerous educational and social benefits. In recognition of the living-learning experience associated with on-campus living, MSU requires first-time freshman to live in on-campus residence halls. Students must first apply and be admitted to the university. Once a student is admitted, they will be able to apply for housing. Students can apply and continue to access their housing application via my.housing.msstate.edu. There is a $75 non-refundable application fee to apply for housing. Once an assignment is offered to a student, they will be able to sign their MSU Housing Contract. A MSU Housing Contract is a legally binding academic year contract.

Roommate Selection: Students wishing to request one another as roommates should do so via my.housing.msstate.edu prior to April 1. Students who do not have a roommate in mind are able to search for a roommate using the Roommate Preference portion of the housing application. Students who aren't able to submit their roommate request prior to April 1 can still submit the request via my.housing.msstate.edu, but requests submitted prior to April 1 are given priority consideration.

Returning Resident Contract Renewal (Room Selection Verification Process: RSVP): Residents currently living on campus are able to apply to renew their housing contract for the next academic year through Room Selection Verification Process (RSVP). RSVP allows students to reapply and select their residence hall room online for the upcoming academic year. RSVP begins in November. To apply residents can visit: my.housing.msstate.edu

Transfer and Currently Enrolled Off-Campus Students: Transfer students and currently enrolled off-campus students will not be assigned a bed space until returning residents and first-time freshman assignments are completed.

MSU Housing Contacts: MSU students cannot cancel their housing contract and/or room assignment after July 1, 2019 for the 2019-2020 academic year. The MSU Housing Contract is for the academic year. The student is legally bound to the terms and conditions of this document as long as the student is enrolled at MSU. For additional information regarding cancellations and contracts for students who are no longer enrolled, residence hall opening dates, and more please visit housing.msstate.edu.

Private Rooms: First-Time Freshman are not eligible to receive a private room unless there is special permission granted by the Department of Housing and Residence Life. Requests for private rooms will only be considered if space is available.

Disability and Medical Needs: Students requesting specific accommodations based on a disability must register with MSU's Office of Student Support Services. Student Support Services will review the needs of the student and work with the Department of Housing and Residence Life during their assignments process. Accommodation requests must be received prior to April 1 in order to receive priority consideration.

Room Change Requests (for students currently living in on-campus housing): Room changes must be approved by the Community or Residence Director. A student who makes an unauthorized room change will be charged a penalty and be required to move back to their assigned space. The assigned occupants are financially responsible for the room's condition. Room reassignments are based on availability after the first week of classes. Room Reassignment Requests will be considered for incoming students prior to Fall move in. Please contact the Department of Housing and Residence Life for more information regarding these processes.

Reassignments and Right of Entry: The university reserves the right to inspect rooms and/or to move any student to another assignment for reasons of space management or for the maintenance of order.

Please contact the Department of Housing and Residence Life for any additional information.

Department of Housing and Residence Life
housing@saffairs.msstate.edu
662-325-3555
P.O. Box 9502
Dogwood Hall - First Floor
Mississippi State, MS 39762

Visit our website: housing.msstate.edu.

Services

Mississippi State University provides many various services for its students. Information on everything from textbooks to dining to student support services can be found in the links listed to the right.

Libraries

http://library.msstate.edu

The Mississippi State University Libraries is composed of the Mitchell Memorial Library (Main Library), the Old Main Academic Center, the Bob and Karen Luke Library (College of Architecture, Art, and Design), the College of Veterinary Medicine Library, the Jackson Design Center Library and the Phil Hardin Foundation Libraries (MSU – Meridian College Park Campus and the Riley Campus).

The University Libraries include a collection of over 2,000,000 volumes and over 100,000 journal/serial titles including print and electronic formats. The Libraries regularly receive many of the publications of leading universities and scholarly societies. The Libraries provide a full complement of full-text journals as well as scholarly journals and online databases available online accessible from offices, dorms and from off campus. The Libraries provide a full range of individual reference services including customized instruction sessions, one-on-one consultations and e-mail and online chat reference services. Providing services and resources to distance education students is a priority on campus with growing online degree options.

The resources of the Special Collections Department include materials of research value on the local, state, regional and national levels. Among the valuable documentation in the University Archives are papers of the university's presidents and other officers, college, division

and departmental records, faculty papers, records of committees and university related organizations. The Manuscripts Division includes many significant collections, especially in the areas of journalism, civil rights, agricultural, and political history. Among the most important are the authors John Grisham and Neely Tucker, Turner Catledge Papers, Hodding and Betty Werlein Carter Papers, Mississippi Republican Party Papers and the Delta and Pine Land Papers. The Mississippiana Collection contains significant works about Mississippi and by Mississippi authors and a large rare book collection. The Rare Book Division collects, houses, preserves and provides access to thousands of rare and diverse volumes. Through the years, MSU Libraries has purchased or received donations of many important, historic and valuable books.

The Congressional and Political Research Center houses the papers of Senator John C. Stennis, Congressmen G.V. "Sonny" Montgomery, David Bowen, Charles Griffin, Mike Espy, Chip Pickering, and Marsha Blackburn.

The MSU Libraries is also the home of the Ulysses S. Grant Association and the Ulysses S. Grant Presidential Library. The Grant Library along with its vast collection of materials and resources by and about U.S. Grant is one of only six academic institutions that have a Presidential Library on their campus. In 2017, the MSU Libraries became the home of the Frank and Virginia Williams Collection of Lincolniana and Civil War Library. These collections contain rare and valuable memorabilia, priceless artifacts, signed documents, and other original and one-of-a-kind items related to Abraham Lincoln and the Civil War. The Williams Collections and the Grant Collections are housed and showcased in a new facility which opened in 2017.

Mitchell Memorial Library is the home of the Charles H. Templeton, Sr., Music Museum, John Grisham Room and the Stennis/Montgomery Room. The Templeton Museum showcases a vast collection of music instruments, sheet music and recordings. The John Grisham Room showcases materials found in the MSU alumnus' collection and features an event space used for special events. The Stennis/Montgomery Room showcases memorabilia from U.S. Congressional leaders Senator John C. Stennis and Congressman G.V. "Sonny" Montgomery.

The Library provides over one hundred computers for students in the Computer Commons Lab and Research Services Department. These computers provide students with access to a wide variety of software needed for the academic career in including Microsoft Office, Adobe Creative Suite and many others. The Lab provides color and black and white printing capabilities as well. The Library's Computer Commons Lab is open until 1:45 a.m., Sunday through Thursday and until 7:45 p.m. on Friday and until 5:45 p.m. on Saturday.

The Digital Media Center offers professional consultation, a state-of-the-art multimedia lab, and an environment essential for learning about new technologies for teaching and research. The Digital Media Center offers state-of-the art hardware and software, in an environment conducive to individual and group project work. The Lab, which features 32 new PCs and four MACs, is staffed by professionals or highly-trained lab assistants. The Lab offers the latest software including Adobe Creative Suites, Microsoft Office, ArcGIS, MathCAD, MATLAB, Camtasia, SketchUp, Snagit, SAS, MovieMaker, Finale, Audacity and much more.

The Lab also has scanners, music composition stations and video capture stations, and virtual and mixed reality hardware and software High-end color printing, wide-format printing and laminating services, 3D printers and a 3D scanner are also available for students and faculty to use. The Digital Media Center provides regularly scheduled workshops on a wide variety of software applications including the Microsoft Office Suite, Adobe Suite, and many emerging technologies. Teaching faculty can partner with the staff to conduct workshops specifically geared toward their course objectives. The Center also checks out equipment to students, faculty and staff. Equipment available for checkout includes laptops, digital cameras, video cameras, projectors, projector screens and a variety of tools. The Libraries hold memberships in the Association of Southeastern Research Libraries, American Library Association, Association of College and Research Libraries, the Networked Digital Library of Theses and Dissertations (NDLTD), EDUCAUSE, Coalition for Networked Information and Center for Research Libraries , and was a founding member of SPARC. The Libraries are one of five supporting regional libraries within the National Agricultural Library Aquaculture Library Network, established to link the research and extension activities of the Regional Research Centers with the Network. The Main Library plays a major role in Mississippi's statewide consortium MAGNOLIA (Mississippi Alliance for Gaining New Opportunity through Library Information).

Books and Supplies

The MSU Bookstore is operated on behalf of the University by **Barnes & Noble**. The store's primary function is to provide students, faculty and staff with textbooks, general reading and reference books, related supplies, and MSU clothing and gifts. It also has parking available for community and visitor use.

Barnes & Noble at MSU is a 30,000 sq. ft. academic superstore located in the **Cullis Wade Depot**. The first floor features MSU clothing and gifts, a large selection of general reading books, and a full service Barnes and Noble Café that proudly serves Starbucks coffee and Cheesecake Factory desserts. The second floor stocks all course-required textbooks, trade and Reference books, and a variety of school supplies. The bookstore also carries electronics and accessories in the store and online software packages are available at substantial educational discounts. The bookstore also offers a vast array of eco-friendly merchandise that includes socks, notebooks, filler paper, and totes among others.

Students have the ability to purchase or rent new, used or digital textbooks. Students can visit the bookstore web site at ShopMissState.com (http://ShopMissState.com) to purchase textbooks and imprinted merchandise for delivery or take advantage of our convenient in-store pickup. Students may also access their book list from the MyState portal using the order or reserve textbooks option. The bookstore also offers cash back for textbooks all year long.

The bookstore is open Monday through Friday from 7:30 a.m. to 7 p.m., Saturday 10 a.m. to 7 p.m., and Sunday 11 a.m. to 5 p.m. The bookstore extends its hours of operation concurrent with campus activities such as home football games. Please call (662) 325-8361 or visit ShopMissState.com (http://ShopMissState.com) for more information.

University Dining Services

From coffee shops to dining halls, we've got you covered. The variety of choices includes popular brands such as Steak 'n Shake, Subway, Pizza Hut, Panda Express, Einstein Brothers Bagels, Starbucks, Chick-fil-A, and Moe's Southwest Grill, as well as local favorites like State Fountain Bakery, Olilo, and Juva. Other options include Pegasus Dining at the Wise Center and McArthur Café, which are considered hidden gems on campus.

The Fresh Food Company, Marketplace at Perry and Templeton Dining, our all-you-care-to-eat Residential Dining Halls, offer the most innovative

dining with authentic flavors and unique menus that are meticulously crafted to satisfy everyone's appetite. Our dining team works hard to ensure we serve only the freshest ingredients and quality products, along with incorporating seasonal trends, themed meals, and events throughout the semester. The popular Fresh Food Company features several unique cooking stations of made-to-order meals prepared in view of customers. The Marketplace at Perry houses a completely vegan station, and the Simple Solutions station which provides a complete menu excluding 7 of the top 8 most common food allergens!

In a hurry? No problem! The Village convenience store P.O.D. Markets, and P.O.D. Expresses located around campus offer items such as grab-n-go sandwiches, cereal, milk, fresh fruit, frozen entrees, medicine, phone chargers, batteries, paper towels and much more – all available without ever needing to leave campus.

In addition to the 23 dining locations and Concessions for all sporting events, MSU Dining also provides a full range of exceptional, customizable Catering service options for any event on campus – including tailgate season.

For more information visit our website www.msstatedining.com (http://www.msstatedining.com), or check us out on Facebook, Twitter, and Instagram @msstatedining. The MSU Dining Office, located between Subway and Moe's Southwest Grill on campus, is open Monday through Thursday 8:30am – 5pm and Friday 8:30am – 4pm during the school year.

We look forward to serving you!

John C. Longest Student Health Center

The Longest Student Health Center is designed to provide comprehensive, accessible, high-quality and cost effective healthcare to students during college years. The Center is open during regular school sessions to all Mississippi State University students who are assessed the student health fee.

It is recommended that all students use the Longest Student Health Center as their preferred provider of care while at Mississippi State. The Center is staffed with well-qualified family practice physicians and registered nurses to provide primary medical care for students. Ancillary services include pharmacy, laboratory, x-ray, and physical therapy. Other services offered include nutrition counseling and health education. The health fee covers the physician's professional charge for an unlimited number of clinic visits. Ancillary services are provided on a fee-for-service basis. Ambulance service is available through Oktibbeha County Hospital. Those who need more specialized care than the Center can provide will be referred to the appropriate resource.

Clinic hours: 8 a.m. to 5 p.m., Monday-Wednesday and Friday; 9 a.m. to 5 p.m. on Thursday. The Center is closed on Saturday and Sunday and during regularly scheduled student holidays.

Health records are to be sent directly to the Longest Student Health Center, where they are kept confidential.

The Student Health Center does accept insurance assignments from health insurance companies recognizing the Center as an authorized provider of health care. A Student Accident and Sickness Insurance Plan has been developed specifically for Mississippi State University students and is intended as a supplement to the care provided by the Student Health Center. Sponsored by the Student Association, it is a voluntary plan for students and their dependents. International students are required by the University to subscribe to this policy unless they provide proof of equal coverage.

Information on student health services and student health insurance is available by writing to Director, John C. Longest Student Health Center, P.O. Box 6338, Mississippi State, MS 39762; telephoning (662) 325-5895; or emailing health@saffairs.msstate.edu. Visit www.health.msstate.edu.

International Services

International Services, a unit of the International Institute within the Division of Academic Affairs, advises and provides information to students, research scholars, visiting professors, and MSU faculty and administrators about rules and regulations of immigration. International Services serves as the University liaison between the U.S. Citizenship and Immigration Services (USCIS), the U.S. Department of State, and the Mississippi State University international community holding F and J visas. By administering both the F-1 Student and J-1 Exchange Visitor Programs, International Services provides documents for qualified non-immigrants to enter the United States. International advisors inform students about maintenance of lawful status, work authorization, enrollment requirements, extension of stay, and other immigration issues. Semi-annual orientation programs for new students along with additional immigration workshops are conducted by this office as well as annual international student services including orientation sessions, cultural programming for visiting scholars, and offering an international tax software program.

The International Services office is located in 116 Allen Hall and can be contacted by telephone at 662-325-8929. Additional information can be found at http://international.msstate.edu/current/services/index.php.

Student Counseling Services

Student Counseling Services, located in 115C Hathorn Hall, offers a variety of clinical and consultation services free to MSU students Monday through Friday from 8:00 A.M. to 5:00 P.M. Appointments may be made in person or by calling 662-325-2091.

Student Counseling Services staff is composed of experienced professionals with training in counseling, social work, and psychology who are knowledgeable in facilitating personal growth and development. Student Counseling Services offers individual and group counseling, workshops, psycho-educational groups, and walk-in urgent care. Consultation regarding student concerns is available to concerned faculty, staff, students, and family members. For more information about services, please visit the Student Counseling Services at http://www.health.msstate.edu/scs/.

Sexual Assault Services

Sexual Assault Services are provided by Student Counseling Services. Our Victim Advocate Coordinator works closely with the Title IX Director to provide crisis response, assessment, and direct support in the event of a sexual assault. The Victim Advocate Coordinator is available to provide further consultation and referrals. Please visit http://students.msstate.edu/sexualmisconduct/ for information regarding the sexual assault policy.

For information or to report a sexual assault case, students and members of the University community may contact the Victim Advocate

Coordinator at Student Counseling Services (662-325-2091), Safeline (662-325-3333), the Title IX Director (662-325-8124), the MSU Police Department (662-325-2121), the Dean of Students' Office (662-325-3611), or visit the website at http://www.health.msstate.edu/sas/.

Computer-Based Testing Services

www.cbt.msstate.edu

The Computer-Based Testing Services, located at 180 Magruder Street (basement in Rice Hall), serves as the University's testing center for national standardized computer-based and paper/pencil tests such as ACT, CLEP, GMAT, GRE, Praxis, LSAT, MAT, and TOEFL. Registration information can be obtained from test program web sites listed on our web site at www.cbt.msstate.edu. Please email testing@saffairs.msstate.edu, or call (662) 325-6610 for more information.

The Learning Center

http://www.tlc.msstate.edu

The major purpose of The Learning Center (TLC) is to help Mississippi State University students improve their academic performance. TLC offers both credit courses and non-credit services to graduate and undergraduate students. For more information, contact the TLC office at (662) 325-2957 or come to 267 Allen Hall.

Credit Classes. The primary focus of the credit classes of The Learning Center is to assist in retention of students by strengthening their reading and studying efficiency. LSK 1023 College Reading and Study Skills emphasizes development of time management, vocabulary, note taking, test preparation and other study skills. TLC offers a one-hour study skills course, LSK 1011. In addition, the center offers LSK 1001 Freshman Seminar, a one hour course designed to orient incoming freshmen to the university.

Non-credit Laboratory Services. TLC offers tutoring in all subject areas. Special assistance is available in all areas of English, mathematics and statistics, chemistry, physics, and preparation for professional examinations. These services are free to all MSU students. In addition, The Learning Center houses a general computer lab available to students and faculty.

The Career Center

www.career.msstate.edu

The MSU Career Center, through quality programs, events and services, empowers individuals to develop skills that will enhance career readiness and success. The Career Center strives to support students, employers, faculty, and alumni by facilitating opportunities for experiential learning, networking, and on-campus recruiting. Assistance is provided that complements the career decision/preparation process in the form of personality and interest inventories, career counseling, resume writing, resume critiques and mock interviewing. In addition, special events are hosted by the Career Center that provide students and alumni with enhancements related to the job search process. Major events held on a regular basis each semester include a Career Expo, Graduate and Professional School Fair, Education Career Fair, and Cooperative Education Interview Days. Special emphasis workshops including dining etiquette, networking, evaluating job offer, etc., are held regularly.

Types of employment resources available for job seekers through the Career Center include:

- Full-time employment for graduating seniors and alumni
- Cooperative Education (see section on Cooperative Education Program)
- Internship and Professional Practice Internships
- Summer Employment
- Part-time employment during school semesters

Details on all events, programs and services of the Career Center may be found at http://www.career.msstate.edu or by contacting the Career Center, 300 Montgomery Hall, 662-325-3344.

The Holmes Cultural Diversity Center

The Holmes Cultural Diversity Center, formerly known as the Office of Minority Affairs, strives to enhance the college experience of culturally diverse students at Mississippi State University. Since its beginnings in 1979, the center has been an important part of university life. The Center promotes the positive image that all cultures contribute to the university life and focuses on making the college experience a productive and successful endeavor all students. For information or services, visit the Holmes Cultural Diversity Center on the 2nd floor of the Colvard Student Union, Suite 220, or at http://www.hcdc.msstate.edu. We can also be contacted via phone at (662) 325-2033.

Information Technology Services

117 Allen Hall. (662) 325-9311. www.its.msstate.edu.

The mission of Information Technology Services (ITS) is to enable learning, service, and research through an advanced information technology environment. In fulfillment of this mission, ITS makes available a broad array of information technology resources and services to the students, faculty, and staff of MSU.

User Services operates the Help Desk, which serves as the primary point of contact for the campus community when requesting services or reporting problems to ITS. User Services offers training workshops and seminars on relevant information technology topics, and it provides personal computer support to departments across campus. Additionally, User services operates the Campus Card Office, which produces the MSU ID Card, and it administers MoneyMate, the university's declining-balance spending account system.

Information Technology Infrastructure (ITI) is responsible for the design, deployment, and support of the University's information technology infrastructure. This infrastructure includes the voice network, central and departmental server resources, the Campus Card system, and wired and wireless data networks encompassing over 220 buildings on the Starkville and Meridian campuses as well as Research and Extension Centers and Extension Offices in all 82 Mississippi Counties. ITI provides connections to the Mississippi Optical Network, MissiON, as well as the commodity Internet and Internet2 via dual 10 Gbps wide-area connections. Additionally, ITI installs and supports instructional technology in over 135 classrooms, open-access computer labs in Griffis

Hall, Allen Hall, and the Library Computer Commons, and departmental computer labs across campus.

Enterprise Information Systems (EIS) is responsible for development, maintenance, and support of a large and growing portfolio of information systems used throughout the university. Systems range from departmental web applications to the comprehensive, integrated Enterprise Resource Planning system (BANNER) for financial, human resources, student, financial aid, and advancement administration. In addition, EIS supports the myState portal, the myCourses learning management system, and the eForms electronic document routing and approval system. Primary operating systems include Linux and Windows, while primary database platforms include Oracle and Microsoft SQL server. General responsibilities include software design, development, and testing, system implementation, database administration, and ongoing maintenance and support.

Student Support Services

The department of Student Support Services (SSS) is a federally-funded program through the U.S. Department of Education. It is a TRIO program designed to assist eligible low income college students, first generation college students, and college students with disabilities to succeed in completing their college education. A limited number of students can be served under the federal grant program. The primary mission of SSS is to enhance educational opportunities for eligible students to improve their academic and social skills, increase their retention toward graduation and as appropriate, facilitate their entrance into graduate and/or professional schools. For information or services, visit Student Support Services in Montgomery Hall, call (662) 325-3335, or visit www.sss.msstate.edu.

Disability Support Services

Students with disabilities who wish to receive academic accommodations can visit the Disability Support Services (DSS) website at http://sss.msstate.edu/disabilities for information and an online application. DSS coordinators work closely with students to formulate plans for academic and other accommodations, based upon documentation of disability. DSS is located on the ground floor of Montgomery Hall, telephone (662) 325-3335. A student may appeal to the Provost and Executive Vice President if they disagree with a determination regarding an academic accommodation or modification.

Student and Campus Life

There are a number of non-academic activities available that are of interest to many students. Information on opportunities such as recreational sports and religious, musical or Greek organizations can be found in the links listed to the right.

Colvard Student Union

www.union.msstate.edu

The Colvard Student Union was built in 1964 under the leadership of its namesake, Dr. Dean W. Colvard, the President of the University who called it the “Living Room of the University.” In response to steady growth in the student body and the number of student organizations, a major renovation and expansion of the Colvard Student Union began in July 2006. The newly renovated building opened in early 2008 with eight large multi-purpose meeting rooms, 4 conference style rooms, the Fowlkes Auditorium, Art Gallery, as well as the Bill R. Foster Ballroom.

You will also find multiple dining options (including a convenience store), a full service Starbucks and a hair salon in the Colvard Student Union. The Holmes Cultural Diversity Center is located on the 2nd floor of the Colvard Student Union. Other offices located in the Colvard Student Union include, the Union Director and Business office (Suite 331), Fraternity and Sorority Life (Suite 300) and the Center for Student Activities (Suite 314).

Rooms in the Colvard Student Union, Bettersworth Auditorium, the Amphitheatre, and many other campus facilities may be reserved through the Event Services office located on the 1st floor of the Colvard Student Union (Suite 117) and by calling 662-325-3228.

The Student Association

www.sa.msstate.edu

The Student Association (SA) at Mississippi State University is the largest student organization at MSU. The SA also serves as the governing body and voice for the students.

The SA Executive Council and Cabinet members are responsible for providing opportunities for students to engage in fun, imaginative, diverse, educational, and entertaining events and programs at Mississippi State. From casual to cultural, serious to witty, committees capture the diversity of the campus and produce a wide variety of events and initiatives to benefit the students, campus, and surrounding community. Some of the more popular annual events include Bulldog Bash, Costume Carnival, as well as the True Maroon Campaign, Cowbell Cabs, Finish in 4, and Block 4 Block initiatives. In addition, some Cabinet positions oversee all matters regarding academic policies and other areas of student concerns.

The Vice President of the SA presides over the legislative arm of the Student Association. The SA Senate is made up of representatives from academic colleges and At-Large members. The purpose of the SA Senate is to consider and pass legislation on any and all matters concerning students and or activities on campus.

Student Publication

http://www.reflector-online.com/

The Reflector, the campus newspaper, appears twice weekly during the regular term and is edited and managed by students. *The Reflector* provides a wide range of news, features, and commentary of interest to the campus community. *The Reflector* office is located in the Meyer Student Media Center.

Student Organizations

www.one.msstate.edu

While it’s true that Mississippi State is composed of classrooms, offices and residence halls, there’s a lot more to our campus. MSU boasts over 380 student organizations which provide ample ways for students to get involved, meet other people, and make the most of their college experience. The best way to view these student organizations is by visiting the Difference of One website at www.one.msstate.edu and log into Engage with your NetID and password. This website allows you to

search organizations by the things you are interested in and automatically connect to students in each of those organizations. You can also meet with the staff of the Center for Student Activities who can directly connect you to groups and student organizations in which you have shown an interest. Stop by and visit the office in Suite 314 of the Colvard Student Union or give them a call at 662-325-2930 to see what is available to make your time at MSU worthwhile.

All student organizations are housed within the Center for Student Activities, along with Music Maker Productions, the Lyceum Series, the MSU Student Association, MSU Dance Marathon, the Miss Mississippi State University and Miss Maroon and White pageants, and the Involvement Ambassadors.

Fraternity and Sorority Life

www.greeks.msstate.edu

Mississippi State is home to 34 fraternity and sorority chapters that are all nationally recognized organizations. Fraternities and sororities at MSU promote a balance of scholarship, leadership, service, and friendship. Members of Greek organizations are expected to maintain high grades, volunteer in the local community, and get involved and be leaders in other campus organizations. Greek members also donate thousands of dollars annually to local and national charities and perform thousands of hours of community service. The majority of the members and leaders in the MSU student organizations are Greek. Membership in a Greek organization is a lifetime commitment and in return, members can expect to make lasting memories and lifelong brothers and sisters. For more information, call 662-325-3917 or visit www.greeks.msstate.edu.

Musical Organizations

All MSU students, regardless of academic major, are enthusiastically invited to participate in one or more of the musical ensembles offered through the University Band, Choir, and Orchestra programs in the Department of Music. These ensembles offer diverse performance opportunities both on and off-campus. Membership is available through audition. Scholarships are available in each of the programs based on talent and experience as demonstrated through audition.

Founded in 1902, the Maroon Band Program is one of the oldest and best-known bands in the Southeast. The Famous Maroon Band is at the center of game-day spirit, is one of the most visible groups on campus, and serves as musical ambassadors for the university. The band appears at all home football games and travels to championship and bowl games. Interested members of the Maroon Band audition for placement in two Basketball Pep Bands to continue supporting the Bulldogs during basketball season.

The Wind Ensemble, Symphonic, Concert, and Campus Bands offer opportunities for students of all ability levels to pursue the study of the instruments through the performance of advanced ensemble literature, with the Wind Ensemble serving as the premiere instrumental concert ensemble. The Wind Ensemble conducts a regional performance tour annually and has been the featured university band at the Mississippi Bandmaster's Convention and for the Mississippi All-State Concert Band. In addition to regular performances in the Mid-South, the Wind Ensemble frequently travels internationally and has recently performed in the British Isles (2008), Germany and Austria (2011), and Italy (2014).

The Jazz Bands are offered for those with an interest in jazz, and numerous chamber ensembles for winds and percussion are offered through the Department of Music.

Mississippi State Singers. Designed to represent the choral area as the premiere vocal ensemble, State Singers study and perform complex repertoire from all stylistic genres, accompanied and a cappella. In addition to performing and touring, the daily curriculum challenges singers to hone their personal musicianship skills, apply and synthesize musical facts and concepts presented in their course work, and develop a professional work ethic. Comprised of 50 – 60 singers, State Singers perform full-length concerts, both on and off campus, numerous collaborative projects, and for a variety of University functions. Touring with the ensemble is mandatory.

The Women of State is a diverse group of talented women hailing from a number of different majors and departments on campus The choir performs a wide variety of repertoire representing all historical periods and styles. This group is comprised of 50 talented young ladies. Podium opportunities are afforded to qualified undergraduates.

Men of State. The most popular of ensembles on the MSU campus, Men of State offers opportunities for a brotherhood of singing and performance through the university community and beyond. Ranging from 75 – 100 members, the students in this ensemble represent nearly a century of history and music at MSU.

Schola Cantorum is an advanced treble ensemble. This popular group performs concerts on campus and in the surrounding area. The ensemble also performs large major works with orchestra, and presents two major concerts per semester. Members in this ensemble are expected to have above average musicianship skills. Touring with this ensemble is optional.

The Philharmonia is the MSU string orchestra and offers opportunities for students to pursue performance of string orchestral repertoire. The ensemble rehearses twice weekly and performs campus concerts each semester. Participation scholarships are available through audition, and students are encouraged to audition for the local professional ensemble, the Starkville – MSU Symphony Orchestra.

All musical ensembles are offered for academic credit and do not constitute an overload fee.

Contact information: Band – (662) 325-2713, Choir (662) 325-3490, Orchestra (662) 325-3070.

Religion

Since Mississippi State University is a non-sectarian institution, it seeks to provide a climate of freedom in which the private and corporate religious life of the students can be expressed. Students and others within the campus community are free to worship or not to worship, in accord with their convictions and beliefs.

The Chapel of Memories, with its George D. Perry Carillon Tower, in the center of the campus, is open to individual students for meditation and prayer throughout the day and evening. It may also be reserved through the Event Services Office for weddings, funerals, initiations, and group religious activities. Student religious groups are registered through the Center for Student Involvement in the Colvard Student Union to provide the co-curricular involvement of students in programs of study, worship, fellowship and service. Four of these groups, the Baptist, Methodist, Catholic, and Church of Christ, have off-campus facilities. In those cases where a minister or faculty advisor is not provided by the preferred group,

every effort will be made to put the student in touch with someone of his or her faith in the area.

The University Common Ministry, composed of ministers engaged in campus ministry at the University, has been serving the needs of students since December 20, 1978. In addition, more than 30 active student religious groups are registered with the Center for Student Involvement.

The Univeristy realizes that for some students their spiritual growth is as important to them as their academic growth. The Dean of Students' office serves as a liaison between the university and this conglomerate of various campus ministry organizations. The University Common Ministry serves in a support and referral capacity for those students who find themselves in the need of spiritual counseling or guidance. If you have questions, please do not hesitate to contact our office at: dos@msstate.edu

In addition to the practice of religion within the student religious groups, an opportunity to learn about religions of the world is provided through credit courses in the Department of Philosophy and Religion, as well as non-credit courses offered through the church-related groups.

University Recreation

University Recreation conducts a comprehensive program of leisure services. The program consists of men’s, women’s, and co-recreational sports; fitness programs and activities; racquetball court reservations, equipment check-out services; informal recreation programming; outdoor adventures; sport club opportunities; and special events.

The Joe Frank Sanderson Center opened in 1998 and offers a wide range of recreational opportunities for Mississippi State students, faculty, and staff. The facility includes six basketball/volleyball courts; six racquetball courts; a fitness room complete with weight and cardiovascular work-out equipment; jogging track; and an indoor swimming pool. The department also operates the RecPlex, a sports field complex with playing areas for softball, flag football, soccer, and tennis.

The Intramural Sports program offers competition for men and women in a variety of activities including badminton, basketball, flag football, racquetball, soccer, softball, tennis, table tennis, and volleyball. For more information, go to http://www.urec.msstate.edu

Intercollegiate Athletics

Mississippi State University is a member of the Southeastern Conference, which includes in its membership 14 of the leading universities of the South. Regulations regarding participation in athletics are subject to the action of the National Collegiate Athletic Association and the Southeastern Conference. Intercollegiate sports for men include football, basketball, baseball, track, tennis and golf. Intercollegiate sports for women include basketball, volleyball, tennis, golf, cross-country, track and field, soccer and softball. Overall supervision of intercollegiate athletics is provided by Director of Athletics.

Course Descriptions

This page is currently being constructed. Please check back later.

African American Studies Courses

AAS 1001 First Year Seminar: 1 hour.
One hour lecture. First-year seminars explore a diverse arrary of topics that provide students with an opportunity to learn about a specific discipline from skilled faculty members

AAS 1063 Introduction to African American Studies: 3 hours.
Three hours lecture. An interdisciplinary examination of African-American history and culture, including the Diaspora, literature, music, reform movements, and black liberation in the U.S

AAS 1103 African American Music: 3 hours.
Three hours lecture. A study of African musical and cultural traditions with focus on the impact of these traditions on the development and advancement of African American Music. (Same as MU 1103)

AAS 2203 Cultural and Racial Minorities: 3 hours.
(Prerequisite: Three hours in an introductory social science). Three hours lecture. Origins of minority groups and racial attitudes. Biological and cultural concepts of race and minority groups; problems of adjustment in interracial and multiethnic societies. (Same as SO 2203 and AN 2203)

AAS 2363 Introduction to African American Literature: 3 hours.
Three hour lecture. (Prerequisites: EN 1103 or 1113 or their equivalent). An introductory course that examines the major authors and texts of the African American Literary Tradition. (Same as EN 2363)

AAS 2990 Special Topics in African American Studies: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years.)

AAS 3013 African American History to 1865: 3 hours.
Three hours lecture. An historical examination of the life and culture of African Americans in the United States from European colonization to the end of the Civil War. (Same as HI 3013)

AAS 3023 African American History since 1865: 3 hours.
Three hours lecture. An historical examination of the life and culture of African Americans in the United States from the beginning of Reconstruction to the present. (Same as HI 3023)

AAS 3043 Modern Civil Rights Law: 3 hours.
Prerequisite: Sophomore standing or higher. Three hours lecture. An analysis of American law as a tool for social change in education, employment, public accommodations, and voting rights. (Same as PS 3043)

AAS 3153 African Art and Culture: 3 hours.
(Prerequisite: AN 1103 or consent of instructor). Three hours lecture. An examination of the role of traditional art in the beliefs and customs of representative African cultures. (Same as AN 3153 and ART 3153)

AAS 3193 African Cultures: 3 hours.
(Prerequisite: AN 1103 or AN 1143 or consent of instructor). Three hours lecture. Course provides a study of sub-Saharan African cultures, including diverse social, political organization, gender roles, and culture change. (Same as AN 3193)

AAS 3713 History of African American Women: 3 hours.
Three hours lecture. Examination of black women from their African origins to the present; emphasizes the social, economic and political engagement of women in American society, including reform movements, family life, business, and the arts. (Same as HI 3713/GS 3713)

AAS 4000 Directed Individual Study in African American Studies: 1-6 hours.
Hours and credits to be arranged

AAS 4093 The African Diaspora: 3 hours.
Prerequisite: Sophomore standing or higher) .Three hours lecture. An interdisciplinary and comparative analysis of the dispersal of Africans throughout the world by examining the cultural, philosophical, literacy, and historical development of the Diaspora

AAS 4273 African American Politics: 3 hours.
(Prerequisite: PS 1113). Three hours lecture. The nature, processes, structures, and functions of African American politics in the domestic arena and international arena. (Same as PS 4273)

AAS 4343 Studies in African American Literature: 3 hours.
(Prerequisite: Completion of English requirements in the student's major). Three hours lecture. A study of selected authors and/or topics in African American literature. (Same as EN 4343)

AAS 4363 African-American History and Culture: 3 hours.
(Prerequisite: Completion of any 1000-level history course) African-Americans from their Africian origins to the present, emphasizing black-white relations in the making of America. (Same as HI 4363)

AAS 4373 History of Modern Civil Rights Movement: 3 hours.
(Prerequisite: Completion of any 1000-level history course). Three hours lecture. A history of the Black struggle for equality in the United States between 1930 and 1970. (Same as HI 4373)

AAS 4383 African American Leadership in the Twentieth Century: 3 hours.
Prerequisite: Sophomore standing or higher). Three hours lecture. An interdisciplinary course that examines the evolution and sociopolitical impact of African American leadership during the late nineteenth and twentieth centuries

AAS 4393 Postcolonial Literature and Theory: 3 hours.
(Prerequisite: Completion of English requirements in the student's major). Three hours lecture. A critical introduction to postcolonial studies, examining the literatures of colonized or previously colonized peoples and their diasporas. (Same as EN 4393)

AAS 4543 African Politics: 3 hours.
(Prerequisites: PS 1513 and junior standing). Three hours lecture. Contemporary sub-Saharan Black Africa; prospects for political development or decay. Role of parties, bureaucracy and military and their relation to elite formation and political integration. (Same as PS 4543)

AAS 4643 Race and the Media: 3 hours.
(Prerequisites: SO/AAS 2203, or CO 1403, or AAS 1063 or equivalent). Three hours lecture. Examines the relationship between society, race, and the media. An examination of the social influence of how racial representations are produced, distributed, and consumed. (Same as SO 4643 and CO 4643)

AAS 4783 African Civilization to 1880: 3 hours.
(Prerequisite: Completion of any 1000-level history course or consent of instructor). Three hours lecture. This is a survey course which traces the major developments in Africa to 1880. (Same as HI 4783)

AAS 4793 Modern Africa: 3 hours.
(Prerequisite: Completion of any 1000-level history course or consent of instructor). Three hours lecture. This course traces Africa's history from 1880 to the present. It discusses how Africa lost and regained its sovereignty and the dilemma of independence. (Same as HI 4793)

AAS 4983 African Americans and the Law: 3 hours.
Prerequisite Sophomore standing or higher). Three hours lecture. Analysis of the legal and constitutional history of African Americans from the codification of slavery and discrimination in the North to the rise of segregation. (Same as HI 4983)

AAS 4990 Special Topics in African American Studies: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years.)

AAS 6990 Special Topics in African American Studies: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years.)

AAS 8543 Diversity and Discrimination Law: 3 hours.
Three hours lecture. Analysis of federal and state laws and regulations on diversity in the workplace, emphasizing race and national origin, sex, physical disability, religion, and age. (This course is available to students enrolled in the Graduate Online Diversity Certificate Program. It is not open to students seeking to complete degree requirements.) (Same as HI 8543)

AAS 8603 Racism and the Color Line: 3 hours.
(Prerequisite:Graduate Standing and enrollment in the Diversity Certificate Program). Three hours lecture. An analysis of race relations and racial inequality in the United States. Designed for online Diversity Certificate program students. (Same as HI 8603)

AAS 8793 Rae and Cultural Diversity in the Workplace: 3 hours.
(Prerequisite:Graduate standing and enrollment in the Diversity Certificate Program). Three hours lecture. An analysis of concepts, issues, and laws relating to race and cultural diversity in public and private organizations. Designed for online Diversity Certificate Program students. (Same as HI 8793)

Ag. and Bio. Engineering Courses

ABE 1001 First Year Seminar: 1 hour.
One hour lecture. First year seminars explore a diverse array of topics that provide students with an opportunity to learn about a specific discipline from skilled faculty members

ABE 1073 Technology Design I.: 3 hours.
(Prerequisite: For AETB majors or Consent of Instructor). One hour lecture. Four hours laboratory. Introduction to design process and parametric solid modeling. Standards for materials, processes and parametric solid modeling. Standards for materials, processes, and documentation. Experimental learning of manufacturing processes within precision measurement, joining, machining, forming

ABE 1083 Technology Design II: 3 hours.
(Prerequisite: ABE 1073 or Consent of Instructor). One hour lecture. Four hours laboratory. Teams work on design prototypes to meet real-world constraints (manufacturability, economics, safety). Intermediate parametric solid modeling. Emphasis on project planning, scheduling, oral/written communication

ABE 1863 Engineering Technology in Agriculture: 3 hours.
Three hours lecture. Introductory course emphasizing use of fundamentals for solving problems related to soil and water management, electrical power and control, agricultural machinery, and environmental control

ABE 1911 Engineering in the Life Sciences: 1 hour.
(Open to freshmen and sophomores or first-semester transfer students only). One hour lecture. Introduction to agricultural and biological engineering; survey of the engineering profession; elementary analysis of biological systems; creative engineering and design and synthesis

ABE 1921 Introduction to Engineering Design: 1 hour.
(Prerequisite: ABE 1911). Two hours laboratory. Introduction to the process of engineering design, including project management, prototype assembly, engineering graphics, technical writing and oral presentation

ABE 2173 Principles of Agricultural and Off-Road Machines: 3 hours.
Two hours lecture. Three hours laboratory. Operational principles and construction of agricultural and off-road vehicles. Engine, electrical, and fluid power systems. Mechanical power transmission, traction performance, and human factors

ABE 2543 Precision Agriculture I: 3 hours.
(Prerequisite: Sophomore standing and MA 1313). Two hours lecture. Two hours lab. This introductory course highlights site-specific crop management techniques. Topics include: Best Management Practices, economic and physical farm production models, and measurement of variability (same as PSS 2543)

ABE 2873 Land Surveying: 3 hours.
(Prerequisite: MA 1323 or equivalent). Two hours lecture . Three hours laboratory. Fundamentals of measurements and traverse computations. Public land surveys. Surveying practice in traverse and topographic surveys

ABE 2990 Special Topics in Agricultural and Biological Engineering: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

ABE 3303 Transport in Biological Engineering: 3 hours.
(Prerequisite: PH 2233 and CS 1213 or CS 1233 or equivalent). Three hours lecture. Principles of steady state and unsteady state energy and mass transfer as applied to biological systems

ABE 3413 Bioinstrumentation I: 3 hours.
(Prerequisite: PH 2223 or equivalent). Two hours lecture. Two hours laboratory. Applied circuit analysis, electrodes and transducers, stress and strain, temperature measurements, human physiology, digital and programmable instrumentation

ABE 3513 The Global Positional System and Geographic Information Systems in Agriculture and Engineering: 3 hours.
(Prerequisite: MA 1313 and MA 1323, or equivalent). Two hours lecture. Four hours laboratory. Basic theory and hands-on application of global positioning system (GPS) technology/hardware, and geographic information systems (GIS) software, for precise positioning in agriculture and engineering

ABE 3700 Internship in Gin Management and Technology: 1-6 hours.
(Prerequisite: Minimum of junior standing or permission of instructor). Credits to be arranged. Work experience in approved cotton gins for Agricultural Engineering Technology and Business majors with an emphasis in Gin Management and Technology

ABE 3813 Biophysical Properties of Materials: 3 hours.
(Prerequisite: PH 2213). Two hours lecture . Two hours laboratory. Physical properties of biological products and materials. Primary emphasis on measurement and evaluation of dimensional, mechanical, rheological, transport, thermal, electrical, and optical properties

ABE 4000 Directed Individual Study in Agricultural and Biological Engineering: 1-6 hours.
Hours and credits to be arranged

ABE 4163 Agricultural and Off-Road Machinery Management: 3 hours.
(Prerequisites: ABE 2173 or consent of instructor). Two hours lecture. Two hours laboratory. Selection, sizing and operation machine systems using cost analysis and systems techniques. Emphasis on agricultural machines used in farming; tillage, planting, harvesting, conveying agricultural materials

ABE 4263 Soil and Water Management: 3 hours.
(Prerequisite: ABE 2873. Students with credit in ABE 2263 will not receive credit in this course). Two hours lecture . Three hours laboratory. Introduction to soil and water management principles; elementary hydrology, basic fundamentals of erosion control, surface and subsurface drainage, and water control for irrigation

ABE 4313 Biological Treatment of Nonpoint Source Pollutants: 3 hours.
Three hours lecture. Fundamental principles and design of biologically based treatment systems used to remove pollutants and protect receiving waters from agricultural and urban/suburban storm water runoff

ABE 4323 Physiological Systems in Biomedical Engineering: 3 hours.
(Prerequisites: BIO 1504 or equivalent; EM 3313 or equivalent; ABE 3813; ABE 4803 or equivalent). Three hours lecture. Mathematical description and modeling of the behavior of physiological systems significant to biomedical engineers

ABE 4383 Building Construction: 3 hours.
(Prerequisites: EG 1143, junior standing.) Three hours lecture. An introduction to building terms, construction materials, structural components, construction methods, and mechanical systems pertaining to residential and commercial structures

ABE 4423 Bioinstrumentation II: 3 hours.
(Prerequisite: ABE 3413 or graduate standing). Two hours lecture. Two hours laboratory. Theory; application of automated measuring and control systems in biological sciences. Includes design/use of transducer interfaces; electronic signal conditioning; data logging; microprocessor based systems

ABE 4473 Electrical Applications: 3 hours.
Two hours lecture. Two hours laboratory. Fundamental electricity, wiring, and control of agricultural operations. Includes use of computer tools, intruments, safety, and hardware

ABE 4483 Introduction to Remote Sensing Technologies: 3 hours.
(Prerequisite: Senior or graduate standing, or consent or instructor). Three hours lecture. Electromagnetic interactions, passive sensors, multispectral and hyperspectral optical sensors, active sensors, imaging radar, SAR Lidar, digital image processing, natural resource applications. (Same as ECE 4423/6423 and PSS 4483/6483)

ABE 4523 Biomedical Materials: 3 hours.
(Prerequisites: One of the following: ABE 3813, CHE 3413, or ME 3403). Three hours lecture. Emphasis is on applications, composition, testing, and biocompatibility of biomedical materials used in implant devices. This course may be used for honors credit

ABE 4533 Rehabilitation Engineering: 3 hours.
(Prerequisite: Senior standing in College of Engineering). Three hours lecture. An introduction to rehabilitation engineering emphasizing applications of technology in prosthetics, orthotics, mobility, and sensory augmentation. This course may be used for honors credit

ABE 4543 Precision Agriculture II: 3 hours.
(Prerequisites: PSS/ABE 2543 and Junior Standing). Two hours lecture. Two hours lab. Site-specific management techniques are examined. Continuous decision-making processes of farm production are integrated using a whole-system, geospatial approach. (Same as PSS 4543/6543)

ABE 4613 Biomechanics: 3 hours.
(Prerequisites: EM 2413 and EM 2433). Three hours lecture. Force, motion, and deformation analysis of organisms and biological structures. Mechanical modeling techniques unique to biological materials

ABE 4624 Experimental Methods in Materials Research: 4 hours.
(Prerequisites:CHE 3413 or ABE 3813 or ME 3403 or permission of instructors).Three hours lecture. Three hours laboratory. An introduction to research methodologies commonly used in the evaluation of treatments, and mechanical testing. (Same as CHE 4624/6624 and ME 4624/6624)

ABE 4723 Tissue Engineering and Regeneration: 3 hours.
(Prerequisite:ABE 3813) . Three hours lecture. A comprehensive course covering the fundamental concepts, multidisciplinary approaches, and clinical applications of tissue engineering/regeneration

ABE 4803 Biosystems Simulation: 3 hours.
Three hours lecture. Spring semester. Application of engineering analysis, modeling and simulation to biological systems

ABE 4813 Principles of Engineering Design: 3 hours.
(Prerequisite: senior standing in engineering) Two hours lecture. Two hours laboratory. First semester of the senior capstone design sequence. Students learn the fundamentals of the design process, select a design project, and complete a preliminary design

ABE 4833 Practices of Engineering Design: 3 hours.
(Prerequisite: ABE 4813). One hour lecture. Two hours laboratory. Second semester of the senior design sequence. Students continue learning about engineering design as they complete, construct, and test the design began in ABE 4813

ABE 4843 Sustainable Communities: 3 hours.
Three hours lecture. Theory and practices that minimize resource use and pollutant production in the human landscape (same as LA 4843/6843)

ABE 4911 Engineering Seminar: 1 hour.
(Prerequisite: Consent of instructor). One hour lecture. Discussion of current engineering developments, professional developments, ethics and their relation to agriculture and the life sciences

ABE 4961 Seminar: 1 hour.
(Prerequisite: Consent of instructor). One hour lecture. Review of current literature dealing with the technical problems in the agricultural industry

ABE 4990 Special Topics in Agricultural and Biological Engineering: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

ABE 6163 Machinery Management for Agro-Ecosystems: 3 hours.
(Prerequisites: ABE 2173 or consent of instructor). Two hours lecture. Two hours laboratory. Selection, sizing and operation machine systems using cost analysis and systems techniques. Emphasis on agricultural machines used in farming; tillage, planting, harvesting, conveying agricultural materials

ABE 6263 Soil and Water Management: 3 hours.
(Prerequisite: ABE 2873. Students with credit in ABE 2263 will not receive credit in this course). Two hours lecture . Three hours laboratory. Introduction to soil and water management principles; elementary hydrology, basic fundamentals of erosion control, surface and subsurface drainage, and water control for irrigation

ABE 6383 Building Construction: 3 hours.
(Prerequisites: EG 1143, junior standing.) Three hours lecture. An introduction to building terms, construction materials, structural components, construction methods, and mechanical systems pertaining to residential and commercial structures

ABE 6423 Bioinstrumentation II: 3 hours.
(Prerequisite: ABE 3413 or graduate standing). Two hours lecture. Two hours laboratory. Theory; application of automated measuring and control systems in biological sciences. Includes design/use of transducer interfaces; electronic signal conditioning; data logging; microprocessor based systems

ABE 6473 Electrical Applications: 3 hours.
Two hours lecture. Two hours laboratory. Fundamental electricity, wiring, and control of agricultural operations. Includes use of computer tools, intruments, safety, and hardware

ABE 6483 Introduction to Remote Sensing Technologies: 3 hours.
(Prerequisite: Senior or graduate standing, or consent or instructor). Three hours lecture. Electromagnetic interactions, passive sensors, multispectral and hyperspectral optical sensors, active sensors, imaging radar, SAR Lidar, digital image processing, natural resource applications. (Same as ECE 4423/6423 and PSS 4483/6483)

ABE 6523 Biomedical Materials: 3 hours.
(Prerequisites: One of the following: ABE 3813, CHE 3413, or ME 3403). Three hours lecture. Emphasis is on applications, composition, testing, and biocompatibility of biomedical materials used in implant devices. This course may be used for honors credit

ABE 6543 Precision Agriculture II: 3 hours.
(Prerequisites: PSS/ABE 2543 and Junior Standing). Two hours lecture. Two hours lab. Site-specific management techniques are examined. Continuous decision-making processes of farm production are integrated using a whole-system, geospatial approach. (Same as PSS 4543/6543)

ABE 6613 Biomechanics: 3 hours.
(Prerequisites: EM 2413 and EM 2433). Three hours lecture. Force, motion, and deformation analysis of organisms and biological structures. Mechanical modeling techniques unique to biological materials

ABE 6624 Experimental Methods in Materials Research: 4 hours.
(Prerequisites:CHE 3413 or ABE 3813 or ME 3403 or permission of instructors).Three hours lecture. Three hours laboratory. An introduction to research methodologies commonly used in the evaluation of treatments, and mechanical testing. (Same as CHE 4624/6624 and ME 4624/6624)

ABE 6723 Tissue Engineering and Regeneration: 3 hours.

ABE 6803 Biosystems Simulation: 3 hours.
Three hours lecture. Spring semester. Application of engineering analysis, modeling and simulation to biological systems

ABE 6843 Sustainable Communities: 3 hours.
Three hours lecture. Theory and practices that minimize resource use and pollutant production in the human landscape (same as LA 4843/6843)

ABE 6990 Special Topics in Agricultural and Biological Engineering: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

ABE 7000 Directed Individual Study in Agricultural and Biological Engineering: 1-6 hours.
Hours and credits to be arranged

ABE 8000 Thesis Research/ Thesis in Agricultural and Biological Engineering: 1-13 hours.
Hours and credits to be arranged

ABE 8511 Journal Reviews in Biomedical Engineering: 1 hour.
One hour lecture. Current journal articles relevant to Biomedical Engineering topics are read and reviewed

ABE 8621 Methods of Biomedical Engineering Research: 1 hour.
One hour lecture. No prerequisites. Introduction to biomedical engineering research including literature review, experimental design, laboratory practices, presentation, and ethics

ABE 8723 Cellular and Tissue Biomechanics: 3 hours.
Three hours lecture. Fundamental concepts, experimental and theoretical approaches of biomechanics and their applications in modern biomedical engineering (e.g. mechanotransduction,tissue engineering/regeneration, surgical intervention)

ABE 8801 Clinical Experience for Biomedical Engineering: 1 hour.
Prerequisites: Graduate standing in the Biomedical Program and permission of the instructor. Three hours experiential learning. This course will provide graduate students with exposure, understanding, and insight into the clinical environment and/or treatment modalities of clinical (human and/or animal) patients

ABE 8911 Agricultural and Biological Engineering Seminar: 1 hour.
Discussion of research needs, review of literature, and development of research work plans

ABE 8921 Agriculturual and Bio Engineering Seminar: 1 hour.
Discussion of research needs, review of literature, and development of research work plans

ABE 8990 Special Topics in Agricultural and Biological Engineering: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

ABE 9000 Dissertation Research/ Dissertation in Agricultural and Biological Engineering: 1-13 hours.
Hours and credits to be arranged

Accounting Courses

ACC 1001 First Year Seminar: 1 hour.
One hour lecture. First-year seminars explore a diverse arrary of topics that provide students with an opportunity to learn about a specific discipline from skilled faculty members

ACC 2013 Principles of Financial Accounting: 3 hours.
Three hours lecture. Financial accounting fundamentals including accounting cycle, accounting systems, cash flow, assets, liabilities, equity, and forms of business organizations.Honors section available

ACC 2023 Principles of Managerial Accounting: 3 hours.
(Prerequisite: ACC 2013;PACC majors must have a grade of B or better in ACC 2013).Three hours lecture. Managerial accounting fundamentals including interpretation and use of management reports, cost behavior, cost accumulation, budgeting, financial statement analysis, responsibility organizations.Honors section available

ACC 2203 Survey of Accounting: 3 hours.
Fundamentals of financial, managerial, and cost accounting for interpreting accounting reports. Primarily for engineering and pre-MBA students. (Not open to undergrad accounting or business majors)

ACC 2990 Special Topics in Accounting: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

ACC 3002 Running the Numbers: Fundamentals of Financial and Managerial Accounting: 2 hours.
(Prerequisite: Admission to MVP). Introduction to financial and managerial accounting concepts essential for interpreting accounting reports produced and analyzed with new entrepreneurial opportunities

ACC 3003 Accounting Information Systems I: 3 hours.
(Prerequisite: Grade of B or better in ACC 2013 and 2023). Three hours lecture. Understanding the role of IT: including governance, recognizing and documenting risks and controls, e-commerce, IT audit issues, system documentation, and the use of application software related to spreadsheets, accounting, data management, and data analytics

ACC 3013 Cost Accounting: 3 hours.
(Prerequisite: Grade of B or better in ACC 2013 and 2023). Three hours lecture. Theory and practice of using accounting information for costing and pricing decisions in managerial planning and control activities

ACC 3023 Intermediate Accounting I: 3 hours.
(Prerequisite: Grade of B or better in ACC 2013 and 2023). Three hours lecture. Financial accounting and reporting related to the development of accounting standards, financial statements, income measurement, cash, receivables, inventory, property, plant, and equipment, intangibles, and investments

ACC 3033 Intermediate Accounting II: 3 hours.
(Prerequisite: Grade of C or better in ACC 3023).Three hours lecture. Financial accounting and reporting related to liabilities, leases, pensions, income taxes, stockholder's equity, accounting changes, errors, cash flows, and earnings per share

ACC 3053 Accounting Information Systems II: 3 hours.
(Prerequisite: Grade of C or better in ACC 3003). Three hours lecture. Students will gain an understanding of the use of data analytics software and methodologies to extract and analyze accounting data to support decision-making

ACC 3203 Financial Statement Analysis: 3 hours.
(Prerequisite: ACC 2023) . Three hours lecture. For non-accounting majors. A study of financial statements from an external users perspective; an analysis of statements for purposes of determining loan and investment potential. (Same as FIN 3203)

ACC 4000 Directed Individual Study in Accounting: 1-6 hours.
(Prerequisites: ACC 2023 and consent of Director of School of Accountancy). Hours and credits to be arranged

ACC 4013 Income Tax I: 3 hours.
(Prerequisite: Grade of C or better in ACC 3023) Three hours lecture. An analysis of the Federal Income Tax law with emphasis on its application to the individual taxpayer

ACC 4023 Advanced Accounting: 3 hours.
(Prerequisite:Grade of C or better in ACC 3033). Three hours lecture. Financial accounting and reporting related to consolidations, partnerships and international business issues

ACC 4033 Auditing: 3 hours.
(Prerequisite: Grade of C or better in ACC 3003 and 3023; not open to PACC students.) Three hours lecture. Fundamentals of auditing, including evaluating controls, assessing risk, designing audit programs, statistical sampling, professional ethics, and collecting evidence for financial, internal, operational, and compliance audits

ACC 4043 Municipal and Governmental Accounting: 3 hours.
(Prerequisite: ACC 2023). Three hours lecture. Accounting theory and practice applied to governmental units, state operated schools and colleges; classification and use of funds; fiscal procedures; bugetary control; financial statements; reports

ACC 4063 Income Tax II: 3 hours.
(Prerequisite: Grade of C or better in ACC 4013). Three hours lecture. Examining federal tax implications of property transfers between entity and owners on formation, reorganization, and liquidation of corporations and flow-thru entities; brief study of trust and federal transfer taxes (gift/estate)

ACC 4200 Accounting Internship: 6 hours.
(Prerequisite: Senior Standing and approval by the internship director prior to the internship). Credit to be arranged based on time and circumstances of the internship providing professional experience in audit, tax and other accounting related areas

ACC 4990 Special Topics in Accounting: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

ACC 6023 Advanced Accounting: 3 hours.
(Prerequisite:Grade of C or better in ACC 3033). Three hours lecture. Financial accounting and reporting related to consolidations, partnerships and international business issues

ACC 6043 Municipal and Governmental Accounting: 3 hours.
(Prerequisite: ACC 2023). Three hours lecture. Accounting theory and practice applied to governmental units, state operated schools and colleges; classification and use of funds; fiscal procedures; bugetary control; financial statements; reports

ACC 6063 Income Tax II: 3 hours.
(Prerequisite: Grade of C or better in ACC 4013). Three hours lecture. Examining federal tax implications of property transfers between entity and owners on formation, reorganization, and liquidation of corporations and flow-thru entities; brief study of trust and federal transfer taxes (gift/estate)

ACC 6200 Accounting Internship: 6 hours.
(Prerequisite: Senior Standing and approval by the internship director prior to the internship). Credit to be arranged based on time and circumstances of the internship providing professional experience in audit, tax and other accounting related areas

ACC 6990 Special Topics in Accounting: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

ACC 7000 Directed Individual Study in Accounting: 1-6 hours.
Hours and credits to be arranged

ACC 8013 Seminar in Financial Accounting Theory: 3 hours.
(Prerequisite: ACC 3033) . Examination of the theoretical concepts, definitions, and models espoused in the accounting literature and relevant to analyzing various contemporary issues in financial accounting and reporting

ACC 8023 Advanced Managerial Accounting: 3 hours.
(Prerequisite: ACC 3013). Three hours lecture. The study of theoretical conceptual and technical issues in planning, control and decision making

ACC 8033 Assurance and Audit Data Analysis: 3 hours.
Three hours lecture. Students will gain an in-depth knowledge of professional auditing standards, financial statement auditing procedures, and audit reporting requirements. Students will develop data analysis skills applicable to auditing practice. Students will also gain exposure to theoretical arguments surrounding professional rules of conduct and audit quality indicators

ACC 8043 Fraud Examination and Data Analysis: 3 hours.
Three hours lecture. Students will gain an in-depth knowledge of the nature of fraud, fraud examination, and the communication of the findings from a fraud examination. Emphasis will be placed on the use of advanced data analysis techniques and procedures to detect errors and frauds

ACC 8053 Financial Accounting Policy: 3 hours.
(Prerequisites: ACC 3033). Three hours lecture. Integrative course examining recent trends and developments in public accounting. Various problems and cases in financial reporting issues, ethics, and other accounting topics

ACC 8063 Research in Tax Practice and Procedures: 3 hours.
(Prerequisite: ACC 4013) . Three hours lecture. Preparation of tax protests, tax planning; use of tax services; client representation; structure of Internal Revenue Service; and research problems in taxation

ACC 8073 Taxation of Corporations and Shareholders: 3 hours.
(Prerequisite: ACC 4013) Examination of federal income tax laws as applied to corporations and shareholders with an emphasis of how research issues deal with these topics

ACC 8093 Taxation of Partnerships, S Corporations, Trusts, and Estates: 3 hours.
(Prerequisite: ACC 4013). Three hours lecture. An examination of the income taxation of partnerships, S corporations, trusts, and estates with an emphasis on how to research issues dealing with these topics

ACC 8101 Analysis Accounting Data: 1 hour.
One hour lecture. The analysis of accounting data extracted from an enterprise resource planning system to monitor business activities and support managerial decision making

ACC 8113 Advanced Individual Taxation and Wealth Management: 3 hours.
(Prerequisite: ACC 4013 or consent of instructor). Three hours lecture. An in-depth examination of advanced topics related to individual taxation and transfer taxes

ACC 8123 Tax Topics: 3 hours.
(Prerequisite:ACC 4013). Three hours lecture. An examination of specialized taxation topics such as real estate taxation, state and local taxation, and bank taxation

ACC 8183 International Accounting: 3 hours.
(Prerequisite: ACC 2023). A study of the international dimension of accounting as it relates to multinational corporations and the international environment. Some specific topics include: international financial reporting; financial reporting outside the USA; foreign exchange; accounting harmonization; international financial disclosure issues

ACC 8203 Advanced Accounting Analysis for Decision Making: 3 hours.
(Prerequisite: ACC 2023). Three hours lecture. Application of accounting principles and concepts to alternative business possibilities as an aid to management decision making

ACC 8213 Financial Statement and Management Accounting Report Analysis for Decision Making: 3 hours.
(Prerequisites: ACC 2203 or equivalent). Three hours lecture. Analysis of financial statements and internal accounting reports to help management make decisions

ACC 8990 Special Topics in Accounting: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

ACC 9000 Dissertation Research/ Dissertation in Accounting: 1-13 hours.
Hours and credits to be arranged

ACC 9013 Seminar in Financial Accounting: 3 hours.
(Prerequisite: ACC 8013) . Review and analysis of historical and current research in financial accounting theory. Emphasis on developing critical analytical skills for evaluating financial accounting research

ACC 9033 Seminar in Accounting Research: 3 hours.
(Prerequisite: Consent of the instructor) Evaluation and analysis of academic research strategies and methodologies, emphasis on (1) understanding and evaluating empirical research results and (2) formulating and writing research proposals

Animal Science Dairy Science Courses

ADS 1001 First Year Seminar: 1 hour.
One hour lecture. First-year seminars explore a diverse arrary of topics that provide students with an opportunity to learn about a specific discipline from skilled faculty members

ADS 1013 Animal Agriculture & Society: Food for Thought: 3 hours.
Three hours lecture. Exploration of connections between animal agriculture and society including animal production systems, food and fiber production, consumer perceptions and addressing concerns regarding the growing world population. (Same as PO 1013)

ADS 1111 Orientation in Animal Science: 1 hour.
One hour lecture. Introduction to career choices within the animal science industry

ADS 1113 Animal Science: 3 hours.
Three hours lecture. Fundamental principles of livestock, dairy, and poultry science. (ADS majors must earn a C or better to graduate)

ADS 1121 Animal Science Laboratory: 1 hour.
(Prerequisite: Prior credit or concurrent enrollment in ADS 1113). Two hours laboratory. Practical application of essential knowledge and skills needed in the livestock, dairy and poultry science

ADS 1132 Introduction to Horsemanship: 2 hours.
One hour lecture. Two hours laboratory. Principles of riding,managing, and training pleasure horses

ADS 2102 Equine Conformation and Performance Evaluation: 2 hours.
Spring Semester. Four hours laboratory. Individual evaluation of horses with an in-depth study of anatomy and its relationship to function, plus methods used in evaluating performance classes

ADS 2111 Animal Science Career Planning: 1 hour.
(Prerequisites: ADS 1111). One hour lecture. Development of life skills with focus on career preparation for animal and dairy sciences' industries

ADS 2122 Advanced Equine Evaluation: 2 hours.
Fall Semester. (Prerequisite: ADS 2102 or consent of instructor). Four hours laboratory. Advanced evaluations of equine conformation and performance classes. Develop more extensive oral reason presentations to defend conformation and performance placings

ADS 2212 Equine Behavior and Training: 2 hours.
(Prerequisite: ADS 1132 or consent of instructor) Two hours laboratory. Equine behavior and application of psychology principles for training horses. Systematic approaches to horse training emphasizing learning principles and training methods for specific equine activities

ADS 2221 Companion Animal Management Laboratory: 1 hour.
(Prerequisite or Corequisite: ADS 2223). Two hours laboratory. Management practices for companion animals. The selection, handling, and care techniques for various types of companion animals

ADS 2223 Companion Animal: 3 hours.
(Prerequisite: sophomore standing or consent of instructor.) Three hours lecture. Focus on companion animal dogs and cats regarding breed selection, nutrition, reproductive biology, management, and responsibilities

ADS 2312 Advanced Horsemanship: 2 hours.
One hour lecture. Two hours laboratory. Advanced equine training and riding. Developing and implementing a training regiment using upper level riding skills to produce an advanced performance horse for competition

ADS 2990 Special Topics in Animal and Dairy Sciences: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

ADS 3014 Anatomy and Physiology: 4 hours.
Three hours lecture. Two hours laboratory. A survey of structure and function of animal body systems and a study of their relationships. (Same as VS 3014)

ADS 3142 Meats Judging I: 2 hours.
Spring semester. Four hours laboratory. Grading and judging meat carcasses and cuts, study of packing house operation. (Same as FNH 3142)

ADS 3214 Livestock Growth and Development: 4 hours.
(Prerequisites: ADS 1113 and ADS 1121 or ADS 1114). Three hours lecture. Two hours laboratory. Particular emphasis will be placed on the development of bone, muscle, and adipose tissues as these are the predominant tissues of physiological and economic importance in livestock production

ADS 3221 Practices In Horse Care & Management: 1 hour.
(Prerequisite or Co-requisite: ADS 3223). Two hours laboratory. Management practices for horses. The handling and care practices applied during various stages in a horse's life

ADS 3223 Horse Management: 3 hours.
(Prerequisites: ADS 1113 and ADS 1121 or ADS 1114). Three hours lecture. Breeding, feeding, management, and training of the horse

ADS 3233 Equine Assisted Therapy: 3 hours.
Two hours lecture. Two hours laboratory. Introductions to equine assisted therapy discussing the equine activities team,facilities and equipment, standards and accreditation, and special needs of the rider. special needs of the rider

ADS 3312 Livestock Management Practices: 2 hours.
(Prerequisites: ADS 1113 and ADS 1121 or ADS 1114). Four hours laboratory. Modern techniques used in proper vocational management of beef cattle, dairy cattle, sheep, swine and horses

ADS 3314 Introduction to Meat Science: 4 hours.
(Prerequisites: ADS 1113, ADS 1114 or FNH 1103). Three hour lecture. Two hours laboratory. Introduction to survey of the muscle food industry including history, production of meat including harvesting, inspection evaluation and fabrication, storage and value added manufacturing of meat. (Same as FNH 3314)

ADS 3812 Dairy Cattle Appraisal: 2 hours.
Four hours laboratory. Phenotypic appraisal; breed programs; performance record systems

ADS 4000 Directed Individual Study in Animal and Dairy Sciences: 1-6 hours.
Hours and credits to be arranged. Approval by Department Head only

ADS 4111 Swine Production and Management Laboratory: 1 hour.
(Prerequisite or Co-requisite: ADS 4113). Two hours laboratory. Operational and management practices for further understanding of and skills for modern swine production industry

ADS 4112 Equine Reproduction: 2 hours.
One hour lecture. Two hours laboratory. A study of equine reproductive activities and the principles for managing the mare,stallion and foal. (Same as PHY 6112)

ADS 4113 Swine Science: 3 hours.
Fall semester. (Prerequisites: ADS 1113 and ADS 1121 or ADS 1114). Three hours lecture. Feeding, management, breeding, production, and marketing of swine

ADS 4114 Animal Nutrition: 4 hours.
(Prerequisites: CH 2503 and CH 2501 or CH 4513 and CH 4511). Four hours lecture. Nutrition of monogastric and ruminant species. Anatomy, physiology, disgestion, and absorption pertaining to monogastric and ruminants. Description, functions, sources, deficiency symptoms

ADS 4124 Animal Breeding: 4 hours.
(Prerequisite: PO/BIO 3103 and ST/MA/BQA 2113). Three hours lecture and two hours laboratory. The basis for genetic improvement of livestock, including the study of variation, heritable characteristics, mating systems and methods of estimating breeding values

ADS 4211 Goat and Sheep Production Lab: 1 hour.
(Prerequisite or Co-requisite: Goat and Sheep Production ADS 4223/6223). Two hours laboratory. Practical application of management strategies in goat and sheep production

ADS 4212 Livestock Evaluation: 2 hours.
Four hours laboratory. Evaluation of individuals and representative groups of livestock from the standpoint of the breeder, the market, and the consumer

ADS 4213 Feeds and Feeding: 3 hours.
(Prerequisites: ADS 4114/6114). Two hours lecture; two hours laboratory. Application of knowledge of feedstuffs and nutrient requirements in ration formulation for all classes of livestock

ADS 4221 Capstone in Animal and Dairy Science: 1 hour.
One hour lecture. (Prerequisite: Senior Standing). Review and oral presentation of animal science research and related production problems

ADS 4223 Goat and Sheep Production: 3 hours.
(Prerequisite: ADS 1113 and ADS 1121 or ADS 1114). Three hours lecture. Management and marketing of goats and sheep in production enterprises

ADS 4232 Advanced Livestock Evaluation: 2 hours.
Four hours laboratory. Advanced study of animal evaluation in functional efficiency

ADS 4243 Composition and Chemical Reactions of Foods: 3 hours.
(Prerequisites: Grade of "C" or better in CH 1213, and CH 2503 or equivalent, and Junior or Senior Standing). Three hours lecture. Nature and chemical behavior of food constituents including proteins, lipids, carbohydrates, minerals, water, enzymes and pigments; properties of food systems as related to commercial preparation. (Same as FNH 4243/6243)

ADS 4313 Advanced Science of Muscle Foods: 3 hours.
(Prerequisite: Junior standing or greater, ADS /FNH 3314, CH 1223 and/or consent of instructor). Three hours lecture. Exploration of the ultra-structure of muscle, (pre and post harvest), and the microbiology,inspection and safety, nutritional properties, and sensory characteristics of muscle. (Same as FNH 4313/6313)

ADS 4321 Beef Cattle Laboratory: 1 hour.
(Prerequisite or Co-requisite: ADS 4323/6323). Two hours laboratory. Management practices for beef cattle operations

ADS 4323 Beef Cattle Science: 3 hours.
(Prerequisites: ADS 1113 and ADS 1121 or ADS 1114). Three hours lecture. Breeding, feeding, management, and marketing of beef cattle

ADS 4333 Equine Exercise Physiology: 3 hours.
(Prerequisite: ADS 3223). Three hours lecture. Evaluation of research in equine exercise science. Physical, physiologic, metabolic, behavioral and locomotive adaptations of the equine athlete to athletic training

ADS 4412 Managing Livestock Sales I: 2 hours.
(Prerequisites: Instructor approval). Four hours laboratory. Course in preparation, structure and management of livestock sales. Emphasis will be on cattle and horse sales. Students will prepare for and conduct sale

ADS 4420 Animal and Dairy Science Internship: 1-6 hours.
(Prerequisite: Consent of instructor). Experience in production, management, or product promotion as it relates to the livestock, companion animal, or laboratory animal species under faculty supervision. Repeatable up to 6 total credit hours

ADS 4423 Animal and Dairy Sciences Internship: 3 hours.
(Prerequisites: Consent of instructor). Individual work experience with the farm animal species either in animal production, meat production or product promotion with an industry commodity representative under faculty supervision

ADS 4433 Advanced Beef Cattle Production: 3 hours.
(Prerequisites: ADS 4323 and ADS 4321.) Two hours lecture, two hours lab. Management, marketing, and utilization of beef animals with cow-calf and stocker cattle production in the U.S

ADS 4440 Research Experience Practicum: 1-6 hours.
(1-6 hours). (Prerequisite: consent of instructor). One to six hours practicum. Supervised research experience to gain an understanding of experimental design and planning, data collection, handling and analysis, and interpretation and presentation of results. Repeatable up to 6 hours

ADS 4520 Livestock Extension Experience: 1-3 hours.
(Prerequisite: ADS 1113 and consent of instructor). One to three hours directed experiential study. Individual work experience with Extension programs related to the animal agriculture industries. Repeatable

ADS 4523 Internet-Based Management in Livestock Industries: 3 hours.
(Prerequisite: Junior, senior or graduate standing). Three hours lecture. Use of the internet in making management decisions in livestock industries, with emphasis on use in livestock production enterprises

ADS 4543 Applied Animal Biotechnology: 3 hours.
(Prerequisites: Junior Standing or Instructor Approval). Two hours lecture and two hours laboratory. Exploring the use of livestock species as dual-purpose models to improve food animal production and to advance bio-medicine through biotechnology. Topics include functional genomics, transgenic livestock production, and nanotechnology

ADS 4553 Current Literature in Animal and Dairy Sciences: 3 hours.
(Prerequisite: Junior, Senior or graduate standing). Three hours lecture. Evaluation of current research in animal and dairy sciences and its application to production and management

ADS 4611 Practices in Physiology of Reproduction: 1 hour.
(Prerequisite: BIO 1134 or BIO 1144). Three hours laboratory. Artificial insemination and rectal palpation of reproductive organs of cattle; semen collection, evaluation, processing and handling. (Same as PHY 6611)

ADS 4613 Physiology of Reproduction: 3 hours.
(Prerequisite: BIO 1134 or BIO 1144.) Three hours lecture. Anatomy and physiology; reproductive cycles; production, evaluation and preservation of gametes; gestation; endocrine regulation; managed reproduction. (Same as PHY 6613.)

ADS 4623 Physiology of Lactation: 3 hours.
(Prerequisite: BIO 1134 or BIO 1144). Two hours lecture. Two hours laboratory. Anatomy, physiology, and pathology of the mammary gland; nervous and hormonal control of lactation, theories of milk secretion, modern methods of milking, factors affecting lactation. (Same as PHY 6623.)

ADS 4633 Immunology and Disease in Large Livestock Species: 3 hours.
(Prerequisite: ADS/VS 3014). Three hours lecture. This course will cover common diseases in dairy cattle, beef cattle, and horses. Curriculum will include immunology, disease transfer, prevention methods, detection techniques, treatment options, and potential impacts on the animal, producer, and industry

ADS 4772 Equine Training and Clinic Development: 2 hours.
(Prerequisite: Consent of instructor). Four hours laboratory. Proper training and behavior modification practices to promote confidence in the riding and the training of horses. Importance is placed on the student's development of teaching ability to conduct riding clinics

ADS 4811 Dairy Farm Management Laboratory: 1 hour.
(Prerequisite or Co-requisite: ADS 4813/6813 Dairy Farm Management). Three hours laboratory. Practical application of management strategies in dairy production enterprises

ADS 4813 Dairy Farm Management: 3 hours.
(Prerequisites: ADS 1113 and ADS 1121 or ADS 1114). Three hours lecture. Planning and integrating dairy farm operations; management principles applied to dairy herd operations

ADS 4823 Advanced Dairy Farm Management: 3 hours.
(Prerequisite: ADS 4814). Two hours lecture. Four hours lab. Advanced principle of dairy science as applied to the whole farm. Management of specific groups of cattle including nutrition, breeding, and milking management

ADS 4990 Special Topics in Animal and Dairy Science: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

ADS 6111 Swine Production and Management Laboratory: 1 hour.
(Prerequisite or Co-requisite: ADS 4113). Two hours laboratory. Operational and management practices for further understanding of and skills for modern swine production industry

ADS 6112 Equine Reproduction: 2 hours.
One hour lecture. Two hours laboratory. A study of equine reproductive activities and the principles for managing the mare,stallion and foal. (Same as PHY 6112)

ADS 6113 Swine Science: 3 hours.
Fall semester. (Prerequisites: ADS 1113 and ADS 1121 or ADS 1114). Three hours lecture. Feeding, management, breeding, production, and marketing of swine

ADS 6114 Animal Nutrition: 4 hours.
(Prerequisites: CH 2503 and CH 2501 or CH 4513 and CH 4511). Four hours lecture. Nutrition of monogastric and ruminant species. Anatomy, physiology, disgestion, and absorption pertaining to monogastric and ruminants. Description, functions, sources, deficiency symptoms

ADS 6124 Animal Breeding: 4 hours.
(Prerequisite: PO/BIO 3103 and ST/MA/BQA 2113). Three hours lecture and two hours laboratory. The basis for genetic improvement of livestock, including the study of variation, heritable characteristics, mating systems and methods of estimating breeding values

ADS 6211 Goat and Sheep Production Lab: 1 hour.
(Prerequisite or Co-requisite: Goat and Sheep Production ADS 4223/6223). Two hours laboratory. Practical application of management strategies in goat and sheep production

ADS 6213 Feeds and Feeding: 3 hours.
(Prerequisites: ADS 4114/6114). Two hours lecture; two hours laboratory. Application of knowledge of feedstuffs and nutrient requirements in ration formulation for all classes of livestock

ADS 6223 Goat and Sheep Production: 3 hours.
(Prerequisite: ADS 1113 and ADS 1121 or ADS 1114). Three hours lecture. Management and marketing of goats and sheep in production enterprises

ADS 6243 Composition and Chemical Reactions of Foods: 3 hours.
(Prerequisites: Grade of "C" or better in CH 1213, and CH 2503 or equivalent, and Junior or Senior Standing). Three hours lecture. Nature and chemical behavior of food constituents including proteins, lipids, carbohydrates, minerals, water, enzymes and pigments; properties of food systems as related to commercial preparation. (Same as FNH 4243/6243)

ADS 6313 Advanced Science of Muscle Foods: 3 hours.
(Prerequisite: Junior standing or greater, ADS /FNH 3314, CH 1223 and/or consent of instructor). Three hours lecture. Exploration of the ultra-structure of muscle, (pre and post harvest), and the microbiology,inspection and safety, nutritional properties, and sensory characteristics of muscle. (Same as FNH 4313/6313)

ADS 6321 Beef Cattle Laboratory: 1 hour.
(Prerequisite or Co-requisite: ADS 4323/6323). Two hours laboratory. Management practices for beef cattle operations

ADS 6323 Beef Cattle Science: 3 hours.
(Prerequisites: ADS 1113 and ADS 1121 or ADS 1114). Three hours lecture. Breeding, feeding, management, and marketing of beef cattle

ADS 6333 Equine Exercise Physiology: 3 hours.
(Prerequisite: ADS 3223). Three hours lecture. Evaluation of research in equine exercise science. Physical, physiologic, metabolic, behavioral and locomotive adaptations of the equine athlete to athletic training

ADS 6433 Advanced Beef Cattle Production: 3 hours.
(Prerequisites: ADS 4323 and ADS 4321.) Two hours lecture, two hours lab. Management, marketing, and utilization of beef animals with cow-calf and stocker cattle production in the U.S

ADS 6523 Internet-Based Management in Livestock Industries: 3 hours.
(Prerequisite: Junior, senior or graduate standing). Three hours lecture. Use of the internet in making management decisions in livestock industries, with emphasis on use in livestock production enterprises

ADS 6543 Applied Animal Biotechnology: 3 hours.
(Prerequisites: Junior Standing or Instructor Approval). Two hours lecture and two hours laboratory. Exploring the use of livestock species as dual-purpose models to improve food animal production and to advance bio-medicine through biotechnology. Topics include functional genomics, transgenic livestock production, and nanotechnology

ADS 6553 Current Literature in Animal and Dairy Sciences: 3 hours.
(Prerequisite: Junior, Senior or graduate standing). Three hours lecture. Evaluation of current research in animal and dairy sciences and its application to production and management

ADS 6611 Practices in Physiology of Reproduction: 1 hour.
(Prerequisite: BIO 1134 or BIO 1144). Three hours laboratory. Artificial insemination and rectal palpation of reproductive organs of cattle; semen collection, evaluation, processing and handling. (Same as PHY 6611)

ADS 6613 Physiology of Reproduction: 3 hours.
(Prerequisite: BIO 1134 or BIO 1144.) Three hours lecture. Anatomy and physiology; reproductive cycles; production, evaluation and preservation of gametes; gestation; endocrine regulation; managed reproduction. (Same as PHY 6613.)

ADS 6623 Physiology of Lactation: 3 hours.
(Prerequisite: BIO 1134 or BIO 1144). Two hours lecture. Two hours laboratory. Anatomy, physiology, and pathology of the mammary gland; nervous and hormonal control of lactation, theories of milk secretion, modern methods of milking, factors affecting lactation. (Same as PHY 6623.)

ADS 6633 Immunology and Disease in Large Livestock Species: 3 hours.
(Prerequisite: ADS/VS 3014). Three hours lecture. This course will cover common diseases in dairy cattle, beef cattle, and horses. Curriculum will include immunology, disease transfer, prevention methods, detection techniques, treatment options, and potential impacts on the animal, producer, and industry

ADS 6772 Equine Training and Clinic Development: 2 hours.
(Prerequisite: Consent of instructor). Four hours laboratory. Proper training and behavior modification practices to promote confidence in the riding and the training of horses. Importance is placed on the student's development of teaching ability to conduct riding clinics

ADS 6811 Dairy Farm Management Laboratory: 1 hour.
(Prerequisite or Co-requisite: ADS 4813/6813 Dairy Farm Management). Three hours laboratory. Practical application of management strategies in dairy production enterprises

ADS 6813 Dairy Farm Management: 3 hours.
(Prerequisites: ADS 1113 and ADS 1121 or ADS 1114). Three hours lecture. Planning and integrating dairy farm operations; management principles applied to dairy herd operations

ADS 6814 Dairy Farm Management: 4 hours.
(Prerequisites: ADS 1114). Three hours lecture. Two hours laboratory. Planning and integrating dairy farm operations; management principles applied to dairy herd operations

ADS 6823 Advanced Dairy Farm Management: 3 hours.
(Prerequisite: ADS 4814). Two hours lecture. Four hours lab. Advanced principle of dairy science as applied to the whole farm. Management of specific groups of cattle including nutrition, breeding, and milking management

ADS 6990 Special Topics in Animal and Dairy Sciences: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

ADS 7000 Directed Individual Study in Animal and Dairy Science: 1-6 hours.
Hours and credits to be arranged

ADS 8000 Thesis Research/ Thesis in Animal and Dairy Sciences: 1-13 hours.

ADS 8004 Method Application and Data Analyses in Animal Sciences: 4 hours.
(Prerequisite: ST 8114 or equivalent). Three hours lecture and two hours laboratory. Data analyses and experimental design principles used commonly in the field of animal science. Data management and practical applications using statistical software. Assessment of validity in differing methods of analysis

ADS 8111 Animal and Dairy Sciences Seminar: 1 hour.
Survey of current literature; preparation, organization, and presentation of papers on selected topics in animal and dairy sciences. (Course is repeatable and may be taken 6 times)

ADS 8133 Endocrine Secretions: 3 hours.
Three hours lecture. Study of factors by which cells communicate: the traditional endocrine system, autocrine, paracrine and neurocrine secretion. Physiological and genetic control of synthesis and secretion. (Same as PHY 8133)

ADS 8153 Ruminant Nutrition: 3 hours.
(Prerequisite: ADS 4114/6114 or equivalent). Three hours lecture. In-depth treatment of rumen function and recent concepts in ruminant nutrition

ADS 8162 Monogastric Nutrition: 2 hours.
(Prerequisite: ADS 4114/6114 or equivalent). Two hours lecture. Monogastric nutritional relationships with special emphasis on swine nutrition. Metabolic functions, dietary requirements, deficiency symptoms and distribution of nutrients in feedstuffs

ADS 8233 Advanced Breeding: 3 hours.
(Prerequisites: ADS 4123/6123 or PO 4303/6303, ST 8114). Three hours lecture. Describing, measuring and partitioning phenotypic variances and covariances. Estimating parameters, predicting response, systems of breeding, and methods of selection

ADS 8243 Advanced Physiology of Reproduction: 3 hours.
(Prerequisite: ADS 4613/6613 or its equivalent). Three hours lecture. An advanced study of the reproductive process with emphasis on reproductive endocrinology and the physiology of fertility. (Same as PHY 8243.)

ADS 8333 Nutritional Biochemistry of Livestock Species: 3 hours.
Three hours lecture. The biochemical aspects of post-absorptive nutrient utilization, intermediary metabolism, and tissue-level accretion in livestock species will be discussed. Particular emphasis will be placed on the contribution of nutrients to the metabolic disposition of economically important tissues including muscle and adipose

ADS 8423 Meat Science: 3 hours.
Three hours lecture. Basic study of the value of meat and how this information is applied to the evaluation, processing and preservation of meat, meat products and meat by-products. (Same as FNH 8423)

ADS 8463 Advanced Animal Nutrition: 3 hours.
(Prerequisite: ADS 4114/6114 or prior approval from instructor). Three hours lecture. Develop an understanding of nutritional physiology, metabolism, and utilization of nutrients by animal species

ADS 8473 Micro-Nutrient Nutrition: 3 hours.
Three hours lecture.Detailed study of functions, deficiency, symptoms, dietary considerations necessary to the nutrition of fish,dogs,cats,horses, mink,rabbits, and laboratory animals

ADS 8533 Beef Cattle Production Systems Management: 3 hours.
(Prerequisite: ADS 4323/6323 or consent of instructor). Three hours lecture. Systems management approaches to profitable and sustainable beef cattle production including cow-calf, stocker, and feedlot industry segments

ADS 8633 Homeostatic Regulation and Physiological Stress: 3 hours.
(Prerequisites: PHY 6514 and PHY 8131, 8133 or consent of instructor). Three hours lecture. An integration of the physiological mechanisms involved in the control of homeostasis in mammals is emphasized with discussion of the effect of specific stressors on these mechanisms. (Same as PHY 8633.)

ADS 8973 Scientific Writing: 3 hours.
(Prerequisite: Graduate standing and consent of instructor). Three hours lecture. The course provides advanced training in research proposal, grant proposal,and manuscript writing. (Same as FO 8973 and CVM 8973)

ADS 8990 Special Topics in Animal and Dairy Sciences: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

ADS 9000 Dissertation Research/ Dissertation in Animal and Dairy Sciences: 1-13 hours.

Agricultural Economics Courses

AEC 1001 First Year Seminar: 1 hour.
One hour lecture. First-year seminars explore a diverse arrary of topics that provide students with an opportunity to learn about a specific discipline from skilled faculty members

AEC 1223 Computer Applications for Agriculturists and Life Scientists: 3 hours.
Two hours lecture. Two hours laboratory. Basic agricultural microcomputer applications and computing logic; creating reports using word processors; developing presentations on agricultural subjects using multimedia software; and agricultural calculations using spreadsheets

AEC 2611 Seminar I: 1 hour.
One hour lecture. Planning and preparing for careers in agricultural economics and agribusiness

AEC 2713 Introduction to Food and Resource Economics: 3 hours.
Three hours lecture. Each semester. Prerequisite to other Agricultural Economics courses. Economic principles applied to production, value, prices, credit, taxation, land tenure, marketing, international trade, and related problems affecting agriculture

AEC 2990 Special Topics in Agricultural Economics and Agribusiness: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

AEC 3113 Introduction to Quantitative Economics: 3 hours.
(Prerequisites: AEC 2713 or EC 2123; and MA 1613 or MA 1713). Three hours lecture. Each semester. Introduction to techniques and procedures for the quantitative analysis of economic problems related to the production and distribution of agricultural products

AEC 3133 Introductory Agribusiness Management: 3 hours.
Three hours lecture. Study of marketing, production, risk, and financial management in agribusiness firms. Emphasis on application of economic principles to management of agri- marketing and farm supply firms

AEC 3213 International Trade in Agriculture: 3 hours.
(Prerequisites: EC 3113 or consent of instructor). Three hours lecture. Examination of the importance of international agricultural trade, the economic basis of trade, and the policies affecting agricultural trade

AEC 3233 Introduction to Environmental Economics and Policy: 3 hours.
(Prerequisites: AEC 2713 or EC 2123). Examines how economic forces, in concert with other processes, influence environmental quality through private markets and public policy

AEC 3413 Introduction to Food Marketing: 3 hours.
(Prerequisites: AEC 2713 or EC 2123). Three hours lecture. Describes the principles, functions, agencies, and methods of farm and food product and input marketing

AEC 3513 Economics of Food and Fiber Production: 3 hours.
(Prerequisite:AEC 3113). Three hours lecture. Economic principles applied to food and fiber production situations with emphasis on firm-level decision analysis

AEC 4000 Directed Individual Study in Agricultural Economics and Agribusiness: 1-6 hours.
Hours and credits to be arranged

AEC 4113 Agribusiness Firm Management: 3 hours.
(Prerequisites: EC 3123 or consent of instructor). Three hours lecture. Examination and study of the organization, management, and operation of agricultural business with special reference to the application of managerial principles for effective decision-making

AEC 4123 Financial and Commodity Futures Marketing: 3 hours.
(Prerequisites: Junior standing). Three hours lecture. Discussion of the purpose, function, mechanics, analysis, and application of commodity and financial futures markets in pricing and hedging opportunities.(Same as FIN 4123/6123)

AEC 4133 Analysis of Food Markets and Prices: 3 hours.
(Prerequisites: AEC 3113 and EC 3123). Three hours lecture. Application of economic theory to agricultural prices and agricultural markets in price estimation, discovery, and determination. Emphasis on marketing management and pricing in agricultural firms

AEC 4213 Ag Finance I: 3 hours.
(Prerequisites: AEC 3113 and ACC 2023 or consent of instructor). Three hours lecture. Farm financial structure analysis; capital budgeting and long-term decision making; financial markets for agriculture; farm entry, growth, and transfer

AEC 4223 Applied Quantitative Analysis in Agricultural Economics: 3 hours.
(Prerequisite: AEC 3113; and BQA 2113 or ST 2113 or ST 3123; or consent of instructor). Three hours lecture. Emphasizes the intuitive understanding and practical application of basic quantitative, statistical, econometric, and optimization techniques as they relate to problem solving in agricultural economics

AEC 4233 Environmental Economics: 3 hours.
(Prerequisites: AEC 3233, EC 3123, and either MA 1613 or MA 1713.) Identifies topics lying on the frontier of environmental economics; demonstrates contribution that economics can make in understanding the problems and in providing guidance on solutions

AEC 4243 Natural Resource Economics: 3 hours.
(Prerequisite: AEC 3233, EC 3123, either MA 1613 or 1713, or consent of instructor.) Three hours lecture. Study of economics of renewable and nonrenewable natural resource use. Emphasis on applying microeconomic concepts to land use, water, fisheries, minerals and forest

AEC 4343 Advanced Farm Management: 3 hours.
(Prerequisites: Senior standing, EC 3123, and AEC 4213). Three hours lecture. Techniques and procedures for decision making in farm business as related to determination of optimum enterprise choice and resource combination in both static and dynamic frameworks

AEC 4363 Economics of Precision Agriculture: 3 hours.
(Prerequisite: EC 3123) Three hours lecture. Economic profitability of precision agriculture technologies, precision farming data management, QGIS operation, economic optimal decision making in site-specific management, precision agriculture impacts on environment and agribusiness, and technology adoption

AEC 4413 Public Problems of Agriculture: 3 hours.
(Prerequisite: Senior standing, EC 3123 and AEC 3113). Three hours lecture. Major public and private problems of agriculture policies and action programs of government and individuals to deal with them; limitations encountered; appraisal of results

AEC 4511 Agricultural and Resource Legislative Policy: 1 hour.
(Prerequisites: AEC 2713 or consent of instructor). One hour lecture. Discusses agricultural policy history and development, roles of consumer, producer, and environmental groups in policy development, and congressional organization and procedures in the policy process

AEC 4530 Agribusiness Management Internship: 1-6 hours.
(Prerequisite: Consent of instructor). Individual work experience with approved agribusiness companies for environmental economics and management students or agribusiness students

AEC 4623 Global Marketing of Agricultural Product: 3 hours.
(Prerequisites: A marketing course is preferred or consent of instructor). This course examines marketing concepts, decisions and strategies that are involved in international marketing and trade of agricultural products. Export market analysis and planning, as well as issues that impact international agricultural trade

AEC 4711 Agri-Marketing Practicum: 1 hour.
Two hours laboratory. Design and preparation of marketing plan for presentation at National Agri-Marketing Association meeting. Development of plan includes market research, budgeting, and advertising layouts

AEC 4713 Quantitative Economics: 3 hours.
(Prerequisites: AEC 3113, EC 3113, and EC 3123). Three hours lecture. Investigation of the basic mathematical methods and techniques currently used to analyze economic problems

AEC 4733 Econometric Analysis in Agriculture Economics: 3 hours.
(Prerequisite: MA 1613 or MA 1713, EC 3123 and ST 2113 or BQA 2113). Three hours lecture. Applications of single-equation estimation techniques to problems in agriculture

AEC 4803 Applied Quantitative Research: 3 hours.
(Prerequisites: EC 3123, AEC 4223, and AELC 3203, or consent of instructor). Three hours lecture. Produce an original research paper. Quantitative research methods and their applications. Writing for academic and professional audiences

AEC 4990 Special Topics in Agricultural Economics and Agribusiness: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

AEC 6113 Agribusiness Firm Management: 3 hours.
(Prerequisites: EC 3123 or consent of instructor). Three hours lecture. Examination and study of the organization, management, and operation of agricultural business with special reference to the application of managerial principles for effective decision-making

AEC 6123 Financial and Commodity Futures Marketing: 3 hours.
(Prerequisites: Junior standing). Three hours lecture. Discussion of the purpose, function, mechanics, analysis, and application of commodity and financial futures markets in pricing and hedging opportunities.(Same as FIN 4123/6123)

AEC 6133 Analysis of Food Markets and Prices: 3 hours.
(Prerequisites: AEC 3113 and EC 3123). Three hours lecture. Application of economic theory to agricultural prices and agricultural markets in price estimation, discovery, and determination. Emphasis on marketing management and pricing in agricultural firms

AEC 6213 Ag Finance I: 3 hours.
(Prerequisites: AEC 3113 and ACC 2023 or consent of instructor). Three hours lecture. Farm financial structure analysis; capital budgeting and long-term decision making; financial markets for agriculture; farm entry, growth, and transfer

AEC 6223 Applied Quantitative Analysis in Agricultural Economics: 3 hours.
(Prerequisite: AEC 3113; and BQA 2113 or ST 2113 or ST 3123; or consent of instructor). Three hours lecture. Emphasizes the intuitive understanding and practical application of basic quantitative, statistical, econometric, and optimization techniques as they relate to problem solving in agricultural economics

AEC 6233 Environmental Economics: 3 hours.
(Prerequisites: AEC 3233, EC 3123, and either MA 1613 or MA 1713.) Identifies topics lying on the frontier of environmental economics; demonstrates contribution that economics can make in understanding the problems and in providing guidance on solutions

AEC 6243 Natural Resource Economics: 3 hours.
(Prerequisite: AEC 3233, EC 3123, either MA 1613 or 1713, or consent of instructor.) Three hours lecture. Study of economics of renewable and nonrenewable natural resource use. Emphasis on applying microeconomic concepts to land use, water, fisheries, minerals and forest

AEC 6323 Applied Region Econ Dev: 3 hours.
(Prerequisite: AEC 6313). Economic analysis and effects of regional resources and development potentials, economic factors affecting industrial location decisions, planning and organization of industrial development

AEC 6343 Advanced Farm Management: 3 hours.
(Prerequisites: Senior standing, EC 3123, and AEC 4213). Three hours lecture. Techniques and procedures for decision making in farm business as related to determination of optimum enterprise choice and resource combination in both static and dynamic frameworks

AEC 6353 Introduction to Regional Economic Development: 3 hours.
(Prerequisites: EC 2113, EC 2123, and MA 1463 or consent of instructor). Three hours lecture. Regional economic differences; location theory (industrial, agricultural, and residential); Land use patterns; Regional structure, growth and methods of analysis; National assistance for regional economic development.(Same as EC 6313)

AEC 6363 Economics of Precision Agriculture: 3 hours.
(Prerequisite: EC 3123) Three hours lecture. Economic profitability of precision agriculture technologies, precision farming data management, QGIS operation, economic optimal decision making in site-specific management, precision agriculture impacts on environment and agribusiness, and technology adoption

AEC 6413 Public Problems of Agriculture: 3 hours.
(Prerequisite: Senior standing, EC 3123 and AEC 3113). Three hours lecture. Major public and private problems of agriculture policies and action programs of government and individuals to deal with them; limitations encountered; appraisal of results

AEC 6511 Agricultural and Resource Legislative Policy: 1 hour.
(Prerequisites: AEC 2713 or consent of instructor). One hour lecture. Discusses agricultural policy history and development, roles of consumer, producer, and environmental groups in policy development, and congressional organization and procedures in the policy process

AEC 6530 Agribusiness Management Internship: 1-6 hours.
(Prerequisite: Consent of instructor). Individual work experience with approved agribusiness companies for environmental economics and management students or agribusiness students

AEC 6623 Global Marketing of Agricultural Products: 3 hours.
(Prerequisites: A marketing course is preferred or consent of instructor). This course examines marketing concepts, decisions and strategies that are involved in international marketing and trade of agricultural products. Export market analysis and planning, as well as issues that impact international agricultural trade

AEC 6713 Quantitative Economics: 3 hours.
(Prerequisites: AEC 3113, EC 3113, and EC 3123). Three hours lecture. Investigation of the basic mathematical methods and techniques currently used to analyze economic problems

AEC 6733 Econometric Analysis in Agriculture Economics: 3 hours.
(Prerequisite: MA 1613 or MA 1713, EC 3123 and ST 2113 or BQA 2113). Three hours lecture. Applications of single-equation estimation techniques to problems in agriculture

AEC 6803 Applied Quantitative Research: 3 hours.

AEC 6990 Special Topics in Agricultural Economics and Agribusiness: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

AEC 7000 Directed Individual Study in Agricultural Economics and Agribusiness: 1-6 hours.
Hours and credits to be arranged

AEC 8000 Thesis Research/ Thesis in Agricultural Economics and Agribusiness: 1-13 hours.
Hours and credits to be arranged

AEC 8123 Analysis of Agricultural Markets.: 3 hours.
Three hours lecture. Integration of economic theory and econometric methods. Models of consumer demand and agricultural supply under perfect and imperfect competition. Modern estimation techniques, identification strategies, and causal inference

AEC 8143 Agricultural Production Economics: 3 hours.
(Prerequisites: EC 3123 or EC 3333 and AEC 4343/6343). Three hours lecture. Theory of production as related to agricultural production and resource use. Emphasis upon optimal organization of agricultural firms

AEC 8163 Consumers, Producers, and Markets: 3 hours.
(Prerequisites: EC 3123; MA 1613 or MA 1713). Three hours lecture. Focuses on economic theory related to production, consumption, and markets for products. Extensions into market structure, welfare economics, and non-market goods will also be discussed

AEC 8233 Applied Welfare and Environmental Economics: 3 hours.
(Prerequisite:AEC 8163 or consent of instructor). Three hours lecture. This course is an applied approach to welfare economics,wherein the normative significance of economic events is evaluated, and its application to environmental economics

AEC 8403 Game Theory: 3 hours.
(Prerequisite:AEC 8163 or EC 8163 or concent of instructor).Three hours lecture. An exploration of how agencies interact stategically. (Same as EC 8403)

AEC 8532 International Agricultural Trade and Policy: 2 hours.
(Prerequisite: EC 8163). Two hours lecture. Examination of international trade theories, policies affecting agriculture, international trade, world trade negotiations, barriers to trade, and the role of agricultural trade in the economic development

AEC 8611 Research Seminar I: 1 hour.
(Prerequisite: EC 3123). Selection of research topic, development of the research proposal

AEC 8621 Research Seminar II: 1 hour.
Final preparation of the research proposal and presentation of the proposal. Each semester

AEC 8713 Rural Community and Economic Development: 3 hours.
Three hours lecture. The central focus in this course is on the set of social and economic components that constitute the fabric of rural communities in the U.S

AEC 8843 Survey Design and Experimental Economics: 3 hours.
(Prerequisite: EC 3123 and ST 2113 or BQA 2113). Three hours lecture. An exploration of economists' use of data collection techniques, such as surveys and experiments, with emphasis on analysis of non-market valuation problems

AEC 8990 Special Topics in Agricultural Economics and Agribusiness: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

AEC 9000 Dissertation Research/ Dissertation in Agricultural Economics and Agribusiness: 1-13 hours.
Hours and credits to be arranged

Ag Educ,Leadership Comm Courses

AELC 1001 First Year Seminar: 1 hour.
One hour lecture. First-year seminars explore a diverse array of topics that provide students with an opportunity to learn about a specific discipline from skilled faculty members

AELC 2103 Seminar in International Studies in Agricultural Systems: 3 hours.
Introduction to world agriculture, farming systems and technologies, crops, trade, and food production and processing. Influence of population and climate on global agriculture. Ethical issues surrounding environment, social, political and financial aspects of agriculture. (Same as GA 2103)

AELC 2411 Orientation to Agricultural Sciences: 1 hour.
An introduction to key personnel in the School of Human Sciences, College of Agriculture and Life Sciences, and across the University. An overview of services provided by departments in the School, College, and University. In addition, various career opportunities in the agricultural industry will be covered

AELC 2413 Orientation to Agricultural Education, Leadership & Communications: 3 hours.
Three hours lecture. History and principles of agricultural education programs; program development, management, and community involvement; career opportunities in agricultural education, leadership and communications

AELC 2990 Special Topics in Agricultural Education, Leadership, and Communication: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

AELC 3013 Field Experience in Agricultural Education, Leadership and Communications: 3 hours.
(Prerequisite: Consent of Instructor). Supervised field experience for agricultural education, leadership and communications students in approved settings; pre-internship experiential learning opportunity. (May be repeated one time)

AELC 3203 Professional Writing in Agriculture, Natural Resources, and Human Sciences: 3 hours.
(Prerequisites: Completion of EN 1103 and 1113 or equivalent and Junior Standing). Three hours lecture. Basic principles and techniques in communicating information relevant to agriculture/agribusiness, natural resources, and life sciences

AELC 3333 Professional Presentations in Agriculture and Life Sciences: 3 hours.
Three hours lecture. Strategies and techniques for effective presentations in agriculture, life sciences and natural resources. Emphasis on oral and visual techniques for formal and non-formal situations

AELC 3500 Internship in Agricultural Leadership: 1-6 hours.
(Hours and credit to be arranged and shall not exceed a total of six hours). Capstone course providing students a supervised learning experience solidifying and applying concepts learned throughout their coursework in a professional atmosphere

AELC 3603 Internship-Agricultural Communications: 3 hours.
(Prerequisites: junior standing). Supervised field experiences related to participation in professional activities relating to problems, methods, and basic communications skills in agriculture and life sciences. Course is not repeatable

AELC 3803 Foundations of Leadership in Agricultural and Life Sciences: 3 hours.
Three hours lecture. Foundational theories and principles of leadership emphasizing personal characteristics, leadership styles, power and influence, group dynamics, and managing change for effective leadership in agriculture

AELC 3813 Team Leadership for Agriculture & Life Sciences: 3 hours.
Three hours lecture. Strategies and techniques for building and leading a successful team. Self-assessment, team-building skills, and experiential activities in teamwork are emphasized and contextualized specifically in agriculture and life sciences

AELC 4000 Directed Individual Study in Agricultural Education, Leadership, and Communications: 1-6 hours.
Hours and credit to be arranged

AELC 4103 Principles and Practices of Extension Education: 3 hours.
(Prerequisite: Junior standing). Three hours lecture. Developing, implementing, and evaluating Extension and non-formal educational programs for youth and adult audiences. Comprehension and application of experiential and transformative learning models and teaching methods

AELC 4113 Methods of Teaching Agriscience: 3 hours.
(Prerequisite: Senior standing or permission of instructor). Two hours lecture. Three hours laboratory. Objectives, materials, and teaching methods for planning, organizing, and managing agricultural science programs

AELC 4203 Applications of Computer Tech to Agricultural Education, Leadership, and Communications: 3 hours.
Two hours lecture and two hours laboratory. Application of microcomputer technology in agricultural education, leadership, and communications; data storage and retrieval; and use of canned computer programs in agricultural and educational settings

AELC 4223 Communications Strategies in Agriculture and Life Sciences: 3 hours.
(Prerequisites: Senior standing and consent of instructor). Three hours lecture. Evaluation and development of communications strategies for agriculture and life science organizations, issues, and/or products. Integrating communications techniques and teamwork are emphasized

AELC 4403 Development of Youth Programs: 3 hours.
Three hours lecture. Needs and interests of youth; developing, managing, and evaluating formal and non-formal youth education programs; volunteer and paraprofessional staff development; securing and developing supportive services

AELC 4424 Teaching Methods in Agricultural and Human Sciences: 4 hours.
(Prerequisite: College of Ag and Life Science major and junior standing). Three hours lecture. Two hours laboratory. Planning instruction; selection teaching techniques; developing teaching plans; teaching agricultural/human science topics; using instructional technologies; and evaluating learner progress. (Same as HDFS 4424)

AELC 4503 International Agricultural Education: 3 hours.
Three hours lecture. Examination of formal and non-formal agricultural education and related processes that influence global agricultural development including impacts of culture and changing demographics. Analysis of current global agricultural issues, roles of international organizations, and effectiveness of technology transfer

AELC 4613 Teaching Agricultural Mechanics: 3 hours.
Two hours lecture and three hours laboratory. Methods and strategies for teaching middle and high school students skills in agricultural mechanics

AELC 4703 Experiential Learning Programs in Agriculture: 3 hours.
Two hours lecture. Two hours laboratory. Theory and practice in planning experiential learning projects for youth in agriculture; roles and responsibilities of teachers and extension agents in supervising and evaluating programs

AELC 4710 Study Tour: 1-3 hours.
Experiential learning through travel in the United States or abroad focusing on specialized areas of study in Agricultural Education

AELC 4803 Contemporary Issues in Agriculture and Life Sciences: 3 hours.
Three hours lecture. Course designed to immerse students in investigation of the issues the agriculture industry faces. Students will uncover the historical aspect of current policy and legislation, identify pertinent contemporary issues, and analyze and describe problems, impacts and solutions

AELC 4873 Professional Seminar in Agricultural Education: 3 hours.
(Prerequisites: Admission to Teacher Education and senior standing). Three hours lecture. Legal, professional, administrative and curricular issues in agricultural and extension education. Includes philosophy, classroom management, curriculum planning, community involvement and problem solving to plan formal and informal education programs

AELC 4886 Teaching Internship in Agricultural Education: 6 hours.
Supervised observation and directed teaching in respective field of endorsement. (Prerequisites: Admission to Teacher Education and senior standing; Co-requisite: AELC 4896)

AELC 4896 Teaching Internship in Agricultural Education: 6 hours.
Supervised observation and directed teaching in respective field of endorsement. (Prerequisites: Admission to Teacher Education and senior standing; Co-requisite: AELC 4886)

AELC 4990 Special Topics in Agricultural Education, Leadership, and Communication: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

AELC 6103 Principles and Practices of Extension Education: 3 hours.
(Prerequisite: Junior standing). Three hours lecture. Developing, implementing, and evaluating Extension and non-formal educational programs for youth and adult audiences. Comprehension and application of experiential and transformative learning models and teaching methods

AELC 6113 Methods of Teaching Agriscience: 3 hours.
(Prerequisite: Senior standing or permission of instructor). Two hours lecture. Three hours laboratory. Objectives, materials, and teaching methods for planning, organizing, and managing agricultural science programs

AELC 6403 Development of Youth Programs: 3 hours.
Three hours lecture. Needs and interests of youth; developing, managing, and evaluating formal and non-formal youth education programs; volunteer and paraprofessional staff development; securing and developing supportive services

AELC 6503 International Agricultural Education: 3 hours.
Three hours lecture. Examination of formal and non-formal agricultural education and related processes that influence global agricultural development including impacts of culture and changing demographics. Analysis of current global agricultural issues, roles of international organizations, and effectiveness of technology transfer

AELC 6613 Teaching Agricultural Mechanics: 3 hours.
Two hours lecture and three hours laboratory. Methods and strategies for teaching middle and high school students skills in agricultural mechanics

AELC 6703 Experiential Learning Programs in Agriculture: 3 hours.
Two hours lecture. Two hours laboratory. Theory and practice in planning experiential learning projects for youth in agriculture; roles and responsibilities of teachers and extension agents in supervising and evaluating programs

AELC 6710 Study Tour: 1-3 hours.
Experiential learning through travel in the United States or abroad focusing on specialized areas of study in Agricultural Education

AELC 6990 Special Topics in Agricultural Education, Leadership, and Communication: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

AELC 7000 Directed Individual Study in Agricultural and Extension Education: 1-6 hours.
Hours and credits to be arranged

AELC 8000 Thesis Research/Thesis in Agricultural and Extension Education: 1-13 hours.
Hours and credits to be arranged

AELC 8100 Creative Component Project in Agricultural and Extension Education: 1-13 hours.
Capstone experience supervised by student's major professor and master’s committee. Individual project involving application of coursework to the student’s career goal. (Hours and credits to be arranged)

AELC 8203 Advanced Communications in Agricultural and Extension Education: 3 hours.
Three hours lecture. Updating of principles of communicating information in the fields of agriculture/ agribusiness, natural resources, and home economics; review and updating of communications techniques

AELC 8243 Administration and Supervision in Agricultural and Extension Education: 3 hours.
Three hours lecture. Focus on leadership as a component of good management for educational and human services organizations. Analysis of the decision-making process and discussions about team management, conflict resolution, and situation-based communication skills within the context of a diversity of organizational scenarios

AELC 8263 Public Relations in Agricultural & Extension Education: 3 hours.
Three hours lecture. Publics to be dealt with, public relations media; methods and techniques of establishing and maintaining desirable public relations

AELC 8403 Directing Learning Experience in Agricultural and Extension Education: 3 hours.
Three hours lecture. Planning instructional activities and educational plans for agricultural audiences for formal and non-formal audiences; assessing and evaluating student learning. Note: Not for students with prior credit in AELC/HDFS 4424 or equivalent

AELC 8413 Methods of Planned Change in Agricultural and Extension Education: 3 hours.
Three hours lecture. A study of the theories and processes used by change agents to plan, influence and accomplish change in social, educational and corporate environments

AELC 8503 Program Planning and Development in Agricultural and Extension Education: 3 hours.
Three hours lecture. Principles, theory, and practice in developing local and state programs of vocational, technical, and extension education

AELC 8513 Volunteer Development in Agricultural and Extension Education: 3 hours.
Three hours lecture. Principles, theory and practice of volunteer development in extension education, high schools, communities, and/or non-profit organizations

AELC 8593 Historical Foundations of Agricultural and Extension Education: 3 hours.
Three hours lecture. Historical development of the land-grant system; implications, influences, and evaluation of policies impacting the future of agricultural and extension education

AELC 8603 Teaching Internship in AEE I: 3 hours.
(Co-requisite: AELC 8613). Professional full-day public school teaching experience in diverse settings and grade levels for 8 weeks (320 hours) under classroom mentor teachers and university supervisors

AELC 8613 Teaching Internship in AEE II: 3 hours.
(Co-requisite: AELC 8603). Professional full-day public school experience in diverse settings and grade levels for 8 weeks (320 hours) under classroom mentor teachers and university supervisors

AELC 8693 Philosophical Foundations of Agriculture and Extension Education: 3 hours.
Three hours lecture. Philosophies, foundational theories, and research on teaching and learning process applied to formal and non-formal programs in agricultural and extension education

AELC 8703 Evaluation of Agricultural and Extension Education Programs: 3 hours.
Three hours lecture. Evaluation principles and procedures used in developing and analyzing vocational, technical, and extension education programs

AELC 8801 Graduate Professional Seminar in Agricultural and Extension Education: 1 hour.
One hour lecture. Introduction to the discipline of agricultural and extension education. Preparing research and program evaluations for publication and dissemination and participating as a professional in the publication process

AELC 8803 Applying Research Methods to Agricultural and Extension Education: 3 hours.
Three hours lecture. Principles and techniques for planning, conducting, and reporting research; development of effective design of research problems; emphasis on understanding and evaluating scientific reports

AELC 8990 Special Topics in Agricultural Education, Leadership, and Communication: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

AELC 9000 Dissertation Research/Dissertation in Agricultural and Extension Education: 1-13 hours.
Hours and credits to be arranged

AELC 9583 Analysis and Interpretation of Data in Agricultural and Extension Education Research: 3 hours.
(Prerequisite: permission of instructor). Three hours lecture. Principles and techniques for collecting, analyzing, and reporting research in agricultural and extension education. Emphasis on student research project development, student authorship

Agricultural Info Sci Ed Courses

AIS 2613 Introduction to Information and Decision Science in Agroecosystems: 3 hours.
Three hours lecture. Introductory course to the science of helping people learn how to access, analyze, apply and amend information to solve problems in agriculture

Anthropology Courses

AN 1001 First Year Seminar: 1 hour.
One hour lecture. First-year seminars explore a diverse arrary of topics that provide students with an opportunity to learn about a specific discipline from skilled faculty members

AN 1103 Introduction to Anthropology: 3 hours.
Three hours lecture. What does it mean to be human? Exploration of human nature, variation, and culture; relationships between human bodies and human culture; and human relationships to other species, living and dead, across time and space. Introduction to biological, cultural, linguistic, and archaeological perspectives on humans

AN 1143 Introduction to Cultural Anthropology: 3 hours.
Three hours lecture. Introduction to the study of social, political, and economic organization, magic and religion, personality, and art

AN 1173 Introduction to Gender Studies: 3 hours.
Three hours lecture. An introduction to theoretical concepts in Gender Studies. This course will examine the influence of the women's movement on the academic development of Gender Studies. (Same as GS 1173 and SO 1173)

AN 1344 Introduction to Biological Anthropology: 4 hours.
Three hours lecture. Two hours laboratory. Biology of evolution, mechanism of speciation, concepts of race, and the primate order are explored culminating in an appreciation of paleoanthropology, human evolution, and human variation

AN 1543 Introduction to Archaeology: 3 hours.
Three hours lecture. A survey of early cultural development throughout the world; emphasis on archaeological techniques, interpretations and theories of development

AN 2103 Nutritional Anthropology: 3 hours.
Three hours lecture. Discussion of human diet and nutrition from holistic, cross-cultural perspective. Topics covered include evolution of human diet, nutrition and subsistence transitions; health, growth, and disease; food insecurity; and food in relation to economy, identity, religion, and senses

AN 2203 Cultural and Racial Minorities: 3 hours.
(Prerequisite: Three hours in an introductory social science). Three hours lecture. Origins of minority groups and racial attitudes. Biological and cultural concepts of race and minority groups; problems of adjustment in interracial and multiethnic societies. (same as AAS 2003 and SO 2203)

AN 2403 Introduction to the Study of Language: 3 hours.
Three hours lecture. Students will be introduced to the subfields of linguistics to answer questions they have about language and to provide evidence about language acquisition and use. (Same as EN 2403)

AN 2510 Archaeological Field Methods: Survey: 1-6 hours.
Credit to be arranged. Archaeological surface survey methods in field setting, including map-reading, shovel- testing, collection techniques, controlled surface collection, artifact recognition

AN 2990 Special Topics in Anthropology: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

AN 3113 Societies of the World: 3 hours.
(Prerequisite: AN 1103 or its equivalent or consent of instructor). Three hours lecture. A survey of principal culture types and their distribution

AN 3123 North American Indians: 3 hours.
(Prerequisite: AN 1103 or consent of instructor). Three hours lecture. Ethnographic survey of the Indians of North and Mesoamerica

AN 3133 Anthropology of Latin America: 3 hours.
Three hours lecture. A survey of societies in Latin America with an emphasis on indigenous peoples, their relationship to contemporary social and economic development

AN 3143 Anthropology of the Middle East: 3 hours.
Three hours lecture. A survey of culture and society in the Middle East. Ethnographic accounts examine topics such as Islam, gender, identity, economics, politics, and the arts

AN 3163 Maritime & Fishing People: 3 hours.
Three hours lecture. Introduction to the anthropological investigation of maritime and fishing people. The course explores: cultural adaptations to maritime existence, the history of seafaring, characteristics of maritime peoples, overfishing, and fisheries economics, management and sustainability

AN 3193 African Cultures: 3 hours.
(Prerequisite: AN 1103 or AN 1143 or consent of instructor). Three hours lecture. Course provides a study of sub-Saharan African cultures, including diverse social, political organization, gender roles, and culture change. (Same as AAS 3193)

AN 3323 Contemporary Woman: 3 hours.
Three hours lecture. Introductory course for the Concentration in Women's Studies. Major topics are women's heritage, identity, culture, and vulnerabilities. (Same as SO 3323)

AN 3333 Primate Behavior: 3 hours.
Three hours lecture. In-depth study of non-human primate evolution, social behavior, and communication. Field studies and conservation efforts will be examined

AN 3343 Introduction to Forensic Anthropology: 3 hours.
Three hours lecture. Examination of the foundations and role of forensic anthropology in the forensic sciences. Review of the biological profile, assessment of bone trauma, identification of taphonomic agents, and an exploration of mass disasters and human rights violations

AN 3510 Archaeological Field Methods: Excavation: 1-6 hours.
Credit to be arranged. Excavation methods in field setting, including mapping, recording, recovery and proveniencing techniques, field research strategies

AN 3513 Artifact Analysis: 3 hours.
Two hours lecture. Two hours laboratory. Introduction to artifact recognition and analysis, focusing on prehistoric and historic creamics, stone tools and debris, glass, nails, animal bones, shell, and environmental indicators

AN 3523 North American Archaeology: 3 hours.
(Prerequisite: AN 1103 or consent of instructor). Three hours lecture. A survey of the prehistoric cultures of North America including the influences of the high civilizations of Mesoamerica

AN 3533 Rise of Civilization: 3 hours.
(Prerequisite: AN 1103 or HI 1213). Three hours lecture. Survey of prehistoric cultures and their contributions to the rise of civilizations in Latin America, China, Africa, India and the Middle East

AN 3540 Archaeological Travel and Participation Program: 1-6 hours.
Participation in excavations in the Near East and related lecture programs. (Same as MEC 3540 and REL 3540)

AN 3553 Near Eastern Archaeology: 3 hours.
Three hours lecture. Introduction to the contributions made by archaeological research to ancient Near Eastern history and prehistory, with special emphasis on the Syro-Palestinian area. (Same as MEC 3553 and REL 3553)

AN 4000 Directed Individual Study in Anthropology: 1-6 hours.
Hours and credits to be arranged

AN 4123 Anthropological Theory: 3 hours.
(Prerequisite: AN 1103 or its equivalent or consent of instructor). Three hours lecture. A history of the development of anthropological theory; an analysis of contemporary theoretical formulations and approaches

AN 4133 Medical Anthropology: 3 hours.
(Prerequisite: AN 1103 or consent of instructor). Three hours lecture. The cross-cultural study of health, sickness, and medicine from a holistic perspective emphasizing in- teractions between culture and biology and between bio- medicine and local healing traditions

AN 4143 Ethnographic Methods: 3 hours.
(Prerequisites: AN 1103 or AN 1143 or consent of instructor.) Three hours lecture. An overview of methods and techniques for conducting ethnographic research

AN 4163 Anthropology of International Development: 3 hours.
(Prerequisite: Senior standing or consent of instructor). Three hours lecture. Role of anthropology in international development including origins of the Third World, development theory, current issues in international development, case studies

AN 4173 Environment and Society: 3 hours.
(Prerequisite: AN 1103, SO 1003 consent of instructor). Three hours lecture. A study of the interaction between human society and the environment including the social aspects of environmental problems. (Same as SO 4173/6173)

AN 4303 Human Variation and Origins: 3 hours.
Three hours lecture. An examination of human origins, genetics, and other principal factors that contribute to physical variation within and between human populations

AN 4313 Human Osteology: 3 hours.
Two hours lecture and two hours laboratory. Identification of each human bone both complete and fragmentary. Study of skeletal and dental development, sex differences, age changes, hard tissue histology, trauma analysis, and paleopathology. Guest lectures in advanced laboratory methods

AN 4323 Plagues and People: 3 hours.
Three hours lecture. Discussion of the impact of epidemic infectious diseases, such as the Black Death, syphilis, and HIV/AIDS, on human societies throughout history

AN 4403 Introduction to Linguistics: 3 hours.
Three hours lecture. The descriptive and historical study of language; linguistic analysis and comparison; language classification; language in its social and cultural setting. (Same as EN 4403/6403)

AN 4523 Public Archaeology: 3 hours.
(Prerequisite: AN 1543 or consent of instructor). Three hours lecture. Survey of cultural resource management practices, Federal and State historic preservation laws, research proposal design, significance assessments, professional ethics, employee/client relationships, and public education

AN 4623 Language and Culture: 3 hours.
Three hours lecture. Examination of language as a part of culture, a source of knowledge about other aspects of culture, and a social behavior. (Same as EN 4623/6623 and SO 4623/6623)

AN 4633 Language and Society: 3 hours.
Three hours lecture. Examination of relationship between language and society, and how, when, and why people in speech communities use language varieties. (Same as EN 4633/6633 and SO 4633/6633)

AN 4990 Special Topics in Anthropology: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

AN 6123 Anthropological Theory: 3 hours.
(Prerequisite: AN 1103 or its equivalent or consent of instructor). Three hours lecture. A history of the development of anthropological theory; an analysis of contemporary theoretical formulations and approaches

AN 6133 Medical Anthropology: 3 hours.
(Prerequisite: AN 1103 or consent of instructor). Three hours lecture. The cross-cultural study of health, sickness, and medicine from a holistic perspective emphasizing in- teractions between culture and biology and between bio- medicine and local healing traditions

AN 6143 Ethnographic Methods: 3 hours.
(Prerequisites: AN 1103 or AN 1143 or consent of instructor.) Three hours lecture. An overview of methods and techniques for conducting ethnographic research

AN 6163 Anthropology of International Development: 3 hours.
(Prerequisite: Senior standing or consent of instructor). Three hours lecture. Role of anthropology in international development including origins of the Third World, development theory, current issues in international development, case studies

AN 6173 Environment and Society: 3 hours.
(Prerequisite: AN 1103, SO 1003 consent of instructor). Three hours lecture. A study of the interaction between human society and the environment including the social aspects of environmental problems. (Same as SO 4173/6173)

AN 6303 Human Variation and Origins: 3 hours.
Three hours lecture. An examination of human origins, genetics, and other principal factors that contribute to physical variation within and between human populations

AN 6313 Human Osteology: 3 hours.
Two hours lecture and two hours laboratory. Identification of each human bone both complete and fragmentary. Study of skeletal and dental development, sex differences, age changes, hard tissue histology, trauma analysis, and paleopathology. Guest lectures in advanced laboratory methods

AN 6323 Plagues and People: 3 hours.
Three hours lecture. Discussion of the impact of epidemic infectious diseases, such as the Black Death, syphilis, and HIV/AIDS, on human societies throughout history

AN 6403 Introduction to Linguistics: 3 hours.
Three hours lecture. The descriptive and historical study of language; linguistic analysis and comparison; language classification; language in its social and cultural setting. (Same as EN 4403/6403)

AN 6523 Public Archaeology: 3 hours.
(Prerequisite: AN 1543 or consent of instructor). Three hours lecture. Survey of cultural resource management practices, Federal and State historic preservation laws, research proposal design, significance assessments, professional ethics, employee/client relationships, and public education

AN 6623 Language and Culture: 3 hours.
Three hours lecture. Examination of language as a part of culture, a source of knowledge about other aspects of culture, and a social behavior. (Same as EN 4623/6623 and SO 4623/6623)

AN 6633 Language and Society: 3 hours.
Three hours lecture. Examination of relationship between language and society, and how, when, and why people in speech communities use language varieties. (Same as EN 4633/6633 and SO 4633/6633)

AN 6990 Special Topics in Anthropology: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

AN 7000 Directed Individual Study in Anthropology: 1-6 hours.
Hours and credits to be arranged

AN 8000 Thesis Research/ Thesis in Anthropology: 1-13 hours.
Hours and credits to be arranged

AN 8011 Professionalization in Applied Anthropology: 1 hour.
One hour seminar. Students are introduced to norms of professional behavior in Applied Anthropology, with focus on success in graduate school and preparation for the job market

AN 8013 Quantitative Methods in Anthropology: 3 hours.
Students are introduced to quantitative methods utilized in anthropological research. Students will examine anthropological research design, sampling strategies, probability theory, and various statistical approaches

AN 8103 Applied Cultural Anthropology: 3 hours.
(Prerequisites: AN 1103 or AN 1143 or consent of instructor). Three hours lecture. An overview of the application of anthropological theory and method of contemporary social problems

AN 8123 Environmental Anthropology: 3 hours.
(Prerequisite: None). Three hours seminar. Study of anthropological approaches to analyzing the relationship between humans and the environment

AN 8193 Current Cultural Theory: 3 hours.
(Prerequisite: None). Three hours seminar. The study of contemporary theoretical perspectives and problems in cultural anthropology

AN 8215 Internship in Applied Anthropology: 5 hours.
A minimum of nine wkked of supervised professional anthropology experience in an appropriate setting

AN 8303 Seminar in Bio-archaeology: 3 hours.
Three hours lecture. Overview of applications in bioarchaeology, including paleodemography, paleopathology, and paleonutrition

AN 8313 Paleopathology: Ancient Disease: 3 hours.
Three hours seminar. Seminar on theory and methods for reconstructing the history of human health and disease from skeletal, archaeological, biomolecular, and historical material

AN 8513 Southeastern Archaeology: 3 hours.
Three hours lecture. Prehistory of Southeastern U.S. from entry of first people to European contact. Changes in technology, settlement, subsistence, demography, and environment examined using archaeological evidence

AN 8523 Environmental Archaeology: 3 hours.
Three hours lecture. Coverage of method and theory in environmental archaeology, including elements of palynology, geoarchaeology, floral and faunal analysis, landscape ecology, historical ecology, cultural ecology, and taphonomy

AN 8533 Readings in Archaeology: Theory: 3 hours.
Three hours lecture. Archaeological theory and its implications for practice, focusing on evolutionary archaeology but also including culture history, processual, reconstructionist, and post-processual approaches

AN 8543 Household Archaeology: 3 hours.
Three hours lecture. Explores inner-workings of societies through the archaeological investigation of households globally. Reviews household universality, composition, function and variation. Considers theoretical, methodological, and substantive issues

AN 8553 Readings in Archaeology: Applications: 3 hours.
Three hours lecture. Review of literature related to materials science in archaeology, including thin-sectioning and petrography, raw material sourcing, organic residues, dating techniques, and preservation technnology

AN 8990 Special Topics in Anthropology: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

Architecture Courses

ARC 1001 First Year Seminar: 1 hour.
One hour lecture. First-year seminars explore a diverse arrary of topics that provide students with an opportunity to learn about a specific discipline from skilled faculty members

ARC 1003 Concept and Form: 3 hours.
(Prerequisites:ART 1213 or ART 1123 or ARC 1536 or BSC 2116) Three hours lecture. Introduction and practice for developing and presenting concepts and criticism

ARC 1013 Architectural Appreciation: 3 hours.
Three hours lecture. Illustrated study of architecture's role in shaping the quality of man's environment. Architectural history, design theory, and process as it affects daily life. Intended for non-majors. (Same as BCS 1013)

ARC 1536 Architectural Design I-A: 6 hours.
(Prerequisite: Letter of Acceptance into design studio and consent of Director of Architecture). Two hours lecture. Ten hours studio. Introduction to creative process, design principles and methods. Design projects emphasize verbal and visual communication; observing,analyzing, representing, and making of form, space, materials

ARC 1546 Architectural Design I-B: 6 hours.
(Prerequisite: ARC 1536 or consent of Director). Two hours lecture. Ten hours studio. Introduction to creative process, design principles and methods. Design projects emphasize verbal and visual communication; observing, analyzing, representing, and making of form, space, materials

ARC 2313 History of Architecture I: 3 hours.
Three hours lecture. A survey of man's effort to mold his environment from prehistory through the Early Middle Ages

ARC 2536 Architectural Design II-A: 6 hours.
(Prerequisite: ARC 1546 or equivalent or consent of the Director). One hour lecture. Eleven hours studio. Introduction to fundamental aspects of building including structural-spatial ordering systems. Projects emphasize linkages between people and spaces through investigation of perceptual-conceptual issues

ARC 2546 Architectural Design II-B: 6 hours.
(Prerequisite: ARC 2536 or equivalent or consent of the director). One hour lecture. Eleven hours studio. Introduction to fundamental aspects of building including structural-spatial ordering systems. Projects emphasize linkages between people and spaces through investigation of perceptual-conceptual issues

ARC 2713 Passive Building Systems: 3 hours.
(Prerequisite: Architecture majors-ARC 1546 and PH 1123; BCS majors-PH 1123; others-instructor consent). Three hours lecture. Investigation of the morphological impacts of various environmental energies on building forms/systems. Includes light, climatic, and ecological factors. Same as BCS 2713

ARC 2723 Materials: 3 hours.
(Prerequisite: Architecture majors: ARC 2536, Non-architecture majors ARC 1013). Three hours lecture. Analyzing how materials and systems are designed to respond to both environmental energies and needs. Included are soils, concrete, wood, masonry, and metals

ARC 2990 Special Topics in Architecture: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

ARC 3313 History of Architecture II: 3 hours.
(Prerequisite: ARC 2313). Three hours lecture. Survey of major developments in architecture and city planning from the Fourteenth through the Eighteenth Centuries

ARC 3323 History of Architecture III: 3 hours.
(Prerequisite: ARC 3313). Three hours lecture. Survey of major developments in American architecture and survey of major developments in European architecture during the Nineteenth and Twentieth Centuries

ARC 3536 Architectural Design III-A: 6 hours.
(Prerequisite: ARC 2546 or equivalent or consent of the Director). One hour lecture. Eleven hours laboratory. The development of building design as a synthesis of environmental concerns, behavioral responses, functional requirements, and technical systems. Studies using small and intermediate scale projects

ARC 3546 Architectural Design III-B: 6 hours.
(Prerequisite: ARC 3536 or equivalent or consent of the director). One hour lecture. Eleven hours laboratory. The development of building design as a synthesis of environmental concerns, behavioral responses, functional requirements, and technical systems. Studies using small and intermediate scale projects

ARC 3573 The Art/Architecture of Packaging: 3 hours.
Three hours lecture . Investigations into theories, techniques, and procedures of packaging (with emphasis on portfolio design) through traditional, mechanical,, and digital means

ARC 3713 Assemblages: 3 hours.
(Prerequisite: ARC 2546 and ARC 2723). Two hours lecture and two hours laboratory. Fabrication and construction are explored in the relationship between nature of materials and methods of assembly

ARC 3723 Active Building Systems: 3 hours.
(Prerequisites: ARC majors-ARC 2546 and ARC 2713; BCS majors-BCS 2713 and BCS 2116; others-consent of instructor). Three hours lecture. Concentrates on defining the mechanical and electrical (active) techniques available to architects for integrating thermal comfort and life safety into the built form. (Same as BCS 3723)

ARC 3813 Study Abroad Seminar I: 3 hours.
(Prerequisite: ART 1213 or consent of instructor.) Three hours seminar. Six weeks of on-site instruction in Italy as part of the CAAD Italy study abroad program. Course content will vary to reflect the expertise of the instructor (Same as ART 3813 and ID 3813.)

ARC 3823 Study Abroad Seminar II: 3 hours.
(Prerequisite: ART 1213 or consent of instructor.) Three hours seminar. Six weeks of on-site instruction in Italy as part of the CAAD Italy study abroad program. Course content will vary to reflect the expertise of the instructor (Same as ART 3823 and ID 3823.)

ARC 3904 Architectural Structures I: 4 hours.
(Prerequisite:MA 1613 and either ARC 1546 or BCS 2226) Three hours lecture. Two hours laboratory. Application of the principles of statics and the strength of materials on structural elements. (Same as BCS 3904)

ARC 3914 Structures II: 4 hours.
(Prerequisite:ARC 3904) Three hours lecture. Two hours laboratory. Design and analysis of structural elements as part of frames and other structural systems. (Same as BCS 3914)

ARC 4000 Directed Individual Study in Architecture: 1-6 hours.
Hours and credits to be arranged with approval of School of Architecture Director

ARC 4152 Digital Design I Laboratory: 2 hours.
(Prerequisite: Undergraduate-permission of instructor; Graduate-none). Four hours laboratory. Laboratory exploration of digital input and output devices concentrating of conceptual design, design development, and manufacturing/construction CADCAM processes using automated machines and devices

ARC 4313 Architectural Theory: 3 hours.
(Prerequisite: ARC 3323 or equivalent and consent of instructor). Three hours lecture. A critical investigation of writings that have shaped architectural theory

ARC 4333 Contemporary Philosophy and Architecture: 3 hours.
(Prerequisites: Junior standing or permission of instructor). Three hours lecture. An examination of modernism and postmodernism in philosophy and architecture. (Same as PHI 4013/6013)

ARC 4536 Architectural Design IV-A: 6 hours.
(Prerequisite: ARC 3546 or equivalent or consent of director). One hour lecture. Eleven hours laboratory. Design of architectural elements integrating building systems, social concerns, and environmental factors. Studies involve intermediate to large scale projects in realistic architectural situations

ARC 4546 Architectural Design IV-B: 6 hours.
(Prerequisites: ARC 4536 or equivalent of consent of director). One hour lecture. Eleven hours laboratory. Design of architectural elements integrating building systems, social concerns, and environmental factors. Studies involve intermediate to large scale projects in realistic architectural situations

ARC 4613 CREATE Common Ground: 3 hours.
Three hours seminar. Service learning through urban design, issues of economic development/renewal, historic preservation, and transportation for small towns in the CREATE Foundation region

ARC 4633 Architecture and Virtual Spaces: 3 hours.
Three hours lecture.Exploration of physical and virtual worlds from a theoretical, technical, communication, and design perspective

ARC 4733 Site Planning for Architects: 3 hours.
(Prerequisite: ARC 2546). Three hours lecture. Introduces the natural ecological systems as they relate to human's impact on them, along with the natural system's resistance to human's impact

ARC 4990 Special Topics in Architecture: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

ARC 5353 Philosophy of Architecture: 3 hours.
Three hours lecture and field visits. The philosophical issues of meaning, appreciation, and the distinctive characteristics of the artistic creation

ARC 5383 Legal Aspects of Architecture: 3 hours.
Three hours lecture. Investigation and research regarding architectural issues including architectural law, contracts, litigation, case studies and other topical issues

ARC 5443 Architectural Programming: 3 hours.
One hour lecture. Six hours laboratory. Advanced study of analytical and intuitive methods of programming, leading to development of terminal project program to be used in ARC 5589

ARC 5493 Architectural Practice: 3 hours.
Three hours lecture. Investigation into issues facing the graduate architect including: responsibilities to the community and the profession; project and business management; client relations; and delivery of services

ARC 5576 Architectural Design V-A: 6 hours.
(Prerequisite: ARC 4546). One hour lecture. Fifteen hours laboratory. Theory and application of architectural problems at urban scale. Investigation of social, economic, political issues effecting architectural programming and design

ARC 5589 Architectural Design V-B: 9 hours.
(Prerequisite: ARC 5576). Two hours lecture . Twenty hours laboratory. Development of architectural project of complex and comprehensive nature. Emphasis upon thorough examination of all aspects of building

ARC 5623 Theory of Urban Design: 3 hours.
Three hours lecture. General introduction into field of urban design. Course divided into two areas of theory and practice as they relate to contemporary urban development

ARC 5990 Advanced Special Topics in Architecture: 9 hours.

ARC 6114 Professional Practice Strategies: 4 hours.
Four hours lecture. Exploration of the students career goals relative to emerging technology impact and design/architectural practice trends

ARC 6152 Digital Design I Laboratory: 2 hours.
(Prerequisite: Undergraduate-permission of instructor; Graduate-none). Four hours laboratory. Laboratory exploration of digital input and output devices concentrating of conceptual design, design development, and manufacturing/construction CADCAM processes using automated machines and devices

ARC 6162 Digital Design II Laboratory: 2 hours.
(Prerequisite:ARC 4152/6152). Four hours laboratory. Advanced laboratory exploration of digital imput and output devices concentrating on conceptual design, design development and manufacturing/ construction CADCAM processes using automated machines and devices

ARC 6333 Contemporary Philosophy and Architecture: 3 hours.
(Prerequisites: Junior standing or permission of instructor). Three hours lecture. An examination of modernism and postmodernism in philosophy and architecture. (Same as PHI 4013/6013)

ARC 6613 CREATE Common Ground: 3 hours.
Three hours seminar. Service learning through urban design, issues of economic development/renewal, historic preservation, and transportation for small towns in the CREATE Foundation region

ARC 6633 Architecture and Virtual Spaces: 3 hours.
Three hours lecture.Exploration of physical and virtual worlds from a theoretical, technical, communication, and design perspective

ARC 6813 Public Design Seminar I: 3 hours.
(Prerequisite: Acceptance in Public Design Inter Program.) Three hours lecture. Public practice theory; limitations of standard practice to meet contemporary social, economic and environmental needs; values and leadership of community organizations; examples of alternative practice

ARC 6823 Public Design Seminar II: 3 hours.
(Prerequisite: ARC 6813.) Three hours lecture. Understanding community; local services and economic problems and global environmental risks; understanding minority subcultures, poverty, and the role of non-profit organizations

ARC 6833 Public Design Seminar III: 3 hours.
(Prerequisite: ARC 6823.) Three hours lecture. Creating and using tools of public practice to help communities address social, economic and environmental problems; leadership skills, advocacy planning, sustaining a non-profit practice

ARC 6853 Public Practice and Projects I: 3 hours.
(Prequisite: Acceptance in Public Design Intern Program). Two hours lecture. Two hours laboratory. Various models of design practice presented by ten outside practitioners. Parallel studio team project

ARC 6863 Public Practice and Projects II: 3 hours.
(Prequisite: ARC 6853). Two hours lecture. Two hours laboratory. Survey of governmental and non-profit organizations that work in the community presented by ten outside practitioners. Parallel studio team project

ARC 6873 Public Practice and Projects III: 3 hours.
(Prerequisite: ARC 6863.) Two hours lecture. Two hours laboratory. Challenging the status-quo; presentations by ten visionary people. Parallel studio team projects

ARC 6990 Special Topics in Architecture: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

ARC 7000 Directed Individual Study in Architecture: 1-6 hours.
Hours and credits to be arranged

ARC 8000 Thesis Research/ Thesis in Architecture: 1-13 hours.
Hours and credits to be arranged

ARC 8114 Digital Design I: 4 hours.
Four hours lecture. Exploration of digital input and output devices concentrating on conceptual design/visualization processes using 3D/4D software and augmenting hardware devices

ARC 8124 Digital Design II: 4 hours.
(Prerequisite:ARC 8114) Four hours lecture. Exploration of digital input and output devices concentration on conceptual design, design development, and manufacturing/construction CADCAM processes using automated machines and devices

ARC 8134 Digital Design III: 4 hours.
Four hour lecture. Advanced exploration of digital input and output methods using 1,2,3,4, and 5D modeling software/hardware application in both virtual and physical problems in theoretical and applied design and research projects

ARC 8172 Digital Design III Laboratory: 2 hours.
Four hours laboratory. Advanced laboratory providing exploration of digital input and output methods using 1,2,3,4 and 5D modeling software/ hardward applications in both virtural and physical problems in theoretical and applied design and research projects

ARC 8224 Research and Writing in Architecture: 4 hours.
Four hours lecture. Provides the student with general grounding in the process of research, problem identification writing, and development of a formal argument in design and architecture

ARC 8444 Interactive Media: 4 hours.
(Prerequisite:ARC 6633) Three hours lecture. Two hours laboratory. Exploration of media and interaction design solutions through case studies and design exercises using emerging technologies and congruent design concepts

ARC 8990 Special Topics in Architecture: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

Art Courses

ART 1001 First Year Seminar: 1 hour.
One hour lecture. First-year seminars explore a diverse arrary of topics that provide students with an opportunity to learn about a specific discipline from skilled faculty members

ART 1013 Art History I: 3 hours.
Three hours lecture. The study of art from prehistoric times to the Renaissance through the architecture, sculpture, painting and minor arts of the western world

ART 1023 Art History II: 3 hours.
Three hours lecture. Art from the Renaissance to the present studied chronologically through the architecture, painting, sculpture, and minor arts of the western world

ART 1113 Art Appreciation: 3 hours.
Three hours lecture. An illustrated lecture course dealing with periods, styles, and personalities in painting, sculpture, and architecture. Honors section available

ART 1123 Design I: 3 hours.
Six hours studio. A basic study of the fundamental elements and principles of design with an emphasis on compostion

ART 1133 Design II: 3 hours.
(Prerequisite: ART 1123). Six hours studio. A continued study of the fundamental elements and principles of design with an emphasis on the theory and application of color

ART 1153 Three-Dimensional Design: 3 hours.
(Prerequisites: ART 1123 or ARC 2536). Six hours studio. An study of the organization of the principles and elements of art as they apply to three-dimensional artwork

ART 1213 Drawing I: 3 hours.
Six hours laboratory. A freehand drawing course for all students interested in the visual arts. This course offers the basic vocabulary for a graphic notation

ART 1223 Drawing II: 3 hours.
(Prerequisite: ART 1213). Six hours studio. A continuation of ART 1213 further developing conceptual and perceptual use of drawing tools, processes and materials. Black and white, and color media explored

ART 2013 Painting Survey: 3 hours.
(Prerequisites: ART 1123 and ART 1213). Six hours laboratory. The fundamentals of oil paintings and composition

ART 2103 Photography Survey: 3 hours.
(Prerequisites: ART 1123 and ART 1213). One hour lecture. Three hours studio. The fundamentals and aesthetics of black and white photography relating to graphic design and the fine arts

ART 2213 Life Drawing I: 3 hours.
(Prerequisites: ART 1213 and ART 1223). Six hours laboratory. A drawing class with emphasis on the basic forms and proportions of the human figure

ART 2233 Drawing III: 3 hours.
(Prerequisite: ART 1223). Six hours laboratory. A continuation of ART 1223 to develop further drawing skills and concepts for advanced students

ART 2303 Printmaking Survey: 3 hours.
(Prerequisites: ART 1123, ART 1133, and ART 1223). Six hours studio. Introduction to the basic techniques and concepts of intaglio and relief printmaking

ART 2403 Sculpture Survey: 3 hours.
(Prerequisite: ART 1123 or ART 1153 or permission of instructor). Six hours studio. Introduction to the basic concepts, materials, and processes of sculpture by exploring modeling, casting, carving and constructing

ART 2503 Ceramic Art Survey: 3 hours.
Six hours studio. Introduction to the processes of ceramic art including hand built forms, wheel thrown pottery and glazing

ART 2803 Introduction to Computing for Art: 3 hours.
(Prerequisites: ART 1133 and ART 1223 or permission of the instructor). One hour lecture. Four hours studio. Introduction to desktop computer hardware, operating systems, and application software in the visual arts and design

ART 2813 Intermediate Computing for Designers: 3 hours.
(Prerequisites: ART 2803, pass second year portfolio review, open only to Graphic Design Majors or Consent of Instructor). One hour lecture. Four hours studio. Further instruction about desktop computer hardware, operating systems, application software and beginning concept development specific to the graphic design industry for graphic design majors

ART 2904 Introduction to Film: 4 hours.
Three hour lecture. Two hours lab. A basic introduction to the study of film language, history, and theory, emphasizing aesthetic, technological, and socio-cultural developments of film form. (Same as CO 2904 and EN 2904)

ART 2990 Special Topics in Art: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

ART 3023 Painting II: 3 hours.
(Prerequisite:ART 2013). Six hours studio. Observational based painting. A study of mediums and techniques in painting in continuation of ART 2013

ART 3033 Non-Representational Painting: 3 hours.
(Prerequisite:ART 2013).Six hours studio. Introduction to non-representational painting. Intermediate painting with further emphasis on the skills and techniques of painting

ART 3043 Figurative Painting: 3 hours.
(Prerequisite:ART 2013 and ART 2213). Six hours studio. Introduction into painting the figure. A continuation of ART 2013 to further develop skill in use of the medium and formal organization of subject matter in painting

ART 3053 Watercolor Painting: 3 hours.
(Prerequisites: ART 1123 and ART 1213). Six hours laboratory. The technique and use of various water-soluble painting mediums

ART 3143 Italian Renaissance Art History: 3 hours.
Three hours lecture. The history of art in Italy in the fifteenth and sixteenth centuries, emphasizing the religious monuments of the period. (Same as REL 2143)

ART 3163 History of Graphic Design: 3 hours.
(Prerequisite:Pass second year portfolio review, open only to Graphic Design Majors or consent of instructor). Three hours lecture. A survey of the history of graphic design from pre-writing to digital

ART 3213 Life Drawing II: 3 hours.
(Prerequisite: ART 2213). Six hours studio. Further study in rendering the human figure

ART 3223 Darkroom Basics: 3 hours.
(Prerequisites: ART 2103 or consent of instructor.) Six hours studio. The course is an introduction to the traditional photographic darkroom

ART 3233 Studio Lighting: 3 hours.
(Prerequisites:ART 2103 or permission of instructor). Six hours studio. The course is an introduction to the professional studio lighting techniques

ART 3243 Intermediate Darkroom: 3 hours.
(Prerequisites: Art 2103 and ART 3223 or permission of instructor). One hour lecture. Four hours studio. Advanced techniques of photographic processes in black and white with emphasis on aesthetics

ART 3253 Photogram: 3 hours.
(Prerequisites: ART 2103 or permission of the instructor). Six hours studio. The course explores the photogram technique as a photographic tool to create a fine art image

ART 3263 Scanography: 3 hours.
(Prerequisites: ART 2103 or permission of the instructor). Six hours studio. The course explores the scanner as a photographic tool to create a fine art image. Students will learn a variety of approaches to creating fine art photographic images using a scanner

ART 3303 Printmaking II: 3 hours.
(Prerequisite: ART 2303). Six hours studio. Continued exploration of the print as a medium of creative expression

ART 3313 Graphic Art Design I: 3 hours.
(Prerequisites: ART 2803, ART 2813). Six hours studio. Introduction to the art and process of design in printed communication. Students develop graphic skills with an emphasis placed upon conceptual development, research, production and both visual and verbal presentation skills

ART 3323 Graphic Art Design II: 3 hours.
(Prerequisite: ART 3313). Six hours studio. The execution of a series of design projects promoting an awareness of different forms of printed visual communication

ART 3403 Printmaking III: 3 hours.
(Prerequisite:ART 2303 and ART 3303) Six hours studio. Exploration of traditional and contemporary relief printmaking techniques,with emphasis on woodcut and collograph methods. Aesthetic, technical, and conceptual development stressed

ART 3443 Illustration: 3 hours.
(Prerequisites: ART 2013 and ART 3053). Six hours studio. A course introducing issues and instrumentation related to standards in the professional field of illustration emphasizing mixed-media processes

ART 3503 Ceramic Art II: 3 hours.
(Prerequisite: ART 2503). Six hours studio. Elementary glaze formulation, surface decoration, kiln firing, wheel thrown and hand built form

ART 3513 Sculpture II: 3 hours.
(Prerequisite: ART 2403). Six hours studio. Further exploration of concepts and processes of sculpture, including mold making and armature building. Beginning development of personal language of expression

ART 3523 3D Seminar: 3 hours.
(Prerequisites: ART 2403 or ART 2503). Six hours studio. Research and investigation of the origins, community, process, and message of contemporary three-dimensional art and craft

ART 3603 Directed Writings in Modern Art History: 3 hours.
Three hours lecture. History of the 20th Century Art with emphasis on scholarly writing, reading, and analyzing of contemporary models and varieties of writing

ART 3613 Art and Film: 3 hours.
Three hours lecture. This course explores the rich and complex relationship between the visual arts and film

ART 3623 Art in France: 1850-1900: 3 hours.
Three hours lecture. This class explores one of the most dynamic periods of artistic production in the entire history of art

ART 3633 History of Photography: 3 hours.
Three hours lecture. The history of still photography as a fine art from its beginning to present

ART 3643 Art of the Graphic Novel: 3 hours.
Three hours lecture. An introduction to the history of the extended comic strip, or graphic novel, and to examples of this art form's major works

ART 3653 Roman Baroque Art: 3 hours.
Three hour lecture. An examination of the art and architecture created in Rome in the 17th Century

ART 3663 Medieval Stained Glass: 3 hours.
Three hours lecture.An examination of the history of Medieval stained glass from the points of view of technique, material,style, and cultural/ historical significance

ART 3673 The Gothic Cathedral: 3 hours.
Three hours lecture. An examination of the art, architecture, religion, politics, and culture of 13th century French Gothic Cathedrals

ART 3683 The History of Art and Religion: 3 hours.
Three hours lecture. An examination of the histories, functions, and controversies of visual imagery created in the service of religion/ spirituality

ART 3801 Art Field Study: 1 hour.
(Prerequisite: Successful completion of Art Concentration Portfolio Review). One hour lecture. A field study of the masters in fine art, graphic design and photography fields in the context of a significant, national art center

ART 3803 Gallery Management: 3 hours.
(Prerequisite: ART 1123 and ART 1213). One hour lecture. Four hours laboratory. The study of gallery operations, techniques of curation, artists ethics, installation procedures and gallery management of an art gallery

ART 3813 Study Abroad Seminar I: 3 hours.
(Prerequisite: ART 1213 or consent of instructor.) Three hours seminar. Six weeks of on-site instruction in Italy as part of the CAAD Italy study abroad program. Course content will vary to reflect the expertise of the instructor (Same as ARC 3813 and ID 3813.)

ART 3823 Study Abroad Seminar II: 3 hours.
(Prerequisite: ART 1213 or consent of instructor.) Three hours seminar. Six weeks of on-site instruction in Italy as part of the CAAD Italy study abroad program. Course content will vary to reflect the expertise of the instructor (Same as ARC 3823 and ID 3823)

ART 3873 Digital Photography: 3 hours.
(Prerequisites: ART 2103 or permission of instructor). Six hours studio. The techniques and aesthetics of digital imagery emphasizing the use of digital photographic input and output processes

ART 3913 Introduction to Print Production: 3 hours.
(Prerequisites:ART 3323 or consent of instructor). Six hours studio. This class is an introduction to digital print techniques, client work, and the responsibilities and role of graphic designers

ART 4000 Directed Individual Study in Art: 1-6 hours.
Hours and credits to be arranged

ART 4053 Watermedia Painting: 3 hours.
(Prerequisite:ART 3053) Six hours studio. An in-depth exploration of water based painting media utilitzing watercolor and acrylic mediums in the creation of a body of two dimensional artworks

ART 4083 Senior Research: 3 hours.
(Prerequisites: Senior Standing and consent of instructor, corequisite ART 4620). Three hours lecture. The application of research methods for the fine artist in contemporary society

ART 4093 Senior Thesis: 3 hours.
(Prerequisites: Senior Standing and consent of instructor, corequisite ART 4620). Three hours lecture. Execution of a thesis exhibition and portfolio materials

ART 4103 The Art of Typography and Layout I: 3 hours.
(Prerequisites: ART 2803, ART 2813). Six hours laboratory. The art and process of presenting written communication in graphic form

ART 4113 The Art of Typography and Layout II: 3 hours.
(Prerequisite: ART 4103/6103). Six hours studio. Advanced problems in presenting written communication in graphic form. Advanced problems as well as additional projects will be required for graduate credit

ART 4123 Screen Printing for Graphic Design: 3 hours.
(Prerequisite: ART 3313, ART 4103, or permission of Instructor). Six hours studio. An in-depth look at contemporary methods in designing and screen printing posters and shirts

ART 4124 Topics in Film: 4 hours.
Three hours lecture. Two hours lab. Repeatable under different subtitles with advisor approval. An advanced investigation of specific topics in Film, Film History, Directors, Genre, and/or approaches to its production. Readings and discussions, supplemented by lectures/labs and film screenings. (Same as CO 4124/6124 and EN 4124/6124)

ART 4143 Letterpress for Design: 3 hours.
Prerequisite: ART 3313, ART 4103, or permission of Instructor). Six hours studio. An in-depth look at contemporary methods of designing and letterpress printing identity, postcards and posters

ART 4223 Alternative Photography: 3 hours.
(Prerequisite: ART 2103 or consent of instructor.) One hour lecture. Four hours studio. Alternative photographic processes in black and white with emphasis on aesthetics

ART 4323 Advanced Printmaking: 3 hours.
(Prerequisite: ART 2303, ART 3303, and ART 3403). Six hours studio. Exploration of advanced printmaking concepts and techniques. Emphasizes refining a personal aesthetic using previously learned print processes with plate lithographic techniques

ART 4343 Drawing IV: 3 hours.
(Prerequisite: ART 2233 at both levels and consent of instructor for 6343). Six hours laboratory. A continuation of ART 2233 to develop further skills for advanced students

ART 4403 Advertising Design I: 3 hours.
(Prerequisite: ART 3323 and ART 4103/6103, and consent of instructor). Six hours laboratory. Course requiring ideational, image making, graphic design and typographic skills to meet rigorous conceptual/visual standards pertinent to creating a brand of a company's identity

ART 4413 Advertising Design II: 3 hours.
(Prerequisite: ART 4403/6403 and consent of instructor). Six hours laboratory. An advanced course requiring interaction on a professional level, working with realistic agency-client situations in order to develop efficient, distinguishable and competitive promotional campaigns

ART 4443 Alternative Color: 3 hours.
(Prerequisites: ART 2103 or permission of instructor). One hours lecture. Four hours studio. Alternative photographic processes in color with emphasis on aesthetics

ART 4453 Ceramics-Handbuilding: 3 hours.
(Prerequisites: ART 2503 or consent of instructor). Six hours studio. Advanced skills and professional practices focused on non-wheel forming techniques for creative expression in clay. May be taken twice for credit

ART 4463 Ceramics-Wheel Technique: 3 hours.
(Prerequisites: ART 2503 or consent of instructor.) Six hours studio. Advanced skills and professional practices focused on the potter’s wheel as a tool for creative expression. May be taken twice for credit

ART 4473 Ceramics-Glaze Formation: 3 hours.
(Prerequisites: ART 2503 or consent of instructor). Six hours studio. Advanced skills and professional practices focused on the chemistry of ceramic glazes and developing various application techniques. May be taken twice for credit

ART 4483 Ceramics-Professional Practices: 3 hours.
(Prerequisites: ART 2503 or consent of instructor). Six hours studio. Advanced skills with a focus on the development of a marketable aesthetic and professional practices. May be taken twice for credit

ART 4523 Internship in Graphic Art Design: 3 hours.
(Prerequisite: Art 3313 and senior standing). Supervised instruction Graphic Design. Advanced problems will be required for graduate credit. May be taken for credit more than once

ART 4533 Ceramic Art III: 3 hours.
(Prerequisites: ART 3503). Six hours studio. Advanced problems in glaze formulation, kiln technology and wheel thrown and hand built forms

ART 4573 Critical Issues in Recent Art: 3 hours.
(Prerequisite: ART 3603 or an equivalent course on 20th Century art and consent of instructor). Three hours lecture. Discussion of major developments and issues in contemporary art, focusing on the period 1980 to present

ART 4583 Photographic Portfolio I: 3 hours.
(Prerequisites: senior standing, Photography concentration majors or permission of instructor). Six hours studio. This course is an introduction to the professional practices in photography and the development of a portfolio. May be taken twice for credit

ART 4593 Photographic Portfolio II: 3 hours.
(Prerequisites: ART 4583 or consent of instructor). Six hours studio. This course is an extension of the professional practices in photography and the completion with an exhibition of a portfolio from ART 4583

ART 4600 Advanced Studio-Drawing: 3-9 hours.
May be taken for credit more than once. Hours and credit to be arranged and shall not exceed a total of nine hours for all advanced studies in any one semester. (Prerequisite: ART 4343 and permission of instructor). Advanced study in drawing. Further development of studio skills. Course encourages analysis and criticism, development of personal aesthetic, and further exploration of content and expression

ART 4610 Advanced Studio - Painting: 3-9 hours.
May be taken for credit more than once. Hours and credit to be arranged and shall not exceed a total of nine hours for all advanced studios in any one semester. (Prerequisite: Consent of instructor). This course develops advanced studio skills and professional practice. Course encourages analysis and criticism of aesthetic, social, ethical and related issues

ART 4620 Advanced Studio - Fine Arts: 1-9 hours.
(May be taken for credit more than once).(1-9) Hours and credit to be arranged and shall not exceed a total of nine hours for all advanced studies in one semester. (Prerequisite: Senior Standing and consent of instructor). This course develops advanced studio skills and professional practice. Course encourages analysis and criticism of aesthetic, social, ethical and related issues

ART 4630 Advanced Studio - Sculpture: 3-9 hours.
May be taken for credit more than once. Hours and credit to be arranged and shall not exceed a total of nine hours for all advanced studios in any one semester. Six hours studio. Further development of a personal sculptural aesthetic through media of choice

ART 4640 Advanced Studio - Graphic Design: 3-9 hours.
(3-9). May be taken for credit more than once. Hours and credit to be arranged and shall not exceed a total of nine hours for all advanced studios in any one semester. (Prerequisite: ART 4403 and consent of instructor). This course develops advanced studio skills and professional practice

ART 4650 Advanced Studio - Ceramics: 3-9 hours.
May be taken for credit more than once. Hours and credit to be arranged and shall not exceed a total of nine hours for all advanced studios in any one semester. This course develops advanced studio skills and professional practice. Course encourages analysis and criticism of aesthetic, social, ethical and related issues

ART 4660 Advanced Studio - Photography: 9 hours.
May be taken for credit more than once. Credit and hours to be arranged and shall not exceed a total of nine hours for all advanced studios in any one semester. Six hours studio. This course develops advanced studio skills and professional practice. Course encourages analysis and criticism of aesthetic, social, ethical and related issues

ART 4683 Photography Internship: 3 hours.
(Prerequisites: ART 2103 and consent of instructor). Three hours internship. A supervised professional work experience of 150 hours with a photographer or business in the field of photography

ART 4693 Internship in Fine Art: 3 hours.
May be taken for credit more than once. (Prerequisite: Consent of department head). Six hours laboratory. Supervised instruction and experience for professional art practice

ART 4713 Advanced Print Production: 3 hours.
(Prerequisite:ART 3913) Six hours studio. A more in-depth look at digital printing techniques through comprehensive work and the responsibilities and roles of graphic design

ART 4723 Advanced Concept Development: 3 hours.
(Prerequisite: ART 3323 and ART 4103) Six hour studio. Conceptual development is the primary goal, additionally students will have more comprehensive campaigns in their portfolios. The techniques can be applied to all design courses

ART 4733 Sculpture- Furniture Making: 3 hours.
(Prerequisites: ART 2403 or ID 4693 or permission of instructor). Six hours studio. An in-depth investigation into the design and execution of contemporary studio furniture. May be taken twice for credit

ART 4743 Sculpture- Metal Fabrication: 3 hours.
(Prerequisites: ART 2403 or consent of instructor). Six hours studio. Introduction to the history and techniques of metalworking including cutting, forming, welding, brazing, finishing, mechanics, kinetics and armature making. May be taken twice for credit

ART 4753 Sculpture- Materials and Processes: 3 hours.
(Prerequisites: ART 2403 or consent of instructor). Six hours studio. Introduction and exploration of materials and processes used in design and production of contemporary objects. May be taken twice for credit

ART 4773 Digital Drawing: 3 hours.
(Prerequisite: ART 2013; ART 2803; or ART 2103; or instructor approval). Six hours studio. Utilization of computer software, drawing tablets, cameras, and traditional media to create digital imagery

ART 4813 Introduction of Multimedia I Design and Authoring: 3 hours.
(Prerequisite: ART 3313 or Consent of instructor). One hour lecture, five hours laboratory. The design and authoring of interactive multimedia for fine and applied arts using desktop computers. Course encourages analysis and criticism of aesthetic and related issues

ART 4863 Advanced Studio - Computer Art and Design: 3 hours.
May be taken for credit more than once. (Prerequisite: Consent of instructor). Six hours laboratory. This course develops advanced studio skills and professional practice. Course encourages analysis and criticism of aesthetic, social, ethical and related issues

ART 4873 Digital Imaging: 3 hours.
(Prerequisite: Art 2103 or consent of instructor). Six hours studio. Application of computer software to generate digital imagery captured with lens-based and related media. Additional projects will be required for graduate credit

ART 4883 Graphic Design for the Internet: 3 hours.
(Prerequisite: ART 3313, open only to Graphic Design Majors, or Consent of Instructor). One hour lecture, five hours laboratory. An introduction to graphic design for the Internet, internet history, HTML, image manipulation, and the use of software to facilitate website design

ART 4893 Video Art: 3 hours.
(Prerequisites: ART 2103 or consent of instructor). Six hours studio. This course will address the use of an approved digital camera, computer, and video editing software for digital video input and editing of video in a fine arts context. Advanced problems will be required of graduate students

ART 4924 Film Theory: 4 hours.
Three hours lecture. One hour lab. This course will introduce students to major theoretical positions and modes of analysis used to understand the various frameworks in which to view, criticize, analyze, and (re)contextualize film. (Same as CO 4924/6924, EN 4924/6924)

ART 4990 Special Topics in Art: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

ART 6103 The Art of Typography and Layout I: 3 hours.
(Prerequisites: ART 2803, ART 2813). Six hours laboratory. The art and process of presenting written communication in graphic form

ART 6124 Topics in Film: 4 hours.
Three hours lecture. Two hours lab. Repeatable under different subtitles with advisor approval. An advanced investigation of specific topics in Film, Film History, Directors, Genre, and/or approaches to its production. Readings and discussions, supplemented by lectures/labs and film screenings. (Same as CO 4124/6124 and EN 4124/6124)

ART 6223 Alternative Photography: 3 hours.
(Prerequisite: ART 2103 or consent of instructor.) One hour lecture. Four hours studio. Alternative photographic processes in black and white with emphasis on aesthetics

ART 6630 Advanced Studio - Sculpture: 3-9 hours.
May be taken for credit more than once. Hours and credit to be arranged and shall not exceed a total of nine hours for all advanced studios in any one semester. Six hours studio. Further development of a personal sculptural aesthetic through media of choice

ART 6650 Advanced Studio - Ceramics: 3-9 hours.
May be taken for credit more than once. Hours and credit to be arranged and shall not exceed a total of nine hours for all advanced studios in any one semester. This course develops advanced studio skills and professional practice. Course encourages analysis and criticism of aesthetic, social, ethical and related issues

ART 6660 Advanced Studio - Photography: 3-9 hours.
May be taken for credit more than once. Credit and hours to be arranged and shall not exceed a total of nine hours for all advanced studios in any one semester. Six hours studio. This course develops advanced studio skills and professional practice. Course encourages analysis and criticism of aesthetic, social, ethical and related issues

ART 6773 Digital Drawing: 3 hours.
(Prerequisite: ART 2013; ART 2803; or ART 2103; or instructor approval). Six hours studio. Utilization of computer software, drawing tablets, cameras, and traditional media to create digital imagery

ART 6813 Introduction to Multimedia I Design and Authoring: 3 hours.
(Prerequisite: ART 3313 or Consent of instructor). One hour lecture, five hours laboratory. The design and authoring of interactive multimedia for fine and applied arts using desktop computers. Course encourages analysis and criticism of aesthetic and related issues

ART 6863 Advanced Studio - Computer Art and design: 3 hours.
May be taken for credit more than once. (Prerequisite: Consent of instructor). Six hours laboratory. This course develops advanced studio skills and professional practice. Course encourages analysis and criticism of aesthetic, social, ethical and related issues

ART 6883 Graphic Design for the Internet: 3 hours.
(Prerequisite: ART 3313, open only to Graphic Design Majors, or Consent of Instructor). One hour lecture, five hours laboratory. An introduction to graphic design for the Internet, internet history, HTML, image manipulation, and the use of software to facilitate website design

ART 6893 Video Art: 3 hours.
(Prerequisites: ART 2103 or consent of instructor). Six hours studio. This course will address the use of an approved digital camera, computer, and video editing software for digital video input and editing of video in a fine arts context. Advanced problems will be required of graduate students

ART 6990 Special Topics in Art: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

ART 7000 Directed Individual Study in Art: 1-6 hours.
Hours and credits to be arranged

ART 8000 Thesis Research/ Thesis in Art: 1-13 hours.
Hours and credits to be arranged

ART 8990 Special Topics in Art: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

Aerospace Studies - AFROTC Courses

AS 1012 Foundations of U.S. Air Force-I: 2 hours.
Fall semester. One hour lecture. One hour practicum. Surveys Air Force's role in contemporary world. Emphasis on strategic offensive and defensive forces

AS 1022 Foundations of U.S. Air Force-II: 2 hours.
Spring Semester. One hour lecture. One hour practicum. A continuation of AS 1012 with emphasis on general purpose and support forces

AS 2012 Air and Space Power-I: 2 hours.
Fall semester. One hour lecture. One hour practicum. Study of air power development and employment in support of national objectives and an examination of the evolution of air power concepts and doctrine

AS 2022 Air and Space Power-II: 2 hours.
Spring semester. One hour lecture. One hour practicum. A continuation of AS 2012 with emphasis on air power since WWII

AS 2523 Military Leadership I: 3 hours.
Three hours lecture. A study of leadership skills and concepts. This course is designed for students who are not pursuing a military commission. (Same as MS 2523)

AS 2990 Special Topics in Air Force Aerospace Studies: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

AS 3013 Air Force Leadership Studies-I: 3 hours.
(Prerequisites: AS 1012, AS 1022, AS 2012, and AS 2022 or permission of instructor). Fall semester. Three hours lecture. Two hours practicum. An integrated management course emphasizing leadership/management concepts and skills. Examines motivational and behavioral processes, leadership communication, decision making, ethics, organizational power, and managerial strategy

AS 3023 Air Force Leadership Studies-II: 3 hours.
(Prerequisites: AS 1012, AS 1022, AS 2012, AS 2022, and AS 3013 or permission of instructor). Spring semester. Three hours lecture. Two hour practicum. A continuation of AS 3013

AS 4000 Directed Individual Study in Air Force Aerospace Studies: 1-6 hours.
Hours and credits to be arranged

AS 4013 National Security Affairs and Preparation for Active Duty-I: 3 hours.
(Prerequisites: AS 1012, AS 1022, AS 2012, AS 2022, AS 3013, and AS 3023 or permission of instructor). Fall semester. Three hours lecture. Two hours practicum. Study of U.S. National Security Policy. Examines formulation, organization, and implementation of national security. Includes ethics, civil-military interaction, technology, and Laws of War

AS 4023 National Security Affairs and Preparation for Active Duty-II: 3 hours.
(Prerequisites: AS 1012, AS 1022, AS 2012, AS 2022, AS 3013, AS 3023, and AS 4013 or permission of instructor). Spring semester. Three hours lecture. Two hour practicum. A continuation of AS 4013

AS 4990 Special Topics in Air Force Aerospace Studies: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

Aerospace Engineering Courses

ASE 1013 Introduction to Aerospace Engineering: 3 hours.
(Prerequisite: credit or co-registration in MA 1713). Three hours lecture. Three hours laboratory. Historical perspectives of aerospace engineering and fundamentals of aerodynamics, the standard atmosphere, computer modeling and manufacturing, information technology, programming environments, computational tools

ASE 1501 Student Design Competition: 1 hour.
(Pre/co-requisite: Aerospace Engineering student with MSU GPA 2.5 or greater or permission of instructor). One hour practicum. Students participate in a department-sponsored design competition, contributing to design and fabrication tasks, writing weekly progress reports, contributing to competitive report and giving presentations

ASE 2013 Astrodynamics, Propulsion and Structures: 3 hours.
(Prerequisite: ASE 1013 and a grade of C or better in MA 1713 and credit or registsration in MA 1723 and PH 2213). Three hours lecture. Three hours laboratory. Introduction to space flight (astronautics), propulsion, flight vehicle structures and materials, and hypersonic vehicles, applications of computer modeling, computational tools, with historical perspectives

ASE 2113 Introduction to Aircraft and Spacecraft Performance: 3 hours.
(Prerequisite: ASE 2013 and grade of C or better in MA 1723 and PH 2213).Three hours lecture. Introduction to general aerodynamics, propulsive and structural considerations of flight mechanics, quasi-steady flight; accelerated and maneuvering flight;launch vehicle performance

ASE 2990 Special Topics in Aerospace Engineering: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

ASE 3123 Aircraft Attitude Dynamics: 3 hours.
(Prerequisite: EM 3413). Three hours lecture. Longitudinal, directional, and lateral static stability and control; related aerodynamics; maneuvering flight; introduction to dynamic stability and control analysis methods; general equation of unsteady motion

ASE 3213 Mechanics of Deformable Structures: 3 hours.
(Prerequisite:Grade of C or better in EM 3213 and MA 3113).Three hours lecture. Introduction to structural materials and loads. Deflection analysis using energy methods, flexibility-based matrix method, and the finite element method. Influence of design on deflection and vice versa

ASE 3223 Aerospace Structural Analysis: 3 hours.
(Prerequisite: Grade of C or better in EM 3213). Three hours lecture. Stress analysis of elastic and inelastic structures under different loading conditions. Shear flow distribution in thin-wall structures. Influence of design on stress and shear flow distributions

ASE 3233 Aerospace Structural Analysis I: 3 hours.
(Prerequisite: Grade of C or better in EM 3213). Three hours lecture. Introduction to elasticity, stress analysis of elastic and inelastic structures under different loading conditions. Shear flow distribution in thin-wall structures. Influence of design on stress and shear flow distributions

ASE 3243 Aerospace Structural Analysis II: 3 hours.
(Prerequisites: ASE 3233 and MA 3113). Three hours lecture. Deflection analysis using energy methods and the finite element method. Influence of design on deflection and vice versa

ASE 3313 Incompressible Aerodynamics: 3 hours.
(Prerequisite:Grade of C or better in EM 3313). Three hours lectures. Potential theory of bodies; airfoil theory and applications; finite wing theory and applications; introduction to Navier-Stokes equations; laminar boundary layers; turbulent boundary layers

ASE 3333 Aerothermodynamics: 3 hours.
(Prerequisites:Grade of C or better in MA 2733 and PH 2213). Three hours lecture. Energy; First and Second Laws of Thermodynamics; Entropy; Properties of Ideal Gases, Gas Power Cycles; Introduction to Heat Transfer

ASE 3813 Introduction to Orbital Mechanics: 3 hours.
(Prerequisities:Grade of C or better in EM 2433, MA 3253 and MA 3113).Three hours lecture. Two-body orbital mechanics;geometry of spatial orbits; fundamental orbits determination;orbital maneuvers; introduction to rendezvous and interplanetary trajectories

ASE 3823 Spacecraft Attitude Dynamics: 3 hours.
(Prerequisite: EM 3413). Three hours lecture. Motion of spacecraft about center of gravity. Rigid body dynamics and rotational kinematics. Mission pointing requirements and design of the attitude determination and control system

ASE 4000 Directed Individual Study in Aerospace Engineering: 1-6 hours.
Hours and credits to be arranged

ASE 4113 Aerospace Engineering Laboratory I: 3 hours.
(Prerequisites: Credit or registration in EM 3413 and GE 3513.) Six hours laboratory. Experimental techniques used in aerospace engineering

ASE 4123 Aerospace Controls: 3 hours.
(Prerequisite: ASE 3123 or ASE 3823). Three hours lecture. Methods of dynamic analysis; stability of steady flight; response to actuation of the controls (open loop); closed-loop control ;human crew/vehicle interactions

ASE 4133 Automatic Control of Aerospace Vehicles: 3 hours.
(Prerequisite: ASE 4123). Three hours lecture. Optimization techniques; structural flexibility effects; statistical design; sample-data control systems

ASE 4153 Advanced Performance: 3 hours.
(Prerequisite: ASE 2113 or consent of instructor). Three hours lecture. Performance methods use for current aeronautical vehicles. Configurations considered are sailplanes, V/STOL aircraft, subsonic/supersonic transports, and fighters

ASE 4163 Introduction to Flight Test Engineering: 3 hours.
(Prerequisite:ASE 3313,ASE 4123).Three hours lecture. Introduction to the techniques of aeronautical flight test engineering. Supplements Aerospace curriculum Pitot/static systems, and introduces fixed-wing flight test engineering, data reduction,certification, flight-test risk assessment/mitigation, and fligt crew-station analysis procedures

ASE 4233 Structural Dynamics: 3 hours.
(Prerequisite: EM 3413). Three hours lecture. Influence coefficients; matrix methods; Lagrange's equations of motion; divergence on an airfoil; introduction to flutter

ASE 4343 Compressible Aerodynamics: 3 hours.
(Prerequisites:ASE 3333 & Grade of C or better in EM 3313). Three hours lecture. Equations of motion for multidimensional flow; oblique shock waves; Prandtl Meyer flow; internal flow; method of characteristics; linearized flows; compressible wing theory; compressible boundary layers

ASE 4353 Combustion Theory and Modeling: 3 hours.
(Prerequisite: Grade C or better in ASE 3333 or CHE 3113 or ME 3513 or Instructor Consent). Three-hour lecture. Acquisition of theoretical basis of thermodynamics, chemical kinetics, and fluid physics for describing flames and combustion. Exploration of state-of-the-art problem-solving techniques and software tools. (Same as EM 4353/6353)

ASE 4413 Aircraft Propulsion: 3 hours.
(Prerequisites: ASE 3333 and ASE 4343). Three hours lecture. Aerothermodynamics of aircraft jet engines and gas turbine engines components;nozzles;turbines; compressors;diffusers;introduction to piston engines; propellers and propeller performance estimation

ASE 4423 Introduction to Computational Fluid Dynamics: 3 hours.
(Prerequisite: Consent of instructor). Three hours lecture. Elementary aspects of computational fluid dynamics (CFD); review of numerical analysis and fluid mechanics as pertinent to CFD; numerical solution to selected fluid dynamic problems

ASE 4433 Fundamentals of Numerical Grid Generation: 3 hours.
(Prerequisite: Consent of instructor). Three hours lecture. Grid Generation strategies; effects of grid quality on discetization errors; structured and unstructured grid generation algorithms; solution adaptive grid generation; surface grid generation

ASE 4443 Spacecraft Propulsion: 3 hours.
(Prerequisites:ASE 3333 and ASE 4343) Three hours lecture. Nozzles and thermochemistry.Componets, design and performance of liquid propellant, solid propellant,hybrid and electric rocket propulsion systems

ASE 4513 Aircraft Design I: 3 hours.
(Prerequisites: ASE 3123; and ASE 3313; and ASE 3243 or ASE 3223). Two hours lecture. Three hours laboratory. Introduction to the principles and techniques of aircraft design. Introduction to systems engineering and requirements analysis; design optimization; layout; weight; performance

ASE 4523 Aircraft Design II: 3 hours.
(Prerequisite: ASE 4513). One hour lecture. Five hours laboratory. Continuation of ASE 4513. Students make use of principles and techniques covered in ASE 4513 to create a design of an aircraft

ASE 4533 Spacecraft Design I: 3 hours.
(Prerequisites: ASE 3223 or ASE 3243, ASE 3813, ASE 3823). Two hours lecture. Three hours laboratory. Introduction to the principles and techniques of spacecraft and mission design. Systems engineering and requirement analysis, spacecraft system characteristics and mission phases

ASE 4543 Spacecraft Design II: 3 hours.
(Prerequisite:ASE 4533) One hour lecture. Five hours laboratory. Continuation of ASE 4533, Spacecraft Design I. Application of design concepts and principles. Concentration on systems engineering, detail design, life cycle cost, manufacturing and operations

ASE 4553 Engineering Design Optimization: 3 hours.
(Prerequisite:Consent of Instructor).Three hours lecture. Introduction to optimality criteria and optimization techniques for solving constrained or unconstrained optimization problems. Sensitivity analysis and approximation. Computer application in optimization. Introduction to MDO. (Same as EM 4143/6143 and IE 4743/6743)

ASE 4623 Aerospace Structural Design: 3 hours.
(Prerequisite: ASE 3223 or ASE 3233). Three hours lecture. Principles of design and manufacture of aerospace structures. General theories of stability and failure with applications. Design optimization, fabrication, and testing of structural members

ASE 4713 Introduction to Unmanned Aircraft Systems: 3 hours.
Three-hour lecture. This course provides an introduction to various aspects involved in design and operation of unmanned aircraft systems. With the increasing use of UAS in civilian and military roles, future engineers will benefit from a systems perspective of unmanned aircraft systems

ASE 4721 Aerospace Engineering Laboratory II: 1 hour.
(Prerequisite: ASE 4113). Three hours laboratory. Experimental techniques used in aerospace engineering

ASE 4813 Advanced Orbital Mechanics: 3 hours.
(Prerequisite: ASE 3813). Three hours lecture. Orbital mechanics; perturbations and numerical integration. Global positioning system, launch performance and optimization

ASE 4990 Special Topics in Aerospace Engineering: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

ASE 6013 Directed Project in Aerospace Engineering: 3 hours.
(Contact hours and title to be arranged). An individual professional project open only to candidates for the Master of Science degree (non-thesis option) Formal written and oral project reports are required

ASE 6133 Automatic Control of Aerospace Vehicles: 3 hours.
(Prerequisite: ASE 4123). Three hours lecture. Optimization techniques; structural flexibility effects; statistical design; sample-data control systems

ASE 6153 Advanced Performance: 3 hours.
(Prerequisite: ASE 2113 or consent of instructor). Three hours lecture. Performance methods use for current aeronautical vehicles. Configurations considered are sailplanes, V/STOL aircraft, subsonic/supersonic transports, and fighters

ASE 6163 Introduction to Flight Test Engineering: 3 hours.
(Prerequisite:ASE 3313,ASE 4123).Three hours lecture. Introduction to the techniques of aeronautical flight test engineering. Supplements Aerospace curriculum Pitot/static systems, and introduces fixed-wing flight test engineering, data reduction,certification, flight-test risk assessment/mitigation, and fligt crew-station analysis procedures

ASE 6233 Structural Dynamics: 3 hours.
(Prerequisite: EM 3413). Three hours lecture. Influence coefficients; matrix methods; Lagrange's equations of motion; divergence on an airfoil; introduction to flutter

ASE 6353 Combustion Theory and Modeling: 3 hours.
(Prerequisite: Grade C or better in ASE 3333 or CHE 3113 or ME 3513 or Instructor Consent). Three-hour lecture. Acquisition of theoretical basis of thermodynamics, chemical kinetics, and fluid physics for describing flames and combustion. Exploration of state-of-the-art problem-solving techniques and software tools. (Same as EM 4353/6353)

ASE 6423 Introduction to Computational Fluid Dynamics: 3 hours.
(Prerequisite: Consent of instructor). Three hours lecture. Elementary aspects of computational fluid dynamics (CFD); review of numerical analysis and fluid mechanics as pertinent to CFD; numerical solution to selected fluid dynamic problems

ASE 6433 Fundamentals of Numerical Grid Generation: 3 hours.
(Prerequisite: Consent of instructor). Three hours lecture. Grid Generation strategies; effects of grid quality on discetization errors; structured and unstructured grid generation algorithms; solution adaptive grid generation; surface grid generation

ASE 6553 Engineering Design Optimization: 3 hours.
(Prerequisite:Consent of Instructor).Three hours lecture. Introduction to optimality criteria and optimization techniques for solving constrained or unconstrained optimization problems. Sensitivity analysis and approximation. Computer application in optimization. Introduction to MDO. (Same as EM 4143/6143 and IE 4743/6743)

ASE 6713 Introduction to Unmanned Aircraft Systems: 3 hours.
Three-hour lecture. This course provides an introduction to various aspects involved in design and operation of unmanned aircraft systems. With the increasing use of UAS in civilian and military roles, future engineers will benefit from a systems perspective of unmanned aircraft systems

ASE 6813 Advanced Orbital Mechanics: 3 hours.
(Prerequisite: ASE 3813). Three hours lecture. Orbital mechanics; perturbations and numerical integration. Global positioning system, launch performance and optimization

ASE 6990 Special Topics in Aerospace Engineering: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

ASE 7000 Directed Individual Study in Aerospace Engineering: 1-6 hours.
Hours and credits to be arranged

ASE 8000 Thesis Research/ Thesis in Aerospace Engineering: 1-13 hours.
Hours and credits to be arranged

ASE 8313 Advanced Compressible Aerodynamics I: 3 hours.
(Prerequisite: ASE 4343 or equivalent). Three hours lecture. Derivation of complete equations for compressible fluid flow; unsteady one-dimensional flows; method of characteristics; flow about two-dimensional and axis-symmetric shapes; integral methods

ASE 8323 Advanced Compressible Aerodynamics II: 3 hours.
(Prerequisite: ASE 8313). Three hours lecture. Perturbation theory for wings and bodies; optimum wing and body shapes; wing-body interference; transonic flows, hypersonic flows

ASE 8343 Incompressible Viscous Laminar Flow: 3 hours.
(Prerequisite: Consent of instructor). Three hours lecture. Incompressible Navier-Stokes equations; properties and exact solutions; laminar boundary layer equations; two- and three-dimensional solutions; time-dependent solutions; approximate solutions; boundary layer control

ASE 8353 Turbulent Flow: 3 hours.
(Prerequisite: ASE 8343). Three hours lecture. Origins of turbulence; stability statistical theory of turbulence; isotropic and non-isotropic turbulence; equations of turbulent flow; turbulent boundary layer; free turbulent flow

ASE 8363 Computational Heat Transfer: 3 hours.
(Prerequisite: Consent of Instructor). Three hours lecture. Application of numerical techniques to elliptic and parabolic problems in engineering heat transfer and fluid flow. Discretization techniques; linearization; stability analysis. (Same as ME 8363)

ASE 8413 Computational Fluid Dynamics I: 3 hours.
(Prerequisite: Consent of instructor). Three hours lecture. Review of relevant numerical analysis; one dimensional methods; compressible inviscid methods, Euler Equation methods, inviscid-viscous interaction methods; current literature

ASE 8423 Computational Fluid Dynamics II: 3 hours.
(Prerequisite: ASE 8413 or equivalent). Three hours lecture. Compressible Viscous Methods; Navier-Stokes equation methods; turbulence models; incompressible methods; panel methods; finite element methods, current literature

ASE 8853 Statistical Orbit Determination: 3 hours.
(Prerequisite:ASE 4813/6813 or consent of instructor). Three hours lecture. Review of matrix and statistical concepts. Overview of orbit determination problem. Least squares:sequential and batch processors; square-root filters; discrete and continuous Kalman filters

ASE 8863 Optimal Control of Dynamic Systems: 3 hours.
(Prerequisite:ASE 4123 or ECE 4913/6913 or equivalent). Three hours lecture. State variable description of systems: maximum principle of Pantryagin,dynamic programming, optimization of linear systems with quadratic performance measures;time optimal and fuel optimal systems. (Same as ECE 8943)

ASE 8990 Special Topics in Aerospace Engineering: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

ASE 9000 Dissertation Research/ Dissertation in Aerospace Engineering: 1-13 hours.
Hours and credits to be arranged

Biochemistry Courses

BCH 1001 Introduction to Biochemistry: 1 hour.
One hour lecture. A course to acquaint the beginning students with the overall concepts of biochemistry and molecular biology. Current research will be described. Offered every year

BCH 1011 First Year Seminar: 1 hour.
One hour lecture. First-year seminars explore a diverse arrary of topics that provide students with an opportunity to learn about a specific discipline from skilled faculty members

BCH 2013 Introduction to Forensic Science: 3 hours.
(Prerequsite BIO 1134, BIO 1144 or consent of instructor). Three hours lecture. Introduction to the field of forensic science, including areas of trace evidence, DNA, drug analysis, and an overview of forensic science techniques and technologies

BCH 2990 Special Topics in Biochemistry, Molecular Biology, Entomology and Plant Pathology: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

BCH 3901 Senior Seminar: 1 hour.
(Prerequisite: BCH 4613/6613). Each student will prepare and present a formal paper based on independent study of the literature and undergraduate research investigations

BCH 4000 Directed Individual Study in Biochemistry, Molecular Biology, Entomology, and Plant Pathology: 1-6 hours.
Hours and credits to be arranged

BCH 4013 Principles of Biochemistry: 3 hours.
(Prerequisite: CH 2503, BIO 1134 or equivalent.) Three hours lecture. A survey of biochemistry designed to provide the non-major with a comprehensive background in the field. (Credit will not be given to students matriculating in the Biochemistry or Molecular Biology degree programs.)

BCH 4100 Biochemistry and Molecular Biology Internship: 1-6 hours.
Internship (1 to 6 Hours). Credit hours to be arranged. Supervised work, career shadowing, or research experience in disciplines related to biochemistry and molecular biology in an appropriate setting approved by the faculty advisor. (May be taken more than once for credit)

BCH 4113 Essentials of Molecular Genetics: 3 hours.
Three hours lecture. A survey of molecular biology and genetics designed to provide the non-major with a comprehensive background in the field. (Credit will not be given to students matriculating in the Biochemistry or Molecular Biology degree program)

BCH 4253 Macronutrients: Human Metabolism: 3 hours.
(Prerequisites: FNH Majors: Grade of "C" or better or concurrent enrollment in BCH 4013 and Junior or Senior Standing; or BCH Major). Three hours face-to-face lecture or web-based distance instruction. In-depth study of the chemistry and functionality of macronutrients in food systems and their biochemical impact on the human body. (Same as FNH 4253/6253)

BCH 4333 Advanced Forensic Science: 3 hours.
(Prerequisite:BCH 4013/6013 or BCH 4603/6603 and BCH 4613/6613; or consent of instructor). Three hours lecture. An advanced study of the central concepts in forensic science as they relate to physiology, biochemistry and statistics

BCH 4414 Protein Methods: 4 hours.
(Prerequisite: Coregistration in BCH 4603/6603). Two hours lecture. Four hours laboratory. A comprehensive course to teach the student the modern methods of protein biochemistry

BCH 4443 Introduction to Public Health: 3 hours.
(Prerequisite BIO 1134, BIO 1144 or consent of instructor). Three hours lecture. Introduction to the field of Public Health. Includes an overview of historic and existing health problems and disparities unique to the United States and Southeast and an overview of related epidemiological methods

BCH 4503 Scientific Communication Skills: 3 hours.
(Prerequisites:Undergraduate, non-BCH majors-junior or senior standing;BCH majors co-registration in BCH 4414 or consent of instructor, or Graduate standing). Three hours lecture. Introduction to developing information literature and survey of data manipulation and presentation skills

BCH 4603 General Biochemistry I: 3 hours.
(Prerequisites: CH 4564, CH 4523/6523 or consent of instructor). Three hours lecture. BCH 4603/6603 must be completed before student may enroll in BCH 4613/6613. Detailed studies of the structure and metabolism of carbohydrates, lipids, proteins, nucleic acids, enzymes, and coenzymes

BCH 4613 General Biochemistry II: 3 hours.
(Prerequisites: CH 4564, CH 4523/6523 or consent of instructor). Three hours lecture. BCH 4603/6603 must be completed before student may enroll in BCH 4613/6613. Detailed studies of the structure and metabolism of carbohydrates, lipids, proteins, nucleic acids, enzymes, and coenzymes

BCH 4623 Biochemistry of Specialized Tissues: 3 hours.
(Prerequisite: Coregistration in BCH 4613/6613). A continuation of BCH 4613/6613 to include a study of specialized tissues, hormones, acid-base balance in animals and other physiological parameters of biochemistry

BCH 4713 Molecular Biology: 3 hours.
(Prerequisite: Coregistration in BCH 4613/6613). Three hours lecture. A study of basic molecular process such as synthesis of DNA, RNA, and protein in both prokaryotic and eukaryotic cells. Offered fall semester. (Same as GNS 6713)

BCH 4804 Molecular Biology Methods: 4 hours.
(Prerequisite:Coregistration in BCH 4613/6613). Two hours lecture. Four hours laboratory. A comprehensive course to teach the student the modern methods of molecular biology. (Same as GNS 4804/6804),

BCH 4990 Special Topics in Biochemistry, Molecular Biology, Entomology and Plant Pathology: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

BCH 6013 Principles of Biochemistry: 3 hours.
(Prerequisite: CH 2503, BIO 1134 or equivalent.) Three hours lecture. A survey of biochemistry designed to provide the non-major with a comprehensive background in the field. (Credit will not be given to students matriculating in the Biochemistry or Molecular Biology degree programs.)

BCH 6113 Essentials of Molecular Genetics: 3 hours.
Three hours lecture. A survey of molecular biology and genetics designed to provide the non-major with a comprehensive background in the field. (Credit will not be given to students matriculating in the Biochemistry or Molecular Biology degree program)

BCH 6253 Macronutrients: Human Metabolism: 3 hours.
(Prerequisites: FNH Majors: Grade of "C" or better or concurrent enrollment in BCH 4013 and Junior or Senior Standing; or BCH Major). Three hours face-to-face lecture or web-based distance instruction. In-depth study of the chemistry and functionality of macronutrients in food systems and their biochemical impact on the human body. (Same as FNH 4253/6253)

BCH 6333 Advanced Forensic Science: 3 hours.
(Prerequisite:BCH 4013/6013 or BCH 4603/6603 and BCH 4613/6613; or consent of instructor). Three hours lecture. An advanced study of the central concepts in forensic science as they relate to physiology, biochemistry and statistics

BCH 6414 Protein Methods: 4 hours.
(Prerequisite: Coregistration in BCH 4603/6603). Two hours lecture. Four hours laboratory. A comprehensive course to teach the student the modern methods of protein biochemistry

BCH 6443 Introduction to Public Health: 3 hours.
(Prerequisite BIO 1134, BIO 1144 or consent of instructor). Three hours lecture. Introduction to the field of Public Health. Includes an overview of historic and existing health problems and disparities unique to the United States and Southeast and an overview of related epidemiological methods

BCH 6503 Scientific Communication Skills: 3 hours.
(Prerequisites:Undergraduate, non-BCH majors-junior or senior standing;BCH majors co-registration in BCH 4414 or consent of instructor, or Graduate standing). Three hours lecture. Introduction to developing information literature and survey of data manipulation and presentation skills

BCH 6603 General Biochemistry I: 3 hours.
(Prerequisites: CH 4564, CH 4523/6523 or consent of instructor). Three hours lecture. BCH 4603/6603 must be completed before student may enroll in BCH 4613/6613. Detailed studies of the structure and metabolism of carbohydrates, lipids, proteins, nucleic acids, enzymes, and coenzymes

BCH 6613 General Biochemistry II: 3 hours.
(Prerequisites: CH 4564, CH 4523/6523 or consent of instructor). Three hours lecture. BCH 4603/6603 must be completed before student may enroll in BCH 4613/6613. Detailed studies of the structure and metabolism of carbohydrates, lipids, proteins, nucleic acids, enzymes, and coenzymes

BCH 6623 Biochemistry of Specialized Tissues: 3 hours.
(Prerequisite: Coregistration in BCH 4613/6613). A continuation of BCH 4613/6613 to include a study of specialized tissues, hormones, acid-base balance in animals and other physiological parameters of biochemistry

BCH 6713 Molecular Biology: 3 hours.
(Prerequisite: Coregistration in BCH 4613/6613). Three hours lecture. A study of basic molecular process such as synthesis of DNA, RNA, and protein in both prokaryotic and eukaryotic cells. Offered fall semester. (Same as GNS 6713)

BCH 6804 Molecular Biology Methods: 4 hours.
(Prerequisite:Coregistration in BCH 4613/6613). Two hours lecture. Four hours laboratory. A comprehensive course to teach the student the modern methods of molecular biology. (Same as GNS 4804/6804),

BCH 6990 Special Topics in Biochemistry, Molecular Biology, Entomology and Plant Pathology: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

BCH 7000 Directed Individual Study in Biochemistry, Molecular Biology, Entomology and Plant Pathology: 1-6 hours.
Hours and credits to be arranged

BCH 8000 Thesis Research/ Thesis in Biochemistry, Molecular Biology, Entomology and Plant Pathology: 1-13 hours.
Hours and credits to be arranged

BCH 8101 Seminar: 1 hour.
Review of current literature; individual presentation of research or classical topics. Course can be taken twice for credit

BCH 8243 Molecular Biology of Plants: 3 hours.
(Prerequisite: Coregistration in BCH 4613/6613). Three hours lecture. A study of plant development at the molecular level. Emphasis will be placed on the influence of nucleic acid metabolism on plant development

BCH 8631 Topics in Genomics: 1 hour.
(Prerequisites:PSS/BCH 8653 or BCH 4713/6713 or BCH 8643). Review and discussion of classic and current genomics literature;individual presentation of a seminar highlighting an area of genomics research. (Same as PSS 8631)

BCH 8633 Enzymes: 3 hours.
(Prerequisites: BCH 4613/6613). Three hours lecture. A study of enzymes; their purification, classification, kinetics and mechanisms

BCH 8643 Molecular Genetics: 3 hours.
(Prerequisites: PO 3103, or BIO 3103, and Coregistration in BCH 5613/7613). Three hours lecture. Study of the gene and its expression with emphasis on structure and function in higher organisms. (Same as GNS 8643)

BCH 8653 Genomes and Genomics: 3 hours.
(Prerequisites:BCH 4113/6113 or BCH 4713/6713 or BCH 8643 or consent of instructor). Overview of genome structure and evolution with emphasis on genomics, the use of molecular biology, robotics, and advanced computational methods to efficiently study genomes. (Same as PSS 8653)

BCH 8654 Intermediary Metabolism: 4 hours.
(Prerequisite: BCH 4613/6613). Four hours lecture. An advanced in-depth study of anabolic and catabolic pathways involved in cellular metabolism. Bioenergetics and control mechanisms will be emphasized

BCH 8990 Special Topics in Biochemistry, Molecular Biology, Entomology and Plant Pathology: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

BCH 9000 Dissertation Research/ Dissertation in Biochemistry,Molecular Biology,Entomology and Plant Pathology: 1-13 hours.
Hours and credit to be arranged

Building Construction Science Courses

BCS 1001 First Year Seminar: 1 hour.
One hour lecture. First-year seminars explore a diverse array of topics that provide students with an opportunity to learn about a specific discipline from skilled faculty members

BCS 1013 Architecture Appreciation: 3 hours.
Three hours lecture. Illustrated study of architecture's role in shaping the quality of man's environment. Architectural history, design theory, and process as it affects daily life. Intended for non-majors. (Same as ARC 1013)

BCS 1116 Building Construction Studio A: 6 hours.
(Prerequisites: MA 1323 or ACT Math sub-score 24). Twelve hours laboratory. Introduction to construction materials and methods, construction drawing and modeling, building systems, project life cycles and management, and professional thinking and action

BCS 1126 Building Construction Studio B: 6 hours.
(Prerequisite:BCS 1116). Twelve hours laboratory. Development of building assemblies and construction sequencing, drawings and computer applications, project management skills, and professional thinking and action

BCS 2116 Building Construction Studio 1: 6 hours.
(Prerequisite: BCS 1126). Twelve hours laboratory. In depth examination of building construction materials and methods, systems, construction drawing and details, and construction finishes

BCS 2226 Building Construction Studio 2: 6 hours.
(Prerequisite: BCS 2116). Twelve hours laboratory. In depth study of building assemblies and systems, fabrication, construction methods and sequences, computer modeling and analysis, and design and construction integration

BCS 2713 Passive Building Systems: 3 hours.
(Prerequisite: Architecture majors-ARC 1546 and PH 1123; BCS majors-PH 1123; others-instructor consent). Three hours lecture. Investigation of the morphological impacts of various environmental energies on building forms/systems. Includes light, climatic, and ecological factors. Same as ARC 2713

BCS 3006 Construction Internship/Co-Op: 6 hours.
(Prerequisite: BCS 2116 and consent of instructor) Supervised professional work experience of 480 hours with a professional construction firm in which the student obtains on-the-job experience in aspects of construction management

BCS 3116 Building Construction Studio 3: 6 hours.
(Prerequisite: BCS 2226). Twelve hours laboratory. In depth study health and safety, project management, construction management, plant and equipment management, logistics and operations management, and building pathology

BCS 3126 Building Construction Studio 4: 6 hours.
(Prerequisite: BCS 3116). Twelve hours laboratory. In-depth evaluation of the principles and applications of construction productivity, estimating and bidding procedures, cost alternatives, scheduling, sequencing, budgeting and project cashflow management

BCS 3213 Mechanical and Electrical Systems: 3 hours.
(Prerequisite: BCS 3723). Three hours lecture. A detailed examination of the design and construction of building electrical systems

BCS 3323 High Performance Construction: 3 hours.
(Prerequisite: BCS 3116). Three hours lecture. Advanced building fabrication and construction systems are explored including high-performance construction materials such as fiber-reinforced cement, fiber-reinforced plastics, polymeric materials, geosynthetics, masonry materials and coatings

BCS 3723 Active Building Systems: 3 hours.
(Prerequisites: ARC majors-ARC 2546 and ARC 2713; BCS majors-BCS 2713 and BCS 2116; others-consent of instructor). Three hours lecture. Concentrates on defining the mechanical and electrical (active) techniques available to architects for integrating thermal comfort and life safety into the built form. (Same as ARC 3723)

BCS 3904 Structures I: 4 hours.
(Prerequisite: MA 1613 and either ARC 2546 or BCS 1126). Three hours lecture. Three hours laboratory. Application of the principles of statics and the strength of materials on structural elements. Construction material. (Same as ARC 3904)

BCS 3914 Structures II: 4 hours.
(Prerequisite: ARC 3904 or BCS 3904). Three hours lecture. Two hours laboratory. Design and analysis of structural elements as part of frames and other structural systems. (Same as ARC 3914)

BCS 4000 Directed Individual Study in Building Construction Science: 1-6 hours.
Hours and credits to be arranged

BCS 4116 Building Construction Studio 5: 6 hours.
(Prerequisite: BCS 3126). Twelve hours laboratory. In-depth evaluation of the legal and contractual environment for construction activities/projects. Emphasis on specifications; dispute resolution; construction contracts and procurement systems; and project delivery modeling

BCS 4126 Building Construction Studio 6: 6 hours.
(Prerequisite: BCS 4116). Twelve hours laboratory. In-depth study of project controls, risk management, strategic management, construction accounting, facilities and maintenance management, and international construction and contracting

BCS 4222 Professional Communication and Practice: 2 hours.
(Prerequisite: BCS 3126). Two hour lecture. Construction practice is reviewed in the broader context of ethics and the built environment. Emphasis on developing professional communication

BCS 4223 Professional Practice: 3 hours.
(Prerequisistes:BCS 3126) Three hours lecture. Construction ethics are reviewed in the broader context of architecture relative to social responsibility. Additional exploration includes professional ethics and emerging best practices

BCS 4990 Special Topics in Building Construction Science: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

BCS 7000 Directed Individual Study in Building Contruction Science: 1-6 hours.
Hours and credits to be arranged

Biological Sciences Courses

BIO 1004 Anatomy and Physiology: 4 hours.
(Prerequisite: a course in the biological sciences). Three hours lecture. Two hours laboratory. For non-science majors. The structure and function of the human body with special emphasis on the muscular, nervous, circulatory, respiratory, digestive, urinary and reproductive systems

BIO 1011 First Year Seminar: 1 hour.
One hour lecture. First-year seminars explore a diverse arrary of topics that provide students with an opportunity to learn about a specific discipline from skilled faculty members

BIO 1023 Plants and Humans: 3 hours.
Two hours lecture. Two hours laboratory. For non-science majors. Students may not have credit for both BIO 1023 and BIO 1203 nor for both BIO 1023 and BIO 1033, nor for both BIO 1023 and BIO 2113, nor for both BIO 1023 and general biology courses transferred from other institutions. A survey of botany intended to introduce students to the world of plants, particularly emphasizing their relationships with humans and society

BIO 1123 Animal Biology: 3 hours.
Two hours lecture. Two hours laboratory. For non-science majors. Students may not have credit for both BIO 1123 and BIO 1504 . Basic understanding of life processes, diversity, inheritance, reproduction, ecology, and evolution

BIO 1134 Biology I: 4 hours.
Three hours lecture. Two hours laboratory. Principles of Biology including nature of science, chemistry of life, cell structure and division, cellular respiration, photosynthesis, Mendelian, chromosomal and molecular genetics, evolution, and ecology

BIO 1144 Biology II: 4 hours.
Three hours lecture. Two hours laboratory. Form and function of organisms including body plans and phylogeny,human evolution, plant anatomy and physiology, animal anatomy and physiology,reproduction, development, and animal behavior

BIO 2103 Cell Biology: 3 hours.
(Prerequisites: 6 hours of biology, CH 1223). Three hours lecture. A comparative study of cell structure among plant, animal and bacterial systems

BIO 2113 Plant Biology: 3 hours.
(Prerequisite: BIO 1134). Two hours lecture. Two hours laboratory. An introduction to the biology of vascular plants, including physiology, anatomy and morphology development, genetics, evolution and diversity, ecology and applied botany

BIO 2123 Ethical Issues in Biology: 3 hours.
(Prerequisite: BIO 1134 or equivalent). Three hours lecture. This course will cover ethical analysis of current biological research issues involved in our understanding of life. Course emphasis will be directed upon issues arising from recent advances in molecular, cellular and organismal biology. Honors section available

BIO 2213 Survey Plant Kingdom: 3 hours.
Two hours lecture. Two hours laboratory. A survey of algae, bryophytes, vascular plants, and fungi, with emphasis on morphology, internal anatomy, life cycles fossil record, and evolutionary relationships

BIO 2313 Ecosystems of Mississippi: 3 hours.
(Prerequisite: BIO 1123 or equivalent). Three hours lecture. History and ecological processes of major ecosystems of Mississippi. (Credit for this course may be earned only at the Meridian campus)

BIO 2503 Environmental Quality: 3 hours.
Three hours lecture. (Prerequisite: One course in biology). Relevance of ecological principles to environmental problems and relationships of humans with their environment with emphasis on preservation of environmental quality

BIO 2513 Animal Diversity: 3 hours.
(Pre-requisites: BIO 1134 and BIO 1144). Two hours lecture. Three hours laboratory. An introduction to evolutionary relationships and diversity of major invertebrate and vertebrate phyla, and animal behaviors, distributions, and ecology

BIO 2990 Special Topics in Biological Sciences: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

BIO 3004 Human Anatomy: 4 hours.
Three hours lecture. Two hours laboratory. Study of the human body with emphasis in anatomical terminology, overview of tissues, and body organization from cellular level to body system level

BIO 3013 Professional Writing for Biologists: 3 hours.
(Prerequisite: Junior/Senior standing in BIO, MIC, or MDT, or consent of instructor). Three hours lecture. Refinement of writing skills for more effective communications. Assignments to include routine and specialized correspondence, technical reports, and speech preparation and delivery

BIO 3014 Human Physiology: 4 hours.
(Prerequisites: BIO 1134 and CH 1213, or BIO 2004 and CH 1043 or equivalent) Three hours lecture. Two hours laboratory. Comprehensive examination of the function and regulation of the human body and physiological integration of organ systems to maintain homeostasis

BIO 3103 Genetics I: 3 hours.
Two hours lecture. Two hours laboratory. (Prerequisites: MA 1313 or higher, BIO 1134 or higher or BIO 2113 or higher). Principles of heredity, genetic material, and gene expressions. (Same as GNS 3103, PO 3103)

BIO 3104 Ecology: 4 hours.
(Prerequisite: BIO 1134). Three hours lecture. Three hours laboratory. A general survey of ecological principles and concepts pertaining to plants and animals with reference to ecosystem structure and function, and interactions among ecosystem components

BIO 3113 Marine Biology: 3 hours.
(Prerequisite: BIO 1134 or equivalent.) Three hours lecture. An introduction to marine environments, the diversity of life in the different marine habitats and human utilization of marine resources

BIO 3213 Biology of Reptiles and Amphibians: 3 hours.
Two hours lecture, two hours laboratory. For non-science majors. Evolution, systematic, biology and ecology of reptiles and amphibians. (Credit for his course may be earned only at the Meridian campus)

BIO 3223 Biology of Fishes: 3 hours.
(Prerequisite: BIO 1123 or equivalent). Two hours lecture, two hours laboratory. For non-science majors. Evolution, systematics, biology and ecology of fishes. (Credit for this course may be earned only at the Meridian campus)

BIO 3233 Biology of Birds: 3 hours.
(Prerequisite: BIO 1123 or equivalent). Two hours lecture, two hours laboratory. For non-science majors. Evolution, systematics, biology and ecology of birds. (Credit for this course may be earned only at the Meridian campus)

BIO 3303 Parasitology: 3 hours.
(Prerequisite: BIO 1134 or equivalent). Two hours lecture. Three hours laboratory. A survey of parasitology to include parasites of importance to the health of humans and domestic animals

BIO 3304 General Microbiology: 4 hours.
(Prerequisites: CH 1053 or CH 1223). Two hours lecture. Four hours laboratory. For science majors. Students may not have credit for both BIO 1043 and BIO 3304. Fundamentals; techniques in staining and culture of microorganisms

BIO 3504 Comparative Anatomy: 4 hours.
(Prerequisite: BIO 1134 and BIO 1144). Two hours lecture. Six hours of laboratory. The vertebrate animals; relationships of organs and systems; and their phylogenetic significance

BIO 3524 Biology of Vertebrates: 4 hours.
Three hours lecture, three hours laboratory. Evolution, systematics, ecology and behavior of vertebrates. Laboratory includes classification of major groups, identification of species, field trips, and experiments in behavior and physiological ecology

BIO 4000 Directed Individual Study in Biological Sciences: 1-6 hours.
Hours and credits to be arranged

BIO 4011 Senior Thesis in Biological Sciences: 1 hour.
(Prerequisites: BIO 4013 with a grade of B or better and consent of department head and thesis committee). Writing of the undergraduate thesis under the direction of the major advisor

BIO 4100 Medical Technology Clinicals: 3-19 hours.
(Prerequisite: Consent of instructor). Medical Technology Clinical Internship

BIO 4113 Evolution: 3 hours.
(Prerequisites: MA 1313 or equivalent, BIO 1134 and BIO 1144, BIO 3103 or BIO 4133). Historical development of evolutionary theory; phylogeny and systematic; historic or organic evolution; molecular and phenotypic variation in populations; genetic drift and natural selection; speciation

BIO 4114 Cellular Physiology: 4 hours.
(Prerequisites: Seven hours of biological science and two semesters of organic chemistry). Three hours lecture. Three hours laboratory. A study of the morphology and function of the cell. (Same as PHY 4114/6114)

BIO 4123 Behavioral Ecology: 3 hours.
(Prerequisites: MA 1313 or equivalent, BIO 1134 and BIO 1144, BIO 3103 or BIO 4133). Three hours lecture. This course focuses on the influence that animal behaviors have in determining their survival, and reproductive success using a hypothesis driven framework

BIO 4133 Human Genetics: 3 hours.
(Prerequisite: BIO 1134 and BIO 1144 or BIO 2113 or consent of instructor)Three hours lecture Principles of Mendelian and molecular genetics as applied to humans. Description and causes of human genetic diseases and other anomalies. (Same as GNS 4133/6133)

BIO 4143 Population Genetics: 3 hours.
(Prerequisite: Both BIO 1134 and 1144, or BIO 2113, or consent of instructor. Three hours lecture. Study of the structure of genetic variation in populations and its applications in life sciences

BIO 4203 Taxonomy of Spermatophytes: 3 hours.
(Prerequisites: BIO 2113 and BIO 2213). Two hours lecture. Three hours laboratory. Classification and nomenclature of seed plants; introductory methods of collection; laboratory studies of representative plant families

BIO 4204 Plant Anatomy: 4 hours.
(Prerequisites: BIO 2113 and BIO 2213). Two hours lecture. Four hours laboratory. Structure and development of cell types, tissues, roots, stems, leaves, flowers, and fruits of seed plants, with emphasis on angiosperms

BIO 4213 Plant Ecology: 3 hours.
Two hours lecture. Three hours laboratory. Conceptual overview and contemporary application of ecological principles related to plant distributions as local to global scales. Laboratory incorporates research planning, data collection, and analysis

BIO 4214 General Plant Physiology: 4 hours.
(Prerequisites: BIO 2113 and CH 1213). Three hours lecture. Three hours laboratory. Chemical and physical activities of the plant; absorption; transpiration; mineral nutrition; photosynthesis; translocation; growth processes

BIO 4224 Aquatic Botany: 4 hours.
(Prerequisite:BIO 2203 and one of BIO 3104 , BIO 4213 or WF 3133 or graduate standing;or consent of instructor). Three hours lecture. Four hours laboratory,every other week. Growth forms,taxonomy and morphology, and physiological adaptations of hydrophytic vegetation; ecolgical interactions involving hydrophytes; function of plants in aquatic ecosystems

BIO 4233 Living with Global Change: 3 hours.
Three hours lecture. Holistic examination of the interrelationship between human activities and ecological systems, with an emphasis on the concept of “sustainable” natural resource management

BIO 4303 Bioinstrumentation: 3 hours.
(Prerequisite: BIO 4304/6304). Two hours lecture. Two hours laboratory and demonstrations. Theory and practical application of electrical, optical and other instruments employed in microbiology and medical technology

BIO 4324 Microbiology and Ecology of Soil: 4 hours.
(Prerequisite: BIO 3304). The study of diverse soil microbial communities and how they influence the structure and function of ecosystems (natural and managed) and the global biosphere (same as PSS 4314/6314)

BIO 4404 Environmental Microbiology: 4 hours.
(Prerequisite: BIO 3304). Two hours lecture. Four hours laboratory. Terrestrial, aquatic, and subsurface microbial ecosystems. Microbiology of water and wastewater treatment, solid waste disposal, landfarming, impact of hazardous waste, and environmental reclamation. Spring/odd years

BIO 4405 Pathogenic Microbiology: 5 hours.
(Prerequisite: BIO 3304). Three hours lecture. Four hours laboratory. The microorganisms producing disease in man and lower animals; means of transmission; protection against disease

BIO 4413 Immunology: 3 hours.
(Prerequisite: BIO 3304 and CH 4513). Three hours lecture. Survey of the functions of the immune system. Emphasis on mammalian immunology, including T- and B-cell interactions in humoral and cell mediated immunity

BIO 4414 Microbiology of Foods: 4 hours.
(Prerequisite: BIO 3304). Two hours lecture. Four hours laboratory. Isolation and classification of the microorganisms associated with spoilage of commercial and domestic preserved foods. Same as FNH 4414/6414

BIO 4424 Eukaryotic Microbiology: 4 hours.
(Prerequisites: BIO 1134, BIO 1144, and BIO 2103). Three hours lecture. Three hours laboratory. This course examines aspects of the basic biology and evolution of microbial eukaryotes (protists) from a comparative perspective

BIO 4433 Principles of Virology: 3 hours.
(Prerequisites: BCH 4603 , BIO 3103 and BIO 3304). Three hours lecture. Principles of viral infectivity, multiplication, and chemical constitution

BIO 4442 Bacterial Genetics Laboratory: 2 hours.
(Prerequisite: BCH 4603,BIO 3304 and concurrent enrollment in BIO 4443/6443). Four hour laboratory.The genetic and molecular manipulation of bacteria and their viruses

BIO 4443 Bacterial Genetics: 3 hours.
(Prerequisites: BCH 4603, BIO 3304 or consent of instructor). Three hours lecture. The genetics of bacteria and their viruses including: replication, rearrangement, repair, transfer, regulation, and methods of manipulation and analysis of DNA

BIO 4463 Bacterial Physiology: 3 hours.
(Prerequisites: BIO 3404 and BCH 4603). Three hours lecture. Structure and function relationships and major aerobic and anaerobic metabolic pathways in microorganisms

BIO 4503 Vertebrate Histology: 3 hours.
(Prerequisite: BIO 1134 and BIO 1144). Two hours lecture. Three hours laboratory. Study of the microscopic anatomy, structure, and function of major cell types and tissues

BIO 4504 Comparative Vertebrate Embryology: 4 hours.
(Prerequisite: BIO 1134 and BIO 1144). Two hours lecture. six hours laboratory. The embryology of the vertebrates; the fertilization of the egg; stages of cleavage and the development of organs and systems

BIO 4514 Animal Physiology: 4 hours.
(Prerequisites: Ten hours of biological science and organic chemistry). Three hours lecture. Three hours laboratory. Functions and interrelationship of the systems of the body. (Same as PHY 4514/6514)

BIO 4563 Evolutionary and Developmental Biology: 3 hours.
(Prerequisite: BIO 1134 and BIO 1144). Three hours lecture. A comparative study of the cell, molecular, and developmental regulatory mechanisms that have evolved to generate the body plans of a wide range of metazoan embryos, from sponges to humans

BIO 4603 Ethnobotany: 3 hours.
(Prerequisite: BIO 1134 and BIO 1144, or AN 1143 and AN 1343). Three hours lecture. Relationships between plants and humans through examination of cultures, uses of plants, paleothbobotany, and the science of botany

BIO 4610 Urinalysis: 2-6 hours.
(Prerequisite: Acceptance to Med Tech internship). Study of physical, chemical and microscopic properties of body fluids. Emphasis is placed on laboratory procedures, morphological findings and correlation of test results to disease

BIO 4612 Special Topics: 2 hours.

BIO 4620 Hematology: 2-9 hours.
(Prerequisite: Acceptance to Med Tech internship). Study of the maturation, morphology, and function of blood cells and their role in disease. Emphasis is placed on lab procedures, identification, and relationships with disease

BIO 4624 Immunohematology: 4 hours.
(Prerequisite: Completion of all preprofessional requirements).Three hours lecture. Six hour laboratory. Blood group serology,compatibility testing, and identification of atypical antibodies, Transfusion practices and blood group immunogenetics

BIO 4626 Hematology: 6 hours.
(Prerequisite:Completion of all preprofessional requirements).Four hours lecture. Eight hours laboratory. Normal and abnormal blood and bone marrow cells. Coagulation mechanisms

BIO 4630 Special Topics: 1-9 hours.
BIO 4630 Special Topic. (1-9). (Prerequisite: Acceptance to Med Tech internship). Topics are presented to prepare students for future roles including management, lab operations, education, research, quality assurance and regulatory issues, along with other special topics

BIO 4636 Clinical Chemistry: 6 hours.
(Prerequisiste: Completion of all preprofessional requirements).Four hours lecture. Eight hours laboratory. Normal and abnormal human body chemistry. Emphasis on istrumentation

BIO 4640 Clinical Micro: 2-9 hours.
(Prerequisite: Acceptance to Med Tech Internship). Study of bacteria-causing disease in man. Includes lab identification using conventional methods as well as rapid systems, susceptibility testing, and evaluation of clinical specimens

BIO 4650 Immunohematology: 2-9 hours.
(Prerequisite: Acceptance to Med Tech internship.) The study of blood group antigens and antibodies. Includes donor selection, lab procedures, identification, storage, quality control, transfusion practices and related topics

BIO 4660 Serology/Immunology: 2-9 hours.
(Prerequisite: Acceptance to Med Tech internship.) Study of the immunologic response in infections and autoimmune diseases, characterization of lymphocyte populations in neoplasms, abnormal immunologic responses

BIO 4670 Clinical Chemistry: 2-9 hours.
BIO 4670 Clinical Chemistry. (2-9). (Prerequisite: Acceptance to Med Tech internship). Study of the biochemical constituents of body fluids, functions, and alterations in disease states. Emphasis placed on analytical laboratory methods

BIO 4673 Industrial Microbiology: 3 hours.
Three hours lecture. Introduction to microbial anatomy, physiology, and genetics.Use of microorganisms and their by-products. Identification and control of biofouling, biocorrosion, and biodegradation of products and processes. (Same as CHE 4673/6673)

BIO 4703 Avian Diversity: 3 hours.
(Prerequisites: BIO 1134 and BIO 1144, or permission of instructor). Two hours lecture. Three hours laboratory. A detailed survey of bird biology, with emphasis on their unique evolutionary adaptations. Laboratory includes field-identification, independent research and examination of bird reference collection

BIO 4990 Special Topics in Biological Sciences: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

BIO 6013 Genetics and Molecular Biology: 3 hours.
(Prerequisite:Consent of instructor). Three hours video and online. Analysis of the transmission of geneteic information from molecular to organismal levels;examination of ways in which genotype detremines phenotype. (Intended for K-12 science teachers. Course cannot be used to satisfy degree requirements in a non-distance degree program)

BIO 6023 Principles of Evolutionary Biology: 3 hours.
(Prequisite:Consent of Instructor). Three hours video and online. Current concepts in genetic variation, natural selection, and adaptation of populations;speciation, extinction, and phylogenetics;patterns of human evolution. (Intended for K-12 science teachers. Course cannot be used to satisfy degree requirements in a non-distance degree program)

BIO 6033 Fundamentals of Biotechnology: 3 hours.
(Prerequisite:BIO 6013 and BIO 8033, or consent of instructor). Three hours video and online. Fundamental principles of animal and plant biotechnology including recombinant DNA technology, gene-based diagnostics,genetically modified organisms and transgenics. (Intended for K-12 science teachers. Course cannot be used to satisfy degree requirements in a non-distance degree program)

BIO 6043 Developmental and Reproductive Biology: 3 hours.
(Prerequisites:BIO 6013 and BIO 8033 or consent of instructor).Three hours video and online. Study of reproduction and development from gametes through birth in mammals;focusing on stages, anatomy, physiology, mechanisms, genetics. (Intended for K-12 science teachers. Course cannot be used to satisfy degree requirements in a non-distance degree program)

BIO 6113 Evolution: 3 hours.
(Prerequisites: MA 1313 or equivalent, BIO 1134 and BIO 1144, BIO 3103 or BIO 4133). Historical development of evolutionary theory; phylogeny and systematic; historic or organic evolution; molecular and phenotypic variation in populations; genetic drift and natural selection; speciation

BIO 6114 Cellular Physiology: 4 hours.
(Prerequisites: Seven hours of biological science and two semesters of organic chemistry). Three hours lecture. Three hours laboratory. A study of the morphology and function of the cell. (Same as PHY 4114/6114)

BIO 6123 Behavioral Ecology: 3 hours.
(Prerequisites: MA 1313 or equivalent, BIO 1134 and BIO 1144, BIO 3103 or BIO 4133). Three hours lecture. This course focuses on the influence that animal behaviors have in determining their survival, and reproductive success using a hypothesis driven framework

BIO 6133 Human Genetics: 3 hours.
(Prerequisite: BIO 1134 and BIO 1144 or BIO 2113 or consent of instructor)Three hours lecture Principles of Mendelian and molecular genetics as applied to humans. Description and causes of human genetic diseases and other anomalies. (Same as GNS 4133/6133)

BIO 6143 Population Genetics: 3 hours.
(Prerequisite: Both BIO 1134 and 1144, or BIO 2113, or consent of instructor. Three hours lecture. Study of the structure of genetic variation in populations and its applications in life sciences

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(Prerequisites: BIO 2113 and BIO 2213). Two hours lecture. Three hours laboratory. Classification and nomenclature of seed plants; introductory methods of collection; laboratory studies of representative plant families

BIO 6204 Plant Anatomy: 4 hours.
(Prerequisites: BIO 2113 and BIO 2213). Two hours lecture. Four hours laboratory. Structure and development of cell types, tissues, roots, stems, leaves, flowers, and fruits of seed plants, with emphasis on angiosperms

BIO 6213 Plant Ecology: 3 hours.
Two hours lecture. Three hours laboratory. Conceptual overview and contemporary application of ecological principles related to plant distributions as local to global scales. Laboratory incorporates research planning, data collection, and analysis

BIO 6214 General Plant Physiology: 4 hours.
(Prerequisites: BIO 2113 and CH 1213). Three hours lecture. Three hours laboratory. Chemical and physical activities of the plant; absorption; transpiration; mineral nutrition; photosynthesis; translocation; growth processes

BIO 6224 Aquatic Botany: 4 hours.
(Prerequisite:BIO 2203 and one of BIO 3104 , BIO 4213 or WF 3133 or graduate standing;or consent of instructor). Three hours lecture. Four hours laboratory,every other week. Growth forms,taxonomy and morphology, and physiological adaptations of hydrophytic vegetation; ecolgical interactions involving hydrophytes; function of plants in aquatic ecosystems

BIO 6233 Living with Global Change: 3 hours.
Three hours lecture. Holistic examination of the interrelationship between human activities and ecological systems, with an emphasis on the concept of “sustainable” natural resource management

BIO 6303 Bioinstrumentation: 3 hours.
(Prerequisite: BIO 4304/6304). Two hours lecture. Two hours laboratory and demonstrations. Theory and practical application of electrical, optical and other instruments employed in microbiology and medical technology

BIO 6324 Microbiology and Ecology of Soil: 4 hours.
(Prerequisite: BIO 3304). The study of diverse soil microbial communities and how they influence the structure and function of ecosystems (natural and managed) and the global biosphere (same as PSS 4314/6314)

BIO 6404 Environmental Microbiology: 4 hours.
(Prerequisite: BIO 3304). Two hours lecture. Four hours laboratory. Terrestrial, aquatic, and subsurface microbial ecosystems. Microbiology of water and wastewater treatment, solid waste disposal, landfarming, impact of hazardous waste, and environmental reclamation. Spring/odd years

BIO 6405 Pathogenic Microbiology: 5 hours.
(Prerequisite: BIO 3304). Three hours lecture. Four hours laboratory. The microorganisms producing disease in man and lower animals; means of transmission; protection against disease

BIO 6413 Immunology: 3 hours.
(Prerequisite: BIO 3304 and CH 4513). Three hours lecture. Survey of the functions of the immune system. Emphasis on mammalian immunology, including T- and B-cell interactions in humoral and cell mediated immunity

BIO 6414 Microbiology of Foods: 4 hours.
(Prerequisite: BIO 3304). Two hours lecture. Four hours laboratory. Isolation and classification of the microorganisms associated with spoilage of commercial and domestic preserved foods. Same as FNH 4414/6414

BIO 6424 Eukaryotic Microbiology: 4 hours.
(Prerequisites: BIO 1134, BIO 1144, and BIO 2103). Three hours lecture. Three hours laboratory. This course examines aspects of the basic biology and evolution of microbial eukaryotes (protists) from a comparative perspective

BIO 6433 Principles of Virology: 3 hours.
(Prerequisites: BCH 4603 , BIO 3103 and BIO 3304). Three hours lecture. Principles of viral infectivity, multiplication, and chemical constitution

BIO 6442 Bacterial Genetics Laboratory: 2 hours.
(Prerequisite: BCH 4603,BIO 3304 and concurrent enrollment in BIO 4443/6443). Four hour laboratory.The genetic and molecular manipulation of bacteria and their viruses

BIO 6443 Bacterial Genetics: 3 hours.
(Prerequisites: BCH 4603, BIO 3304 or consent of instructor). Three hours lecture. The genetics of bacteria and their viruses including: replication, rearrangement, repair, transfer, regulation, and methods of manipulation and analysis of DNA

BIO 6463 Bacterial Physiology: 3 hours.
(Prerequisites: BIO 3404 and BCH 4603). Three hours lecture. Structure and function relationships and major aerobic and anaerobic metabolic pathways in microorganisms

BIO 6503 Vertebrate Histology: 3 hours.
(Prerequisite: BIO 1134 and BIO 1144). Two hours lecture. Three hours laboratory. Study of the microscopic anatomy, structure, and function of major cell types and tissues

BIO 6504 Comparative Vertebrate Embryology: 4 hours.
(Prerequisite: BIO 1134 and BIO 1144). Two hours lecture. six hours laboratory. The embryology of the vertebrates; the fertilization of the egg; stages of cleavage and the development of organs and systems

BIO 6514 Animal Physiology: 4 hours.
(Prerequisites: Ten hours of biological science and organic chemistry). Three hours lecture. Three hours laboratory. Functions and interrelationship of the systems of the body. (Same as PHY 4514/6514)

BIO 6563 Evolutionary and Developmental Biology: 3 hours.
(Prerequisite: BIO 1134 and BIO 1144). Three hours lecture. A comparative study of the cell, molecular, and developmental regulatory mechanisms that have evolved to generate the body plans of a wide range of metazoan embryos, from sponges to humans

BIO 6603 Ethnobotany: 3 hours.
(Prerequisite: BIO 1134 and BIO 1144, or AN 1143 and AN 1343). Three hours lecture. Relationships between plants and humans through examination of cultures, uses of plants, paleothbobotany, and the science of botany

BIO 6673 Industrial Microbiology: 3 hours.
Three hours lecture. Introduction to microbial anatomy, physiology, and genetics.Use of microorganisms and their by-products. Identification and control of biofouling, biocorrosion, and biodegradation of products and processes. (Same as CHE 4673/6673)

BIO 6703 Avian Diversity: 3 hours.
(Prerequisites: BIO 1134 and BIO 1144, or permission of instructor). Two hours lecture. Three hours laboratory. A detailed survey of bird biology, with emphasis on their unique evolutionary adaptations. Laboratory includes field-identification, independent research and examination of bird reference collection

BIO 6990 Special Topics in Biological Sciences: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

BIO 7000 Directed Individual Study in Biological Sciences: 1-6 hours.
Same as GCRL Zoology 561. Hours and credits to be arranged. Directed Individual Study courses usually require prerequisites of BIO 4326/6326

BIO 8000 Thesis Research/ Thesis in Biological Sciences: 1-13 hours.
Thesis research/Thesis. Same as GCRL Zoology 561. Hours and credits to be arranged

BIO 8011 Seminar I: 1 hour.
One hour seminar. Weekly seminar on current research in the Biological Sciences. Attendance is mandatory for on-campus Biological Sciences graduate students not enrolled in BIO 8021

BIO 8021 Seminar II: 1 hour.
One hour seminar. Weekly seminar on current research in the Biological Sciences and one formal presentation of the student's research; serves as the student's public exit seminar

BIO 8023 Modern Microbiology: 3 hours.
(Prerequisite:Consent of instructor). Three hours video and online. Fundamental principles of microbiology, including microbial structure,replication, and diversity;role of microorganisms in human health and the environment. (Intended for K-12 science teachers. Course cannot be used to satisfy degree requirements in a non-distance degree program)

BIO 8033 Advanced Cell Biology: 3 hours.
(Prerequisiste:Consent of instructor). Three hours video and online. Study of eukaryotic cellular and sub-cellular structure and function;integration of cellular processes to understand the cell as a whole. (Intended for K-12 science teachers. Course cannot be used to satisfy degree requirement in a non-distance degree program)

BIO 8043 Ecology and the Environment: 3 hours.
(Prerequisite:Consent of instructor). Three hours video and online. Investigation of biodiversity, ecological hierarchies, and interactions between biota and the environment. Includes as introduction to contemporary environmental science issues. (Intended for K-12 science teachers. Course cannot be used to satisfy degree requirements in a non-distance degree program)

BIO 8053 Comprehensive Study of Animals: 3 hours.
(Prerequisites:BIO 6023 or consent of instructor). Three hours video and online. Study of invertebrate and vertebrate animals,including reproduction, development, physiology,behavior, ecology and evolution. (Intended for K-12 science teachers. Course cannot be used to satisfy degree requirements in a non-distance degree program)

BIO 8063 Comprehensive Study of Plants: 3 hours.
(Prerequisiste:BIO 6023 or consent of instructor). Three hours video and online. Study of plants from bryophytes to angiosperms, including growth, photosynthesis, respiration, nutrition, reproduction, ecology, and evolution. (Intended for K-12 science teachers. Course cannot be used to satisfy degree requirements in a non-distance degree program)

BIO 8093 Experimental Biology and Biostatistics: 3 hours.
(Prerequisite: Consent of instructor). Three hours video and online. Experimental design and methods for statistical analysis of biological data, with an emphasis on inquiry using the scientific method.(Intended for K-12 science teachers. Course cannot be used to satisfy degree requirements in a non-distance degree program)

BIO 8103 Advanced Ecology: 3 hours.
(Prerequisite: BIO 3104). Two hours lecture. Three hours laboratory. Selected topics with special references to bioenergetics, population and human ecology; with student research project

BIO 8113 Biogeography: 3 hours.
Three hours lecture. Study of the geographic distribution of life. Emphasis placed on climatic, geologic, and human influence, dispersal mechanisms and evolutionary history

BIO 8123 Speciation: 3 hours.
Three hours seminar. Species concepts, species delimitation, evolution of reproductive isolation, modes of speciation, and the rate of speciation are discussed

BIO 8163 Invasion Ecology: 3 hours.
Three hours lecture. Theoretical and empirical ecology of species invasion. Discussion-based with an emphasis understanding the invasion process from ecological, evolutionary, and biogeographical perspectives

BIO 8183 Capstone in Modern Biology: 3 hours.
(Prerequisites:Thirty hours of BIO graduate work and consent of instructor). Three hours lecture. Hands-on laboratory and field experiences which demonstrate the major techniques of molecular, cellular, organismal and ecological biology. (Intended for K-12 science teachers. Course cannot be used to satisfy degree requirements in a non-distance degree program)

BIO 8191 Seminar in General Biology: 1 hour.
(Prerequisites: 33 hours of BIO graduate work and consent of the instructor.) One hour seminar. Conduit for interactions with faculty members to assist students in preparing for the comprehensive exam in the MS in General Biology degree program. (Intended for K-12 science teachers. Course cannot be used to satisfy degree requirements in a non-distance degree program.)

BIO 8223 Plant Metabolism: 3 hours.
(Prerequisites: BIO 4214 and organic chemistry). Three hours lecture. Photosynthesis, respiration, nitrogen metabolism, and other metabolic processes

BIO 8233 Molecular Applications: 3 hours.
Two hours lecture. Two hours laboratory. Discussion of the fundamental principles behind basic molecular applications used in biology with a focus on methods employed to study DNA, RNA and proteins

BIO 8283 Developmental Plasticity: 3 hours.
Three hours lecture. Study of variation in biological form and function through a synthesis of ecology, evolution and developmental biology

BIO 8990 Special Topics in Biological Sciences: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

BIO 9000 Dissertation Research/ Dissertation in Biological Sciences: 1-13 hours.
Same as GCRL Zoology 561. Hours and credits to be arranged

Business Information Systems Courses

BIS 1001 First Year Seminar: 1 hour.
One hour lecture. First-year seminars explore a diverse arrary of topics that provide students with an opportunity to learn about a specific discipline from skilled faculty members

BIS 1012 Introduction to Business Information Systems: 2 hours.
Two hours lecture. Overview of business information systems. Application of computer hardware, software, data, analytics, and procedures to business processes. Covers the internet, emerging technologies, and personal and business analytical productivity packages

BIS 1523 Web Development I: 3 hours.
Three hours lecture. An introduction to the design, development, and maintenance of dynamic web pages and web sites, including coverage of HTML, CSS, and the PHP programming language

BIS 1733 Visual Basic Programming: 3 hours.
Three hours lecture. Introduction to object-oriented, event-driven, and procedural programming to develop business and e-commerce applications

BIS 1753 Introduction to Business COBOL: 3 hours.
(Prerequisites: Grade of B or higher in BIS 1733, or grade of B or higher in any 3 hours of computer programming, or graduate standing). Three hours lecture. Structured program design for business applications. Data editing, table handling, and file processing with sequential and random access files will be stressed

BIS 2523 Web Development II: 3 hours.
(Prerequisite: BIS 1523) Three hours lecture. Advanced design, development, and maintenance of dynamic web pages and web sites, including coverage of Javascript, third party Javascript tools such as jQuery and jQuery Mobile, as well as AJAX, and PHP/MySQL

BIS 2990 Special Topics in Business Information Systems: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

BIS 3233 Management Information Systems: 3 hours.
Three hours lecture. A survey of the components, functions, and processes of Information Systems as they relate to managing modern organization for increased efficiency and competitiveness

BIS 3523 Advanced Languages I: 3 hours.
(Prerequisite: BIS 1523 and BIS 2523, or any 6 hours of computer programming). Three hours lecture. An introduction to object-oriented programming, with an emphasis on working with classes, objects, and event-driven programming

BIS 3713 Electronic Information Systems: 3 hours.
(Prerequisite: Junior Standing and six hours of mathematics and/or statistics, or consent of instructor). Three hours lecture. Principles of business information systems using computer equipment. Business problem solving, including problem definition, flow charting, basic programming and input-output design. (Credit for this course may be earned only at the Meridian and Jackson branches of Mississippi State University. Credit will not be granted for this course and BIS 1013 or CS 1013)

BIS 3753 Business Database Systems: 3 hours.
(Prerequisite: BIS 1523 and BIS 2523, or any 6 hours of computer programming, or graduate standing). Three hours lecture. Introduction to business database applications. Includes data modeling, design techniques, and data collection, storage, manipulation, retrieval, and analytical strategies

BIS 4000 Directed Individual Study in Business Information Systems: 1-6 hours.
Hours and credits to be arranged

BIS 4113 Business Information Systems Security Management: 3 hours.
(Prerequisite: BIS 3233 or any 3 hours of computer-related coursework). Three hours lecture. Concepts, skills, tools, and analytical techniques involved in management of computer security as it applies to today's business environment

BIS 4513 Microcomputers and Networks: 3 hours.
(Prerequisite: BIS 3523 or equivalent, or any 3 hours of computer-related coursework). Three hours lecture. Concepts and technology of microcomputers and of computer networks. Experience in building and maintaining microcomputer and networking hardware and software

BIS 4523 Business Programming with COBOL: 3 hours.
(Prerequisite: BIS 1523 and BIS 2523 or 6 hours of computer programming; or graduate standing and three hours of computer programming). Three hours lecture. In-depth concepts and experience in business-oriented computer programming. File input/output, sequential, indexed sequential, and relative files

BIS 4533 Decision Support Systems: 3 hours.
(Prerequisites: BIS 3233 or equivalent). Three hours lecture. Theory and application of decision support, business intelligence, integrated collaboration systems, and data mining using advanced computing techniques. Hands-on experience in developing decision support systems

BIS 4753 Structured Systems Analysis and Design: 3 hours.
(Prerequisite: BIS 1523 and BIS 2523, or any 6 hours of computer programming). Three hours lecture. Analysis/design of computer-based information systems emphasizing problem identification, requirements structuring, business data analytics, and solution generation in business process analysis projects

BIS 4763 BIS Senior Seminar: 3 hours.
(Prerequisite: Senior standing, BIS 1523, BIS 2523, and 9 hours of upper-level BIS courses; or consent of instructor). Three hours lecture. Preparation for IS careers involving information systems management emphasizing e-commerce technology and emerging business models. Business analytics project

BIS 4990 Special Topics in Business Information Systems: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

BIS 6113 Business Information Systems Security Management: 3 hours.
(Prerequisite: BIS 3233 or any 3 hours of computer-related coursework). Three hours lecture. Concepts, skills, tools, and analytical techniques involved in management of computer security as it applies to today's business environment

BIS 6513 Microcomputers and Networks: 3 hours.
(Prerequisite: BIS 3523 or equivalent, or any 3 hours of computer-related coursework). Three hours lecture. Concepts and technology of microcomputers and of computer networks. Experience in building and maintaining microcomputer and networking hardware and software

BIS 6523 Business Programming with COBOL: 3 hours.
(Prerequisite: BIS 1523 and BIS 2523 or 6 hours of computer programming; or graduate standing and three hours of computer programming). Three hours lecture. In-depth concepts and experience in business-oriented computer programming. File input/output, sequential, indexed sequential, and relative files

BIS 6533 Decision Support Systems: 3 hours.
(Prerequisites: BIS 3233 or equivalent). Three hours lecture. Theory and application of decision support, business intelligence, integrated collaboration systems, and data mining using advanced computing techniques. Hands-on experience in developing decision support systems

BIS 6990 Special Topics in Business Information Systems: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

BIS 7000 Directed Individual Study in Business Information Systems: 1-6 hours.
Hours and credits to be arranged

BIS 8000 Thesis Research/ Thesis in Business Information Systems: 1-13 hours.
Hours and credits to be arranged

BIS 8113 Management Information Technology and Systems: 3 hours.
Three hours lecture. Course includes the description, development and use of systems from an analytical perspective. Technology-enabled concepts are used for student assignments

BIS 8122 Multimedia Presentation and Communication: 2 hours.
(Prerequisite: Graduate Standing). Two hours lecture. Emphasis on planning and delivering business presentations enhanced by multimedia. Concepts, design, and experience in developing multimedia presentations. Exposure to interactive multimedia

BIS 8213 Secure Systems Analysis and Design: 3 hours.
(Prerequisite or co-requisite: BIS 8113 or any 3 hours of computer-related coursework). Three hours lecture. Analysis/design of secure computer-based information systems using structured methodologies. Emphasis on functional and security requirements analysis, business data analysis, logical system design, quality assurance, and comprehensive information security management

BIS 8313 Advanced Database Design Administration: 3 hours.
(Prerequisite: Three hours of computer programming with a grade of B or better). Three hours lecture. Design and management of local and distributed data resources, database design, definition, creation, maintenance, acquisition and analytical use. Role of Database Administrator

BIS 8413 Data Analytics: 3 hours.
(Prerequisite: BQA 8443 or equivalent). Three hours lecture. Enterprise approach to improving business processes and managerial decision-making through quantitatively sophisticated analysis of organizational data. Hands-on experience in analytical techniques, modeling, and software

BIS 8513 Business Telecommunications: 3 hours.
(Prerequisite or co-requisite: BIS 8113 or equivalent). Three hours lecture. The evaluation, analysis and design of information systems utilizing telecommunications and networking concepts and techniques. Emphasis is on business applications and related considerations

BIS 8613 MIS Administration: 3 hours.
(Prerequisite or co-requisite: BIS 8113 or equivalent). Three hours lecture. Administration of the MIS function in the business enterprise. Emphasis on activity of managing and analyzing the IS function at all levels of the firm

BIS 8753 Information Systems Collaborative Project: 3 hours.
(Prerequisites: 9 hours of graduate BIS coursework beyond 8113). Three hours lecture. Capstone experience incorporating knowledge gained in prerequisite courses. Requires team participation using appropriate tools and methodologies in assisting organizations with real-world information systems related requirements through business and data analysis

BIS 8990 Special Topics in Business Information Systems: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

BIS 9000 Dissertation Research/ Dissertation in Business Information Systems: 1-13 hours.
Hours and credits to be arranged

BIS 9013 General Topics in MIS Research: 3 hours.
(Prerequisites: Graduate standing). Three hours lecture. Review of the most widely recognized literature in the MIS field, including studies on systems acceptance, usage, user satisfaction, and group support

BIS 9113 Management Information Systems (MIS) Seminar: 3 hours.
(Prerequisite: BIS 8213, BIS 8313). Three hours lecture. Penetrating review of issues, methodologies and new developments in design and operation of management information, decision support, and computer-based decision-making systems

BIS 9213 Advanced Topics in MIS Research: 3 hours.
(Prerequisite: BIS 8213, BIS 8313, or consent of instructor) In-depth study of MIS research topics. Review of emerging theories and methodologies, scientific empiricism, modeling, validity, measurement, research design, journal review, and research project management

BIS 9313 Qualitative Research in MIS: 3 hours.
Three hours lecture. Emphasis is on evaluation the operation and contribution of qualitative research in MIS. The approach, conduct, and evaluation of qualitative research

BIS 9613 Info Security Research Design: 3 hours.
(Prerequisite: Graduate Standing). Three hours lecture. Review of InfoSec research theory and methods, plus emerging methodological issues. Design of rigorous publishable research projects to address emerging InfoSec research questions

Business Law Courses

BL 2413 The Legal Environment of Business: 3 hours.
Three hours lecture. Environmental study of legal influences, concepts, institutions, emphasizing social forces shaping business law. Introduces business students to interrelationships of law and society, jurisprudence and business

BL 2990 Special Topics in Business Law: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

BL 3001 Innovation Law: You Don't Look Good in Stripes: 1 hour.
(Prerequisite: Admission to MVP). An introduction to specific legal missteps that entrepreneurs must consider during the startup process. Topics include basic business law concepts and a working knowledge of how to converse with transactional lawyers

BL 3223 The Law of Commercial Transactions: 3 hours.
(Prerequisite: BL 2413 and Junior Standing). Three hours lecture. Commercial instruments in the economic process. Use of commercial and investment paper; documents of title, security instruments, notes, drafts, checks; integrated treatment of uniform statutes

BL 3233 Business Law for Resorts: 3 hours.
(Prerequisites:Junior standing)Three hours lecture. A survey of state and federal business law and ethical issues as they relate to legislation concerning resorts, conventions, and casinos. Course available only on MSU-Meridian campus

BL 4000 Directed Individual Study in Business Law: 1-6 hours.
(Prerequisite: BL 2413 and Junior standing). Hours and credits to be arranged

BL 4243 Legal Aspects of Entrepreneurship: 3 hours.
(Prerequisite: BL 2413, MGT 3323, or consent of instructor). Three hours lecture. Business creation including legal aspects from permits and taxes to structure and sale with emphasis on Mississippi Law

BL 4263 Environmental Law: 3 hours.
(Prerequisite: BL 2413). Three hours lecture. An introduction to how environmental law interfaces with the legal system. Overview of the major statutes, cases, and regulations pertaining to the environment

BL 4273 International Business Law: 3 hours.
(Prerequisite: BL 2413). Three hours lecture. An international commercial transaction course emphasizing trade, licensing and investments (contracts, financing, instruments, dispute resolution)

BL 4333 Real Estate Law: 3 hours.
(Prerequisite: BL 2413 or consent of instructor). Three hours lecture. The legal principles applicable to real estate, including types of ownership and interests, mortgages, restrictions, and regulations. (Same as REF 4333/6333)

BL 4990 Special Topics in Business Law: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

BL 6243 Legal Aspects of Entrepreneurship: 3 hours.
(Prerequisite: BL 2413, MGT 3323, or consent of instructor). Three hours lecture. Business creation including legal aspects from permits and taxes to structure and sale with emphasis on Mississippi Law

BL 6263 Environmental Law: 3 hours.
(Prerequisite: BL 2413). Three hours lecture. An introduction to how environmental law interfaces with the legal system. Overview of the major statutes, cases, and regulations pertaining to the environment

BL 6273 International Business Law: 3 hours.
(Prerequisite: BL 2413). Three hours lecture. An international commercial transaction course emphasizing trade, licensing and investments (contracts, financing, instruments, dispute resolution)

BL 6333 Real Estate Law: 3 hours.
(Prerequisite: BL 2413 or consent of instructor). Three hours lecture. The legal principles applicable to real estate, including types of ownership and interests, mortgages, restrictions, and regulations. (Same as REF 4333/6333)

BL 6990 Special Topics in Business Law: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

BL 7000 Directed Individual Study in Business Law: 1-6 hours.
Hours and credits to be arranged

BL 8113 Law, Business, Ethics, and Dispute Resolution: 3 hours.
Three hours lecture. Legal and ethical issues faced by the business firm with emphasis on prevention and resolution of disputes, including mediation, negotiation and alternative dispute resolution

BL 8990 Special Topics in Business Law: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

Business Quantitive Analysis Courses

BQA 1001 First Year Seminar: 1 hour.
One hour lecture. First-year seminars explore a diverse arrary of topics that provide students with an opportunity to learn about a specific discipline from skilled faculty members

BQA 2001 Business Informatics: 1 hour.
(Prerequisite: Admission to MVP). The class will focus on processing data to help inform and frame business decisions. Topics will include data formatting, model design, basic data management, and simple forecasting techniques. Emphasis will be placed on interpreting the results for a business

BQA 2113 Business Statistical Methods I: 3 hours.
(Prerequisite: MA 1613 or MA 1713 and BIS 1012 or equivalent). Three hours lecture. Methods of describing numerical data; probability in business decisions; random variables; sampling distributions; introduction to estimation and hypothesis testing; computer statistical packages applied

BQA 2990 Special Topics in Business Quantitative Analysis: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

BQA 3113 Introduction to Business Statistical Methods: 3 hours.
(Prerequisite: MA 1463 or equivalent). Three hours lecture. Descriptive statistics; measures of central tendency, measures of dispersion, probability, discrete and continuous random variables, sampling, estimation, hypothesis testing, computer package applications. (Credit for this course may be earned only at the Meridian Campus. Credit will not be granted for this course and BQA 2113 or ST 2113)

BQA 3123 Business Statistical Methods II: 3 hours.
(Prerequisite: BQA 2113 or equivalent). Three hours lecture. Reviewing estimation and hypothesis testing; correlation and regression; chi-square tests; analysis of variance; non-parametric concepts; index numbers; time series analysis; computer statistical packages applied

BQA 4000 Directed Individual Study in Business Quantitative Analysis: 1-6 hours.
(Prerequisite: Junior standing). Hours and credits to be arranged

BQA 4413 Business Forecasting and Predictive Analytics: 3 hours.
(Prerequisite: BQA 3123 or equivalent). Analysis of large datasets using methods such as exploratory data analysis, business forecasting, and predictive analytics. Implementation of techniques using computational tools. Use of real world business and competition datasets

BQA 4423 Business Decision Analysis: 3 hours.
(Prerequisites: BQA 3123 or equivalent). Basic/medium-level quantitative analysis methods for business decisions, including optimization modeling using spreadsheets, queueing service system, Newsboy models, customer choice models, and simulation. It serves students who want to grasp the techniques to solve real-world business decision problems

BQA 4990 Special Topics in Business Quantitative Analysis: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

BQA 6413 Business Forecasting and Predictive Analytics: 3 hours.
(Prerequisite: BQA 3123 or equivalent). Analysis of large datasets using methods such as exploratory data analysis, business forecasting, and predictive analytics. Implementation of techniques using computational tools. Use of real world business and competition datasets

BQA 6423 Business Decision Analysis: 3 hours.
(Prerequisites: BQA 3123 or equivalent). Basic/medium-level quantitative analysis methods for business decisions, including optimization modeling using spreadsheets, queueing service system, Newsboy models, customer choice models, and simulation. It serves students who want to grasp the techniques to solve real-world business decision problems

BQA 6990 Special Topics in Business Quantitative Analysis: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

BQA 7000 Directed Individual Study in Business Quantitative Analysis: 1-6 hours.
Hours and credits to be arranged

BQA 8233 Quantitative Analysis and Business Research: 3 hours.
(Prerequisite: BQA 8443 or equivalent). Three hours lecture. Investigation of the managerial decisions and statistical techniques used for conducting business research, collection and analysis of data, and presentation results

BQA 8443 Statistical Analysis for Business Decision-making: 3 hours.
(Prerequisites: Proficiency with spreadsheet software).Three hours lecture. Review of descriptive statistics, parametric inference procedures, analysis of variance, regression, nonparametric methods; business problem formulation for computer analysis using statistical packages

BQA 8583 Quantitative Methods for Research in Business: 3 hours.
(Prerequisite: BQA 8443). Three hours lecture. Designed to familiarize the graduate student with the fundamentals of scientific research and the classical and modern quantitative methods of analysis useful in business research

BQA 8990 Special Topics in Business Quantitative Analysis: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

BQA 9333 Statistical Methods for Business Research: 3 hours.
(Prerequisite:Doctoral student or permission of instructor). Three hours lecture. Understanding and communicating statistical methods for business and economics academic publications;descriptive statistics;random variables; estimation;Bayesian credible sets;hypothesis testing; regression;nonparametric;computerized analysis

BQA 9533 Advanced Statistics for Business Decisions: 3 hours.
(Prerequisite: BQA 8443). Three hours lecture. Multivariate analysis; multiple regression analysis; multiple descriminant analysis; multivariate analysis of variance and covariance; factor analysis; cluster analysis

Business Technology Education Courses

BTE 3003 Practicum in Technology Teacher Education: 3 hours.
Three hour practicum. Field-based observation of secondary technology students and participation in classroom activities

BTE 4213 Methods of Teaching Business Subjects: 3 hours.
Three hours lecture. Objectives, materials, and methods of teaching basic business subjects, including economics, and design and methods of teaching online

BTE 4463 Method of Teaching Business Technology: 3 hours.
(Prerequisite: Admission to Teacher Education for teacher education majors and keyboarding proficiency using the touch method). Three hours lecture. A study of objectives, materials and methods appropriate for teaching business technology courses

BTE 4873 Professional Seminar in Vocational/Technical Education: 3 hours.
(Prerequisites: Admission to Teacher Education and senior standing). Three hours lecture. A seminar dealing with legal, professional, administrative, and curriculum issues as they relate to vocational/technical education

BTE 4886 Teaching Internship: 6 hours.
(Prerequisites: Admission to Teacher Education, minimum grade point average of 2.5 overall and in major, completion of all professional education courses with a grade of C or better). Supervised observation and directed teaching in respective fields of endorsement

BTE 4896 Teaching Internship: 6 hours.
(Prerequisites: Admission to Teacher Education, minimum grade point average of 2.5 overall and in major, and completion of all professional education courses with a grade of C or better). Supervised observation and directed teaching in respective fields of endorsement

BTE 6213 Methods of Teaching Business Subjects: 3 hours.
Three hours lecture. Objectives, materials, and methods of teaching basic business subjects, including economics, and design and methods of teaching online

BTE 6463 Method of Teaching Business Technology: 3 hours.
(Prerequisite: Admission to Teacher Education for teacher education majors and keyboarding proficiency using the touch method). Three hours lecture. A study of objectives, materials and methods appropriate for teaching business technology courses

Business Adminstration Courses

BUS 1111 Freshman Business Plan: 1 hour.
One hour lecture. This course is designed to help entering freshman business majors succeed in their degree program and begin preparation for their business career after graduation

BUS 2990 Special Topics in Business: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

BUS 3011 Academic Peer Advising I: 1 hour.
(Prerequisites: Junior standing and consent of instructor, for Business majors only). One hour lecture. Study of the role, benefits, objectives, and practice of academic peer advising

BUS 3021 Academic Peer Advising II: 1 hour.
(Prerequisites: BUS 3011 and consent of Instructor, for Business majors only). One hour lab. Laboratory application of academic peer advising

BUS 3031 Academic Peer Advising III: 1 hour.
(Prerequisites: BUS 3011, BUS 3021, and consent of Instructor ,for Business majors only). One hour lab. Laboratory application of academic peer advising

BUS 4000 Directed Individual Study in Business: 1-6 hours.
Hours and credits to be arranged

BUS 4203 Business Internship: 3 hours.
(Prerequisites:Approval of Associate Dean prior to internship). A minimum of ten weeks consisting of forty hours per week of business or public service experience

BUS 4853 Business Policy: 3 hours.
(Prerequisite: Graduating senior and BIS 3233 and FIN 3123 and MGT 3113 and MKT 3013.) Three hours lecture. Administrative process under conditions of uncertainty in large, small, entrepreneurial, and family businesses. Emphasis in integrating knowledge acquired in the functional areas of business administration in formulating administrative policies

BUS 4990 Special Topics in Business: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

BUS 6990 Special Topics in Business: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

BUS 7000 Directed Individual Study in Business: 1-6 hours.
Hours and credits to be arranged

BUS 8990 Special Topics in Business: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

BUS 9113 Preparing Future Business Faculty: 3 hours.
Three hours lecture. An examination of teaching, research, and service expectations for business academicians. Selected topics include institutional support, instructional technologies, journal submission, and job market

Culinary Arts Courses

CA 1251 ServSafe: 1 hour.
One hour lecture. Food safety training leading to national ServSafe Certification. (Offered at MUW)

CA 2003 Intro to Culinary Arts: 3 hours.
Three hours lecture. Career options in culinary arts and the food hospitality industry; introduction to kitchen operation and cuisine, food history, food safety and sanitation. (Offered at MUW)

CA 2603 CA Entrepreneurship: 3 hours.
Three hours lecture. Basic application of fundamental entrepreneurial skills in a culinary-specific environment. (Offered at MUW)

CA 3005 Food Prep I: 5 hours.
Three hours lecture. Four hours lab. Techniques used in cooking; food identification, handling, and preparation; preparation of soups, stocks and sauces; basics of baking; salad preparation; pasta and grains. (Offered at MUW)

CA 3015 Food Prep II: 5 hours.
Three hours lecture. Four hours lab. Intermediate level of food preparation, meat fabrication; basic charcuterie; smoked products; plate presentation; meal planning for large groups and off-premise catering. (Offered at MUW)

CA 3023 Menu and Recipe Dev: 3 hours.
(Prerequisite: CA 3005 or consent of instructor). Three hours lecture. The development of recipes and menus for application to food service test kitchen settings. (Offered at MUW)

CA 3103 Dining Room Service: 3 hours.
(Prerequisite: CA 2003) Food service preparation for dining services, history of food service, beverage identification and management, as well as staff coordination

CA 3153 Demonstration Techniques: 3 hours.
Three hours lecture. This course focuses on adequate knowledge and skills necessary for presenting, demonstrating, and merchandising various items or procedures. (Offered at MUW)

CA 3500 CA Internship: 6-12 hours.
(Prerequisite: CA 3015 and recommendation of the Director of the Culinary Arts Institute) 6-12 hours internship. Supervised application of knowledge and skills in a food service program. (Offered at MUW)

CA 3623 Business Law for CA: 3 hours.
(Prerequisite: CA 2003& CA 2603) Three hours lecture. A comprehensive study of the legal aspects of the hospitality industry with emphasis on compliance and prevention of liabilities. (Offered at MUW)

CA 3633 Service Design and Mgmt: 3 hours.
(Prerequisite: CA 203, CA 2603, & CA 3103) Three hours lecture. Food and beverage service systems design and management. Emphasis on the customer service aspect of culinary ventures from the perspective of organizational management. (Offered at MUW)

CA 3643 CA Venture Marketing: 3 hours.
(Prerequisite: CA 2603) Three hours lecture. Study of the fundamentals of marketing research, planning, and strategy as applied to culinary ventures. Emphasis on the development of market planning and research skills. (Offered at MUW)

CA 3653 HR Mgmt of Cul Business: 3 hours.
(Prerequisite: CA 2003 & CA 2603) Three hours lecture. Applied perspective of human resource management for culinary-specific environments. (Offered at MUW)

CA 3753 Advancing Baking: 3 hours.
(Prerequisite: CA 3005). Two hours lecture. Two hours laboratory. The theory and practice of operating a small bakery or pastry shop. Provides experience in producing French and American pastries and baked goods. Emphasis is on producing products from scratch, by hand. (Offered at MUW)

CA 4005 Food Preparation III: 5 hours.
(Prerequisite: CA 3015) Three hours lecture. Four hours lab. Advanced level of food preparation; emphasis on distinctive and complex food preparations; extensive menu-based meal plmming and presentation. (Offered at MUW)

CA 4013 World Cuisines: 3 hours.
(Prerequisite: CA 3015) Three hours lecture. Regional cuisines from throughout the world and application of cooking methods used in these cuisines including distinctive ingredients and approaches to food preparation. (Offered at MUW)

CA 4103 Business Skills in Culinary Arts: 3 hours.
(Prerequisite: MA 1113). Three hours lecture. Basic business skills and business mathematics applied to the food industry. (Offered at MUW)

CA 4153 Food Styling: 3 hours.
(Prerequisite: Art 1033, 1043, 2203, or permission on the Director of the Culinary Arts Institute) Three hours lecture. Concepts and techniques for food presentation to the camera, including styling techniques; the process of preparing food for still photography and videos; selecting tools and props; choosing and treating ingredients for presentation and endurance; and bringing the plate to camera readiness; food styling problems related to photography. Requires the development of a food styling kit. (Offered at MUW)

CA 4603 Culinary Arts Entrepreneurship: 3 hours.
(Prerequisite: All other courses in the Culinary Entrepreneurship program). Three hours seminar. Capstone course in culinary entrepreneurship. Emphasis on case analysis and the development and presentation of a comprehensive culinary business plan. (Offered at MUW)

Community College Leadership Courses

CCL 7000 Directed Individual Study in Community College Leadership: 1-9 hours.
Hours and credits to be arranged

CCL 8113 Community College History/Philosophy: 3 hours.
Three hours lecture. Objectives of the community college, philosophical/ historical bases, changing roles, issues in higher education/workforce devlopment/economic industry

CCL 8123 Community College Finance: 3 hours.
Three hours lecture. Analyzes tools, methods, problems in community college financial management, revenue sources, budget preparation, risk management, purchasing, employee compensation

CCL 8133 Leadership Theory and Practice in the Community College: 3 hours.
Three hours lecture. In-depth analysis of leadership theory and practice in the community college environment, including an overview of leadership, approaches, theories, and ethics

CCL 8143 Program Planning and Development: 3 hours.
In-depth analysis of workforce education including the mission, the knowledge base, planning and developing programs, and delivering programs

CCL 8153 Human Resources Administration: 3 hours.
Examines the role of the human resources administrator on workforce education leadership; key administrative functions, workforce development, benefits and compensation, and employee relations are analyzed

CCL 8173 Community College Teaching and Learning: 3 hours.
Comprehensive preparation for teaching at the community college: teaching strategies centered on outcomes and experiential learning, assessment of learning, and job related responsibilities

CCL 8193 Issues in Community College and Workforce Leadership: 3 hours.
A study of the current issues in community college leadership and workforce education. Designed for students in the community college leadership program

CCL 8213 Internship in Community College Leadership: 3 hours.
Provides experience in community college leadership and is conducted at a local community college under supervision of an administrator serving as the student's mentor

CCL 8223 Internship in Workforce Education Leadership: 3 hours.
Provides experience in workforce education leadership and is conducted at a local community college under supervision of an administrator serving as the student's mentor

CCL 8233 Community College Legal Issues: 3 hours.
Three hours lecture. In-depth analysis of the legal/policy issues pertaining to students, faculty, and administrators of community colleges

CCL 8243 Internship in Community College Teaching: 3 hours.
Provides experience in workforce education leadership and is conducted at a local community college under supervision of an administrator serving as the student's mentor

CCL 8283 Leadership in Community College Administration: 3 hours.
Three hours lecture. Nature and types of leadership and foundation theories. Uses of theory in administrative problem solving by applying models to community college mission, organization, and academe

CCL 8313 Community College Instructional Assessment: 3 hours.
Three hours lecture. In-depth analysis of community college setting, students, courses planning, and assessment of instruction, including techniques associated with effective teaching and assessment in the community college arena

CCL 8333 Community College Administration: 3 hours.
Three hours lecture. In-depth analysis of community college governance, structure, functions, and its relationship with external groups, state government

CCL 8343 Community Development and Resources: 3 hours.
In-depth analysis of community environment in which community colleges serve, including strategic planning, asset mapping, project development, resources and grant writing, and project evaluation

CCL 8353 Applications of Organizational Theory and Behavior in Community College Leadership: 3 hours.
Three hours lecture. Nature and types of community college leadership and foundation theories for understanding and managing modern organizations in relation to community college mission, organization, and academe

CCL 8363 Community College Activities Administration: 3 hours.
Three hours lecture. Nature and types of community college activities, understanding and managing today’s students, legal aspects, and relation to the community college mission, organization, and academe

CCL 8373 Community College Curriculum Improvement: 3 hours.
Three hours lecture. Comprehensive overview of community college curriculum improvement; theory and perspectives, contemporary curriculum, curriculum design and assessment, and curricular innovation

CCL 8383 Ethical Decision Making in Community College Administration: 3 hours.
Three hours lecture. Ancient, modern, and postmodern ethical theory. Case studies used to analyze ethical decisions. Multiple decision models and ethical concepts applied to problems and moral dilemmas

CCL 8990 Special Topics in Community College Leadership: 1-9 hours.

CCL 9000 Dissertation Research/ Dissertation in Community College Leadership: 1-13 hours.
Hours and credits to be arranged

CCL 9913 Dissertation Seminar: 3 hours.
Optional or elective course for specialized study in developing dissertation research. May be repeated once for credit

Civil Engineering Courses

CE 1001 Introduction to Civil Engineering: 1 hour.
Three hours laboratory. Introduction to the Civil Engineering profession. Ethics. Engineering problem-solving, basic computing skills and tools used in Civil Engineering. Engineering communications

CE 1011 First Year Seminar: 1 hour.
One hour lecture. First-year seminars explore a diverse arrary of topics that provide students with an opportunity to learn about a specific discipline from skilled faculty members

CE 2213 Surveying: 3 hours.
(Prerequisite:Credit in MA 1323 with a grade of C or better, or Credit,or concurrent registration in MA 1613,or Credit or concurrent registration in MA 1713). Two hours lecture, Four hour field and problem work. Fundamentals of field measurements. Theory, selection, and use of surveying instruments, theories used in adjustment of surveys

CE 2803 Environmental Engineering Issues: 3 hours.
(Prerequisite: Grade of C or better in CH 1213 and CH 1223). Three hours lecture. An overview of the scientific, social and legal issues impacting environmental management and protection in the United States

CE 2990 Special Topics in Civil & Environmental Engineering: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

CE 3113 Transportation Engineering: 3 hours.
(Prerequisite: Grade of C or better in CE 2213 and ST 3123; Co-requisite EM 2413). Three hours lecture. An introduction to the general modes of transportation, the planning processes associated with the modes of transportation and design of transportation facilities

CE 3311 Construction Materials Lab: 1 hour.
(Co-requiste:Credit or concurrent enrollment in CE 3313.) Three hours laboratory. A laboratory introduction to testing construction materials that includes analysis of data collected and presentation of the findings in written documents

CE 3313 Construction Materials: 3 hours.
(Prerequisite:Grade of C or better in CE 3413; credit or enrollment in ST 3123). Two hours lecture. Physical and mechanical properties of basic civil engineering construction materials.Significance of and reasons for testing control and specification of materials

CE 3411 Soil Mechanics Laboratory: 1 hour.
(Prerequisite:Credit or concurrent enrollment in CE 3413). Three hours laboratory. Laboratory tests to determine soil properties and behavior

CE 3413 Soil Mechanics: 3 hours.
(Prerequisite:Credit or current enrollment in EM 3213). Three hours lecture . Introduction to soil properties and behavior. Emphasis is placed on relating soil properties to compressibility and shear strength of soils

CE 3501 Water Resource Engineering Lab: 1 hour.
(Co-requisite: Credit or concurrent enrollment in CE 3503). A laboratory introduction to the analysis and design of systems for hydraulic and hydrologic management

CE 3503 Water Resource Engineering: 3 hours.
(Prerequisite: Grade of C or better in CE 2803, credit or concurrent enrollment in EM 3313). Three hours lecture. Fundamentals of hydrology and hydraulics. Analysis and design of stormwater management systems; water distribution, stormwater, and sanitary sewer design

CE 3603 Structural Mechanics: 3 hours.
(Prerequisite: Grade of C or better in EM 3213). Three hours lecture. Analytical and graphical methods of structural analysis; stress diagrams; influence lines; deflection; methods of work, moment distribution and slope deflection

CE 3801 Environmental Engineering and Water Resources Engineering Lab: 1 hour.
(Co-requisite: Credit or concurrent enrollment in CE 3823). Three hours laboratory. A laboratory introduction to processes and operations used in systems for water supply and wastewater reclamation

CE 3823 Environmental Engineering: 3 hours.
(Prerequisite: Grade of C or better in CE 2803). Three hours lecture. Environmental process design. Analysis and design of systems for water treatment, wastewater treatment, air pollution control, and hazardous waste engineering

CE 4000 Directed Individual Study in Civil & Environmental Engineering: 1-6 hours.
Hours and Credits to be arranged

CE 4103 Pavement Design: 3 hours.
(Prerequisite: Grade of C or better in CE 3313; or consent of major advisor). Three hours lecture. Analysis design of both flexible and rigid pavement structures

CE 4133 Geometric Design of Highways: 3 hours.
(Prerequisite: Grade of C or better in CE 3113; or consent of major advisor). Three hours lecture. Highway finance, organization and planning, economic analysis, elements of highway and street design, computer applications to highway engineering

CE 4143 Traffic Engineering: 3 hours.
(Prerequisite: Grade of C or better in CE 3113, grade of C or better in ST 3123; or consent of major advisor). Three hours lecture. Human and vehicular characteristics as they affect highway traffic flow; traffic regulation, accident cause/prevention; improving flow on existing facilities; planning traffic systems

CE 4153 Freight Transportation System Analysis: 3 hours.
(Prerequisite: CE 3113 and consent of instructor; or consent of major advisor). Three hours lecture. Definition, taxonomy and emerging issues for multi-modal transportation systems with focus on freight transportation and mathematical models for complex logistics and supply chain systems

CE 4163 Urban Transportation Planning: 3 hours.
(Prerequisite: CE 3113 and consent of instructor; or consent of major advisor). Three hours lecture. This course will provide an understanding of the nature of travel demand and methods and computer software used to plan for future transportation systems

CE 4173 Travel Behavior Modeling and Forecasting: 3 hours.
(Prerequisite: CE 3113 or consent of instructor). Three hours lecture. This course gives an overview of travel behavior and demand analysis and forecasting, with primary attention to the statistical and behavioral choice model research techniques used to study and forecast travel demand

CE 4183 Waterborne Transportation Engineering: 3 hours.
(Prerequisite: Grade of C or better in CE 3113; or consent of major advisor). Three hours lecture. Navigation vessels and their characteristics. Planning and design of Marine Transportation System facilities including navigation ports, channels and locks

CE 4233 Control Surveys: 3 hours.
(Prerequisite:Grade of C or better in CE 2213). Two hours lecture. Four hours laboratory. Methods and procedures for performing control surveys

CE 4243 Land Surveys: 3 hours.
(Prerequisites: Grade of C or better in CE 2213 or consent of major advisor). Three hours lecture. Methods of surveying and describing property with emphasis on Mississippi's public land surveys

CE 4433 Foundations: 3 hours.
(Prerequisite: Grade of C or better in CE 3413; or consent of major advisor). Three hours lecture. Introduction to exploration and engineering evaluation of subsoil and groundwater conditions for selection and design of foundations for structures and earth masses

CE 4483 Geosynthetics: 3 hours.
(Prerequisite: Grade of C or better in CE 3413 or equivalent). Three hour lecture. Understand the behavior of the different types of geosynthetic materials, proper design-by-function and selection of the right material for its intended applications

CE 4513 Engineering Hydrology: 3 hours.
(Prerequisite: grade of C or better in CE 3503; or consent of major advisor). Three hours lecture. Hydrologic processes; rainfall-runoff analysis; groundwater flow; frequency analysis; hydrologic design

CE 4523 Open Channel Hydraulics: 3 hours.
(Prerequisite: Grade of C or better in CE 3503; or consent of major advisor). Three hours lecture. Continuity, energy and momentum principles in open channel flow, flow resistance, uniform and non-uniform flow, channel controls and transitions, unsteady flow routing

CE 4533 Computational Methods in Water Resources Engineering: 3 hours.
(Prerequisite: Grade of C or better in CE 3503; or consent of major advisor). Three hours lecture. Review of relevant numerical analysis; numerical methods for kinematic wave, St. Venant, Boussinesq and dept-averaged equations; simulation of one and two dimension free-surface flows

CE 4543 Advanced Reinforced Concrete: 3 hours.
(Prerequisite: Grade of C or better in CE 4973; or consent of major advisor). Three hours lecture. Two-way slab systems, shear walls, retaining walls, bi-axial bending of columns, torsion, brackets and corbels. Introduction to prestressed concrete

CE 4563 Sedimentation Engineering: 3 hours.
(Prerequisite: Grade of C or better in CE 4523; or consent of major advisor). Three hours lecture. Processes by which cohesive and non-cohesive sediments are transported in overland flow and in rivers, reservoirs, estuaries and coastlines. Deposition and erosion rates. Design criteria

CE 4583 Stream Reconnaissance: 3 hours.
(Prerequisite: Grade of C or better in CE 3503; or consent of major advisor). Three hours lecture. Stream channel form and sedimentary features. Understanding how water flows into trough streams and channel form and function. Hydrologic, hydraulic and geomorphic channel evolution processes

CE 4633 Concrete Structures: 3 hours.
(Prerequisite: Grade of C or better in CE 3603). Three hours lecture. Theory and problems in the analysis and design of concrete structures

CE 4703 Construction Engineering and Management: 3 hours.
(Prerequisite: Grade of C or better in IE 3913, Senior standing or consent of instructor; or consent of major advisor). Three hours lecture. Construction contracts and law, cost estimating, and project scheduling

CE 4733 Construction Engineering Equipment and Methods: 3 hours.
(Prerequisite: Grade of C or better in IE 3913, Senior standing or consent of instructor; or consent of major advisor). Three hours lecture. Aspects of planning, operation and management of civil engineering support equipment, site logistics, equipment cost engineering, power systems and environmental considerations of equipment use

CE 4743 Analysis and Mitigation of Conflicts, Claims and Disputes: 3 hours.
(Prerequisite: Senior standing or consent of instructor; or consent of major advisor). Three hour lecture. Overview of the different techniques used to analyze and mitigate conflicts, claims, and disputes (C2D) in civil engineering projects

CE 4753 Construction Cost Estimating: 3 hours.
(Prerequisite: Senior Standing). Three hour lecture. Overview of cost estimates, total cost of a project, direct and indirect costs, labor and equipment cost analysis, materials management, overhead; contingency; and profit, bonds and insurance in construction engineering projects

CE 4763 Construction Risk Management: 3 hours.
(Prerequisite: Senior Standing). Three hour lecture. Overview of Introduction to the concept of risk: Risk, uncertainty, probability, components of a risk event (source, impact etc.), risk reward structure, risk attitude in construction engineering projects

CE 4843 Environmental Engineering Chemistry: 3 hours.
(Prerequisite: Grade of C or better in CE 3823 or consent of instructor; or consent of major advisor). Three hours lecture. Introduction to advanced theoretical concepts in sanitary engineering analysis with special emphasis on inorganic, organic, and physical chemistry

CE 4863 Water and Wastewater Engineering: 3 hours.
(Prerequisite: CE 3823 with grade of C or better; or consent of major advisor). Three hour lecture. Evaluation of municipal water and wastewater characteristics and flows; application of various unit processes/unit operations for the treatment of municipal water and wastewater

CE 4883 Engineered Environmental Systems: 3 hours.
(Prerequisite: CE 3503 & CE 3823 with grade of C or better; or consent of major advisor). Three hour lecture. Evaluation and characterization of storm water quality; selection, design and application of various treatment technologies; surface water quality management and modeling; and sustainable engineering

CE 4893 Hazardous Waste Management: 3 hours.
(Prerequisite: Grade of C or better in CE 3823; or consent of major advisor). Three hours lecture. Examination of state-of-the-art technologies available for the handling treatment; storage; and disposal of hazardous waste materials

CE 4903 Civil Engineering Comprehensive: 3 hours.
(Prerequisite:Graduation semester, or consent of department head).Engineering,ethical and professional practice considerations in the planning, design, and construction of civil engineering projects

CE 4913 Matrix of Analysis of Structures: 3 hours.
(Prerequisite: Grade of C or better in CE 3603, or consent of instructor; or consent of major advisor). Matrix formulation and computer analysis of structures. Linear stiffness analysis of truss and frames structures

CE 4923 Structural Dynamics: 3 hours.
(Prerequisite: Grade of C or better in CE 3603, or consent of instructor; or consent of major advisor). Three hours lecture. Response of a single and multi-degree of freedom structures to dynamic loading: free vibration, harmonic excitation, pulses, and earthquakes

CE 4953 Concrete and Steel Structures: 3 hours.
(Prerequisite: Grade of C or better in CE 3603). Three hours lecture. Load on structures. Analysis and design of concrete and steel structures using the ACI and AISC specifications

CE 4963 Steel Structures I: 3 hours.
(Prerequisite: Grade of C or better in CE 3603). Three hours lecture. Loads on structures. Analysis, design, and study of steel structures using the AISC specifications. Focus on beams and columns

CE 4973 Concrete Structures I: 3 hours.
(Prerequisite: Grade of C or better in CE 3603). Three hours lecture. Loads on structures. Analysis, design, and study of concrete structures using the ACI specifications. Focus on beams and columns

CE 4983 Engineering of Wood Structures: 3 hours.
(Prerequisite: Grade of C or better in CE 3603; or consent of major advisor). Three hours lecture. Loads on structures. Analysis and design of wood structures using the appropriate specifications. Focus on beams and columns

CE 4990 Special Topics in Civil & Environmental Engineering: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

CE 4993 Prestressed Concrete Structures: 3 hours.
(Prerequisite: Grade of C or better in CE 4973; or consent of major advisor). Three hours lecture. Loads on structures. Analysis and design of prestressed concrete structures using ACI specifications. Focus on beams

CE 6103 Pavement Design: 3 hours.
(Prerequisite: Grade of C or better in CE 3313; or consent of major advisor). Three hours lecture. Analysis design of both flexible and rigid pavement structures

CE 6133 Geometric Design of Highways: 3 hours.
(Prerequisite: Grade of C or better in CE 3113; or consent of major advisor). Three hours lecture. Highway finance, organization and planning, economic analysis, elements of highway and street design, computer applications to highway engineering

CE 6143 Traffic Engineering: 3 hours.
(Prerequisite: Grade of C or better in CE 3113, grade of C or better in ST 3123; or consent of major advisor). Three hours lecture. Human and vehicular characteristics as they affect highway traffic flow; traffic regulation, accident cause/prevention; improving flow on existing facilities; planning traffic systems

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CE 6183 Waterborne Transportation Engineering: 3 hours.
(Prerequisite: Grade of C or better in CE 3113; or consent of major advisor). Three hours lecture. Navigation vessels and their characteristics. Planning and design of Marine Transportation System facilities including navigation ports, channels and locks

CE 6243 Land Surveys: 3 hours.
(Prerequisites: Grade of C or better in CE 2213 or consent of major advisor). Three hours lecture. Methods of surveying and describing property with emphasis on Mississippi's public land surveys

CE 6433 Foundations: 3 hours.
(Prerequisite: Grade of C or better in CE 3413; or consent of major advisor). Three hours lecture. Introduction to exploration and engineering evaluation of subsoil and groundwater conditions for selection and design of foundations for structures and earth masses

CE 6483 Geosynthetics: 3 hours.
(Prerequisite: Grade of C or better in CE 3413 or equivalent). Three hour lecture. Understand the behavior of the different types of geosynthetic materials, proper design-by-function and selection of the right material for its intended applications

CE 6513 Engineering Hydrology: 3 hours.
(Prerequisite: grade of C or better in CE 3503; or consent of major advisor). Three hours lecture. Hydrologic processes; rainfall-runoff analysis; groundwater flow; frequency analysis; hydrologic design

CE 6523 Open Channel Hydraulics: 3 hours.
(Prerequisite: Grade of C or better in CE 3503; or consent of major advisor). Three hours lecture. Continuity, energy and momentum principles in open channel flow, flow resistance, uniform and non-uniform flow, channel controls and transitions, unsteady flow routing

CE 6533 Computational Methods in Water Resources Engineering: 3 hours.
(Prerequisite: Grade of C or better in CE 3503; or consent of major advisor). Three hours lecture. Review of relevant numerical analysis; numerical methods for kinematic wave, St. Venant, Boussinesq and dept-averaged equations; simulation of one and two dimension free-surface flows

CE 6543 Advanced Reinforced Concrete: 3 hours.
(Prerequisite: Grade of C or better in CE 4973; or consent of major advisor). Three hours lecture. Two-way slab systems, shear walls, retaining walls, bi-axial bending of columns, torsion, brackets and corbels. Introduction to prestressed concrete

CE 6563 Sedimentation Engineering: 3 hours.
(Prerequisite: Grade of C or better in CE 4523; or consent of major advisor). Three hours lecture. Processes by which cohesive and non-cohesive sediments are transported in overland flow and in rivers, reservoirs, estuaries and coastlines. Deposition and erosion rates. Design criteria

CE 6583 Stream Reconnaissance: 3 hours.
(Prerequisite: Grade of C or better in CE 3503; or consent of major advisor). Three hours lecture. Stream channel form and sedimentary features. Understanding how water flows into trough streams and channel form and function. Hydrologic, hydraulic and geomorphic channel evolution processes

CE 6703 Construction Engineering and Management: 3 hours.
(Prerequisite: Grade of C or better in IE 3913, Senior standing or consent of instructor; or consent of major advisor). Three hours lecture. Construction contracts and law, cost estimating, and project scheduling

CE 6733 Construction Engineering Equipment and Methods: 3 hours.
(Prerequisite: Grade of C or better in IE 3913, Senior standing or consent of instructor; or consent of major advisor). Three hours lecture. Aspects of planning, operation and management of civil engineering support equipment, site logistics, equipment cost engineering, power systems and environmental considerations of equipment use

CE 6743 Analysis and Mitigation of Conflicts, Claims and Disputes: 3 hours.
(Prerequisite: Senior standing or consent of instructor; or consent of major advisor). Three hour lecture. Overview of the different techniques used to analyze and mitigate conflicts, claims, and disputes (C2D) in civil engineering projects

CE 6753 Construction Cost Estimating: 3 hours.
(Prerequisite: Senior Standing). Three hour lecture. Overview of cost estimates, total cost of a project, direct and indirect costs, labor and equipment cost analysis, materials management, overhead; contingency; and profit, bonds and insurance in construction engineering projects

CE 6763 Construction Risk Management: 3 hours.
(Prerequisite: Senior Standing). Three hour lecture. Overview of Introduction to the concept of risk: Risk, uncertainty, probability, components of a risk event (source, impact etc.), risk reward structure, risk attitude in construction engineering projects

CE 6843 Environmental Engineering Chemistry: 3 hours.
(Prerequisite: Grade of C or better in CE 3823 or consent of instructor; or consent of major advisor). Three hours lecture. Introduction to advanced theoretical concepts in sanitary engineering analysis with special emphasis on inorganic, organic, and physical chemistry

CE 6863 Water and Wastewater Engineering: 3 hours.
(Prerequisite: CE 3823 with grade of C or better; or consent of major advisor). Three hour lecture. Evaluation of municipal water and wastewater characteristics and flows; application of various unit processes/unit operations for the treatment of municipal water and wastewater

CE 6873 Water and Wastewater Engineering: 3 hours.
(Prerequisite: Grade of C or better in CE 3803). Two hours lecture. One hour laboratory. Evaluation of municipal water and waste-water characteristics and flows; application of various unit processes/unit operations for the treatment of municipal water and wastewater

CE 6883 Engineered Environmental Systems: 3 hours.
(Prerequisite: CE 3503 & CE 3823 with grade of C or better; or consent of major advisor). Three hour lecture. Evaluation and characterization of storm water quality; selection, design and application of various treatment technologies; surface water quality management and modeling; and sustainable engineering

CE 6893 Hazardous Waste Management: 3 hours.
(Prerequisite: Grade of C or better in CE 3823; or consent of major advisor). Three hours lecture. Examination of state-of-the-art technologies available for the handling treatment; storage; and disposal of hazardous waste materials

CE 6913 Matrix of Analysis of Structures: 3 hours.
(Prerequisite: Grade of C or better in CE 3603, or consent of instructor; or consent of major advisor). Matrix formulation and computer analysis of structures. Linear stiffness analysis of truss and frames structures

CE 6923 Structural Dynamics: 3 hours.
(Prerequisite: Grade of C or better in CE 3603, or consent of instructor; or consent of major advisor). Three hours lecture. Response of a single and multi-degree of freedom structures to dynamic loading: free vibration, harmonic excitation, pulses, and earthquakes

CE 6963 Design of Steel Structures: 3 hours.
(Prerequisite: Grade of C or better in CE 4953). Three hours lecture. Loads on structures. Analysis and design of steel structures using the AISC specifications. Focus on beams and columns

CE 6973 Design of Concrete Structures: 3 hours.
(Prerequisite: Grade of C or better in CE 3603). Three hours lecture. Loads on structures. Analysis, design, and study of concrete structures using the ACI specifications. Focus on beams and columns

CE 6983 Engineering of Wood Structures: 3 hours.
(Prerequisite: Grade of C or better in CE 3603; or consent of major advisor). Three hours lecture. Loads on structures. Analysis and design of wood structures using the appropriate specifications. Focus on beams and columns

CE 6990 Special Topics in Civil & Environmental Engineering: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

CE 6993 Prestressed Concrete Structures: 3 hours.
(Prerequisite: Grade of C or better in CE 4973; or consent of major advisor). Three hours lecture. Loads on structures. Analysis and design of prestressed concrete structures using ACI specifications. Focus on beams

CE 7000 Directed Individual Study in Civil & Environmental Engineering: 1-6 hours.
Hours and credits to be arranged

CE 8000 Thesis Research/ Thesis in Civil & Environmental Engineering: 1-13 hours.
Hours and credits to be arranged

CE 8133 Traffic Flow Theory: 3 hours.
(Prerequisite: Consent of Major Advisor). Three hours lecture. An analysis of the engineering and mathematical principles of traffic flow

CE 8143 Traffic Simulation and Advanced Traffic Management: 3 hours.
(Prerequisite: Consent of Major Advisor). Introduction of traffic control concepts. Understanding of existing traffic control systems. In-depth knowledge of traffic simulation

CE 8163 Public Transportation: 3 hours.
(Prerequisite: Consent of Major Advisor). Three hours lecture. Principles of efficient management, and planning of public transportation systems: capabilities and limitations, optimal scale and layout, design and operation of transit systems

CE 8203 Finite Element Modeling in CEE: 3 hours.
(Prerequisite: Consent of Major Advisor). Three hours lecture. Modern finite element methods for continuum mechanical models relevant to civil and environmental engineering, including surface and subsurface fluid flow, mass transport, and solid mechanics

CE 8303 Material Characterization: 3 hours.
(Prerequisite: Consent of Major Advisor). Three hours lecture. Characterization of advanced material behaviors for pavement subgrades, bases and surface courses, Stree dependency, viscoelasticity, repeated load moduli, and stabilization are central behaviors of interest

CE 8313 Materials Science and Durability of Concrete: 3 hours.
(Prerequisite: Consent of Major Advisor). Three hours lecture. Materials science of concrete and cement-based materials with a focus on materials specification and testing as well as identifying mechanisms of material degradation

CE 8333 Pavement Performance and Rehabilitation: 3 hours.
(Prerequisites: Consent of Major Advisor). Three hours lecture. Field methods for evaluating pavement performance including surveys, profiling, and frictional resistance. Impulse deflection testing of structural integrity. Pavement preservation and rehabilitation techniques

CE 8343 Advanced Pavement Materials: 3 hours.
(Prerequisite: Consent of Major Advisor). Three hours lecture. Properties, behavior and performance of highway and airfield paving materials; principally asphalt and concrete. Quality control and assurance. Constitute material properties and specifications

CE 8413 Advanced Geotechnical Site Characterization: 3 hours.
(Prerequisite: Consent of Major Advisor). Three hours lecture. Fundamentals of geotechnical engineering site characterization and special techniques for large projects involving difficult complex geological soils

CE 8423 Geotechnical Earthquake Engineering: 3 hours.
(Prerequisite: Consent of Major Advisor). Three hours lecture. Dynamic soil properties, seismic site response analysis, and evaluation of soil liquefication, seismic stability of dams and embankments, seismic aspects of foundation design

CE 8433 Advanced Foundations: 3 hours.
(Prerequisite: Consent of Major Advisor). Three hours lecture. A continuation of CE 3433 with emphasis on unusual soil conditions and foundations

CE 8443 Soil Behavior: 3 hours.
(Prerequisite: Consent of Major Advisor). Three hours lecture. Review of methods of testing to define response; rationale for choosing shear strength and deformation parameters for soils for design applications

CE 8453 Physical Properties of Soils: 3 hours.
(Prerequisite: Consent of Major Advisor). Three hours lecture. Three hours laboratory. A study of the physical properties of soil masses as related to foundation engineering

CE 8463 Slopes & Embankments: 3 hours.
(Prerequisite: Consent of Major Advisor). Analysis and design of geotechnical systems placed on an angle from the horizontal

CE 8473 Theoretical Soil Mechanics: 3 hours.
(Prerequisite: Consent of Advisor). Three hours lecture. Modern interpretation of soil behavior for engineering applications. Extrapolation of actual conditions from standard testing results

CE 8503 Data Analysis for CEE: 3 hours.
(Prerequisite: Consent of Major Advisor). Three hours lecture. Analysis and interpretation of civil and environmental engineering data. Empirical, analytic, and statistical decomposition of spatial and temporal data to determine meaning

CE 8533 Hydromechanics: 3 hours.
(Prerequisite: Consent of Major Advisor). Three hours lecture. Mechanics of incompressible unsteady, turbulent flows. Equations of motion, hydrodynamic forces on structures, introduction to turbulence

CE 8543 Tidal Hydraulics: 3 hours.
(Prerequisite: Consent of Major Advisor). Three hours lecture. Hydrodynamics and transport in tidal bays and estuaries. Unsteady, non-uniform stratified flows, tides, waves, currents, circulation, salinity intrusion, and sedimentation, and engineering analysis and works

CE 8553 Rivers, Estuaries and Coasts: 3 hours.
(Prerequisite: Consent of Major Advisor). Three hours lecture. Basic introduction to the physical processes in river, estuaries, and coastal zones. Engineered solutions to common problems concerning flow and sedimentation

CE 8563 Groundwater Resource Evaluation: 3 hours.
(Prerequisite: Consent of Major Advisor). Three hours lecture. Groundwater movement; Darcy's law; equations of groundwater flow; confined and unconfined flow; wells and well field analysis; groundwater quality; aquifer management

CE 8573 Hydro-environmental Analysis: 3 hours.
(Prerequisite: Consent of Major Advisor.) Three hours lecture. Environmental engineering aspects of physical/chemical/ biological processes impacting conventional and toxic materials in surface waters. Characteristics of rivers/streams, lakes and estuaries related to environmental quality

CE 8593 Environmental Hydrology: 3 hours.
(Prerequisite: Consent of Major Advisor). Three hours lecture. Discuss hydrologic cycle and its effects on water quality; principles and models for pollutant transport and transformations in surface runoff, in-stream, unsaturated soil, and groundwater

CE 8603 Mat Struct Analysis II: 3 hours.
(Prerequisite: Consent of Major Advisor). Advanced topics in matrix structural analysis using the direct stiffness method

CE 8623 Theory of Plates and Shells: 3 hours.
(Prerequisites: Consent of Major Advisor.) Three hours lecture. Equations of equilibrium for plates, slabs, and shells

CE 8653 Computational Inelasticity: 3 hours.
(Prerequisite: Consent of Major Advisor). Three hour lecture. Computational methods and finite elements applied to inelastic deformations of solids; deformation continuum plasticity, viscoplasticity and viscoelasticity; with application to metals, soils, concrete, and polymers

CE 8673 Blast Effects and Structures Responses: 3 hours.
(Prerequisite: Consent of Major Advisor). Three hours lecture. Fundamental blast phenomena. Blast loadings on structures and effects on occupants. Design and analysis of structural elements and systems subjected to blast

CE 8683 Finite Element Analysis in Structural Engineering: 3 hours.
(Prerequisite: Consent of Major Advisor). Three hours lecture. Energy and elasticity principles. Development of planar three-dimensional and curved elements. Applications to plates and shells. Use of computer programs

CE 8713 Green Building Systems: 3 hours.
(Prerequisite: Consent of Major Advisor). Three hour lecture. Understanding negative impacts of construction on the societal sustainability and using life-cycle assessment, systems analysis and economic valuation for mitigation

CE 8803 Unit Processes and Operations in Environmental Engineering I: 3 hours.
(Prerequisite: Consent of Major Advisor). Three hours lecture. Theory and application of physical and chemical unit processes and operations available for the treatment of water and wastewater

CE 8823 Unit Processes and Operations in Environmental Engineering II: 3 hours.
(Prerequisite: Consent of Major Advisor). Three hours lecture. Theory and application of biological processes available for the treatment of wastewater

CE 8863 Solid Waste Management: 3 hours.
(Prerequisite: Consent of Major Advisor.) Three hours lecture. Define and characterize non-hazardous solid wastes and how to minimize, handle, transport, store, recycle and dispose of these materials

CE 8923 Surface Water Quality Modeling: 3 hours.
(Prerequisite: Consent of Major Advisor). Development of the mathematical formulations describing the distribution of concentration of conservative and nonconservative pollutants describing the distribution of concentration of conservative in natural waters

CE 8933 Surface Water Quality Modeling II: 3 hours.
(Prerequisite: Consent of Major Advisor.) Three hours lecture. Advanced topics related to surface water quality modeling. Overview of the present state-of-the-art of modeling, analysis eutrophication, toxic materials (organic chemicals and metals) and review of recent trends

CE 8953 Fine Sediment Processes: 3 hours.
(Prerequisite: Consent of Major Advisor). Three hours lecture. Fine sediment processes in transport, deposition, and erosion by water. Fluid-particle interactions, flocculation process in clay sediments, lutocline, formations and fluid mud, bed formation processes

CE 8963 Hydraulics of Closed Conduits: 3 hours.
(Prerequisite: Consent of Major Advisor). Three hours lecture. Analysis of steady, quasi-steady, time-dependent, and transient conduit flow; flow resistance; system components; distribution systems; compute applications to closed conduits

CE 8990 Special Topics in Civil & Environmental Engineering: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

CE 9000 Dissertation Research/ Dissertation in Civil & Environmental Engineering: 1-13 hours.
Hours and credits to be arranged

College of Forest Resources Courses

CFR 1011 Amb. Leadership Development: 1 hour.
(Pre-requisite: Application and interview required then approval by instructor). One hour lecture. For Ambassadors of College of Forest Resources only. Focus on recruitment, discussion and study of each department, and community service outreach. Repeatable for up to 6 credits

Chemistry Courses

CH 1001 First Year Seminar: 1 hour.
One hour lecture. First-year seminars explore a diverse arrary of topics that provide students with an opportunity to learn about a specific discipline from skilled faculty members

CH 1043 Survey of Chemistry I: 3 hours.
Three hours lecture. The nature of chemistry and its applications.For non-chemistry majors

CH 1051 Experimental Chemistry: 1 hour.
Three hours laboratory. A laboratory to accompany CH 1043. Experiments designed to illustrate the practical aspects of chemistry

CH 1053 Survey of Chemistry II: 3 hours.
(Pre-requisite: CH 1043). The nature of chemistry and its applications. Designed for non-chemistry majors

CH 1141 Professional Chemistry: Paths: 1 hour.
Skills to be successful as a chemistry major and in possible careers in chemistry. Introduction to professional conduct of scientists and necessary computer skills

CH 1211 Investigations in Chemistry I: 1 hour.
(Prerequisite:Prior credit or concurrent enrollment in CH 1213).Three hours laboratory. Selected experiments to illustrate fundamentals of chemistry.Accompanies CH 1213

CH 1213 Chemistry I: 3 hours.
(Prerequisities:ACT Math subscore 24 or grade of C or better in MA 1313) Three hours lecture.The principles of atomic and molecular structure, energetics, dynamics, and synthesis as related to chemical systems

CH 1221 Investigations in Chemistry II: 1 hour.
(Prerequisites: Grade of C or better in CH 1211 and prior credit or concurrent enrollment in CH 1223). Three hours laboratory. Selected experiments to illustrate the fundamentals of chemistry. Accompanies CH 1223

CH 1223 Chemistry II: 3 hours.
(Prerequisites: Grade of C or better in CH 1213). Three hours lecture. The principles of atomic and molecular structure, energetics, dynamics, and synthesis as related to chemical systems

CH 1234 Integrated Chemistry I: 4 hours.
(Prerequisites: ACT Math subscore 22 or grade of C or better in MA 1313). Three hours lecture. Three hours laboratory. Integrated lecture-lab course for chemistry majors. Stoichiometry, thermochemistry, bonding and structure, properties of solid, liquids, gases and solutions. Honors section available

CH 1244 Integrated Chemistry II: 4 hours.
(Prerequisites: Grade of C or better in CH 1234 or CH 1213 and CH 1211). Three hours lecture. Three hours laboratory. Integrated lecture-laboratory course for chemistry majors. Kinetics, equilibrium, acid-base chemistry, advanced thermochemistry, electrochemistry, chemistry of metals, nuclear chemistry, and introduction to organic chemistry

CH 2141 Professional Chemistry: Tools: 1 hour.
(Prerequisite:CH 1141).One hour lecture. Advanced computer skills including chemical literature searching. Introduction to oral communication and research in chemistry

CH 2311 Analytical Chemistry I Laboratory: 1 hour.
(Prerequisites:CH 1223 and CH 1221. Prior credit or concurrent enrollment in CH 2313).Three hours laboratory. Laboratory course to accompany CH 2313

CH 2313 Analytical Chemistry I: 3 hours.
(Prerequisites:CH 1221 and CH 1223). Three hours lecture. Quantitative, instrumental, and separation methods in analytical chemistry

CH 2501 Elementary Organic Chemistry Laboratory: 1 hour.
(Prerequisite: CH 1211 or CH 1051). Three hours laboratory. A laboratory course to accompany CH 2503

CH 2503 Elementary Organic Chemistry: 3 hours.
(Prerequisite: CH 1213 or CH 1043). Three hours lecture. A terminal course in organic chemistry. Common aliphatic, aromatic, and heterocyclic compounds

CH 2990 Special Topics in Chemistry: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

CH 3141 Professional Chemistry: Literature: 1 hour.
(Prerequisite: CH 2141). One hour lecture. Advanced discussion of careers the chemical literature. Introduction to scientific writing

CH 3213 Inorganic Chemistry: 3 hours.
(Prerequisites: Grade of C or better in CH 4513 or CH 4554). Three hours lecture. A basic course in inorganic chemistry. Topics include periodicity, ionic interactions, systematic chemistry of the elements and solvent relations to acid-base and redox reactions

CH 4000 Directed Individual Study in Chemistry: 1-6 hours.
Hours and credits to be arranged

CH 4141 Professional Chemistry: Research: 1 hour.
(Prerequisite:CH 3141). One hour lecture. Disseminating research results in chemistry. Advanced scientific writing, performing scientific research and professional conduct of scientists

CH 4212 Advanced Inorganic Laboratory: 2 hours.
(Prerequisite: Prior credit or concurrent enrollment in CH 4213/6213). Six hours laboratory. The application of modern experimental techniques to inorganic systems

CH 4213 Advanced Inorganic Chemistry I: 3 hours.
(Prerequisite: Grades of C or better in CH 3213 and either CH 4523 or CH 4564). Three hours lecture. Primarily the study of the elements in light of the periodic law; emphasis on coordination number, molecular complexes, and nuclear chemistry

CH 4303 Environmental Chemistry I: 3 hours.
(Prerequisites: Grade of C or better in CH 1223 or in CH 1244, junior standing). Three hours lecture. A systematic study of the basic concepts of environmental chemistry. Topics include air, water, soil chemistry, pollution, and environmental regulations

CH 4351 Analytical Chemistry Laboratory II: 1 hour.
(Prerequisite: Grade of C or better in CH 3311. Concurrent registration in CH 4353/6353). Three hours laboratory. Laboratory course to accompany CH 4353/6353

CH 4353 Analytical Chemistry II: 3 hours.
(Prerequisites: Grade of C or better in CH 3313). Three hours lecture. Three hours laboratory. A study of instrument-based methods in analytical chemistry

CH 4403 Biophysical Chemistry: 3 hours.
(Prerequisites: PH 1123 or PH 2223, MA 1723, grade of C or better in CH 4813). Three hours lecture. Principles of thermodynamics, solutions, electrochemistry, kinetics, transport processes, macromolecular solutions and electromagnetic properties as applied to biological systems

CH 4411 Physical Chemistry Laboratory I: 1 hour.
(Prerequisite:Prior credit or concurrent enrollment CH 4413/6613). Three hours laboratory Laboratory course to accompany CH 4413/6413

CH 4413 Thermodynamics and Kinetics: 3 hours.
(Prerequisites: PH 2213 or PH 1113, MA 1723, grade of C or better in CH 1223). Three hours lecture. A study of the quantitative and theoretical properties of matter. Topics include chemical thermodynamics and kinetics, and solutions

CH 4421 Physical Chemistry Laboratory II: 1 hour.
(Prerequisite:Prior credit or concurrent enrollment in CH 4423/6423).Three hours laboratory. Laboratory course to accompany CH 4423/6423

CH 4423 Quantum Mechanics and Spectroscopy: 3 hours.
(Prerequisites: PH 2213 or PH 1113, MA 1723, grade of C or better in CH 1223). Three hours lecture. Topics include solid state, surface chemistry, macromolecules, quantum mechanics, spectroscopy, and statistical thermodynamics

CH 4511 Organic Chemistry Laboratory I: 1 hour.
(Prerequisites: Grade of C or better in CH 1221 and CH 1223 or in CH 1244. Prior credit or concurrent enrollment in CH 4513). Three hours laboratory. A laboratory course to accompany CH 4513/6513

CH 4513 Organic Chemistry I: 3 hours.
(Prerequisites: Grade of C or better in CH 1223 or in CH 1244). Three hours lecture. A systematic study of organic chemistry including aliphatic, aromatic, and heterocyclic compounds

CH 4521 Organic Chemistry Laboratory II: 1 hour.
(Prerequisites: Grade of C or better in CH 4511/6511 and CH 4513/6513 or in CH 4554. Prior credit or concurrent enrollment in CH 4523). Three hours laboratory. A laboratory course to accompany CH 4523/6523

CH 4523 Organic Chemistry II: 3 hours.
(Prerequisite: Grade of C or better in CH 4513/6513 or in CH 4554). Three hours lecture. A systematic study of organic chemistry including aliphatic, aromatic, and heterocyclic compounds

CH 4554 Integrated Organic I: 4 hours.
(Prerequisites: Grade of C or better in CH 1221 and 1223 or in 1244). Three hours lecture. Three hours laboratory. Integrated lecture-lab course for chemistry majors. A systematic study of organic chemistry including alipathic, aromatic, and heterocyclic compounds

CH 4564 Integrated Organic II: 4 hours.
(Prerequisite: Grade of C or better in CH 4521 and CH 4523 or in CH 4554). Three hours lecture. Three hours laboratory. Integrated lecture-lab course for chemistry majors. A systematic study of organic chemistry including aliphatic, aromatic, and heterocyclic compounds

CH 4603 Undergraduate Research: 3 hours.
Nine hours laboratory. Original research project directed by a chemistry faculty member

CH 4711 Senior Seminar: 1 hour.
(Prerequisite:CH 4141 or concurrent enrollment). One hour lecture. Submission of a written report and presentation of a seminar on either experimental results or a literature topic in chemistry

CH 4713 Study Abroad Tour: 3 hours.
Three hour study abroad. Experiential learning through travel abroad focusing on specialized areas of study in Chemistry

CH 4990 Special Topics in Chemistry: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

CH 6213 Advanced Inorganic Chemistry I: 3 hours.
(Prerequisite: Grades of C or better in CH 3213 and either CH 4523 or CH 4564). Three hours lecture. Primarily the study of the elements in light of the periodic law; emphasis on coordination number, molecular complexes, and nuclear chemistry

CH 6303 Environmental Chemistry I: 3 hours.
(Prerequisites: Grade of C or better in CH 1223 or in CH 1244, junior standing). Three hours lecture. A systematic study of the basic concepts of environmental chemistry. Topics include air, water, soil chemistry, pollution, and environmental regulations

CH 6351 Analytical Chemistry Laboratory II: 1 hour.
(Prerequisite: Grade of C or better in CH 3311. Concurrent registration in CH 4353/6353). Three hours laboratory. Laboratory course to accompany CH 4353/6353

CH 6353 Analytical Chemistry II: 3 hours.
(Prerequisites: Grade of C or better in CH 3313). Three hours lecture. Three hours laboratory. A study of instrument-based methods in analytical chemistry

CH 6413 Thermodynamics and Kinetics: 3 hours.
(Prerequisites: PH 2213 or PH 1113, MA 1723, grade of C or better in CH 1223). Three hours lecture. A study of the quantitative and theoretical properties of matter. Topics include chemical thermodynamics and kinetics, and solutions

CH 6423 Quantum Mechanics and Spectroscopy: 3 hours.
(Prerequisites: PH 2213 or PH 1113, MA 1723, grade of C or better in CH 1223). Three hours lecture. Topics include solid state, surface chemistry, macromolecules, quantum mechanics, spectroscopy, and statistical thermodynamics

CH 6511 Organic Chemistry Laboratory I: 1 hour.
(Prerequisites: Grade of C or better in CH 1221 and CH 1223 or in CH 1244. Prior credit or concurrent enrollment in CH 4513). Three hours laboratory. A laboratory course to accompany CH 4513/6513

CH 6513 Organic Chemistry I: 3 hours.
(Prerequisites: Grade of C or better in CH 1223 or in CH 1244). Three hours lecture. A systematic study of organic chemistry including aliphatic, aromatic, and heterocyclic compounds

CH 6521 Organic Chemistry Laboratory II: 1 hour.
(Prerequisites: Grade of C or better in CH 4511/6511 and CH 4513/6513 or in CH 4554. Prior credit or concurrent enrollment in CH 4523). Three hours laboratory. A laboratory course to accompany CH 4523/6523

CH 6523 Organic Chemistry II: 3 hours.
(Prerequisite: Grade of C or better in CH 4513/6513 or in CH 4554). Three hours lecture. A systematic study of organic chemistry including aliphatic, aromatic, and heterocyclic compounds

CH 6713 Study Abroad Tour: 3 hours.
Three hour study abroad. Experiential learning through travel abroad focusing on specialized areas of study in Chemistry

CH 6990 Special Topics in Chemistry: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

CH 7000 Directed Individual Study in Chemistry: 1-6 hours.
Hours and credits to be arranged

CH 8000 Thesis Research/ Thesis in Chemistry: 1-13 hours.
Hours and credits to be arranged

CH 8111 Professional Chemistry: 1 hour.
One hour lecture. Professionalism in chemistry as it applies to research, with emphasis on the different methods used for disseminating research results

CH 8203 Advanced Inorganic Chemistry II: 3 hours.
(Prerequisite: CH 4213/6213 and CH 4423/6423). Three hours lecture. A systematic study of coordination compounds with emphasis upon the techniques

CH 8213 Organometallic Chemistry: 3 hours.
Three hours lecture. The preparation, bonding, structure, spectroscopy and reactions of main group or transition metal organometallic compounds and catalysis involving organometallic intermediates

CH 8313 Advanced Analytical Chemistry: 3 hours.
(Prerequisite: Consent of instructor). Three hours lecture. Basic principles and problems involved with chemical analysis

CH 8333 Advanced Instrumental Analysis: 3 hours.
(Prerequisite: CH 4353/6353 or consent of instructor). Three hours lecture. Fourier transform and laser methods of spectroscopy, surface analysis and their application to current analytical probelsm

CH 8343 Electroanalytical Chemistry: 3 hours.
(Prerequisite: Consent of instructor). Three hours lecture. Fundamentals of electrochemistry and application of electrochemical methods to analytical chemistry

CH 8423 Molecular Structure: 3 hours.
(Prerequisites: consent of instructor. Three hours lecture. An introduction to various methods for studying molecular structure. Methods covered include quantum mechanics, statistical mechanics, molecular spectroscopy, and nuclear chemistry

CH 8513 Synthetic Organic Chemistry: 3 hours.
(Prerequisite: 12 credits in organic chemistry). Three hours lecture. The scope and limitations of commonly employed organic preparative methods. New and unusual reagents

CH 8553 Theoretical Organic Chemistry: 3 hours.
(Prerequisite: 12 credits in organic chemistry). Three hours lecture. A study of the mechanisms of organic reactions

CH 8613 Methods in Biophysical Chemistry: 3 hours.
Three hours leceture. Discussion of physical methods and conceptual models used to describe the behavior or biological macromolecules and biochemical reactions

CH 8711 Seminar: 1 hour.
One hour lecture. Reports on recent literature by students and staff. All graduate students in chemistry required to attend. One credit for each semester's participation. Up to a total of six credits allowed for Ph.D. candidates, and three for M.S

CH 8721 Seminar: 1 hour.
One hour lecture. Reports on recent literature by students and staff. All graduate students in chemistry required to attend. One credit for each semester's participation. Up to a total of six credits allowed for Ph.D. candidates, and three for M.S

CH 8731 Seminar: 1 hour.
One hour lecture. Reports on recent literature by students and staff. All graduate students in chemistry required to attend. One credit for each semester's participation. Up to a total of six credits allowed for Ph.D. candidates, and three for M.S

CH 8990 Special Topics in Chemistry: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

CH 9000 Dissertation Research/ Dissertation in Chemistry: 1-13 hours.
Hours and credits to be arranged

Chemical Engineering Courses

CHE 1001 First Year Seminar: 1 hour.
One hour lecture. First-year seminars explore a diverse array of topics that provide students with an opportunity to learn about a specific discipline from skilled faculty members

CHE 1101 Introduction to Chemical & Petroleum Engineering: 1 hour.
(Prerequisites: Credit or registration in CH 1213 Chemistry I and MA 1323 Trigonometry or MA 1453 Pre-calculus). One hour lecture. One hour laboratory. Study of fundamentals of chemical and petroleum engineering including unit conversions and stoichiometry

CHE 2114 Mass and Energy Balances: 4 hours.
(Prerequisites: C or better in CH 1223 and credit or registration in MA 1723). Three hours lecture. Two hours laboratory. Application of systems of units, material balances, heats of reaction, energy balances, and chemical equilibria to typical industrial problems

CHE 2203 Introduction to Engineering with CHE and PTE Applications: 3 hours.
(Prerequisite: Credit or registration in chemistry and calculus). Two hours lecture. Two hours laboratory. Taught on approved high school campuses. Introduction to engineering topics and analysis of engineering problems with applications to chemical and petroleum engineering

CHE 2213 Chemical Engineering Analysis: 3 hours.
(Prerequisite: C or better in CH 1213; Credit or registration in MA 1713). Three hours lecture. Introduction to the analysis of chemical & petroleum engineering processes using numerical and statistical techniques with application of modern computational tools available to engineers

CHE 2990 Special Topics in Chemical Engineering: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

CHE 3113 Chemical Engineering Thermodynamics I: 3 hours.
(Prerequisites: C or better in CH 1223 and PH 2213. Co-requisites: CHE 2114 and MA 2733). Three hours lecture. Thermodynamic properties, energy relationships, applications of the first and second law of thermodynamics, flow processes, power cycles, refrigeration and liquefaction

CHE 3123 Chemical Engineering Thermodynamics II: 3 hours.
(Prerequisites: C or better in MA 2743, CHE 2114 and CHE 3113). Three hours lecture. Treatment of non-ideal effects. High pressure behavior of pure substances. Thermodynamics of ideal and non-ideal mixtures, phase equilibria, and chemical equilibria

CHE 3203 Fluid Flow Operations: 3 hours.
(Prerequisites: C or better in PH 2213 and credit and registration in CHE 2114 and MA 1723). Three hours lecture. Fundamentals of fluid flow behavior in chemical processes emphasized by extensive calculations. Design of fluid flow systems

CHE 3213 Heat Transfer Operations: 3 hours.
(Prerequisites: C or better in MA 2743 and in either CHE 3203 or EM 3313 and credit or registration in CHE 3113 and MA 3253). Three hours lecture. Fundamentals of heat transfer in chemical engineering processes and process equipment

CHE 3222 Chemical Engineering Laboratory I: 2 hours.
(Prerequisites: Grade of C or better in CHE 3203 or EM 3313; Credit or registration in CHE 3213). Four hours laboratory. Experiments in chemical engineering operations related to fluid flow and heat transfer. Experimental design, statistics, health & safety concerns

CHE 3223 Separation Processes: 3 hours.
(Prerequisites: C or better in CHE 3203; Credit or registration in CHE 3213 and CHE 3123) Three hours lecture. Fundamentals of separation processes, including distillation, gas, absorption/stripping, liquid-liquid extraction, membrane-based processes. Analysis, evaluation, and synthesis of separation processes for binary and multi-component mixtures. Design and sizing of separation equipment

CHE 3232 Chemical Engineering Laboratory II: 2 hours.
(Prerequisites: C or better in CHE 3203, CHE 3213, and CHE 3223). Four hours laboratory. Experiments in chemical engineering unit operations related to heat transfer, mass transfer, kinetics and process control. Statistical design of experiments, instrumentation and data acquisition

CHE 3331 Professional Development Seminar: 1 hour.
(Prerequisites: Chemical Engineering majors with Junior Standing). One hour lecture. A seminar focused on professional development and topics of interest/concern to the chemical engineering professional

CHE 3413 Engineering Materials: 3 hours.
(Prerequisites: C or better in CH 1223 and PH 2213). Three hours lecture. The physical, chemical, and mechanical properties of engineering materials. The influence of these properties on the behavior of materials that have been placed in service

CHE 4000 Directed Individual Study in Chemical Engineering: 1-6 hours.
Hours and credits to be arranged

CHE 4113 Chemical Reactor Design: 3 hours.
(Prerequisites: Grade of C or better in CHE 3123 and MA 3253). Three hours lecture. The fundamentals of chemical reaction kinetics with applications

CHE 4134 Process Design: 4 hours.
(Prerequisite: IE 3913 and Grade of C or better in CHE 3123 ,CHE 3213 and CHE 3223). Three hours lecture. Two hours laboratory. Design and analysis of chemical and environmental engineering processes utilizing momentum, energy, and mass transport principles

CHE 4143 Advanced Polymeric and Multicomponent.: 3 hours.
(Prerequisite: Junior standing; CHE 3413, ME 3403, EM 4133 or equivalent materials course.) Three hours lecture. Nomenclature, synthesis, characterization, processing, and properties of state-of-the-art polymeric and multicomponent materials

CHE 4153 Introduction to Particle and Crystallization Technology: 3 hours.
(Prerequisite: Junior standing, C or better in CHE 2114, MA 1723, PH 2213, and/or consent of instructor). Three hours lecture. Fundamentals of particle and crystallization technology including theory and practical applications that emphasize unit operations and their interaction with solids

CHE 4163 Nanotechnology in Chemical Applications: 3 hours.
(Prerequisite: Junior standing, C or better in CH 1223, PH 2213, MA 1723, and/or consent of instructor). Three hours lecture. Fundamental concepts, applications, and preparation and synthesis of colloidal systems. Includes characterization methods and applications in nanotechnology

CHE 4193 Automotive Engineering: 3 hours.
Three hours lecture. Fundamentals of automotive engineering, including power units, mechanical systems, electrical systems, and industrial and systems engineering aspects. (Same as ECE 4193/6193,IE 4193/6193 and ME 4193/6193)

CHE 4223 Process Instrumentation and Control: 3 hours.
(Prerequisites: CHE 4113 and C or better in CHE 3223). Three hours lecture. Measurement of process variables; characteristics of control elements; automatic control instruments; dynamic behavior of process equipment; process control systems

CHE 4233 Chemical Plant Design: 3 hours.
(Prerequisites:CHE 4134 and CHE 4113) Three hours lecture. Application of scientific and engineering principles to the design and economic evaluation of industrial chemical plants

CHE 4313 Transport Phenomena: 3 hours.
(Prerequisites: Grade of C or better in CHE 3213 , MA 3253 and either CHE 3203 or EM 3313). Three hours lecture.Fundamental principles of momentum, heat and mass transport. Relationships between transport processes and the physical property distributions in fluids and solids

CHE 4423 Fundamentals of Industrial Corrosion: 3 hours.
(Co-requisite: CHE 3413). Three hours lecture. Identifying and eliminating the different types of corrosion that lead to the failure of engineering structures

CHE 4441 Fundamentals of Engineering Seminar: 1 hour.
One hour lecture. Review of general engineering and chemical engineering fundamentals in preparation for the Fundamentals of Engineering exam

CHE 4513 Pulp and Paper Manufacturing Processes: 3 hours.
(Prerequisite: CHE 2113 and consent of instructor). Three hours lecture. A study of pulping and paper making processes with emphasis on application of basic engineering techniques to special problems of the pulp and paper industry

CHE 4613 Air Pollution Control Design: Theory and Practice: 3 hours.
(Prerequisite: Consent of instructor). Three hours lecture. A study of the unit operations of air pollution control systems with a specific emphasis on air pollution dynamics, equipment design, and equipment operation

CHE 4624 Experimental Methods in Materials Research: 4 hours.
(Prerequisites: CHE 3413 or ABE 3813 or ME 3403 or permission of instructors).Three hours lecture.Three hours laboratory. An introduction to research methodologies commonly used in the evaluation of treatments, and mechanical testing.(Same as ABE 4624/6624 and ME 4624/6624)

CHE 4633 Chemical Process Safety: 3 hours.
(Prerequisites: C or better in CHE 2114, CHE 3203, and MA 1723). Three hours lecture. Fundamentals of chemical process safety, including toxicology, industrial hygiene, source modeling, dispersion modeling, fires & explosion and the design of reliefs

CHE 4673 Industrial Microbiology: 3 hours.
Three hours lecture. Introduction to microbial anatomy, physiology, and genetics. Use of microorganisms and their by-products. Identification and control of biofouling, biocorrosion,and biodegradation of products and processes. (Same as BIO 4673/6673)

CHE 4683 Fundamentals of Biofuels Production: 3 hours.
Three hours lecture. Engineering and economic analysis of the chemical processes applied to produce biofuels

CHE 4990 Special Topics in Chemical Engineering: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

CHE 6113 Chemical Reactor Design: 3 hours.
(Prerequisites: Grade of C or better in CHE 3123 and MA 3253). Three hours lecture. The fundamentals of chemical reaction kinetics with applications

CHE 6134 Process Design: 4 hours.
(Prerequisite: IE 3913 and Grade of C or better in CHE 3123 ,CHE 3213 and CHE 3223). Three hours lecture. Two hours laboratory. Design and analysis of chemical and environmental engineering processes utilizing momentum, energy, and mass transport principles

CHE 6143 Advanced Polymeric and Multicomponent: 3 hours.
(Prerequisite: Junior standing; CHE 3413, ME 3403, EM 4133 or equivalent materials course.) Three hours lecture. Nomenclature, synthesis, characterization, processing, and properties of state-of-the-art polymeric and multicomponent materials

CHE 6153 Introduction to Particle and Crystallization: 3 hours.
(Prerequisite: Junior standing, C or better in CHE 2114, MA 1723, PH 2213, and/or consent of instructor). Three hours lecture. Fundamentals of particle and crystallization technology including theory and practical applications that emphasize unit operations and their interaction with solids

CHE 6163 Nanotechnology in Chemical Applications: 3 hours.
(Prerequisite: Junior standing, C or better in CH 1223, PH 2213, MA 1723, and/or consent of instructor). Three hours lecture. Fundamental concepts, applications, and preparation and synthesis of colloidal systems. Includes characterization methods and applications in nanotechnology

CHE 6193 Automotive Engineering: 3 hours.
Three hours lecture. Fundamentals of automotive engineering, including power units, mechanical systems, electrical systems, and industrial and systems engineering aspects. (Same as ECE 4193/6193,IE 4193/6193 and ME 4193/6193)

CHE 6223 Process Instrumentation and Control: 3 hours.
(Prerequisites: CHE 4113 and C or better in CHE 3223). Three hours lecture. Measurement of process variables; characteristics of control elements; automatic control instruments; dynamic behavior of process equipment; process control systems

CHE 6233 Chemical Plant Design: 3 hours.
(Prerequisites:CHE 4134 and CHE 4113) Three hours lecture. Application of scientific and engineering principles to the design and economic evaluation of industrial chemical plants

CHE 6313 Transport Phenomena: 3 hours.
(Prerequisites: Grade of C or better in CHE 3213 , MA 3253 and either CHE 3203 or EM 3313). Three hours lecture.Fundamental principles of momentum, heat and mass transport. Relationships between transport processes and the physical property distributions in fluids and solids

CHE 6423 Fundamentals of Industrial Corrosion: 3 hours.
(Co-requisite: CHE 3413). Three hours lecture. Identifying and eliminating the different types of corrosion that lead to the failure of engineering structures

CHE 6513 Pulp and Paper Manufacturing Processes: 3 hours.
(Prerequisite: CHE 2113 and consent of instructor). Three hours lecture. A study of pulping and paper making processes with emphasis on application of basic engineering techniques to special problems of the pulp and paper industry

CHE 6613 Air Pollution Control Design: Theory and Practice: 3 hours.
(Prerequisite: Consent of instructor). Three hours lecture. A study of the unit operations of air pollution control systems with a specific emphasis on air pollution dynamics, equipment design, and equipment operation

CHE 6624 Experimental Methods in Materials Research: 4 hours.
(Prerequisites: CHE 3413 or ABE 3813 or ME 3403 or permission of instructors).Three hours lecture.Three hours laboratory. An introduction to research methodologies commonly used in the evaluation of treatments, and mechanical testing.(Same as ABE 4624/6624 and ME 4624/6624)

CHE 6633 Chemical Process Safety: 3 hours.
(Prerequisites: C or better in CHE 2114, CHE 3203, and MA 1723). Three hours lecture. Fundamentals of chemical process safety, including toxicology, industrial hygiene, source modeling, dispersion modeling, fires & explosion and the design of reliefs

CHE 6673 Industrial Microbiology: 3 hours.
Three hours lecture. Introduction to microbial anatomy, physiology, and genetics. Use of microorganisms and their by-products. Identification and control of biofouling, biocorrosion,and biodegradation of products and processes. (Same as BIO 4673/6673)

CHE 6683 Fundamentals of Biofuels Production: 3 hours.
Three hours lecture. Engineering and economic analysis of the chemical processes applied to produce biofuels

CHE 6990 Special Topics in Chemical Engineering: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

CHE 7000 Directed Individual Study in Chemical Engineering: 1-6 hours.
Hours and credits to be arranged

CHE 8000 Thesis Research/ Thesis in Chemical Engineering: 1-13 hours.
Hours and credits to be arranged

CHE 8011 Chemical Engineering Seminar: 1 hour.
(Prerequisite: Graduate standing). Library assignments and reports on the current chemical engineering literature

CHE 8113 Advanced Chemical Engineering Thermodynamics: 3 hours.
(Prerequisites: CHE 3123 and CHE 4113 or equivalent). Three hours lecture. Advanced study of fundamental laws of thermodynamics as applied to unit operations, nonideal fluids and solutions, chemical equilibria, electrochemistry and similar topics

CHE 8123 Chemical Kinetics and Dynamics: 3 hours.
(Prerequisite: consent of instructor). Three hours lecture. Theory and interrelations of phenomemological chemical kinetics and molecular reaction dynamics

CHE 8223 Advanced Process Computations: 3 hours.
(Prerequisite: CHE 3223). Three hours lecture. Numerical methods. Numerical solution of ordinary and partial differential equations for process applications. Use of algebraic and matrix methods. Digital computer applications

CHE 8523 Advanced Transport Phenomena: 3 hours.
Three hours lecture. (Prerequisite: Graduate standing). Fundamental principles in momentum, heat, and mass transport. Conservation equations. Continuity, motion, energy equations, and multicomponent mass equation of change

CHE 8713 Scientific Proposal Instruction and Development: 3 hours.
Three hours lecture. Detailed instruction in scientific research proposal preparation and review including, article and proposal reviewing, budgeting, literature searches, broader impact statements, and full proposal development and defense

CHE 8990 Special Topics in Chemical Engineering: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

CHE 9000 Dissertation Research/ Dissertation in Chemical Engineering: 1-13 hours.
Hours and credits to be arranged

Computational Biology Courses

CMB 8011 Graduate Seminar: 1 hour.
This course serves as an introduction to the graduate program in computational biology and will introduce students to common methods and current research in bioinformatics and computational biology

CMB 8013 Applied Computational Biology: 3 hours.
This course focuses on the application of computational methods and tools to explore biological processes and diversity

Computational Engineering Courses

CME 2990 Special Topics in Computational Engineering: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to ofer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

CME 4000 Directed Individual Study in Computational Engineering: 1-6 hours.
Hours and credits to be arranged

CME 4990 Special Topics in Computational Engineering: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

CME 6990 Special Topics in Computational Engineering: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

CME 7000 Directed Individual Study in Computational Engineering: 1-6 hours.
Hours and credits to be arranged

CME 8000 Thesis Research/ Thesis in Computational Engineering: 1-13 hours.
Hours and credits to be arranged

CME 8113 Computational Geometry: 3 hours.
(Prerequisite: consent of instructor). Three hours lecture. Computer aided geometric design techniques and their applications in engineering and general computational field simulation

CME 8990 Special Topics in Computational Engineering: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

CME 9000 Dissertation Research/ Dissertation in Computational Engineering: 1-13 hours.
Hours and credits to be arranged

Communication Courses

CO 1001 First Year Seminar: 1 hour.
One hour lecture. First-year seminars explore a diverse arrary of topics that provide students with an opportunity to learn about a specific discipline from skilled faculty members

CO 1003 Fundamentals of Public Speaking: 3 hours.
Three hours lecture. The psychological processes and adjustments necessary in preparing, organizing, wording, and delivering effective speeches. Honors section available. Students may not receive credit for both CO 1003 and CO 1013

CO 1013 Introduction to Communication: 3 hours.
Three hours lecture. To sharpen the student's awareness and to facilitate growth in the human interaction process across a variety of communication situations. Students may not receive credit for both CO 1003 and CO 1013

CO 1223 Introduction to Communication Theory: 3 hours.
Three hours lecture. A comprehensive introduction to the bases of contemporary communication theory

CO 1403 Introduction to the Mass Media: 3 hours.
Three hours lecture. How American media are organized to collect and distribute news, editorial, entertainment material, and other forms of public information

CO 1503 Introduction to the Theatre: 3 hours.
Three hours lecture. A comprehensive view of the theatre, including plays, playwrights, directing, acting, theatres, and technicians

CO 1533 Theatre Practicum #3: 3 hours.
Nine hours laboratory. Preparation for and participation in department production activities

CO 1543 Theatre Practicum #4: 3 hours.
Nine hours laboratory. Preparation for and participation in department production activities

CO 1553 Theatre Practicum #5: 3 hours.
Nine hours laboratory. Preparation for and participation in department production activities

CO 1563 Theatre Practicum #6: 3 hours.
Nine hours laboratory. Preparation for and participation in department production activities

CO 1903 Introduction to Cinema: 3 hours.
Three hours lecture. A multidisciplinary study of the film, with emphasis on linguistics, psychological, philosophical, and general intellectual aspects

CO 2013 Voice and Articulation: 3 hours.
Three hours lecture. A study of the phonetic and acoustic features of speech

CO 2253 Fundamentals of Interpersonal Communication: 3 hours.
Emphasis on two-person interactions to increase student's understanding and appreciation of communication principles

CO 2333 Television Production: 3 hours.
(Prerequisite: CO 1403). Two hours lecture. Two hours laboratory. Elementary principles, practices of television production in varied program formats

CO 2413 Introduction to News Writing and Reporting: 3 hours.
(Prerequisites: EN 1113 or EN 1173 with a C or better; Passage of the departmental GSP exam). Two hours lecture and two hours lab. Practice in writing and reporting news stories

CO 2423 News Editing, Typography, and Makeup: 3 hours.
(Prerequisite: CO 2413). Three hours lecture. Editing newspaper copy, writing headlines, and using type and pictures in makeup of newspaper pages

CO 2503 Acting: 3 hours.
Three hours lecture. Principles of character interpretation. Classroom projects involving presentation of scenes from plays

CO 2524 Stagecraft and Lighting: 4 hours.
(Prerequisite: CO 1503). Three hours lecture. Forty hours work on a major production. Theory and practice of set construction, scene design and stage lighting and its application to theatre production

CO 2544 Makeup and Costuming: 4 hours.
(Prerequisite: CO 1503). Three hours lecture. Forty hours work on a major production. Theory and practice of theatrical makeup and costumes for the theatre production

CO 2574 Summer Theatre Workshop: 4 hours.
Three hours lecture. Two hours laboratory. Daily observation and practice of acting and technical work in preparation of a production. May be repeated one semester

CO 2613 Introduction to Oral Interpretation: 3 hours.
(Prerequisite: CO 1503). Three hours lecture. Basic principles of comprehending and communicating literature to a listening audience

CO 2904 Introduction to Film: 4 hours.
Three hours lecture. Two hours lab. A basic introduction to the study of film language, history, and theory, emphasizing aesthetic, technological, and socio-cultural developments of film form. (Same as ART 2904 and EN 2904)

CO 2990 Special Topics in Communication: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

CO 3213 Small Group Communication: 3 hours.
(Prerequisite: CO 1003 or junior standing). Three hours lecture. A study of the problems and techniques of participation in and leadership of small groups

CO 3293 Corporate Communication: 3 hours.
(Prerequisite: Junior standing). Study of applied communication techniques related to the development and proficiency of oral corporate communications skills

CO 3313 News Writing for the Electronic Media: 3 hours.
(Prerequisite: CO 2413 with a C or better). Three hours lecture. Practice in analysis, gathering, writing, and delivering copy for various types of news programming

CO 3333 Advanced Television Production: 3 hours.
(Prerequisite: CO 2333 with a C or better). Two hours lecture. Two hours laboratory. Advanced principles and techniques of broadcast production

CO 3343 Writing for the Media: 3 hours.
(Prerequisite: EN 1113 or EN 1173 with a C or better). Three hours lecture. Study and practice of the principles and techniques of media writing

CO 3403 Photographic Communication: 3 hours.
(Prerequisite:Nine hours in Communication or consent of instructor). Two hours lecture. Two hours laboratory. Study and practice of techniques of photography and digital imaging as they relate to visual communication in journalism, public relations, mass media, and related fields

CO 3423 Feature Writing: 3 hours.
(Prerequisite: CO 2413 with a C or better). Three hours lecture. Feature markets and practice in preparing and writing features for print and digital media

CO 3433 Editing and Design: 3 hours.
(Prerequisite: CO 2413 with a C or better). Two hours lecture. Two hours lab. Editing copy, writing headlines, and using type, pictures, and graphics to digitally design newspapers and magazines

CO 3443 Advanced News Writing and Reporting: 3 hours.
(Prerequisite: CO 2413 with a C or better). Three hours lecture. Practice in writing more complex news stories and the responsibilities of the reporter in newsgathering and writing

CO 3543 Improvisation: 3 hours.
Three hours lecture. Course is designed to develop skills in improvisation with emphasis on exercises and performance

CO 3563 Voice and Movement: 3 hours.
Three hours lecture. Course is designed for technical training of actor in performance area with emphasis on exercises

CO 3593 Auditioning/Monologue: 3 hours.
Three hours lecture. Course designed for the development of the technical skills necessary for Professional/Graduate performance work

CO 3713 Digital Communication: 3 hours.
(Prerequisites: CO 2413 with a C or better or CO 3313 with a C or better or consent of instructor). Two hours lecture. Two hours laboratory. Processes and methods of effective digital communication

CO 3803 Principles of Public Relations: 3 hours.
Three hours lecture. The role and origin of public relations in society, the identification and influence of publics, and applications of public relations principles to campaigns and organizations

CO 3813 Public Relations Case Problems: 3 hours.
(Prerequisite: Grade of C or better in CO 3803). Three hours lecture. The written analysis, presentation, and group discussion of specific and hypothetical cases using public relations theory as a base

CO 3833 Interviewing in Communication: 3 hours.
(Prerequisite: CO 1223). Three hours lecture. The communicative processes and adjustments necessary in preparing, organizing, wording, and participating in various types of interviews from both the interviewer and the interviewee perspectives

CO 3843 Media Relations: 3 hours.
(Prerequisite: CO 3833). Three hours lecture. Study of interviewing and communication skills for reporters and the issues, problems, and strategies employed by interviewees related to radio, television, and print interviews

CO 3853 Public Relations Writing: 3 hours.
(Prerequisites: Grade of C or better in CO 2413 and CO 3803). Three hours lecture. Practice of written communication for public relations. Emphasis on research, establishing communication goals, and writing for internal and external audiences via multiple channels

CO 3863 Public Relations Production: 3 hours.
(Prerequisites: Grade of C or better in CO 2413 and grade of C or better in CO 3853). Two hours lecture. Two hours laboratory. Detailed exercise in design and production of public relations materials for print, broadcast, and computer-based media

CO 3903 Advanced Cinema Studies: 3 hours.
(Prerequisite: CO 1903 or EN 2434). Three hours lecture. A study of the forms, styles, and criticisms of cinema

CO 4000 Directed Individual Study in Communication: 1-6 hours.
Hours and credits to be arranged

CO 4043 Communication and Leadership: 3 hours.
Three hours lecture. A study of communication as related to the functions and styles of leadership

CO 4053 Internship in Communication: 3 hours.
(Prerequisites: Communication majors only, junior or senior standing, consent of instructor). Practical field experience in student's concentration area. For approval, the internship must be under the supervision of a skilled practitioner, appropriate to the major and meet departmental requirements

CO 4124 Topics in Film: 4 hours.
Three hours lecture. Two hours lab. Repeatable under different subtitles with advisor approval. An advanced investigation of specific topics in Film, Film History, Directors, Genre, and/or approaches to its production. Readings and discussions, supplemented by lectures/labs and film screenings. (Same as ART 4124/6124, EN 4124/6124)

CO 4203 Nonverbal Communication: 3 hours.
(Prerequisite: CO 1223 or PSY 1013). Three hours lecture. Study of nonverbal cues as they affect the communication interface in numerous contexts including social events, political campaigns, and dramatic productions

CO 4213 Political Communication: 3 hours.
Three hours lecture. Analysis and evaluation of the verbal and nonverbal dimensions of the creation dissemination, and reception of political communication in the United States

CO 4223 Advanced Communication Theory: 3 hours.
(Prerequisite: CO 1223). Three hours lecture. Analysis of twentieth century communication theories. A study of mass, interpersonal, and intrapersonal communication processes and effects

CO 4233 Gender and Media: 3 hours.
A critical exploration of discourses of gender and its intersections with sexuality, race, and class as represented in popular forms of media. (Same as GS 4233/6233)

CO 4243 Rhetorical Theory: 3 hours.
(Prerequisite: CO 1223). Three hours lecture. Survey and criticism of the theories of public speaking found in the works of Plato, Aristotle, Cicero, Quintilian, and St. Augustine

CO 4253 Elements of Persuasion: 3 hours.
(Prerequisite: CO 1223). Three hours lecture. A study of the motivation of audiences and techniques of persuasive campaigns and communications

CO 4263 Gender Communication: 3 hours.
Three hours lecture. An investigation of the ways in which communication impacts the construction, performance, evaluation, and negotiation of gender. (Same as GS 4263/6263)

CO 4273 Intercultural Communication: 3 hours.
(Prerequisite: CO 1223 and Senior standing). Three hours lecture. A study of how communication behaviors differ between cultures. Frameworks for studying intercultural communication will be provided by studying one specific culture

CO 4283 Health Communication: 3 hours.
(Prerequisite: Junior standing or consent of instructor). Three hours lecture. A study of health communication, the contexts in which it occurs, and techniques used to create health messages

CO 4313 Mass Media Law: 3 hours.
(Prerequisite: Junior standing). Three hours lecture. Study and analysis of laws and regulations significantly affecting newspapers, magazines, motion pictures, broadcasting and digital media in America

CO 4323 Mass Media and Society: 3 hours.
(Prerequisite: Junior standing). Three hours lecture. The effects of mass communication on social and cultural institutions

CO 4343 Backpack Video Journalism: 3 hours.
(Prerequisite: CO 3333 with a C or better). Two hours lecture and two hours lab. Learning advanced techniques as a multimedia journalist. Individually produce video stories from start to finish – learning to find topics, research stories, contact sources, shoot video, record audio, edit video, upload completed stories

CO 4373 Practicum in Television News: 3 hours.
(Prerequisites: CO 3333 with a C or better AND CO 3313 OR CO 3343 with a C or better). Two hours lecture, two hours laboratory. Theory and practice of producing a television news program

CO 4393 Broadcast Performance: 3 hours.
(Prerequisite: Junior Standing.) Two hours lecture. Two hours laboratory. Practice and theory of the mechanics, tools and techniques required to communicate successsfully as a broadcaster

CO 4394 Broadcast Capstone: 4 hours.
(Prerequisite: CO 4343 with a C or better). Eight hours studio course. Practice of producing a television news program, including: broadcast writing, producing, reporting, video news gathering, anchoring, studio production, and dissemination of newscast via web and social media

CO 4403 Journalism Ethics: 3 hours.
(Prerequisite: Junior standing). Three hours lecture. Examination of ethical problems in contemporary journalism

CO 4423 Advanced Photo Communication: 3 hours.
(Prerequisite: CO 3403 with a C or better). Two hours lecture. Two hours laboratory. Exploration of narrative and illustrative photography in PR and news. Evaluation of still vs. moving images and Web/multimedia presentation options

CO 4433 Television Criticism: 3 hours.
(Prerequisite: Junior standing or higher). Three hour lecture. Methods of television criticism

CO 4494 Bulldog Online Newsroom: 4 hours.
(Prerequisites: C or better in CO 3443 and CO 4713). Two hours lecture/ two hours lab. Capstone course designed to synthesize knowledge, values and skills acquired in Print & Digital Journalism Concentration. Students produce a portfolio and contribute content, editing and promotion via social media to course news website

CO 4504 History of Theatre: 4 hours.
(Prerequisite: Junior standing). Four hours lecture. A survey of the theatre with emphasis on the physical structure, production problems and theatrical personalities

CO 4524 Directing: 4 hours.
(Prerequisite: CO 2524 and junior or senior standing). Three hours lecture. Two hours laboratory. Evaluation of dramatic styles and analysis of stage composition. Supervised hours in actual directing experience

CO 4533 Advanced Acting: 3 hours.
(Prerequisite: CO 2503). Three hours lecture. Intensive study of the theories and techniques of acting in the various dramatic styles

CO 4573 Theatre Management: 3 hours.
(Prerequisite: Junior standing). Two hours lecture. Two hours laboratory. Business organization and management for the educational (secondary and university), community, and professional theatre, including budgeting, publicity, public relations, and box office principles

CO 4583 Playwriting: 3 hours.
(Prerequisite: Completion of freshman composition and CO 1503). Three hours lecture. Practice in the fundamentals of dramatic composition. Reading, discussion, and analysis of written work

CO 4643 Race and the Media: 3 hours.
(Prerequisites: SO/AAS 2203, or CO 1403, or AAS 1063 or equivalent). Three hours lecture. Examines the relationship between society, race, and the media. An examination of the social influence of how racial representations are produced, distributed, and consumed. (Same as SO 4643 and AAS 4643)

CO 4713 Digital Communication II: 3 hours.
(Prerequisite: CO 3713 with a C or better and co-requisite: credit for or concurrent enrollment with CO 3443 or CO 3423 or CO 3333 or CO 4423). Two hours lecture. Two hours lab. Advanced methods of effective digital communication

CO 4803 Research in Public Relations and Advertising: 3 hours.
(Prerequisite: Grade of C or better in CO 3853, or Grade of C or better in MKT 4413, or consent of the instructor, or graduate standing). Three hours lecture. Theory and practice of research methods in public relations

CO 4813 Public Relations in Organizations: 3 hours.
(Prerequisites: Grade of C or better in CO 3813 and CO 3863). Three hours lecture. Studies in using various communication techniques for image building and campaign development for profit and non-profit organizations

CO 4924 Film Theory: 4 hours.
Three hours lecture. Two hours lab. This course will introduce students to major theoretical positions and modes of analysis used to understand the various frameworks in which to view, criticize, analyze, and (re)contextualize film. (Same as ART 4924 and EN 4924/6924)

CO 4990 Special Topics in Communication: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

CO 6043 Communication and Leadership: 3 hours.
Three hours lecture. A study of communication as related to the functions and styles of leadership

CO 6053 Internship in Communication: 3 hours.
(Prerequisites: Communication majors only, junior or senior standing, consent of instructor). Practical field experience in student's concentration area. For approval, the internship must be under the supervision of a skilled practitioner, appropriate to the major and meet departmental requirements

CO 6124 Topics in Film: 4 hours.
Three hours lecture. Two hours lab. Repeatable under different subtitles with advisor approval. An advanced investigation of specific topics in Film, Film History, Directors, Genre, and/or approaches to its production. Readings and discussions, supplemented by lectures/labs and film screenings. (Same as ART 4124/6124, EN 4124/6124)

CO 6203 Nonverbal Communication: 3 hours.
(Prerequisite: CO 1223 or PSY 1013). Three hours lecture. Study of nonverbal cues as they affect the communication interface in numerous contexts including social events, political campaigns, and dramatic productions

CO 6213 Political Communication: 3 hours.
Three hours lecture. Analysis and evaluation of the verbal and nonverbal dimensions of the creation dissemination, and reception of political communication in the United States

CO 6223 Advanced Communication Theory: 3 hours.
(Prerequisite: CO 1223). Three hours lecture. Analysis of twentieth century communication theories. A study of mass, interpersonal, and intrapersonal communication processes and effects

CO 6233 Gender and Media: 3 hours.
A critical exploration of discourses of gender and its intersections with sexuality, race, and class as represented in popular forms of media. (Same as GS 4233/6233)

CO 6243 Rhetorical Theory: 3 hours.
(Prerequisite: CO 1223). Three hours lecture. Survey and criticism of the theories of public speaking found in the works of Plato, Aristotle, Cicero, Quintilian, and St. Augustine

CO 6253 Elements of Persuasion: 3 hours.
(Prerequisite: CO 1223). Three hours lecture. A study of the motivation of audiences and techniques of persuasive campaigns and communications

CO 6263 Gender Communication: 3 hours.
Three hours lecture. An investigation of the ways in which communication impacts the construction, performance, evaluation, and negotiation of gender. (Same as GS 4263/6263)

CO 6273 Intercultural Communication: 3 hours.
(Prerequisite: CO 1223 and Senior standing). Three hours lecture. A study of how communication behaviors differ between cultures. Frameworks for studying intercultural communication will be provided by studying one specific culture

CO 6283 Health Communication: 3 hours.
(Prerequisite: Junior standing or consent of instructor). Three hours lecture. A study of health communication, the contexts in which it occurs, and techniques used to create health messages

CO 6313 Mass Media Law: 3 hours.
(Prerequisite: Junior standing). Three hours lecture. Study and analysis of laws and regulations significantly affecting newspapers, magazines, motion pictures, broadcasting and digital media in America

CO 6323 Mass Media and Society: 3 hours.
(Prerequisite: Junior standing). Three hours lecture. The effects of mass communication on social and cultural institutions

CO 6373 Practicum in Television News: 3 hours.
(Prerequisites: CO 3333 with a C or better AND CO 3313 OR CO 3343 with a C or better). Two hours lecture, two hours laboratory. Theory and practice of producing a television news program

CO 6403 Journalism Ethics: 3 hours.
(Prerequisite: Junior standing). Three hours lecture. Examination of ethical problems in contemporary journalism

CO 6433 Television Criticism: 3 hours.
(Prerequisite: Junior standing or higher). Three hour lecture. Methods of television criticism

CO 6504 History of the Theater: 4 hours.
(Prerequisite: Junior standing). Four hours lecture. A survey of the theatre with emphasis on the physical structure, production problems and theatrical personalities

CO 6524 Directing: 4 hours.
(Prerequisite: CO 2524 and junior or senior standing). Three hours lecture. Two hours laboratory. Evaluation of dramatic styles and analysis of stage composition. Supervised hours in actual directing experience

CO 6533 Advanced Acting: 3 hours.
(Prerequisite: CO 2503). Three hours lecture. Intensive study of the theories and techniques of acting in the various dramatic styles

CO 6573 Theatre Management: 3 hours.
(Prerequisite: Junior standing). Two hours lecture. Two hours laboratory. Business organization and management for the educational (secondary and university), community, and professional theatre, including budgeting, publicity, public relations, and box office principles

CO 6583 Playwriting: 3 hours.
(Prerequisite: Completion of freshman composition and CO 1503). Three hours lecture. Practice in the fundamentals of dramatic composition. Reading, discussion, and analysis of written work

CO 6803 Research in Public Relations and Advertising: 3 hours.
(Prerequisite: Grade of C or better in CO 3853, or Grade of C or better in MKT 4413, or consent of the instructor, or graduate standing). Three hours lecture. Theory and practice of research methods in public relations

CO 6813 Public Relations in Organizations: 3 hours.
(Prerequisites: Grade of C or better in CO 3813 and CO 3863). Three hours lecture. Studies in using various communication techniques for image building and campaign development for profit and non-profit organizations

CO 6924 Film Theory: 4 hours.
Three hours lecture. Two hours lab. This course will introduce students to major theoretical positions and modes of analysis used to understand the various frameworks in which to view, criticize, analyze, and (re)contextualize film. (Same as ART 4924 and EN 4924/6924)

CO 6990 Special Topics in Communication: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

CO 7000 Directed Individual Study in Communication: 1-6 hours.
ours and credits to be arranged

CO 8000 Thesis Research/ Thesis in Communication: 1-13 hours.
Hours and credits to be arranged

CO 8990 Special Topics in Communication: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

Counselor Education Courses

COE 1001 First Year Seminar: 1 hour.
One hour lecture. First-year seminars explore a diverse arrary of topics that provide students with an opportunity to learn about a specific discipline from skilled faculty members

COE 1323 Career Planning: 3 hours.
Three hours lecture. Provides students with a basis for making career decisions and selecting an academic major

COE 2323 History, Heritage, and Campus Community of MSU: 3 hours.
Three hours lecture. Overview of the history, culture, traditions, academics, athletics, research, people, buildings, community, points of pride, and etiquette of Mississippi State University (MSU). Offered to freshman, sophomore and junior students who have been selected as Maroon VIP campus tour guides

COE 2990 Special Topics in Counselor Education & Educational Psychology: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

COE 3313 Rehabilitation Services: 3 hours.
Three hours lecture. Concepts, philosophies, and methods of rehabilitation services for physically, emotionally, or mentally disabled people

COE 4000 Directed Individual Study in Counselor Education & Educational Psychology: 1-6 hours.
Hours and credits to be arranged

COE 4013 Facilitative Skills Development: 3 hours.
Three hours lecture. Introduction to the theory and practice of helping with emphasis on the development of basic communication skills. Applicable to a variety of settings

COE 4023 Introduction to Counseling: 3 hours.
Three hours lecture. Overview of counseling as a profession including specialty areas. Theories and techniques used in counseling. This course is not for Counselor Education majors

COE 4050 Seminar for Guidance Counselors: 1-6 hours.
Three hours lecture. Hour to be arranged. A study of current issues and trends in the field of guidance

COE 4303 Rehabilitation of Visually Impaired Persons: 3 hours.
Three hours lecture. Special issues and procedures related to vocational rehabilitation of persons with visual impairments

COE 4353 Assistive Technology in the Rehabilitation Process: 3 hours.
(Prerequisites: Undergraduates: COE 3313. Graduates: COE 6393, COE 8373 or permission of the instructor). Three hours lecture. Diverse applications of technologies are reviewed for potential impact with all forms of disability. Examines various roles played by technology in total rehabilitiation process

COE 4363 Introduction to Sign Language: 3 hours.
Development of basic sign language skills, study of special needs of deaf persons, and understanding use of interpreters. (Same as EDX 4953/6953)

COE 4513 Paraprofessionals in Student Affairs: 3 hours.
(Prerequisite: Consent of instructor). Three hours lecture. Fundamental concepts and philosophies underlying the paraprofessional's role in college student affairs. Includes supervised and paraprofessional experience

COE 4713 Issues in Aging: 3 hours.
Three hours lecture. An examination and integration of gerontological issues related to mental health of the elderly

COE 4743 Gender Issues in Counseling: 3 hours.
Three hours lecture. Overview of gender issues and their relationship to the counseling process

COE 4903 Developmental Counseling and Mental Health: 3 hours.
Three hours lecture. One hour laboratory. Methods of identifying and meeting normal emotional and social needs of children and adults. Emphasis on maintaining better mental health conditions in schools

COE 4990 Special Topics in Counselor Education & Educational Psychology: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

COE 6013 Facilitative Skills Development: 3 hours.
Three hours lecture. Introduction to the theory and practice of helping with emphasis on the development of basic communication skills. Applicable to a variety of settings

COE 6023 Introduction to Counseling: 3 hours.
Three hours lecture. Overview of counseling as a profession including specialty areas. Theories and techniques used in counseling. This course is not for Counselor Education majors

COE 6050 Seminar for Guidance Counselors: 1-6 hours.
Three hours lecture. Hour to be arranged. A study of current issues and trends in the field of guidance

COE 6303 Rehabilitation of Visually Impaired Persons: 3 hours.
Three hours lecture. Special issues and procedures related to vocational rehabilitation of persons with visual impairments

COE 6313 Resources for Visually Impaired Persons: 3 hours.
Three hours lecture. Survey of issues, techniques, and resources for independent living, orientation and mobility, and communication of visually impaired persons

COE 6323 Sensory Aid Technology: 3 hours.
Three hours lecture. Survey of sensory devices. Includes practice with computer assistive devices designed to enhance employment and communication skills of persons with visual impairments

COE 6353 Assistive Technology in the Rehabilitation Process: 3 hours.
(Prerequisites: Undergraduates: COE 3313. Graduates: COE 6393, COE 8373 or permission of the instructor). Three hours lecture. Diverse applications of technologies are reviewed for potential impact with all forms of disability. Examines various roles played by technology in total rehabilitiation process

COE 6363 Introduction to Sign Language: 3 hours.
Development of basic sign language skills, study of special needs of deaf persons, and understanding use of interpreters. (Same as EDX 4953/6953)

COE 6373 Vocational Assessment of Special Needs Persons: 3 hours.
Two hours lecture. Two hours laboratory. (Prerequisite: EPY 8263 or equivalent). Comprehensive vocational assessment, counseling, and individual planning for special needs persons. Job/training analysis, vocational interest/aptitude tests, work samples, and situational assessment. (Same as TKT 8653)

COE 6513 Paraprofessionals in Student Affairs: 3 hours.
(Prerequisite: Consent of instructor). Three hours lecture. Fundamental concepts and philosophies underlying the paraprofessional's role in college student affairs. Includes supervised and paraprofessional experience

COE 6713 Issues in Aging: 3 hours.
Three hours lecture. An examination and integration of gerontological issues related to mental health of the elderly

COE 6743 Gender Issues in Counseling: 3 hours.
Three hours lecture. Overview of gender issues and their relationship to the counseling process

COE 6903 Developmental Counseling and Mental Health: 3 hours.
Three hours lecture. One hour laboratory. Methods of identifying and meeting normal emotional and social needs of children and adults. Emphasis on maintaining better mental health conditions in schools

COE 6990 Special Topics in Counselor Education & Educational Psychology: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

COE 7000 Directed Individual Study in Counselor Education & Educational Psychology: 1-6 hours.
Hours and credits to be arranged

COE 8000 Thesis Research/ Thesis in Counselor Education & Educational Psychology: 1-13 hours.
Hours and credits to be arranged

COE 8013 Counseling Skills Development: 3 hours.
(Prerequisite: COE 6013 and COE 8023). Three hours lecture. Theory and practice of counseling with emphasis on development of advanced skills required for assisting clients

COE 8023 Counseling Theory: 3 hours.
Three hours lecture. Study of the major counseling theories

COE 8043 Group Techniques and Procedures: 3 hours.
(Prerequisite: COE 8013). Three hours lecture. Group counseling theory, dynamics, processes, and leadership functions

COE 8053 Practicum: 3 hours.
(Prerequisites: COE 8013, 8023, and consent of department). Seminar and supervised field experience

COE 8063 Research Techniques for Counselors: 3 hours.
Three hours lecture. Methods of research and evaluation in counseling

COE 8073 Cultural Foundations in Counseling: 3 hours.
Three hours lecture. Examination of individual differences due to socialization acquired in distinct cultural and socioeconomic environments. Implications for counseling

COE 8093 Seminar in Counseling: 3 hours.
(Prerequisite: COE 8123 or equivalent). Seminar in counseling trends and approaches with application to various settings and problems

COE 8143 Grief Counseling for Loss and Bereavement: 3 hours.
Three hours lecture. This course is designed to provide students with understanding of grief and loss responses, and counseling approaches for working with bereaved and grieving individuals

COE 8150 Academic School Year Field Experience Practicum: 1-9 hours.
Prerequisite: COE 8043, COE 8903, and EPY 8263). First semester of the supervised academic year field experience in school counseling. (Variable credit)

COE 8163 Spirituality in Counseling: 3 hours.
Three hours lecture. Didactic instruction of developmental models and clinical interventions related to the interface of spirituality and counseling

COE 8173 Counseling Gifted Students: 3 hours.
Three hours lecture. Counseling functions that relate to the total development of gifted students. Directed Individual Study and utilization of resources necessary for optimal growth

COE 8183 Utilizing Art and Art Therapy in Counseling: 3 hours.
Three hours lecture. Didactic instruction of development models, theoretical approaches and practical intervention related to the interface of creative arts and counseling practice

COE 8203 Placement and Career Development Counseling: 3 hours.
Three hours lecture. Studies of career development and academic/job placement; occupational classification schemes; trends in the world of work; compiling and utilizing career information in counseling

COE 8293 Supervised Project: 3 hours.
(Prerequisite: Consent of department). Study of a topic in counseling or student development

COE 8303 Family Counseling Theory: 3 hours.
Three hours lecture. (Prerequisite: COE 8023). Study of the theory and practice of family counseling

COE 8353 Vocational Rehabilitation Counseling: 3 hours.
Three hours lecture. Rehabilitation legislation and the rehabilitation counseling process

COE 8363 Psychological Aspects of Disability: 3 hours.
Three hours lecture. Psychological and social factors influencing adjustment of disabled persons

COE 8373 Medical Aspects of Disability: 3 hours.
Three hours lecture. Involves a detailed survey of physical disabilities, their resulting functional limitations and rehabilitation implications. Also includes discussion of appropriate rehabilitation technology

COE 8383 Job Placement in Rehabilitation: 3 hours.
Three hours lecture. Process of job placement for disabled persons

COE 8533 Literature of Student Affairs: 3 hours.
Three hours lecture. Provides an overview of student affairs in higher education through extensive reading in the field and individual study of specific aspects

COE 8573 College Counseling Services: 3 hours.
Three hours lecture. Counseling, prevention and student development services on the university and community college campus

COE 8623 Advanced and Ethical Issues in Counseling: 3 hours.
(Prerequisite: COE 8023). Three hours lecture. Advanced study of professional, legal, and ethical issues in counseling

COE 8633 Psychosocial Rehabilitation: 3 hours.
Three hours lecture. Counseling techniques that assist in the community adjustment of seriously mentally ill clients

COE 8703 Principles of Clinical Mental Health Counseling: 3 hours.
Three hours lecture. Overview of the history, philosophy, trends, and practice of mental health counseling

COE 8730 Internship: 1-9 hours.
(Prerequisite: COE 8053.) Supervised field experience

COE 8740 Academic Year Field Experience Semester II-Internship: 1-9 hours.
(Prerequisite: COE 8150 or its equivalent). Second semester of the supervised academic year field experience in school counseling. (Variable credit)

COE 8743 Counseling LGBTQ: Awareness, Mental Health & Advocacy: 3 hours.
Three hours lectures. This course addresses knowledge, skills, and advocacy for counselors who work with lesbian, gay, bisexual, queer, intersex, questioning, and gender-non conforming individuals and communities

COE 8750 Internship: 1-9 hours.
(Prerequisite: Consent of department). Supervised field experience for Ed.S students

COE 8753 Stress Management Counseling: 3 hours.
Three hours lecture. Course content includes cognitive behavioral assessment and application of relaxation and stress management strategies as a mental health/counseling intervention

COE 8763 Counseling the Sexually Abused Client: 3 hours.
(Prerequisite: COE 8023). Three hours lecture. Diagnosis and treatment of persons who have been sexually abused

COE 8773 Counseling the Chemically Dependent Client: 3 hours.
Three hours lecture. Information about the etiology, diagnosis, and treatment of chemical dependence

COE 8783 Counseling the Chemically Dependent Family: 3 hours.
(Prerequisite: COE 8773.) Three hours lecture. Provide information on the effects of chemical dependence on the family and counseling programs for this disorder

COE 8803 Crisis Response in Counseling: 3 hours.
(Prerequisite: COE 8013, COE 8023, or consent of instructor). Three hours lecture. Exposure to theory and practice in crisis response in counseling. Therapeutic strategies for intervening in crisis situations on an individual, group, and systems level

COE 8813 Counseling Elderly Clients: 3 hours.
Three hours lecture. Concepts, attitudes, and skills needed to provide counseling for elderly clients

COE 8903 School Counseling Services: 3 hours.
Three hours lecture. Overview of a comprehensive school counseling program

COE 8913 Counseling Children: 3 hours.
Three hours lecture. Didactic instruction and discussion of counseling techniques useful in community and school settings to work with early school-aged children

COE 8923 Seminar in School Counseling: 3 hours.
(Prerequisites: COE 8903). Three hours lecture. Overview of effective, comprehensive school counseling programs, program accountability, and best practice models in school counseling

COE 8990 Special Topics in Counselor Education & Educational Psychology: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

COE 9000 Dissertation Research/ Dissertation in Counselor Education & Educational Psychology: 1-13 hours.
Hours and credits to be arranged

COE 9013 Counseling Supervision: 3 hours.
Three hours lecture. (Prerequisite: COE 8730 and 8013). The theory and practice of providing counseling supervision for practicing counselors and student development professionals

COE 9023 Advanced Counseling Theory: 3 hours.
(Prerequisite: COE 8023). Three hours lecture. Study of selected counseling strategies. Development of a personal approach to counseling

COE 9033 Advanced Seminar: 3 hours.
Three hours lecture. Advanced study of a topic in counseling

COE 9043 Advanced Group Work and Systems: 3 hours.
(Prerequisites: COE 8023,COE 8013,COE 8043 and Educational Specialist or Doctoral Standing , or consent of instructor). One hour lecture. Four hours laboratory. Advanced studies in group counseling theory, systems theory, group leadership, and standards of training and practice for group workers

COE 9053 Advanced Multicultural Counseling: 3 hours.
(Prerequisites:COE 8013,COE 8023,COE 8043,COE 8053,COE 8063 or an equivalent course,COE 8073 or an equivalent course, COE 8730,Educational Specialist or Doctoral standing or consent of the instructor). Three hours lecture. The course emphasizes advanced multicultural knowledge, skill development, and research competencies for counselors

COE 9083 Advanced Assessment Techniques for Counseling: 3 hours.
(Prerequisites: COE 8063 and EPY 8124 or equivalent courses; Educational Specialist or Doctoral standing or consent of instructor).Advanced knowledge, skill and practice in selecting, administering, scoring and interpreting personality, behavioral, career, and family assessments

COE 9740 Advanced Doctoral Practicum: 1-9 hours.
(Prerequisite: Consent of department). First supervised field experience for doctoral students

COE 9750 Internship: 1-9 hours.
(Prerequisite: Consent of department). Second supervised field experience for doctoral students

Cooperative Education Program Courses

CP 2103 First Work Semester: 3 hours.
(Prerequisite: Approval of the Cooperative Education Office, acceptance by employing organization, and admission to the University)

CP 2203 Second Work Semester: 3 hours.
(Prerequisite: CP 2103)

CP 3303 Third Work Semester: 3 hours.
(Prerequisite: CP 2203)

CP 3403 Fourth Work Semester: 3 hours.
(Prerequisite: CP 3303)

CP 4503 Fifth Work Semester: 3 hours.
(Prerequisite: CP 3403)

CP 4603 Sixth Work Semester: 3 hours.
(Prerequisite: CP 4503)

CP 4703 Seventh Work Semester: 3 hours.
(Prerequisite: CP 4603)

CP 4803 Eighth Work Semester: 3 hours.
(Prerequisite: CP 4703)

CP 8013 First Work Semester: 3 hours.
(Prerequisite: Approval of the Cooperative Education Office, acceptance by employing organization, and admission to the University and Graduate School)

CP 8023 Second Work Semester: 3 hours.
(Prerequisite: CP 8013)

CP 8033 Third Work Semester: 3 hours.
(Prerequisite: CP 8023)

CP 8043 Fourth Work Semester: 3 hours.
(Prerequisite: CP 8033)

CP 8053 Fifth Work Semester: 3 hours.
(Prerequisite: CP 8043)

Criminology Courses

CRM 1003 Crime and Justice in America: 3 hours.
Three hours lecture. A survey of the basic concepts and approaches in criminology, including patterns of crime, causes of crime, and an examination of the criminal justice system

CRM 2003 Crime, Justice, and Inequality: 3 hours.
(Prerequisites: CRM 1003 and SO 1003 or consent of instructor). Three hours lecture. Survey of issues pertaining to race, class, gender, and crime, focusing on discrimination, structural barriers, and the place of inequality within the criminal justice system

CRM 2990 Special Topics in Criminology: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

CRM 3033 Criminology Internship: 3 hours.
(Prerequisite: 24 hours of coursework within the criminology major and a minimum GPA of 2.5 and consent of instructor). Three hours practicum. Practicum within selected corrections agencies, individually supervised performance and self-development in relation to clients, agency workers, and provisions of correctional services.May be repeated one time

CRM 3103 Contemporary Issues in Criminal Justice: 3 hours.
(Prerequisites: CRM 1003 and SO 1003). Three hours lecture. The interrelationships of law enforcement, prosecution, and the courts, particularly how each affects the correctional process

CRM 3113 Community Crime Prevention and Policy: 3 hours.
(Prerequisites: SO 1003 and CRM 1003 or consent of instructor). Three hours lecture. An in-depth analysis of crime control policy and community sanctions, focusing on policy implementation, effectiveness, alternatives and prevention efforts

CRM 3123 Policing and Society: 3 hours.
(Prerequisites: CRM 1003 and SO 1003). Three hours lecture. An overview of police functions and responsibilities at all levels from a sociological perspective. Focuses on symbiotic roles of policing and other societal organizations

CRM 3313 Deviant Behavior.: 3 hours.
(Prerequisite: SO 1003 and CRM 1003 or its equivalent or consent of instructor). Three hours lecture. Introduction to the social and cultural factors related to human deviance. Special attention given to the study of various theories of deviance. Same as SO 3313)

CRM 3320 Field Work: 1-6 hours.
(Prerequisites: CRM 3316). One to six hours practicum within selected Corrections agencies, individually supervised performance and self-development in relation to clients, agency workers, and provisions of Correctional services

CRM 3343 Gender, Crime, and Justice: 3 hours.
(Prerequisite: CRM 1003 and SO 1003 or consent of instructor). Three hours lecture. Gender differences in criminal behavior, victimization, and criminal justice processing, emphasizing the unique experiences of women in all of these areas. (Same as SO 3343)

CRM 3353 Race, Crime and Justice: 3 hours.
(Prerequisite: CRM 1003 and SO 1003 or consent of instructor). Three hours lecture. Racial differences in criminal behavior, victimization, and criminal processing, emphasizing the unique experiences of racial minorities in these areas (Same as SO 3353)

CRM 3363 Globalization and Crime: 3 hours.
(Prerequisites: CRM 1003 and SO 1003 or consent of instructor). Three hours lecture. Examines the international differences in crime and justice, exploring topics such as illegal immigration, human trafficking, organized crime and terrorism

CRM 3503 Violence in the United States: 3 hours.
(Prerequisite: CRM 1003 and SO 1003 or consent of instructor). Three hours lecture. Indepth study of violence, including types of violence, categories of offenders and victims, its social consequences, and potential solutions. (Same as CRM 3503)

CRM 3603 Criminological Theory: 3 hours.
(Prerequisites: CRM 1003 and SO 1003 or consent of instructor). Three hours lecture. Survey of the major sociological and criminological explanations of crime. (Same as SO 3603)

CRM 4000 Directed Individual Study in Criminology: 1-6 hours.
Hours and credits to be arranged

CRM 4153 Mentoring for At-Risk Youths: 3 hours.
(Prerequisite: JR/SR Standing and Permission of Instructor). One hour lecture, four hours practical experience. This course trains students to mentor at-risk juveniles to facilitate their successful transition to productive community roles. (Same as SO 4153 and SLCE 4153)

CRM 4233 Juvenile Delinquency: 3 hours.
(Prerequisites: CRM 1003 and SO 1003 or consent of instructor). Three hours lecture. Critical study of problems, causes, ways of handling; attitudes, roles and relationships of persons involved, including youthful offenders, social workers, court and law enforcement officials. (Same as SO 4233/6233)

CRM 4243 Drugs, Crime and Control: 3 hours.
(Prerequisites: SO 1003 and CRM 1003 or consent of instructor). Three hours lecture. Focus on the social factors which give rise to illicit drug use, patterns and trends in drug crime and strategies to control drug crime. (Same as SO 4243/6243)

CRM 4253 White Collar Crime and Elite Deviance: 3 hours.
(Prerequisites: SO 1003 and CRM 1003 or consent of instructor). Three hours lecture. An overview of the sociological and criminological literature in the area defined as 'White Collar Crime' (Same as SO 4253/6253)

CRM 4323 Victimology: 3 hours.
(Prerequisite: CRM 1003 and SO 1003 or consent of instructor). Three hours lecture. A critical study of victims, examining theories of victimization, the social construction of victimization, the relationship between victims and offenders, and victim prevention efforts. (Same as SO 4323/6323)

CRM 4343 Media, Crime and Justice: 3 hours.
(Prerequisites: CRM 1003 and SO 1003). An overview of the role media plays in shaping criminal justice policy, as well as public knowledge about crime and the criminal justice system

CRM 4453 Power, War, and Peace: 3 hours.
Three hours lecture. Introduction to three major topics in sociology/ criminology: power, war and peace. Minor topics include: power and organizations, the relationship between power and war, terrorism, torture, ethnic conflict, reconstruction and reconciliation, and social movements (same as SO 4453)

CRM 4513 Correctional Systems: 3 hours.
(Prerequisites: CRM 1003 and CRM 3603 or consent of instructor). Three hours lecture. Survey of contemporary correctional systems and practices. Emphasis placed on the formal organization and functioning of penal systems (same as SO 4513/6513)

CRM 4523 Law and Society: 3 hours.
(Prerequisites: SO 1003 and CRM 1003 or consent of instructor). Three hours lecture. Explores the social origins of law and how law can both maintain social order and bring about social change (Same as SO 4523/6523)

CRM 4803 Senior Seminar in Criminology: 3 hours.
(Prerequisites: CRM 3603 or consent of instructor). Three hours lecture. A capstone course which integrates knowledge from criminology course work. Students will apply their knowledge of criminological theory and policy to crime and justice issues

CRM 4990 Special Topics in Criminology: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

CRM 6233 Juvenile Delinquency: 3 hours.
(Prerequisites: CRM 1003 and SO 1003 or consent of instructor). Three hours lecture. Critical study of problems, causes, ways of handling; attitudes, roles and relationships of persons involved, including youthful offenders, social workers, court and law enforcement officials. (Same as SO 4233/6233)

CRM 6243 Drug, Crime and Control: 3 hours.
(Prerequisites: SO 1003 and CRM 1003 or consent of instructor). Three hours lecture. Focus on the social factors which give rise to illicit drug use, patterns and trends in drug crime and strategies to control drug crime. (Same as SO 4243/6243)

CRM 6253 White Collar Crime and Elite Deviance: 3 hours.
(Prerequisites: SO 1003 and CRM 1003 or consent of instructor). Three hours lecture. An overview of the sociological and criminological literature in the area defined as 'White Collar Crime' (Same as SO 4253/6253)

CRM 6323 Victimology: 3 hours.
(Prerequisite: CRM 1003 and SO 1003 or consent of instructor). Three hours lecture. A critical study of victims, examining theories of victimization, the social construction of victimization, the relationship between victims and offenders, and victim prevention efforts. (Same as SO 4323/6323)

CRM 6513 Correctional Systems: 3 hours.

CRM 6523 Law and Society: 3 hours.
(Prerequisites: SO 1003 and CRM 1003 or consent of instructor). Three hours lecture. Explores the social origins of law and how law can both maintain social order and bring about social change (Same as SO 4523/6523)

CRM 6990 Special Topics in Criminology: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

Computer Science Engineering Courses

CSE 1001 First Year Seminar: 1 hour.
One hour lecture. First-year seminars explore a diverse array of topics that provide students with an opportunity to learn about a specific discipline from skilled faculty members

CSE 1002 Introduction to CSE: 2 hours.
Two hours lecture. Introduction to the computer science and software engineering curricula, profession, and career opportunities. Historical perspective; support role of the department. Ethics, team building, problem solving

CSE 1233 Computer Programming with C: 3 hours.
(Prerequisite: MA 1313 or equivalent). Three hours lecture. Problem-solving methods, algorithm development, debugging and documentation in the C Programming language; applications. (Not recommended to students with credit in CSE 1213 or CSE 1233 or equivalent)

CSE 1273 Computer Programming with Java: 3 hours.
(Prerequisite:MA 1313 or equivalent). Three hours lecture Problem-solving methods, algorithm development, debugging and documentation in the Java programming language; applications.(Not recommended to students with credit in CSE 1213 or CSE 1233 or equivalent)

CSE 1284 Introduction to Computer Programming: 4 hours.
(Prerequisiste:MA 1313 or equivalent).Three hours lecture Three hours laboratory. Introductory problem solving and computer programming using object-oriented techniques. Theoretical and practical aspects of programming and problem solving. Designed for CSE,CPE and SE majors

CSE 1384 Intermediate Computer Programming: 4 hours.
(Prerequisite: CSE 1284 with grade of C or better). Three hours lecture.Three hour laboratory. Object-oriented problem solving, design,and programming. Introduction to data structures, algorithm design and complexity. Second course in sequence designed for CSE,CPE and SE majors

CSE 2383 Data Structures and Analysis of Algorithms: 3 hours.
(Prerequisite :Grade C or better in CSE 1384 and MA 1713). Three hours lecture. Non-linear data structures and their associated algorithms. Trees, graphs, hash tables, relational data model, file organization. Advanced software design and development

CSE 2813 Discrete Structures: 3 hours.
(Prerequisites:Grade of C or better in CSE 1284 and MA 1313 or equivalent). Three hours lecture. Concepts of algorithms, induction, recursion,proofs, topics from logic,set theory, combinatorics, graph theory fundamental to study of computer science

CSE 2990 Special Topics in Computer Science and Engineering: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in exisiting courses.(Courses limited to two offerings under one title with two academic years)

CSE 3213 Software Engineering Senior Project I: 3 hours.
(Prerequisite: CSE 4214 with grade of C or better). Six hour laboratory. Software requirements elicitation and specification, cost estimation, scheduling, development of project management and quality assurance plans, reviews

CSE 3223 Software Engineering Senior Project II: 3 hours.
(Prerequisite: CSE 4214 with grade of C or better). Six hour laboratory. Teamwork, software design, construction, implementation of project management and quality assurance plans, and configuration management

CSE 3324 Distributed Client/Server Programming: 4 hours.
(Prerequisite: All majors: Grade of C or better in CSE 2383. CS/SE majors: CSE 4503 with a grade of C or better). Three hours lecture. Three hours laboratory. Design of software systems for distributed environments. Multithreaded and server-side programming, client/server

CSE 3813 Introduction to Formal Languages and Automata: 3 hours.
(Prerequisites:Grade of C or better in CSE 2383 and CSE 2813). Three hour lecture. Theoretical foundations of computer science; formal languages and automata, parsing of context-free languages; Turing machines; introduction to computability and complexity

CSE 3981 Social and Ethical Issues in Computing: 1 hour.
(Prerequisite: Senior standing) One hour lecture. Study of major social and ethical issues in computing, impact of computers on society, and the computer professional's code of ethics

CSE 4000 Directed Individual Study in Computer Science and Engineering: 1-6 hours.
Hours and credits to be arranged

CSE 4153 Data Communications and Computer Networks: 3 hours.
(Prerequisites: Grade of C or better in CSE 1384 or ECE 3732, and ECE 3724 . Three hours lecture.The concepts and practices of data communications and networking to provide the student with an understanding of the hardware and software used for data communications. (Same as ECE 4833/6833)

CSE 4163 Designing Parallel Algorithms: 3 hours.
(Prerequisites: Grade of C or better in CSE 3324 or CSE 4733/6733). Three hours lecture. Techniques for designing algorithms to take advantage efficiently of different parallel architectures. Includes techniques for parallelizing sequential algorithms and techniques for matching algorithms to architectures

CSE 4173 Cryptography: 3 hours.
(Prerequisite: CSE 2383 Data Structures and Algorithms). Three hours lecture. Discrete probability, Information theory, Symmetric Cryptography, Introductory Number Theory, Asymmetric Cryptography, Standard Cryptographic Primitives, Cryptographic Protocols

CSE 4214 Introduction to Software Engineering: 4 hours.
(Prerequisite: CSE 2383 with a grade of C or better). Three hours lecture. Two hours laboratory. Introduction to software engineering; planning, requirements, analysis and specification, design; testing; debugging; maintenance; documentation. Alternative design methods, software metrics, software projecet management, reuse, and reengineering

CSE 4223 Managing Software Projects: 3 hours.
(Prerequisite:CSE 4214/6214 with grade of C or better). Three hours lecture. Concepts in software project management functions such as planning, organizing, staffing, directing and control, estimating, scheduling, monitoring, risk management, and use of tools

CSE 4233 Software Architecture and Design Paradigms: 3 hours.
(Prerequisite: Grade of C or better in CSE 4214/6214). Three hours lecture. Topics include software architectures, methodologies, model representations, component-based design ,patterns,frameworks, CASE-based designs, and case studies

CSE 4243 Information and Computer Security: 3 hours.
(Prerequisite: Credit or registration in CS 4733/6733). Three hours lecture. Topics include encryption systems, network security, electronic commerce, systems threats, and risk avoidance procedures

CSE 4253 Secure Software Engineering: 3 hours.
(Prerequisite: CSE 3324 with a grade of C or better). Three hours lecture. Principles, techniques, and practices involved in building security into software systems including security requirements analysis, secure design, secure coding and security testing, verification and risk management. Topics include analysis and security assessment of legacy software

CSE 4273 Introduction to Computer Forensics: 3 hours.
(Prerequisite:Senior standing in CSE/SE/CPE/MIS/CJ) Three hours lecture. Introduction to computer crime and the study of evidence for solving computer-based crimes. Topics: computer crime, computer forensics and methods for handling evidence

CSE 4283 Software Testing and Quality Assurance: 3 hours.
(Prerequisite:Grade of C or better in CSE 4214/6214). Three hour lecture. Topics include methods of testing, verification and validation, quality assurance processes and techniques, methods and types of testing, and ISO 9000/SEI CMM process evaluation

CSE 4363 Software Reverse Engineering: 3 hours.
(Prerequisite: CSE 4733/6733). Three hours lecture. Software specification recovery and malicious software analysis. Tools and techniques for analyzing compiled programs and communications in the absence of documentation

CSE 4383 Network Security: 3 hours.
(Prerequisites: CSE 4173/6173 Cryptography; and credit or registration in CSE 4153/6153). Three hours lecture. Basic and advanced concepts in cryptography and network security: symmetric and asymmetric cryptography, key management, wired and wireless network security protocols, network systems security

CSE 4413 Principles of Computer Graphics: 3 hours.
(Prerequisities:MA 3113 and grade of C or better in CSE 2383). Three hours lecture. Graphics hardware; algorithms,graphics primitives, windowing and clipping , transformations,3D graphics, shading,hidden surfaces; standards

CSE 4453 Game Design: 3 hours.
(Prerequisites: All majors: junior standing, Design-oriented majors: courses in digital art and/or sound design. CS/SE/CPE majors: CSE 3324 or equivalent with a grade of C or better). Three hours lecture. Principles of computer game design: Game mechanics, structure, narrative, character/environment/level design

CSE 4503 Database Management Systems: 3 hours.
(Prerequisites: CSE 2383 and CSE 2813, both with a grade of C or better). Three hours lecture. Modern database models; basic database management concepts; query languages; database design through normalization; advanced database models; extensive development experience in a team environment

CSE 4613 Bio-computing: 3 hours.
Three hours lecture. Essential programming skills for computational biology. Problem-solving and use of specialized bio-computing libraries. (Credit will not be given to students matriculating in Computer Science, Computer Engineering , or Software Engineering degree programs)

CSE 4623 Computational Biology: 3 hours.
(Prerequisite:BCH 4113/6113 or equivalent and CSE 1384 or CSE 4613/6613). Three hours lecture. Computational analysis of gene sequences and protein structures on a large scale. Algorithms for sequence alignment, structural and functional genomics, comparative genomics, and current topics

CSE 4633 Artificial Intelligence: 3 hours.
(Prerequisite:Grade of C or better in CSE 2383 and CSE 2813) Three hours lecture. Study of the computer in context with human thought processes. Heuristic programming;search programming; search strategies; knowledge representation; natural language understanding; perception; learning

CSE 4643 AI Robotics: 3 hours.
(Prerequisites: Grade of C or better in CSE 2383 or CSE 1233 or with consent of instructor). Three hours lecture. Introduction to artificial intelligence methods for mobile robots. Focus on the theory and practice of robot sensing, localization, navigation, and intelligent task execution

CSE 4653 Cognitive Science: 3 hours.
(Prerequisite: PSY 3713 or CSE 4633 or PHI 4143/6143 or AN 4623/6623). Three hours lecture. The nature of human cognition from an interdisciplinary perspective, primarily utilizing a computational model, including insights from philosophy, psychology, linguistics, artificial intelligence, anthropology, and neuroscience. (Same as PSY 4653/6653)

CSE 4663 Human-Computer Interaction: 3 hours.
(Prerequisite: Junior class standing or consent of instructor). Three hours lecture. Conceptual models formed by users, aspects of computer systems which affect users, interface design and evaluation, and examples and critiques of specific interfaces

CSE 4713 Programming Languages: 3 hours.
(Prerequisities:Grade of C or better in ECE 3724 and CSE 3813).Three hours lecture. An introduction to programming language specification and analysis. Additional topics include control structrues, data types, and structures,run-time environments, binding strategies, compilers, and interpreters

CSE 4723 Compiler Construction: 3 hours.
(Prerequisite:Credit or registration in CSE 4713/6713). Formal treatment of context-free programming language translation and compiler design concepts, including: lexical, syntactic and semantic analysis, machine-dependent code generation and improvement, and error processing

CSE 4733 Operating Systems I: 3 hours.
(Prerequisites: Grade of C or better in CSE 2383 and ECE 3724).Three hours lecture. Historical development of operating systems to control complex computing systems; process management, communication, scheduling techniques;file systems concepts and operation; data communication, distributed process management

CSE 4743 Operating Systems II: 3 hours.
(Prerequisites: CSE 4733/6733 with grade of C or better). Three hours lecture. Integrated treatment of hardware and software concepts in operating systems design; procedure implementation; creation and control of processes;name and space management

CSE 4763 Ethical and Legal Issues in Computing: 3 hours.
Three hours lecture. This course will provide students with an advanced understanding of how and why information security laws and policies are developed and managed. Students will learn about existing state and federal laws and explore social and ethical issues related to information technology and computing

CSE 4773 Introduction to Cyber Operations: 3 hours.
Three hours lecture. This course is designed to develop the students' knowledge of basic cyberspace operations concepts and methodologies. Graduates should be able to assist in the analysis, synthesys, and evaluation of management, engineering, and operational approaches to solve complex problems within cyberspace, defensive and offensive

CSE 4833 Introduction to Analysis of Algorithms: 3 hours.
(Prerequisites:CSE 2383,CSE 2813, and MA 2733 with a grade of C or better). Three hours lecture. Study of complexity of algorithms and algorithm design. Tools for analyzing efficiency; design of algorithms, including recurrence, divide-and-conquer, dynamic programming and greedy algorithms

CSE 4990 Special Topics in Computer Science and Engineering: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

CSE 6153 Data Communications and Computer Networks: 3 hours.
(Prerequisites: Grade of C or better in CSE 1384 or ECE 3732, and ECE 3724 . Three hours lecture.The concepts and practices of data communications and networking to provide the student with an understanding of the hardware and software used for data communications. (Same as ECE 4833/6833)

CSE 6163 Designing Parallel Algorithms: 3 hours.
(Prerequisites: Grade of C or better in CSE 3324 or CSE 4733/6733). Three hours lecture. Techniques for designing algorithms to take advantage efficiently of different parallel architectures. Includes techniques for parallelizing sequential algorithms and techniques for matching algorithms to architectures

CSE 6173 Cryptography: 3 hours.
(Prerequisite: CSE 2383 Data Structures and Algorithms). Three hours lecture. Discrete probability, Information theory, Symmetric Cryptography, Introductory Number Theory, Asymmetric Cryptography, Standard Cryptographic Primitives, Cryptographic Protocols

CSE 6214 Introduction to Software Engineering: 4 hours.
(Prerequisite: CSE 2383 with a grade of C or better). Three hours lecture. Two hours laboratory. Introduction to software engineering; planning, requirements, analysis and specification, design; testing; debugging; maintenance; documentation. Alternative design methods, software metrics, software projecet management, reuse, and reengineering

CSE 6223 Managing Software Projects: 3 hours.
(Prerequisite:CSE 4214/6214 with grade of C or better). Three hours lecture. Concepts in software project management functions such as planning, organizing, staffing, directing and control, estimating, scheduling, monitoring, risk management, and use of tools

CSE 6233 Software Architecture and Design Paradigms: 3 hours.
(Prerequisite: Grade of C or better in CSE 4214/6214). Three hours lecture. Topics include software architectures, methodologies, model representations, component-based design ,patterns,frameworks, CASE-based designs, and case studies

CSE 6243 Information and Computer Security: 3 hours.
(Prerequisite: Credit or registration in CS 4733/6733). Three hours lecture. Topics include encryption systems, network security, electronic commerce, systems threats, and risk avoidance procedures

CSE 6253 Secure Software Engineering: 3 hours.
(Prerequisite: CSE 3324 with a grade of C or better). Three hours lecture. Principles, techniques, and practices involved in building security into software systems including security requirements analysis, secure design, secure coding and security testing, verification and risk management. Topics include analysis and security assessment of legacy software

CSE 6273 Introduction to Computer Forensics: 3 hours.
(Prerequisite:Senior standing in CSE/SE/CPE/MIS/CJ) Three hours lecture. Introduction to computer crime and the study of evidence for solving computer-based crimes. Topics: computer crime, computer forensics and methods for handling evidence

CSE 6283 Software Testing and Quality Assurance: 3 hours.
(Prerequisite:Grade of C or better in CSE 4214/6214). Three hour lecture. Topics include methods of testing, verification and validation, quality assurance processes and techniques, methods and types of testing, and ISO 9000/SEI CMM process evaluation

CSE 6363 Software Reverse Engineering: 3 hours.
(Prerequisite: CSE 4733/6733). Three hours lecture. Software specification recovery and malicious software analysis. Tools and techniques for analyzing compiled programs and communications in the absence of documentation

CSE 6383 Network Security: 3 hours.
(Prerequisites: CSE 4173/6173 Cryptography; and credit or registration in CSE 4153/6153). Three hours lecture. Basic and advanced concepts in cryptography and network security: symmetric and asymmetric cryptography, key management, wired and wireless network security protocols, network systems security

CSE 6413 Principles of Computer Graphics: 3 hours.
(Prerequisities:MA 3113 and grade of C or better in CSE 2383). Three hours lecture. Graphics hardware; algorithms,graphics primitives, windowing and clipping , transformations,3D graphics, shading,hidden surfaces; standards

CSE 6453 Game Design: 3 hours.
(Prerequisites: All majors: junior standing, Design-oriented majors: courses in digital art and/or sound design. CS/SE/CPE majors: CSE 3324 or equivalent with a grade of C or better). Three hours lecture. Principles of computer game design: Game mechanics, structure, narrative, character/environment/level design

CSE 6503 Database Management Systems: 3 hours.
(Prerequisites: CSE 2383 and CSE 2813, both with a grade of C or better). Three hours lecture. Modern database models; basic database management concepts; query languages; database design through normalization; advanced database models; extensive development experience in a team environment

CSE 6613 Bio-computing: 3 hours.
Three hours lecture. Essential programming skills for computational biology. Problem-solving and use of specialized bio-computing libraries. (Credit will not be given to students matriculating in Computer Science, Computer Engineering , or Software Engineering degree programs)

CSE 6623 Computational Biology: 3 hours.
(Prerequisite:BCH 4113/6113 or equivalent and CSE 1384 or CSE 4613/6613). Three hours lecture. Computational analysis of gene sequences and protein structures on a large scale. Algorithms for sequence alignment, structural and functional genomics, comparative genomics, and current topics

CSE 6633 Artificial Intelligence: 3 hours.
(Prerequisite:Grade of C or better in CSE 2383 and CSE 2813) Three hours lecture. Study of the computer in context with human thought processes. Heuristic programming;search programming; search strategies; knowledge representation; natural language understanding; perception; learning

CSE 6643 AI Robotics: 3 hours.

CSE 6653 Cognitive Science: 3 hours.
(Prerequisite: PSY 3713 or CSE 4633 or PHI 4143/6143 or AN 4623/6623). Three hours lecture. The nature of human cognition from an interdisciplinary perspective, primarily utilizing a computational model, including insights from philosophy, psychology, linguistics, artificial intelligence, anthropology, and neuroscience. (Same as PSY 4653/6653)

CSE 6663 Human-Computer Interaction: 3 hours.
(Prerequisite: Junior class standing or consent of instructor). Three hours lecture. Conceptual models formed by users, aspects of computer systems which affect users, interface design and evaluation, and examples and critiques of specific interfaces

CSE 6713 Programming Languages: 3 hours.
(Prerequisities:Grade of C or better in ECE 3724 and CSE 3813).Three hours lecture. An introduction to programming language specification and analysis. Additional topics include control structrues, data types, and structures,run-time environments, binding strategies, compilers, and interpreters

CSE 6723 Compiler Construction: 3 hours.
(Prerequisite:Credit or registration in CSE 4713/6713). Formal treatment of context-free programming language translation and compiler design concepts, including: lexical, syntactic and semantic analysis, machine-dependent code generation and improvement, and error processing

CSE 6733 Operating Systems I: 3 hours.
(Prerequisites: Grade of C or better in CSE 2383 and ECE 3724).Three hours lecture. Historical development of operating systems to control complex computing systems; process management, communication, scheduling techniques;file systems concepts and operation; data communication, distributed process management

CSE 6743 Operating Systems II: 3 hours.
(Prerequisites: CSE 4733/6733 with grade of C or better). Three hours lecture. Integrated treatment of hardware and software concepts in operating systems design; procedure implementation; creation and control of processes;name and space management

CSE 6753 Foundations in Computation: 3 hours.
(Prerequisite: CSE 1213 or CSE 1233 or CSE 1273 or CSE 1284 with a grade of C or better, or permission of instructor). Three hours lecture. Foundational concepts of computational algorithm design and analysis. (No credit for student in Computer Science, Computer Engineering, or Software Engineering degree programs)

CSE 6763 Ethical and Legal Issues in Computing: 3 hours.
Three hours lecture. This course will provide students with an advanced understanding of how and why information security laws and policies are developed and managed. Students will learn about existing state and federal laws and explore social and ethical issues related to information technology and computing

CSE 6773 Introduction to Cyber Operations: 3 hours.
Three hours lecture. This course is designed to develop the students' knowledge of basic cyberspace operations concepts and methodologies. Graduates should be able to assist in the analysis, synthesys, and evaluation of management, engineering, and operational approaches to solve complex problems within cyberspace, defensive and offensive

CSE 6833 Introduction to Analysis of Algorithms: 3 hours.
(Prerequisites:CSE 2383,CSE 2813, and MA 2733 with a grade of C or better). Three hours lecture. Study of complexity of algorithms and algorithm design. Tools for analyzing efficiency; design of algorithms, including recurrence, divide-and-conquer, dynamic programming and greedy algorithms

CSE 6990 Special Topics in Computer Science and Engineering: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

CSE 7000 Directed Individual Study in Computer Science and Engineering: 1-6 hours.
Hours and credits to be arranged

CSE 8000 Thesis Research/ Thesis in Computer Science and Engineering: 1-13 hours.
Hours and credits to be arranged

CSE 8011 Graduate Seminar: 1 hour.
One hour seminar. Reports on recent advances and problems in computer science by guest speakers,faculty, and students; student participation, general discussion

CSE 8080 Directed Project in Computer Science: 1-3 hours.
Hours and credits to be arranged. An individual professional project open only to candidates for the Master of Science degree (project option). Formal written and oral project reports are required

CSE 8153 Advanced Data Communications: 3 hours.
(Prerequisite:CSE 4153/6153 or equivalent). Three hours lecture. A study of advanced concepts and practices of data communications with particular emphasis on Local Area Networks and Transmission Control Protocol/Internet Protocol (TCP/IP)

CSE 8163 Parallel and Distributed Scientific Computing: 3 hours.
(Prerequisite:CSE 4163/6163). Three hours lecture. Algorithms for distributed scientific computing; performance evaluation; scheduling and load balancing issues for scientific applications; architectural issues affecting performance

CSE 8233 Software Engineering Project Management: 3 hours.
(Prerequisites:CSE 4214/6214). Three hours lecture. Management of the engineering of software products including estimating, planning, process management, and special topics

CSE 8243 Software Specification: 3 hours.
(Prerequisites:CSE 4214/6214). Three hours lecture. Writing software specifications, transforming specifications into code , and verifying transformations using formal methods

CSE 8253 Software Design: 3 hours.
(Prerequisite:CSE 4214/6214). Three hours lecture. Software design principles, attributes, models, and methodologies; object-oriented designs; real-time system design; user interface design;design verification; reusability issues; tools;current issues

CSE 8273 Software Requirements Engineering: 3 hours.
(Prerequisites:CSE 4214/6214 with grade of C or better). Three hours lecture. An in-depth study of current research and practice in requirements elicitation, requirements analysis, requirements specification, requirements verification and validation, and requirements management

CSE 8283 Empirical Software Engineering: 3 hours.
(Prerequisite:CSE 4214/6214). Three hours lecture. Basics of empirical software engineering, metrics, and modeling of the software development process, validation and comparing software engineering methods, and methods for data analysis

CSE 8413 Visualization: 3 hours.
(Prerequisites:CSE 4413/6413).Three hours lecture. Essential algorithms for three-dimensional rendering and modeling techniques;viewing transformations, illumination, surface modeling; methodologies for visualization of scalar and vector fields in three dimensions

CSE 8433 Advanced Computer Graphics: 3 hours.
(Prerequisites:CSE 4413/6413). Three hours lecture. Realistic, three-dimensional image generation; modeling techniques for complex three-dimensional scenes; advanced illumination techniques; fractal surface modeling; modeling and rendering of natural phenomena

CSE 8613 Cognitive Models of Skill: 3 hours.
(Prerequisite: Graduate standing). Three hours lecture. Introduction to cognitive modeling, with a focus on computational models of skill acquisition and expert skill. (Same as PSY 8723)

CSE 8673 Machine Learning: 3 hours.
(Prerequisite: CSE 4633/6633). Three hours lecture. Introduction to machine learning, including computational learning theory, major approaches to machine learning, evaluation of models, and current research

CSE 8713 Advanced Cyber Operations: 3 hours.
Three hours lecture. This course is designed to develop the students' knowledge of cyberspace operations concepts and methodologies. Graduates should be able to analyze, synthesize, and evaluate management, engineering, and operational approaches to solve complex problems within cyberspace, defensive and offensive

CSE 8723 Cyber Law and Policy: 3 hours.
Three Hours Lecture. This course will provide students with an advanced understanding of how and why information security laws and policies are developed and managed. Students will be exposed to existing laws at the state and federal level, as well as security policies of successful organizations

CSE 8743 Advanced Network Security: 3 hours.
Three Hours Lecture: This course explores advanced topics in Network Security, to include: Internet of Things, Wireless Networks, Low Complexity Cryptographic Models, Network System Models, Tamper Resistant Network Components

CSE 8753 Wireless Networks: 3 hours.
Three hours lecture. Wireless network protocol design, theoretical analysis, and security and privacy. (Same as ECE 8823)

CSE 8813 Theory of Computation: 3 hours.
(Prerequisite: CSE 3813).Three hours lecture.Study of abstract models of computation,unsolvability,complexity theory, formal grammars and parsing, and other advanced topics in theoretical computer science

CSE 8833 Algorithms: 3 hours.
(Prerequisites: CSE 4833/6833).Three hours lecture. Advanced techniques for designing and analyzing algorithms, advanced data structures, case studies, NP-completeness including reductions, approximation algorithms

CSE 8843 Complexity of Sequential and Parallel Algorithms: 3 hours.
(Prerequisite:CSE 4833/6833).Three hours lecture. Complexity of sequential algorithms, theory of complexity, parallel algorithms

CSE 8990 Special Topics in Computer Science and Engineering: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

CSE 9000 Dissertation Research/ Dissertation in Computer Science and Engineering: 1-13 hours.
Hours and credits to be arranged

CSE 9133 Topics in High Performance Computing: 3 hours.
(Prerequisite:Consent of Instructor). Three hours lecture. Reading and study of current work related to the area of high performance computing. Intended for doctoral students. (May be taken for credit more than once)

CSE 9633 Topics in Artificial Intelligence: 3 hours.
(Prerequisite: Consent of instructor). Three hours lecture. Reading and study of current work related to the area of artificial intelligence. Intended for doctoral students. (May be taken for credit more than once)

Veterinary Medicine Courses

CVM 1001 First Year Seminar: 1 hour.
One hour lecture. First-year seminars explore a diverse arrary of topics that provide students with an opportunity to learn about a specific discipline from skilled faculty members

CVM 2443 Essentials of Biotechnology: 3 hours.
Three hours lecture. An introduction to principles and applications of biotechnology. (Same as FO 2443)

CVM 2990 Special Topics in Veterinary Medicine: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

CVM 3013 Small Animal Diseases and Management: 3 hours.
(Prerequisites: admission to the junior year of the veterinary medical technology program). Three hours lecture. Pathophysiology, transmission, diagnostic process, clinical management and prevention of canine and feline diseases as well as emergency and critical care

CVM 3014 Applied Anatomy and Physiology for Veterinary Technologists: 4 hours.
Three hours lecture. Three hours laboratory. Study of anatomical and physiological systems of animals commonly encountered by veterinary technologists with emphasis of species differences and clinical applications. (Offered to students enrolled in the Veterinary Technology Program ONLY)

CVM 3022 Small Animal Technical Skills & Nursing Care: 2 hours.
(Prerequisite:Admissions to the junior year of the Veterinary Medical Technology Program). One hour lecture . Two hours laboratory. Principles of small animal medical management topics and techniques, behavior, and an overview of critical care techniques for small animals

CVM 3031 Food Animal Technical Skills & Nursing Care: 1 hour.
(Prerequisite: Admission to the junior year of the Veterinary Medical Technology program). Two hours laboratory Fundamentals of handling of the food animal species. Breed identification, specimen collection, physical exam, medication administration and other nursing care procedures relevant to the species

CVM 3032 Food Animal Diseases and Management: 2 hours.
(Prerequisite: Admission to the junior year of the Veterinary Medical Technology program). Two hours lecture. Diseases, husbandry, preventative health care,epidemiology, public health and client education for the food animal species

CVM 3041 Equine Technical Skills & Nursing Care: 1 hour.
(Prerequisite:Admission to the junior year of the Veterinary Medical Technology Program). Two hours lecture/laboratory. Fundamentals of handling of the equine species. Breed identification, specimen collection, physical exam, medication administration and other nursing care procedures relevant to the species

CVM 3042 Equine Diseases and Management: 2 hours.
(Prerequisite:Admission to the junior year of the Veterinary Medical Technology program).Two hours lecture. Diseases,husbandry, preventative health care and client education for the equine species

CVM 3051 Laboratory Animal Health Management: 1 hour.
(Prerequisite:Admission to the junior year of the Veterinary Medical Technology Program).One hour lecture. Diseases, husbandry and preventative health care for the Laboratory animal species

CVM 3061 Laboratory Animal Technical Skills: 1 hour.
(Prerequisite:Admission to the junior year of the Veterinary Medical Technology Program). Two hours laboratory. Fundamentals of the handling of the laboratory animal species. Species and breed identification, specimen collection, physical exam, medication administration and other nursing care procedures

CVM 3101 Veterinary Technology Medical Terminology: 1 hour.
One hour lecture.Veterinary medical terminology, focusing on fundamental recognition, interpretation and usage of medical terms

CVM 3111 Parasitology for Veterinary Technologists: 1 hour.
(Prerequisite:Admission to the junior year of the Veterinary Medical Technology Program).Two hour lecture/laboratory. Parasites of veterinary and public health importance,including gross and microscopic morphology, transmission, and control

CVM 3112 Animal Handling, Husbandry, and Nutrition: 2 hours.
(Prerequisites: admission to the veterinary medical technology program). One hour lecture. Two hours laboratory. General handling and restraint, basic husbandry techniques, and the nutritional needs for companion animals and production animals

CVM 3121 Hematology for Veterinary Technologists: 1 hour.
(Prerequisite:Admission to the junior year of the Veterinary Medical Technology Program)One hour lecture. Structure and function of normal blood cells, cellular and humoral immunity, mechanisms of hemostasis, blood group serology, transfusion medicine and vaccinology

CVM 3132 Clinical Pathology Laboratory Techniques: 2 hours.
(Prerequisites: admission to the junior year of the veterinary medical technology program). One hour lecture. Two hours laboratory. Procedures in hematology, serology, and ELISA methodology, cytology, urology, chemistries, and microbiology (culture and sensitivity)

CVM 3141 Anatomical Pathology Laboratory Techniques: 1 hour.
(Prerequisite:Admission to the junior year of the Veterinary Medical Technology Program).Two hours lecture/laboratory. Veterinary anatomical pathology laboratory including necropsy,sample collection and submission, and disposal of animal tissues

CVM 3201 Dental Principles for Veterinary Technologists: 1 hour.
(Prerequisite: Admission to the junior year of the Veterinary medical Technology program).One hour laboratory. Students are expected to become proficient in dental techniques of all small animal species, instrumentation, and dental radiology positioning in additions to common dental disorders

CVM 3202 Diagnostic Imaging for Veterinary Technologists: 2 hours.
(Prerequisite: Admission to the junior year of the Vet Tech program) One hour lecture. Two hours laboratory. Diagnostic imaging (x-ray,CT, MRI, ultrasound), production of images, use of screens and grids, handling film, imaging quality, film processing, patient positioning,and radiation safety

CVM 3212 Anesthesiology for Veterinary Technologists: 2 hours.
(Prerequisite:Admission to the junior year of the Vet Tech Program).Two hours lecture. Pharmacologic action of pre-anesthetic and anesthetic drugs. Principles and techniques of induction, maintenance, monitoring, and recovery of the patient.Humane methods of euthanasia

CVM 3221 Surgical Nursing & Anesthetic Management Laboratory: 1 hour.
(Prerequsisite:Admission to the junior year of Vet Med Tech Program). Two hours laboratory. Principles and techniques in veterinary surgical nursing and anesthesia

CVM 3222 Surgical Skills & Nursing Care for Veterinary Technologists: 2 hours.
(Prerequisite:Admission to the junior year Vet Med Tech Prog) Two hours lecture. Role of the veterinary technician as a member of the veterinary surgical team

CVM 3232 Pharmacology & Toxicology for Veterinary Technologists: 2 hours.
(Prerequisite:Admission to junior year of Vet Med Tech Prog) Two hours lecture. Characteristics,classification and usage of veterinary pharmaceuticals. Introduction to and application of dosage and formulation calculations. Overview of common toxins, clinical signs and associated treatments

CVM 3243 Basics of Practice Procedures and Management: 3 hours.
(Prerequisite:Admission to junior year of Vet Med Prog). Three hours lecture.Veterinary practice economics, personnel management, professional and client communications, inventory control, and marketing techniques

CVM 4000 Directed Individual Study in Veterinary Medicine: 1-6 hours.

CVM 4003 Internship Experience: 3 hours.
(Prerequisite: admission to the senior year of the Veterinary Medical Technology Program).Three hours practicum. Students choose a facility to complete a three week internship. Choices include zoos, laboratory, research, equine, emergency, and small animal. Facility is approved by director

CVM 4101 Veterinary Technology Academic Elective: 1 hour.
(Prerequisite: admission to the senior year of the Veterinary Medical Technology Program).One hour practicum. The student will work one on one with a faculty member in areas of academic standard, course design, laboratory/lecture preparation, and other aspects of undergraduate programs

CVM 4102 Professional Development for Veterinary Technologists: 2 hours.
(Prerequisite: admission to the senior year of the Veterinary Medical Technology Program).Two hours lecture. Professional, ethical, and legal considerations of clinical practice. Professional development, career opportunities, and advancements in veterinary technology. Interdisciplinary, teams and human-animal bond in community and practice

CVM 4103 Large Animal Clinical Experience: 3 hours.
(Prerequisites: admission to the senior year of the veterinary medical technology program). Three hour practicum. Supervised rotation through the MSU-CVM Large Animal Clinics (Equine and Food Animal) and Large Animal Ambulatory Rotation

CVM 4113 Large Animal Clinical Elective: 3 hours.
(Prerequisite: Admission into the senior year of the Veterinary Medical Technology Program). Lecture/Practicum. Lecture component on an advanced large animal topic. Practicum component consists of rotating through one of the large animal services

CVM 4134 Aquatic Animal Health Management: 4 hours.
Three hours lecture. Three hours laboratory.(Prerequisite: One course in microbiology and one course in physiology). Fundamentals concepts of preventing , diagnosing and treating economically important diseases in wild and cultured stocks and invertebrates through didactic and laboratory instruction

CVM 4180 Emergency Prep for Animal Health: 1-5 hours.
Introduction to emergency preparedness concerning health/well-being of animals. Incident Command System (ICS) leading to subjects pertinent to animal health during natural/man-made disasters

CVM 4193 Medical Pharmacology: 3 hours.
(Prerequisites for undergraduates: BIO 3014 or BIO 4514 and BCH 4013 or 4603; Prerequisites for graduates: graduate standing and instructor's consent). Three hours lecture. This course is an introduction to basic and clinical pharmacology with an emphasis on major drug groups, their mechanisms of action, and therapeutic use

CVM 4201 Clinical Experience Elective: 1 hour.
(Prerequisite: admission to the senior year of the Veterinary Medical Technology Program).One hour practicum. This course allows senior students in an elected clinical experience, either within MSU-CVM or at an outside approved facility; animal clinic/hospital, laboratory, research

CVM 4206 Small Animal Clinical Experience: 6 hours.
(Prerequisites: admission to the junior year of the veterinary medical technology program). Six hour practicum. Students will rotate through 3 weeks in Community Veterinary Services, 1 week in laboratory animal, 1 week in shelter medicine, and 1week in radiology

CVM 4213 Small Animal Surgery & Anesthesia Clinical Experience: 3 hours.
(Prerequisite: Admission to the senior year of the Veterinary Medical Technology Program) Three hour practicum. Students will manage surgical/anesthetic cases at MSU-CVM. Students participate in surgical preparation, OR operations, induce/monitor anethesia,pre/post-op and all technical aspects of patient care

CVM 4223 Small Animal Clinical Elective: 3 hours.
(Prerequisite: Admission to the senior year of the Veterinary Medical Technology Program). Lecture/Practicum. Lecture component on an advanced small animal topic. Practicum component consists of rotating through one of the small animal services

CVM 4333 Emergency/ICU Clinical Experience: 3 hours.
(Prerequisite:Admission to Senior year of Vet Med Tech Prog) Three hours practicum.Supervised rotation through the Small Animal Emergency/Critical Care Unit. Students participate in all technical aspects of the patient's care

CVM 4501 Diagnostic Laboratory Experience: 1 hour.
(Prerequisites: Admission to the senior year of the veterinary medical technology program). One hour practicum. Supervised rotation through the State Diagnostic Laboratory in Pearl, MS

CVM 4511 Biomedical Research Experience Elective: 1 hour.
(Prerequisite: admission to the senior year of the Veterinary Medical Technology Program).One week rotation at the Laboratory Animal Facilities, University of Mississippi Medical Center. Principles of animal research and application animal welfare regulations

CVM 4513 Environmental Toxicology: 3 hours.
(Prerequisites: 8 hours biological sciences and 8 hours chemistry). Three hours lecture. The disposition and toxicological effects of environmentally-relevant toxicants (such as agrochemicals, petroleum and industrial pollutants) within organisms, and aquatic and terrestrial ecosystems

CVM 4601 Animal Emergency & Referral Center Elective: 1 hour.
(Prerequisite: admission to the senior year of the Veterinary Medical Technology Program).One week practicum. Supervised rotation through the Animal Emergency and referral Center in Flowood. Students participate in technical aspects of referral center and emergency and critical care nursing

CVM 4701 Application & Process for VTNE: 1 hour.
(Prerequisite: admission to the senior year of the Veterinary Medical Technology Program).One hour lecture. VTNE application process and how to review for the national board examination

CVM 4905 Pre-Uganda Study Abroad: 5 hours.
Five hours lecture. This course addresses several topics over the spring semester aimed at preparing students for the CVM 5906 and CVM 4906/6906 Tropical Veterinary Medicine and One Health summer study abroad In Uganda course

CVM 4906 Tropical Veterinary Medicine and One Health: 6 hours.
Six hours study abroad. This course covers Tropical Veterinary Medicine (TVM) in Uganda including; Tropical Animal production, Animal Health, Disease Surveillance, Public Health systems and Food safety of Animal Products. Additionally, the course covers One Health perspectives of the TVM and cultural emersion

CVM 4990 Special Topics in Veterinary Medicine: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

CVM 5000 Directed Individual Study in CVM: 1-6 hours.
Hours and credits to be arranged

CVM 5011 Professional Development I: 1 hour.
(Prerequisite: Enrollment in the professional veterinary degree program). One hour lecture. This course will include veterinary career pathways, personal finance, cultural competence, ethical issues, dealing with stress, and study skills

CVM 5013 Veterinary Neuroscience: 3 hours.
(Prerequisite: Enrollment in professional veterinary degree program.) Two hours lecture. One hour laboratory. Basic anatomic and physiologic concepts foundational to understanding animal behaviors and veterinary neurology

CVM 5021 Professional Development II: 1 hour.
(Prerequisite: Enrollment in the professional veterinary degree program.) One hour lecture. This course will include presentations and discussions on ethics, jurisprudence, business and professionalism

CVM 5022 Veterinary Epidemiology: 2 hours.
Prerequisite: Enrollment in professional veterinary degree program. Two hours lecture. Presentation of basic concepts and principles of epidemiology and the relationship to animal and human health

CVM 5023 Infectious Agents I: 3 hours.
(Prerequisites: Enrollment in the professional veterinary degree program). Three hours lecture. Principles regarding the classification, pathophysiological mechanisms, control, diagnosis, and zoonotic potential of bacteria of importance in veterinary medicine

CVM 5032 Immunology: 2 hours.
(Prerequisite:Enrollment in the professional veterinary degree program). Two hours lecture. Presentation of the priniciples regarding immune responses in health and disease

CVM 5033 Immunology: 3 hours.
(Prerequisites: Enrollment in the professional veterinary degree program). Three hours lecture. Presentation of the principles regarding immune responses in health and disease . Introduction to Veterinary Immunology

CVM 5036 Veterinary Physiology: 6 hours.
(Prerequisite:Enrollment in the professional veterinary degree program).Six hours lecture. Presentation of fundamental concepts, principles, and issues in veterinary physiology specifically related to cellular physiology, muscle and nerve function,cardiovascular,respiratory , urinary,digestive, endocrine and reproductive physiology

CVM 5044 Veterinary Pathology: 4 hours.
(Prerequisite: Enrollment in the professional veterinary degree program.) Four hours lecture. Introduction to the host response to endogenous and exogenous injury. Emphasis will be on general and systematic anatomic patholog

CVM 5046 Veterinary Anatomy I: 6 hours.
(Prerequisite:Enrollment in the professional veterinary degree program). Eight hours lecture-lab combination. Study of gross anatomy through dissection with intergration of embryological and radiographic anatomy. Hindlimb/forelimb, vertebral column, head, and the neck. Canine and equine models primarily

CVM 5072 Veterinary Anatomy II: 2 hours.
(Prerequisite: CVM 5046 and enrollment in professional veterinary degree program). Three hours lecture and laboratory. Study of anatomy through dissection with integration of embryological/radiographic anatomy. Alimentary system/abdomen, urogential system, pelvic cavity, and mammary gland. Canine, equine, and bovine models primarily

CVM 5073 Veterinary Histology: 3 hours.
(Prerequisite:Enrollment in the professional veterinary degree program). Two hours lecture. Two hours laboratory. Basic microscopic anatomy cells, tissues, organs, and organ systems

CVM 5106 First Year CVM Medicine: 6 hours.
Six hours non-gradable course. This course is used in summer terms (only) to establish First Year CVM students fall enrollment elgibility

CVM 5111 Professional Development III: 1 hour.
(Prerequisite: Enrollment in the professional veterinary degree program). One hour lecture. Application of evidence based medicine and quantitative skills in veterinary medicine

CVM 5121 Professional Development IV: 1 hour.
(Prerequisite: Enrollment in the professional veterinary degree program). One hour lecture. Application of evidence based medicine and quantitative skills in veterinary medicine

CVM 5123 Veterinary Clinical Pathology: 3 hours.
(Prerequisite: Enrollment in the professional veterinary degree program.) Three hours lecture. This course covers the basic concepts of hematology, clinical chemistry, and cytology. The interpretation of laboratory methods in evaluation will also be covered

CVM 5130 VNI Clinical Rotation: 2-6 hours.
(Prerequisite: enrollment in the CVM professional curriculum). Two to six (2-6) credit hours practicum. Clinical rotation at Veterinary Neurology & Imaging, where students participate in the care of patients referred to specialists in the field of veterinary neurology/neurosurgery

CVM 5132 Anes & Pharm II: 2 hours.
(Prerequisite: Enrollment in professional veterinary degree program.) Two hours lecture. Principles of anesthetic techniques in various species along with systems oriented anesthesia. Mechanisms of antimicrobial action with an emphasis on antimicrobial therapy

CVM 5133 Veterinary Preventive Medicine: 3 hours.
(Prerequisite: Enrollment in professional veterinary degree program.) Three hours lecture. Management and prevention of animal diseases that impact animal and human health

CVM 5143 Theriogenology: 3 hours.
(Prerequisite: Enrollment in professional veterinary degree program.) Two hours lecture. Two hours laboratory. The pathogenesis, diagnosis, pathology, medical and surgical treatment, and prevention of diseases related to the urogenital system of domestic species

CVM 5152 Toxicology: 2 hours.
(Prerequisite: Enrollment in professional veterinary degree program). One hour lecture. Two hours laboratory. Diagnosis and management of animal intoxications

CVM 5153 Equine Medicine & Surgery I: 3 hours.
(Prerequisite: Enrollment in professional veterinary degree program). Three hours lecture/lab. Clinical reasoning, principles of diagnosis and the medical and surgical management of multi-systemic disorders involving the equine cardiovascular, endocrine, gastrointestinal, immune and urinary systems

CVM 5162 Diagnostic Imaging: 2 hours.
(Prerequisite: Enrollment in professional veterinary degree program.) Two hours lecture. This course introduces the fundamental principles of radiographic diagnosis of abnormal body systems. Included are the physics and principles of interpretation and visual perception

CVM 5163 Veterinary Parasitology: 3 hours.
(Prerequisite: Enrollment in professional veterinary degree program.) Two hours lecture. Two hours laboratory. Present- ation of principles essential to understanding the classification, pathophysiological mechanisms, control and diagnosis of parasites of importance in veterinary medicine

CVM 5173 Equine Medicine & Surgery II: 3 hours.
(Prerequisite: Enrollment in professional veterinary degree program). Three hours lecture/lab). The principles of diagnosis and management of disorders involving the cardiovascular, endocrine, gastrointestinal, respiratory, nervous, immune and urinary systems

CVM 5175 Food Animal Medicine and Surgery: 5 hours.
(Prerequisite: Enrollment in professional veterinary degree program.) Four hours lecture. Two hours laboratory. Disease and common surgical conditions of food animals including history, clinical signs, diagnostic methods, medical treatment, surgical correction, prognosis, and prevention

CVM 5182 Veterinary Disaster Management: 2 hours.
(Prerequisite: Enrollment in the professional veterinary degree program. Not open to students who have completed CVM 4180/CVM 6180). Veterinary disaster management concerning animal health and well-being before, during, and after disasters. Includes general incident management training for local, state and federal levels

CVM 5183 Special Species: 3 hours.
(Prerequisite: Enrollment in profesisonal veterinary degree program.) Three hours lecture. This course will cover applied anatomy, physiology, husbandry and common diseases in avian, aquatic, reptiles, amphibians, rodents and other minor species

CVM 5186 Small Anim Med & Surgery I: 6 hours.
(Prerequisite: Enrollment in professional veterinary degree program). Five hours lecture. Two hours laboratory. This course covers diagnosis and treatment of medical and surgical conditions of the urogenital, gastrointestinal, cardiorespiratory, hematologic, and nervous systems, plus emergency medicine

CVM 5193 Veterinary Agents of Infectious Disease II: 3 hours.
(Prerequisite: C or better in CVM 5023). Three hours lecture. A systematic presentation of viruses and fungi and their features of importance in veterinary medicine including disease synonyms morphology, classification, and character of the disease

CVM 5195 Small Anim Med & Surgery II: 5 hours.
(Prerequisite: Enrollment in professional veterinary degree program.) Four hours lecture. Two hours laboratory. Course covers diagnosis and treatment of medical and surgical conditions of the musculoskeletal, digestive, and endocrine systems

CVM 5196 Small Animal Medicine and Surgery II: 6 hours.
(prerequisite: Enrollment in professional veterinary degree program). Five hours lecture. Two hours laboratory. This course covers diagnosis and treatment of medical and surgical conditions of the musculoskeletal, endocrine, and integumentary systems, plus selected topics in small animal oncology

CVM 5206 Second Year Vet. Medicine: 6 hours.
Six hours non-gradable course. This course is used in summer terms (only) to establish Second Year CVM students fall enrollment elgibility

CVM 5210 Advanced Clinical Rotation - Comparative Ophthalmology.: 2-6 hours.
Advanced clinical rotation in comparative ophthalmology. Veterinary students will actively participate in care and examination of referred ophthalmology patients

CVM 5213 Introduction to Veterinary Anesthesiology: 3 hours.
(Prerequisite: Enrollment in the professional veterinary degree program). Two hours lecture. Two hours laboratory. This course is an introduction to principles of anesthesia for the common veterinary species, and includes equipment, drugs, methods of administration, monitoring, and methods for specific disease states

CVM 5214 Laboratory Services: 4 hours.
Four hours practicum. Supervised rotation through the Diagnositc Laboratory of the Animal Health Center. Responsibilities include diagnostic techniques and data interpretation in clinical pathology, pathology, parasitology and bacteriology

CVM 5222 Small Animal Clinical Nutrition: 2 hours.
(Prerequisite: Eligible to take 4th year electives.) Two hours lecture. Applied clinical nutrition focusing on the nutritional needs of the healthy and diseased small animal patient and utilization of current diets to impact patient health

CVM 5223 Veterinary Pharmacology I: 3 hours.
(Prerequisite: Enrollment in the professional veterinary degree program). Three hours lecture. Molecular basis for absorption, mechanism of action, metabolism, excretion and toxicity focusing on pharmaceuticals used to treat hemostatic, neoplasitc, parasitic, and inflammatory disorders

CVM 5224 Radiology: 4 hours.
Four hours practicum. Supervised rotation in Radiology. Areas of study include radiographic and ultrasound techniques and interpretation and radiotherapy

CVM 5234 Anesthesiology: 4 hours.
Four hours practicum. Supervised rotation in Anesthesiology. Areas of study include preanesthetic patient evaluation, anesthetic induction, maintenance and monitoring and postanesthetic patient management

CVM 5246 Community Veterinary Services: 6 hours.
Six hours practicum. Supervised through the Community Veterinary Service of the Small Animal Health Center. Students participate in all aspects of patient care and health management

CVM 5256 Small Animal Surgery: 6 hours.
Six hours practicum. Supervised rotation through Small Animal Surgery. Students participate in the receiving, analysis, surgery and management of patients referred for surgical care

CVM 5266 Equine Medicine & Surgery: 6 hours.
Six hours practicum. Supervised rotation through the Equine unit of the Large Animal Clinic. Students participate in the receiving, analysis, and management of patients referred for care

CVM 5273 Population Medicine: 3 hours.
(Prerequisite: enrollment in professional veterinary degree program). Two hours lecture. Two hours laboratory. This course focuses on animal health assessment at the population level. It emphasizes decision making and best practices to maintain health in large and small animal populations

CVM 5276 Food Animal Practice: 6 hours.
Six hours practicum. Supervised rotation through the Food Animal section of the Animal Health Center. Students participate in problem analysis, case management and development of health maintenance programs

CVM 5282 Ambulatory/Large Animal Primary Care: 2 hours.
(Prerequisite: Enrollment in professional veterinary degree program). Two hours practicum. Supervised clinical rotation through the Ambulatory/ Large Animal Primary Care service. Students participate in large animal medicine and surgery in a field setting

CVM 5292 Flowood/MVRDL Externship: 2 hours.
(Prerequisite: Enrollment in the CVM professional curriculum). Two credit hours practicum. Supervised clinical rotation at the Animal Emergency and Referral Center, Flowood, MS where veterinary students will actively participate in all aspects of patient care. Additional clinical experiences will provided at the Mississippi Veterinary Research and Diagnostic Laboratory

CVM 5301 Clinicopathological Conference: 1 hour.
One hour lecture. One hour laboratory. Advanced communication skills. Professional writing and public speaking to the scientific audience

CVM 5310 Small Animal Emergency and Critical Care Medicine: 4-6 hours.
Variable hours, four to six hours practicum. Supervised clinical rotation in the small animal intensive care and emergency services. Emphasis on the evaluation and management of the critically ill or injured animal. Grading will be Satisfactory or Unsatisfactory

CVM 5364 Veterinary Specialty Center Rotation: 4 hours.
(Four weeks). Four hours practicum. Senior veterinary students will participate in care of veterinary patients referred to Neurology, Ophthalmology, and Oncology

CVM 5380 Small Animal Internal Medicine: 6-8 hours.
Variable hours practicum. Advanced supervised rotation through the Small Animal Clinic. Students participate in the receiving, analysis, and management of patients referred for medical care

CVM 5382 Cytology Elective: 2 hours.
The students will learn how to systematically review different cytology samples and will be exposed to many examples of cases submitted to the College of Veterinary Medicine diagnostic laboratory

CVM 5392 Pharmacy: 2 hours.
Two hours practicum. Supervised clinical rotation in the pharmacy of the Animal Health Center. Students participate in all activities of these units

CVM 5420 Advanced Rotation in Radiology: 1-6 hours.
Two to four hours practicum. (Prerequisite: CVM 5204). (May be repeated for credit). Areas of study include advanced radiographic and ultrasound techniques and interpretation and use of radioisotopes in therapy

CVM 5430 Advanced Rotation in Anesthesiology: 1-6 hours.
Variable hours practicum. (Prerequisite: CVM 5414). (May be repeated for credit). Advanced rotation in Anesthesiology. Areas of study include pre-anesthetic patient evaluation, and advanced techniques in anesthetic induction, anesthetic maintenance, patient monitoring and post-anesthetic care

CVM 5452 Small Animal Physical Rehabilitation: 2 hours.
(Prerequisite: Consent of instructor). Two hours clinical instruction. Practical application of physical rehabilitation in the small animal patient

CVM 5454 Advanced Rotation in Small Animal Surgery: 4 hours.
Four hours practicum. (Prerequisite: Consent of Instructor). (May be repeated for credit). Students assume primary responsibility for the receiving, diagnosis, treatment and management of small animal surgery patients

CVM 5460 Advanced Rotation in Equine Medicine and Surgery: 4 hours.
(Prerequisite:CVM 5266). Variable hours 0-4. Practicum .Students assume primary responsibilty for the resloving, diangosis, treatment and management of equine patients. May be repeated for credit

CVM 5464 Adv Rot Eq Med & Surg: 4 hours.
Four hours practicum. (Prerequisite: CVM 5266). (May be repeated for credit). Students assume primary responsibility for the resolving, diagnosis, treatment and management of equine patients

CVM 5474 Advanced Rotation in Food Animal Practice: 4 hours.
Four hours practicum. (Prerequisite: CVM 5276). (May be repeated for credit). Students assume primary responsibility in problem analysis, case management and development of health maintenance programs for food animals

CVM 5510 Veterinary Medicine/Animal Industry Externship 1: 1-6 hours.
Variable hours practicum. Rotation through private industry dealing with one of the major animal commodities. Rotation may include poultry, catfish, swine, dairy, beef or other commercial animal operation

CVM 5520 Veterinary Medicine/Animal Industry Externship 2: 1-6 hours.
Variable hours practicum. Rotation through private industry dealing with one of the major animal commodities. Rotation may include poultry, swine, dairy, beef or other commercial animal operation

CVM 5530 Veterinary Medicine/Animal Industry Externship 3: 1-6 hours.
Variable hours practicum. Rotation through private industry dealing with one of the major animal commodities. Rotation may include poultry, catfish, swine, dairy, beef or other commercial animal operation

CVM 5540 Veterinary Medicine/Animal Industry Externship 4: 1-6 hours.
Variable hours practicum. Rotation through private industry dealing with one of the major animal commodities. Rotation may include poultry, catfish, swine, dairy, beef or other commercial animal operation

CVM 5550 Veterinary Medicine/Animal Industry Externship 5: 1-6 hours.
Variable hours practicum. Rotation through private industry dealing with one of the major animal commodities. Rotation may include poultry, catfish, swine, dairy, beef or other commercial animal operation

CVM 5552 Veterinary Cardiology: 2 hours.
(Prerequisite: Enrollment in the professional veterinary degree program). Two hours lecture. Senior year elective class focusing on the diagnosis, treatment, management and prevention of diseases or conditions affecting the cardiovascular system of veterinary patients

CVM 5553 Pharmacology II: 3 hours.
Three hours lecture. There is an emphasis on antimicrobial therapy. The course also addresses regulatory issues, vaccinology, and the management of disease syndromes

CVM 5560 Advanced Clinical Rotation 1: 1-6 hours.
Variable hours practicum. (May be repeated for credit). Supervised rotation through one of the defined units of the Animal Health Center. Students assume primary responsibility for patient diagnosis and care

CVM 5570 Advanced Clinical Rotation 2: 1-6 hours.
Variable hours practicum. (May be repeated for credit). Supervised rotation through one of the defined units of the Animal Health Center. Students assume primary responsibility for patient diagnosis and care

CVM 5580 Advanced Clinical Rotation 3: 1-6 hours.
Variable hours practicum. (May be repeated for credit). Supervised rotation through one of the defined units of the Animal Health Center. Students assume primary responsibility for diagnosis and care

CVM 5602 Comparative Endocrinology: 2 hours.
(Prerequisite:Enrollment in Phase II of the professional veterinary degree program). Two week practicum. An in-depth analysis including the pathophysiology,diagnosis, and treatment of endocrine disease in veterinary species,with emphasis on small animal patients

CVM 5640 Shelter Medicine Spay Neuter: 1-6 hours.
(Prerequisite:CVM 5246) Variable credit hour practicum. This course will provide in-depth understanding and practical experience in dealing with issues surrounding pet over population, responsible pet ownership, shelter medicine and surgery

CVM 5652 Equine Podiatry: 2 hours.
(Prerequisite: Enrollment in CVM professional curriculum). One hour lecture. Two hours laboratory. Includes fundamental of horseshoeing, anatomy, diseases of the equine digit, and therapeutic techniques

CVM 5662 Clinical Neurology: 2 hours.
(Prerequisite: Consent of instructor). Two hours lecture. Phase 2 elective emphasizes basic procedures and concepts required to diagnose and manage neurologic diseases

CVM 5672 Veterinary Dentistry: 2 hours.
Two hours practicum. (Prerequisite: Consent of instructor). Phase 2 elective emphasizing diagnostic and therapeutic approach to dentistry in small animals and equine species

CVM 5682 Veterinary Ophthalmology: 2 hours.
(Prerequisite: Consent of instructor). Two hours lecture. Phase 2 elective emphasizing the diagnosis and treatment of ophthalmic diseases

CVM 5692 Veterinary Art and Business Management: 2 hours.
(Prerequisites:Consent of Instructor). Two hours lecture. Lecture, group discussion, and focused independent study of the art and business of veterinary medicine. This course will emphasize non-technical veterinary skills. (Phase 2 elective)

CVM 5702 Clin Hematology & Immunology: 2 hours.
(Prerequisite:Enrollment in Phase II of the professional veterinary degree program). Two week practicum. Assessment of clinical disease in small animal patients suffering from hematologic and immunologic disorders, with an emphasis on case management with interactive discussions

CVM 5722 Small Ruminant Production Medicine: 2 hours.
(Prerequisite: CVM 5276). Two hours practicum. An elective focused on sheep and goat production. Experience in common surgery/treatment procedures provided. Small ruminant production medicine topics and current literature review discussed

CVM 5754 Advanced Small Animal Surgery: 4 hours.
One hour lecture. Three hours laboratory. Exercises to provide additional understanding and "hands-on" experience for students interested in orthopedic surgery, neurosurgery, plastic and reconstructive surgery, and other selected soft tissue procedures

CVM 5764 Advanced Equine Reproduction: 4 hours.
(Prerequisite: Consent of instructor). Four hours lecture. Phase 2 elective emphasizing review of basic equine reproduction and exposure to advanced diagnostic and therapeutic modalites

CVM 5772 Canine Theriogenology: 2 hours.
(Prerequisite: Consent of instructor.) Two hour practicum. Advanced study of canine reproduction. Review of basic diagnostics and procedures followed by an introduction to assisted reproductive technology (ART)

CVM 5784 Clinical Behavioral Medicine: 4 hours.
(Prerequisite: Consent of instructor). Four hours lecture and discussion. Case oriented study of normal and abnormal behaviors and underlying influences in domestic animals, with focus on dogs, cats, and horses

CVM 5802 Practical Small Animal Oncology: 2 hours.
(Prerequisites:Enrollment in the professional veterinary degree program). Two week practicum.Practical clinical oncology at the general practice level to include an overview of individual disease behaviors and diagnostic techniques and an introduction to therapy modalities

CVM 5812 Behavior for the Companion Animal Veterinarian: 2 hours.
Introduction of learning theory, reducing stress in the veterinary hospital, normal and abnormal behavior, treatment and prevention of behavioral problems for the companion animal veterinarian

CVM 5814 The Feline Patient: 4 hours.
Four hours lecture. Lecture, group discussion, and focused independent study on a variety of feline-related topics, with emphasis on medical problems which are unique to the cat

CVM 5840 Veterinary Student Research Initiative: 2-6 hours.
(Prerequisite: Enrollment in DVM curriculum or consent of instructor). Two to six hours research instruction. Veterinary Student Research Initiative (VSRI) course allows veterinary students opportunity to earn credit for participation in research projects. (Repeatable for up to 6 total credits)

CVM 5844 Clinical Pharmacology: 4 hours.
Four hours lecture. Use of pharmacologic agents in the treatment of disease syndromes. Emphasis will be placed on therapeutic alternatives for the treatment of specific diseases or syndromes

CVM 5854 Aquarium Health Management: 4 hours.
(Prerequisite: Consent of instructor). Concepts and techniques for the maintenance of common aquarium species. this course will provide students opportunities to develop selected skills relating to aquarium medicine

CVM 5862 Equine Lameness: 2 hours.
Two hours practicum. Advanced study of equine lameness. Provides opportunities to develop and use problem-solving skills in the diagnosis, treatment, and management of lameness and related topics

CVM 5864 Bovine Production Medicine: 4 hours.
(Prerequisite: Enrollment in the CVM professional curriculum). Four hours lecture. Reproductive and nutritional management, record-keeping, data analysis, herd health programs, and other advanced bovine production topics will be covered, building on student's core veterinary education

CVM 5874 Bovine Theriogenology: 4 hours.
(Prerequisites: Consent of Instructor). Four hours practicum. Advanced study of bovine theriogenology. Review of basic diagnostics, surgical procedures, and obstetrics followed by an introduction to assigned reproductive technology (ART)

CVM 5882 Small Animal Gastroenterology: 2 hours.
(Prerequisite: Enrollment in Phase II of the DVM curriculum or instructor consent). Two hours lecture. Through lectures and case-based discussions and assignments, this elective course will provide in-depth understanding of many gastrointestinal, hepatic, and pancreatic disorders in small animal patients. (Same as CVM 6882)

CVM 5906 Tropical Veterinary Medicine and One Health: 6 hours.
Six hours study abroad. Course involves travel to Uganda to study Tropical Veterinary Medicine including; International Animal production and Health, Disease Surveillance, Public Health and Food safety, One Health, cultural emersion and opportunities for networking and global career development

CVM 5990 Special Topics in CVM: 1-6 hours.
Variable hours practicum. (May be repeated for credit). Special topics in veterinary medicine offers the opportunity to explore selected veterinary topics in depth

CVM 5991 Preparations for Study Abroad: 1 hour.
This course addresses several topics including: personal security, documentation, health, financial support, communication, travel arrangements, history, cuisine, culture, and various attractions; over the spring semester aimed at preparing students for summer study abroad

CVM 6021 Essentials of Research Practice & Professions: 1 hour.
One hour lecture. An introduction to fundamental research methodologies, compliance, communication, and basic research ethics to prepare students for becoming a member of a research team

CVM 6023 Infectious Agents I: 3 hours.
(Prerequisites: Enrollment in the professional veterinary degree program and enrollment in a Ph.D program). Two hours lecture. Two hours laboratory. Completion of project assigned by course leader required. Principles regarding immune responses and classification, pathophysiological mechanisms, control/diagnosis of viruses, bacteria, and fungi in veterinary medicine

CVM 6033 Immunology: 3 hours.
(Prerequisite: Enrollment in the professional veterinary degree program and enrollment in a Ph.D program). Three hours lecture. Completion of project assigned by course leader required. Presentation of the principles regarding Immune responses in health and medicine

CVM 6036 Veterinary Physiology: 6 hours.
(Prerequisite: Enrollment in the professional veterinary degree program and enrollment in a PhD program). Completion of project assigned by course leader required. Six hours lecture. Fundamental concepts, principles, and details of veterinary physiology specifically related to cellular, membrane, muscle, cardiovascular, respiratory, urinary, gastrointestinal, endocrine, and reproductive systems

CVM 6134 Aquatic Animal Health Management: 4 hours.
Three hours lecture. Three hours laboratory.(Prerequisite: One course in microbiology and one course in physiology). Fundamentals concepts of preventing , diagnosing and treating economically important diseases in wild and cultured stocks and invertebrates through didactic and laboratory instruction

CVM 6163 Veterinary Parasitology: 3 hours.
(Prerequisite: Enrollment in the professional veterinary degree program). Two hours lecture. Two hours laboratory. Completion of project assigned by course leader required. Presentation of principles essential to the classification, pathophysiological mechanisms, control/diagnosis of parasites of importance in veterinary medicine

CVM 6180 Emergency Prep for Animal Health: 1-5 hours.
Introduction to emergency preparedness concerning health/well-being of animals. Incident Command System (ICS) leading to subjects pertinent to animal health during natural/man-made disasters

CVM 6193 Medical Pharmacology: 3 hours.
(Prerequisites for undergraduates: BIO 3014 or BIO 4514 and BCH 4013 or 4603; Prerequisites for graduates: graduate standing and instructor's consent). Three hours lecture. This course is an introduction to basic and clinical pharmacology with an emphasis on major drug groups, their mechanisms of action, and therapeutic use

CVM 6223 Pharmacology I: 3 hours.
(Prerequisites: Enrollment in the professional veterinary degree program and enrollment in a Ph.D program). Three hours lecture. Completion of project assigned by course leader required. Molecular basis for absorption, mechanisms of action, metabolism, excretion and toxicity focusing on pharmaceuticals used to treat haemostatic, neoplastic, parasitic, and inflammatory disorders

CVM 6263 Wildlife Diseases: 3 hours.
Two hours lecture. Four hours laboratory, alternate weeks. Effects and management of parasites and diseases in wild bird and mammal populations. (Same as WF 4263/6263)

CVM 6513 Environmental Toxicology: 3 hours.
(Prerequisites: 8 hours biological sciences and 8 hours chemistry). Three hours lecture. The disposition and toxicological effects of environmentally-relevant toxicants (such as agrochemicals, petroleum and industrial pollutants) within organisms, and aquatic and terrestrial ecosystems

CVM 6602 Comparative Endocrinology II: 2 hours.
(Prerequisiste:Enrollment in a veterinary graduate degree program;instructor approval). Two week practicum. An in-depth analysis including the pathophysiology,diagnosis, and treatment of endocrine disease in veterinary species, with emphasis on small animal patients

CVM 6882 Small Animal Gastroenterology: 2 hours.
(Prerequisite: Enrollment in graduate program). Two hours lecture. Through lectures and case-based discussions and assignments, this elective course will provide in-depth understanding of many gastrointestinal, hepatic, and pancreatic disorders in small animal patients. Same as CVM 5882

CVM 6905 Pre-Uganda Study Abroad: 5 hours.
Five hours lecture. This course addresses several topics over the spring semester aimed at preparing students for the CVM 5906 and CVM 4906/6906 Tropical Veterinary Medicine and One Health summer study abroad In Uganda course

CVM 6906 Tropical Veterinary Medicine and One Health: 6 hours.
Six hours study abroad. This course covers Tropical Veterinary Medicine (TVM) in Uganda including; Tropical Animal production, Animal Health, Disease Surveillance, Public Health systems and Food safety of Animal Products. Additionally, the course covers One Health perspectives of the TVM and cultural emersion

CVM 6990 Special Topics in Veterinary Medicine: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

CVM 7000 Directed Individual Study in Veterinary Medicine: 1-6 hours.
Hours and credits to be arranged

CVM 8000 Thesis Research/ Thesis in Veterinary Medicine: 1-13 hours.
Thesis Research/Thesis. Hours and credits to be arranged

CVM 8011 Seminar: 1 hour.
One hour lecture. A seminar which provides the student with a forum for presentation of current topics in veterinary medical research

CVM 8013 Poultry Virology: 3 hours.
Description of the viruses of importance. Topics on individual agents: morphology, classification, character of disease, epizootiology, pathogenesis, immunity, cultivation, diagnosis, prevention, control, and zoonotic potential

CVM 8031 Current Topics in Molecular Mechanisms of Disease: 1 hour.
1.5 hours discussion. The molecular biology of pathogens, hosts and their interactions are covered by students presenting recently published papers. This course can be taken six times

CVM 8033 Poultry Histopathology: 3 hours.
Three hours lecture. Microscopic Anatomy and diagnosis of major poultry diseases. Tissues histologic reactions to injury from physical-mechanical, genetic-base, metabolic, viral, bacterial, protozoan insults. Writing histopathology reports

CVM 8041 Advanced Clinical Radiology Seminar: 1 hour.
(May be repeated for credit). (Prerequisite:Course leader approval). A Bi-weekly seminar to present, discuss, and interpret radiographic, ultrasound, CT scan, and other advanced diagnostic imaging findings of current and archived clinical cases

CVM 8051 Advanced Clinical Pathology Seminar: 1 hour.
(May be repeated for credit).(Prerequisite:Course leader approval). Bi-weekly seminar to present, discuss, and interpret body fluid analysis,cytology, biopsy, toxicology, and /or necropsy findings and other findings of current and archived clinical cases

CVM 8061 Small Animal Surgery Literature Seminar: 1 hour.
One hour seminar. Weekly seminar focusing on current literature pertaining to small animal surgery

CVM 8071 Small Animal Internal Medicine: 1 hour.
(Prerequisite: Enrollment in the M.S. or Ph.D. program in Veterinary Medical Sciences.) One hour credit per semester. Repeatable course (students are able to repeat the course a total of 9 times). Graduate students and faculty in the Clinical Sciences Department will review and study physiology, pathophysiology, diagnostics, and treatments of commonly encountered small animal internal medicine diseases and medical conditions enhance the training of the graduate students

CVM 8081 Clinical Sciences Journal Review: 1 hour.
(Prerequisite: Enrollment in the M.S. or Ph.D. program in Veterinary Medical Sciences). One hour of credit per semester. Repeatable course (students are able to repeat the course a total of 9 times). Graduate students and faculty in the Clinical Sciences Department will review and study current and relevant peer-reviewed journal articles to enhance the learning and training of the graduate students

CVM 8091 Current Topics in Production Animal Medicine: 1 hour.
(Prerequisite: Consent of Instructor). 1.5 hour discussion. A weekly seminar to address issues of current interest in production animal medicine (i.e., cattle, swine, poultry, aquaculture). May be repeated four times for credit

CVM 8101 Case Studies in Scientific Research Ethics: 1 hour.
One hour seminar. Practical application of research ethics using case scenarios to direct discussions on data ownership plagiarism, authorship, conflict of interest, and other regulatory compliance related issues. (Same as PHI 8101)

CVM 8105 Avian Externship: 5 hours.
(Prerequisite: Consent of instructor). Extensive field experience with poultry companies is provided. Breeder, pullet, layer, and broiler management, ration formulation, poultry inspection, and hatchery practices are emphasized

CVM 8113 Advanced Diseases of Poultry: 3 hours.
Three hours lecture. Advanced study of the major poultry diseases; the mechanisms of each disease, diagnosis, prevention and control

CVM 8134 Advanced Fish Diseases: 4 hours.
Prequisite: CVM 6134 or permission).Three hours lecture. Three hours laboratory. Detailed investigations into the mechanisms involved in the development and management of infectious and non-infectious diseases in fish

CVM 8153 Histopathology of Fish Diseases: 3 hours.
(Prerequisite:CVM 4134/6134 or equivalent). Three hours seminar. Study of the pathophysiology response of fish to a variety of environmental,infectious,parasitic, and neoplastic diseases based upon histologic interpretation of case materials

CVM 8190 Aquatic Diagnostic Investigation: 1-9 hours.
(Prerequisite: CVM 6134, equivalent, or consent of instructor). Variable hours prcticum. (May be repeated for credit). A practical exercise in diagnosis and therapeutic recommendation for health management and maintenance in aquatic animal medicine

CVM 8201 Medical Physics I: 1 hour.
(Prerequisite: DVM or equivalent or instructor approval). One credit hour. Course will cover medical physics, including X-ray production, interaction with matter, grids and collimators, film systems, digital systems, and fluoroscopy. Classes will consist of lecture and discussion, with student participation expected

CVM 8211 Medical Physics II: 1 hour.
(Prerequisite: CVM 8201 or instructor approval). One hour lecture. Course will cover medical physics, including MRI physics, image weighing, sequences, artifacts, and safety. Classes will consist of lecture and discussion, with in class participation expected

CVM 8301 Advanced Topics in Comparative Immunology: 1 hour.
1.5 hours discussion. Current controversies, discoveries, and experimental approaches in comparative immunology will be covered by students' presentations. This course can be taken 4 times for repeated credit

CVM 8303 Advanced Immunology: 3 hours.
(Prerequisite: BIO 6413 or equivalent or consent from the instructor). Three hours lecture. Advanced theory and concepts of immunology, structure and function of immune mechanisms are discussed in detail

CVM 8323 Zoonotic Disease in Public Health: 3 hours.
Three hours lecture. Major zoonotic diseases affecting humans,their role in bioterrorism and CDC category A and B disease are studied, with focus on epidemiology and prevention

CVM 8333 Food Safety and Security in Public Health: 3 hours.
(Prerequisite: enrolled in graduate school,MPH program, or consent of instructor.)Three hours lecture. Epidemiology and risk factors of illness from microbial food contaminates. Pre and post-harvest interventions will be addressed. (Same as FNH 8333)

CVM 8343 Biosecurity in Environmental Health: 3 hours.
(Prerequisite: Enrolled in graduate school or permission of instructor).Three hour lecture.Application of biosecurity principles, focusing on food producing animals, especially relating to bioterrorism and foreign animal disease

CVM 8403 Principles of Pharmacology and Pharmacokinetics: 3 hours.
Three hours lecture. This course addresses basic principles of how the body reacts to the presence of a drug or toxin and the mathematical expression of drug residues

CVM 8503 Epidemiology/Biostatistics: 3 hours.
(Prerequisite: ST 8114) Three hours lecture. Fundamental principles of descriptive and analytical epidemiology

CVM 8513 Applied Veterinary Epidemiology: 3 hours.
Three hours lecture. Applications of qualitative veterinary epidemiology in animal and human health. Includes uses of epidemiologic methodology in field investigations and disease control programs

CVM 8523 Organ Systems Toxicology I: 3 hours.
Three hours lecture. The course covers an in depth understanding of toxic responses of the liver, kidney,lung, cardiovascular, blood, and immune system

CVM 8533 Organ Systems Toxicology II: 3 hours.
Three hours lecture. The course covers an in depth understanding of toxic responses of the nervous, reproductive, endocrine,eye and skin systems

CVM 8543 Mechanisms of Toxic Action: 3 hours.
Three hours lecture. The course covers the basic mechanisms underlying the toxicity of chemicals in animals

CVM 8552 Foreign and Emerging Animal Diseases: 2 hours.
(Prerequisites: not open to students who have completed CVM 5133). Study of the recognition,treatment, and prevention of economically important animal diseases considered foreign to the US. Overview of factors affecting emerging animal diseases

CVM 8614 Helminthology: 4 hours.
(Prerequisite: BIO 1144 or consent of instructor). Three hours lecture. Three hours laboratory. This course will cover current concepts in morphology and identification, life cycle, and host-parasite relationships of helminthic parasites

CVM 8624 Protozoology: 4 hours.
(Prerequisite: BIO 1504 or equivalent). Three hours lecture, two hours laboratory. This course will cover the morphology and identification, life cycles, epidemiology and control of protozoans in vertebrates

CVM 8701 Veterinary Histopathology Seminar: 1 hour.
(Prerequisite: CVM 5044 or consent of instructor). (Course can be repeated for credit). One hour lecture. A weekly seminar to present and discuss current topics relevant to veterinary pathology and diagnostic medicine. Emphasis on the characterization of disease using histopathology

CVM 8721 Gross Veterinary Pathology Seminar: 1 hour.
(Prerequisite:CVM 5044 or consent of instructor). One hour seminar. Weekly seminar on the gross pathologic lesions of diseases. Emphasis will be on classical diseases and gross changes encountered and brief discussion of pathogenesis and etiology. (May be repeated for credit)

CVM 8733 Pathological Basis of Disease: 3 hours.
(Prerequisite:Acceptance to Dual Degree DVM/MS Program or Consent of instructor). Three hour lecture. The course covers basic mechanisms of disease in mammals. Topics include cellular and organism response to inflammatory, hemodynamic,genetic, immunological, and neoplastic disorders

CVM 8743 Emerging Infectious Diseases and Zoonoses: 3 hours.
(Prerequisite: Acceptance to dual degree program or consent of instructor). Three hours seminar. An advanced discussion of emerging and currently relevant veterinary health issues with emphasis on zoonoses

CVM 8790 Laboratory Diagnostic Services: 1-9 hours.
Variable hours practicum. (May be repeated for credit). Experimental training in laboratory investigation of animal health-related problems to include pathological, microbiological, parasitic, and toxicological problems

CVM 8801 Seminars in Veterinary Anesthesiology: 1 hour.
(Prerequisite: DVM or equivalent degree, or permsission from instructor). One hour seminar. Topics include physiology and pharmacology in veterinary anesthetic practice, anesthesia equipment, and anesthetic techniques

CVM 8802 Canine Theriogenology: 2 hours.
(Prerequisite: Consent of instructor.) Two hours practicum. Advanced study of canine reproduction. Review of basic diagnostics and procedures followed by an introduction to assisted reproductive technology (ART)

CVM 8805 Adv Sm Anim Clinic Neuro: 5 hours.
(Prerequisite: Must already have registerable veterinary degree and consent of instructor). Five hours practicum. Ad- vanced-level study of neurologic disease in small animals, with an emphasis on case management, oral and written presentation skills, and student teaching

CVM 8812 Equine Reproductive Ultrasound: 2 hours.
(Prerequisite: Consent of instructor.) One hour lecture. Two hours laboratory. Advanced study of ultrasound diagnostics of the equine urogenital systems in the male and female

CVM 8822 Advanced Surgical Techniques: 2 hours.
(Prerequisite: Consent of instructor). Four hours laboratory. Study of advanced principles and surgical skills in the management of clinical patients and the application of advanced surgical skills in veterinary medicine

CVM 8824 Advanced Veterinary Anatomy I: 4 hours.
(Prerequisites: DVM degree and appointment as Resident in the CVM.) Two hours lecture/four hours lab. First of a 2 semester course covering advanced surgical and radiographic anatomy of the forelimb, axial skeleton, thorax, abdomen, head, and neck of domestic animals as applicable to specialty surgical or radiology practice

CVM 8825 Large Animal Urogenital Surgery: 5 hours.
(Prerequisite: Consent of instructor.) Three hours lecture. Four hours laboratory. Urogenital surgery of the male and female in the equine and bovine species

CVM 8832 Advanced Veterinary Anatomy II: 2 hours.
(Prerequisites: CVM 8824, DVM degree and current appointment as Resident in the CVM). One hour lecture. One hour lab. Second of a 2 semester course covering the surgical and radiographic anatomy of the hindlimb, pelvic cavity, and reproductive system of domestic animals, applicable to specialty surgical/radiology practice

CVM 8890 Economic and Performance Medicine: 1-9 hours.
Variable hours practicum. (May be repeated for credit). (Prerequisite: Consent of instructor). Advanced training in the identification and management of health realted problems in commerical food animal production units

CVM 8961 Nobel Topics in Physiology/Medicine and Chemistry: 1 hour.
(Prerequisite:Graduate standing or consent of instructor). One hour seminar. The course will provide historic and current understanding of topics awarded with a Nobel Prize.(Same as GNS 8961 and FO 8961). May be repeated three times for credit)

CVM 8971 Current Topics in Parasitology: 1 hour.
(Prerequisite:Graduate Standing and consent of instructor). One hour lecture with discussion. Students will critically analyze peer-reviewed publications on current research in parasitoloty. This course can be repeated for credit up to four times

CVM 8973 Scientific Writing: 3 hours.
(Prerequisite: Graduate standing and consent of instructor) Three hours lecture. The course provides advanced training in research proposal, grant proposal,and manuscript writing. (Same as ADS 8973 and FO 8973)

CVM 8983 Advanced Biotechnology: 3 hours.
(Prerequisite:BCH 6603,BCH 6613,BCH 6713 or consent of instructor).Three house lecture. Advanced biotechnology course with an emphasis on environmental,biopharmaceutical,industrial, and medical technologies.(Same as FO 8983)

CVM 8990 Special Topics in Veterinary Medicine: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

CVM 8991 Principles of Polychromatic Flow Cytometry: 1 hour.
(Prerequisite: BIO 4413/6413 Immunology, CVM 5033 Immunology, or CVM 8303 Advanced Immunology, or by permission of instructor). One hour lecture. An introduction to the basic theory and skills necessary to successfully design, conduct, and analyze a typical polychromatic flow cytometry experiment

CVM 8993 Functional Genomics: 3 hours.
(Prerequisites: BCH 6713 Molecular Biology and ST 6243 Data analysis or consent of instructor). Three hours lecture. Fundamental concepts, technology, and applications of functional genomics, such as microarray, yeast hybrid systems, and RNA inference, emphasizing experimental design, analysis, and applications in biomedical research

CVM 9000 Dissertation Research/ Dissertation in Veterinary Medicine: 1-13 hours.
Hours and credits to be arranged

Technology Foundations Courses

DTF 4000 Directed Individual Study in Technology Foundations: 1-6 hours.
Hours and credits to be arranged

DTF 4923 Technology Career Seminar: 3 hours.
(Prerequisite: DTF 4613). Three hours lecture. Critical evaluation of current issues in technology, examination of career opportunities and approved project completion status

DTF 4936 Technology Field Practicum I: 6 hours.
(Correquisite: DTF 4926). The course provides students opportunities to apply contemporary practices by completing a minimum of 340 supervised hours in an approved industry

DTF 4946 Technology Field Practicum II: 6 hours.
(Prerequisite: DTF 4936 or concurrent enrollment in DTF 4936). The course provides students opportunities to apply contemporary practices by completing a minimum of 340 super- vised hours in an approved industry

DTF 4990 Special Topics in Division of Technology: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

Manufacturing Courses

DTM 4000 Directed Individual Study in Division of Technology Manufacturing: 1-6 hours.
Hours and credits to be arranged

DTM 4113 Manufacturing Methods: 3 hours.
Three hours lecture. A study of historical and contemporary manufacturing techniques. Emphasis on the scientific and conceptual analysis of applied manufacturing methods and value added alternatives

DTM 4213 MFG Reg Agencies: 3 hours.
Three hours lecture. An introduction to the effects that regulatory agencies, both public and private, have on con- temporary manufacturing operations

DTM 4313 Transp & Packaging: 3 hours.
Three hours lecture. A study of internal and external product transportation for a manufacturing facility. Emphasis on the reduction of time and cost to include protective packaging

DTM 4413 Facility Operations: 3 hours.
Three hours lecture. An introduction to the many facets of manufacturing facility operations. Emphasis on key areas such as maintenance, employee services and public utility optimization

DTM 4553 Prod Stds & Meas: 3 hours.
Three hours lecture. A study to focus upon the application if theoretical and contemporary methods of manufacturing production standards and appropriate measurement techniques

DTM 4990 Special Topics in Division of Technology Manufacturing: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

Economics Courses

EC 1001 First Year Seminar: 1 hour.
One hour lecture. First-year seminars explore a diverse arrary of topics that provide students with an opportunity to learn about a specific discipline from skilled faculty members

EC 1033 Economics of Social Issues: 3 hours.
Three hours lecture. Basic economic principles introduced and developed through the study of important social issues such as unemployment, health care, poverty, crime, pollution, inflation, and government debt. (Not open to students with prior credit in Principles of Economics)

EC 2113 Principles of Macroeconomics: 3 hours.
(Prerequisite: Sophomore standing.) Three hours lecture. Introduction to macroeconomics: free enterprise principles, policies, institutions; national income, employment, output, inflation, money, credit, business cycles, and government finances

EC 2123 Principles of Microeconomics: 3 hours.
(Prerequisite: Sophomore standing.) Three hours lecture. Introduction to microeconomics: emphasizes American industrial structure, demand and supply, pricing and output, income distribution, factor pricing, international trade

EC 2990 Special Topics in Economics: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

EC 3113 Intermediate Macroeconomics: 3 hours.
(Prerequisites: EC 2113 and EC 2123). Measurement and determination of national income, employment, and output; economic significance of consumption, saving, investment, foreign trade, money and prices, fiscal and monetary policy

EC 3123 Intermediate Microeconomics: 3 hours.
(Prerequisites: EC 2113 and EC 2123). Theory and application of microeconomics; demand, supply, optimal consumer choice, production, cost, profit-maximizing pricing and output decisions, employment of resources, externalities, efficiency and welfare

EC 3333 Managerial Economics: 3 hours.
(Prerequisites: EC 2113 and EC 2123). Three hours lecture. The application and use of economic models in analyzing and solving selected problems of the firm such as product pricing, product mix, demand forecasting, market analysis

EC 3423 Economics of Regulation and Antitrust: 3 hours.
(Perquisites: EC 2113 and EC 2123). Three hours lecture. Examination of the evolution and composition of the economic relationship between government and business in the U.S., focusing on regulation and antitrust

EC 3513 Comparative Economic Policy: 3 hours.
(Perquisites: EC 2113 and EC 2123 or consent of instructor). Three hours lecture. Comparative analysis of major government policies, economic structure, institutions around the world, emphasis on the organization o production and distribution of good and resources

EC 4000 Directed Individual Study in Economics: 1-6 hours.
Hours and credits to be arranged

EC 4043 Survey of Economics: 3 hours.
(Prerequisite: Senior or Graduate standing). Three hours lecture. Introduction to macro and microeconomics, national income accounts, monetary system, macroeconomic policy, international trade, supply and demand, distribution of income, markets, pricing,and output. (Not open to BACC or BBA Business majors)

EC 4183 U.S. Economic History: 3 hours.
(Prerequisite: Completion of any 1000-level history course). Three hours lecture. An intensive study of economic change in the United States and its impact on political and social development. (Same as HI 4183/6183)

EC 4213 Personnel Economics: 3 hours.
(Prerequisites: EC 2113 and EC 2123). Three hours lecture. Economic analysis of human resource issues within business organizations. Theoretical examination of hiring standards, productivity, compensation schemes, training, teamwork, incentives, benefits, worker empowerment, and evaluation

EC 4223 Labor Law and Employment Policy: 3 hours.
(Prerequisites: Three hours credit of economics or consent of instructor). Three hours lecture. Examination of the legal and regulatory environment of the employment relation- ship in today's American economy; including, unionization, equal employment opportunity, occupational health and safety

EC 4233 Labor Economics: 3 hours.
(Perquisites: EC 2113, EC 2123, and EC 3123). Three hours lecture. Labor Market behavior of households and firms. Emphasizes wage determination, optimal employment decision, income distributions, unionization, human capital, and discrimination

EC 4303 International Economic Development: 3 hours.
(Perquisites: EC 2113 and EC 2123). Three hours lecture. An analysis of problems facing developing economies and polices designed to promote economic growth with an emphasis on income distribution, trade, agriculture, industry, and technology

EC 4323 International Economics: 3 hours.
(Prerequisite: EC 2113 and EC 2123).Three hours lecture. The nature of international trade.International theory. Economic analysis of the movement of goods,resources, and financial assets across national borders

EC 4423 Public Finance: 3 hours.
(Perquisites: EC 2113,EC 2123 and EC 3123). Three hours lecture. Economics of the public sector. Analysis of government's influence on distribution, allocation, and stabilization functions. Emphasis on public goods, externalities, social insurance, and taxation

EC 4433 State and Local Finance: 3 hours.
(Perquisites: EC 2113 and EC 2123). Three hours lecture. Fiscal and economic effects of state and local budgets; alternative tax and expenditure models; fiscal administration and budgeting with emphasis on local economic development

EC 4443 Economics of Education: 3 hours.
(Prerequisites: EC 2123 or instructor consent). Three hours lecture. Examines provision of education using economic theory. Topics include research methods, education production functions, school finance, labor market outcomes, economic growth, teacher quality, school accountability, equity, and access to higher education

EC 4523 History of Economic Thought: 3 hours.
(Prerequisites: EC 2113 and EC 2123 or consent of instructor). Three hours lecture. Survey of economic ideas from Ancient Greece to present, emphasizing the changing foci and methodologies of economics relative to economic problems perceived at the time

EC 4643 Economic Forecasting and Analysis: 3 hours.
(Prerequisites: EC 2113,EC 2123, and BQA 2113 (or equivalent) or consent of the instructor). Three hours lecture. Forecasting tools and econometric estimation techniques utilizing regression,exponential smoothing, decomposition, frontier analysis, etc. Real-world data, business applications, and model building are emphasized

EC 4713 Industrial Organization: 3 hours.
(Perquisites: EC 2113,EC 2123 and EC 3123). Three hours lecture. Behavior of firms in imperfectly competitive market. Analysis of market structure, strategic interaction, price and non-price competition with emphasis on the implication for public policy

EC 4990 Special Topics in Economics: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

EC 6183 U.S. Economic History: 3 hours.
(Prerequisite: Completion of any 1000-level history course). Three hours lecture. An intensive study of economic change in the United States and its impact on political and social development. (Same as HI 4183/6183)

EC 6213 Personnel Economics: 3 hours.
(Prerequisites: EC 2113 and EC 2123). Three hours lecture. Economic analysis of human resource issues within business organizations. Theoretical examination of hiring standards, productivity, compensation schemes, training, teamwork, incentives, benefits, worker empowerment, and evaluation

EC 6223 Labor Law and Employment Policy: 3 hours.
(Prerequisites: Three hours credit of economics or consent of instructor). Three hours lecture. Examination of the legal and regulatory environment of the employment relation- ship in today's American economy; including, unionization, equal employment opportunity, occupational health and safety

EC 6303 International Economic Development: 3 hours.
(Perquisites: EC 2113 and EC 2123). Three hours lecture. An analysis of problems facing developing economies and polices designed to promote economic growth with an emphasis on income distribution, trade, agriculture, industry, and technology

EC 6323 International Economics: 3 hours.
(Prerequisite: EC 2113 and EC 2123).Three hours lecture. The nature of international trade.International theory. Economic analysis of the movement of goods,resources, and financial assets across national borders

EC 6423 Public Finance: 3 hours.
(Perquisites: EC 2113,EC 2123 and EC 3123). Three hours lecture. Economics of the public sector. Analysis of government's influence on distribution, allocation, and stabilization functions. Emphasis on public goods, externalities, social insurance, and taxation

EC 6433 State and Local Finance: 3 hours.
(Perquisites: EC 2113 and EC 2123). Three hours lecture. Fiscal and economic effects of state and local budgets; alternative tax and expenditure models; fiscal administration and budgeting with emphasis on local economic development

EC 6443 Economics of Education: 3 hours.
(Prerequisites: EC 2123 or instructor consent). Three hours lecture. Examines provision of education using economic theory. Topics include research methods, education production functions, school finance, labor market outcomes, economic growth, teacher quality, school accountability, equity, and access to higher education

EC 6523 History of Economic Thought: 3 hours.
(Prerequisites: EC 2113 and EC 2123 or consent of instructor). Three hours lecture. Survey of economic ideas from Ancient Greece to present, emphasizing the changing foci and methodologies of economics relative to economic problems perceived at the time

EC 6643 Economic Forecasting and Analysis: 3 hours.
(Prerequisites: EC 2113,EC 2123, and BQA 2113 (or equivalent) or consent of the instructor). Three hours lecture. Forecasting tools and econometric estimation techniques utilizing regression,exponential smoothing, decomposition, frontier analysis, etc. Real-world data, business applications, and model building are emphasized

EC 6990 Special Topics in Economics: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

EC 7000 Directed Individual Study in Economics: 1-6 hours.
Hours and credits to be arranged

EC 8000 Thesis Research/ Thesis in Economics: 1-13 hours.
Hours and credits to be arranged

EC 8063 Foundations of Microeconomic Theory: 3 hours.
(Prerequisite: Graduate standing.) Three hours lecture. Exposition of the theoretical foundations to microeconomic theory: market process, price mechanism, exchange and production, cost and supply, non-market decision making, and the international economy

EC 8103 Economics for Managers: 3 hours.
(Prerequisites: Graduate Standing and FIN 3123 or equivalent). Three hours lecture. Primarily for masters level candidates. Exposition of the fundamental theoretical and analytical tools of economics used by business managers engaged in decision making

EC 8113 Labor Theory and Analysis: 3 hours.
(Prerequisites: Graduate Standing). Three hours lecture. Theoretical and empirical examination of labor market processes and policy; Wage determination, resource allocation, labor mobility, human capital investment, discrimination and income distribution

EC 8123 8123 Mathematics for Economists: 3 hours.
(Prerequisite: Graduate standing.) Three hours lecture. The course covers topics in linear algebra, logic and set theory, topology, real analysis, and optimization theory

EC 8133 Econometrics I: 3 hours.
(Prerequisite: AEC 8413 or consent of instructor). Econometric theory and methods. Topics include the classical linear regression model, maximum likelihood estimation, generalized least squares, and estimation with panel data. equations

EC 8143 Econometrics II: 3 hours.
(Prerequisite: EC 8133). A continuation of EC 8133. Topics include advanced theories of simultaneous equations estimation methods, time series econometrics, and estimation with qualitative and limited dependent variables

EC 8163 Microeconomics I: 3 hours.
(Prerequisite: EC 3123 or EC 8103 or equivalent). Three hours lecture. Survey of demand analysis, production, cost, and supply relationships, analysis of pricing under competitive and noncompetitive conditions, analysis of income distribution with emphasis on input pricing

EC 8173 Macroeconomics I: 3 hours.
(Prerequisites: EC 3113, EC 3123, and one semester of calculus, or consent on instructor). Three hours lecture. Synthesis of short and long run analysis of the macroeconomy with special emphasis on the role of fiscal and monetary policy

EC 8263 Microeconomics II: 3 hours.
(Prerequisite: EC 8163). Three hours lecture. An exposition of general equilibrium theory, the theory of welfare economics and the economics of information

EC 8273 Macroeconomics II: 3 hours.
(Prerequisites: EC 8173 or equivalent). Three hours lecture. Examination of the modern macroeconomic synthesis. Studies in dynamic economic growth, rational expectations, monetarism, disequilibrium analysis, and open market economies

EC 8313 Regional Economic Analysis: 3 hours.
(Prerequisities:EC 4313/6313 and EC 8133 or equivalent or consent of instructor). Three hours lecture. Theories and tools. Includes economic base, recursive and simultaneous equation econometric models, input-output analysis, and mixed models

EC 8403 Game Theory: 3 hours.
(Prerequisite: AEC 8163 or EC 8163 or consent of instructor).Three hours lecture. An exploration of how agencies interact strategically. (Same as AEC 8403)

EC 8423 Public Finance: 3 hours.
(Prerequisite: Graduate standing). Three hours lecture. Foundations of public finance: the role of government, major government expenditures, optimal taxation, and applied research methods

EC 8473 Public Choice: 3 hours.
(Prerequisite: Graduate Standing). Three hours lecture. A survey of public choice, also known as political economy, rational choice theory, or the economics of politics. The goal is to provide students with a general framework within which public sector policies and decisions can be evaluated

EC 8643 Applied Economic Skills: Advanced Estimation and Diagnostics of Econometric Models: 3 hours.
(Prerequisites: EC 8133 and EC 8143 or consent of the instructor). Advanced econometric tools, diagnostics, and estimation techniques with an emphasis on applied economic model building. Application of econometric theory to real- world problems and issues

EC 8653 Microeconometrics: 3 hours.
(Prerequisite: Graduate standing.) Topics include discrete choice models, truncated and censored regression models, sample selection models, duration models, variance estimation, matching and propensity score methods, measurement error, and panel data models. The econometric concepts are illustrated using economic applications

EC 8990 Special Topics in Economics: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

EC 9000 Dissertation Research/ Dissertation in Economics: 1-13 hours.
Hours and credits to be arranged

Electrical Computer Engineer Courses

ECE 1001 First Year Seminar: 1 hour.
One hour lecture. First-year seminars explore a diverse arrary of topics that provide students with an opportunity to learn about a specific discipline from skilled faculty members

ECE 1002 Introduction to Electrical & Computer Engineering: 2 hours.
(Prerequisite: Credit or registration in MA 1713). One hour lecture. Three hours laboratory. What it means to be an engineer, engineering ethics, engineering modeling, the design process, areas of ECE, communication skills, ECE computer account, MATLAB, the Internet

ECE 1013 Introduction to ECE Design I: 3 hours.
(Prerequisite: Credit or registration in MA 1713). Two hours lecture. Two hours laboratory. Introduction to the profession, college, department, and program. Survey of ECE technical knowledge and tools crucial in early ECE courses. Introduction to engineering design, teaming, and technical communication

ECE 1022 Introduction to ECE Design II: 2 hours.
(Prerequisite: Grade of C or better in both ECE 1013 and CSE 1284.). One hour lecture. Two hours laboratory. Technical communication (including engineering team communication) and engineering ethics. Project planning and management. Documenting, designing, prototyping, testing, and oral presentations of an engineering design project

ECE 2990 Special Topics in Electrical and Computer Engineering: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

ECE 3183 Electrical Engineering Systems: 3 hours.
(For non-Electrical Engineering majors). (Prerequisite: MA 2743). Three hours lecture. Definitions and laws relating to electrical quantities; circuit element descriptions; development of techniques in network analysis; semiconductor devices; integration of devices into digital networks

ECE 3213 Introduction to Solid State Electronics: 3 hours.
(Prerequisite: grade of C or better in ECE 3424). Three hours lecture. Introduction to quantum mechanics, semiconductor physics and solid state electronics. Energy band structure and charge carriers in semiconductors. Junctions, diodes and transistors

ECE 3283 Electronics: 3 hours.
(For non-Electrical Engineering majors).(Prerequisites: Grade of C or better in ECE 3413 or ECE 3183). Three hours lecture. Fundamentals of active devices, linear amplifiers, digital logic, digital and microprocessors

ECE 3313 Electromagnetics I: 3 hours.
(Prerequisite: MA 3253, PH 2223). Three hours lecture. Introduction to engineering electromagnetics with applications. Vector analysis, static and time-varying electromagnetic fields, wave propagation, and transmission lines

ECE 3323 Electromagnetics II: 3 hours.
(Prerequisite: Grade of C or better in ECE 3313). Three hour lecture. Waveguides and cavity resonators, fiber optics, antennas, electromagnetic compatibility, analytical and numerical solution techniques in electromagnetics

ECE 3413 Introduction to Electronic Circuits: 3 hours.
(Prerequisites: Grade of C or better in both MA 1723 and PH 2223). Three hours lecture. Fundamentals of electric circuits and network analysis. DC and AC circuits. AC power. Ideal transformers. Frequency response of networks. Ideal operational amplifiers and circuits

ECE 3424 Intermediate Electronic Circuits: 4 hours.
(Prerequisites: Grade of C or better in both ECE 3413 and MA 3253). Three hours lecture. Three hours laboratory. First-order and second-order transient analysis. Operation circuit models and application of diodes and field-effect and bipolar junction transistors. Electronic instrumentation

ECE 3434 Advanced Electronic Circuits: 4 hours.
(Prerequisites: Grade of C or better in both ECE 1022 and ECE 3424). Three hours lecture. Three hours laboratory. Feedback and stability. Operational-amplifier and data-converter circuits. Introduction to CMOS logic circuits. Filters and tuned amplifiers. Signal generator circuits. Power amplifiers

ECE 3443 Signals and Systems: 3 hours.
(Prerequisite:Grade of C or better in ECE 3424) Three hours lecture. Modeling of analog and discrete-time signals and systems, time domain analysis. Fourier series, continuous and discrete-time Fourier transforms and applications, sampling, z-transform, state variables

ECE 3614 Fundamentals of Energy Systems: 4 hours.
(Prerequisite: Grade of C or better in ECE 3413 and credit or registration in ECE 3313). Three hours lecture. Three hours laboratory. Synchronous generators; power transmission lines and cables; power transformers; induction and direct current motors; power electronic and programmable controllers; National Electric Code and electrical safety

ECE 3714 Digital Devices and Logic Design: 4 hours.
(Prerequisite: Credit or registration in CSE 1213, CSE 1233, or CSE 1284). Three hours lecture. Three hours laboratory. Binary codes, Boolean, algebra, combinational logic design, flip-flops, counters, synchronous sequential logic, programmable logic devices, MSI logic devices, adder circuits

ECE 3724 Microprocessors: 4 hours.
(Prerequisites: Grade of C or better in ECE 3714, CSE 1384, and credit or registration in CSE 2383). Three hour lecture. Three hour laboratory. Architecture of microprocessor-based systems. Study of microprocessor operation, assembly language, arithmetic operations, and interfacing

ECE 4000 Directed Individual Study in Electrical and Computer Engineering: 1-6 hours.
Hours and credit to be arranged

ECE 4193 Automotive Engineering: 3 hours.
Three hours lecture. Fundamentals of automotive engineering, including power units, mechanical systems, electrical systems, and industrial and systems engineering aspects. (Same as CHE/IE/ME 4193/6193)

ECE 4243 Introduction to Physical Electronics: 3 hours.
(Prerequisite:Grade of C or better in ECE 3424). Three hours lecture. Introduction to quantum mechanics and solid state physics. Physical principles of pn junctions, bipolar transistors, field effect transistors. Applications include electro-optics, integrated circuits, gaseous electronics

ECE 4263 Principles of VLSI Design: 3 hours.
(Prerequisites:Grade of C or better in both ECE 3724 and ECE 3424).Two hours lecture. Three hours laboratory. Classic and dynamic CMOS circuit design using state-of-the-art CAD tools, with emphasis on digital system cells and architecture

ECE 4273 Microelectronics Process Design: 3 hours.
(Prerequisite:Grade of C or better in ECE 3424). Three hours lecture. Theory of semiconductors in equilibrium and non-equilibrium, advanced theory of p-n junctions, bipolar junction transistor and advanced theory and operation of field dependent devices

ECE 4283 Microelectronics Device Design: 3 hours.
(Prerequisite: Grade of C or better in ECE 3424). Three hours lecture. Introduction to device fabrication technologies, semiconductor parameter measurement techniques, and the principles of design relative to the LSI technologies

ECE 4293 Nano-electronics: 3 hours.
(Prerequisites: ECE 3213, PH 2233 or PH 3613, or equivalent). Three hours lecture. Theoretical foundations of nano-electronics, overview of nano-fabrication, general principles of nan-electronic devices, modern applications including integrated circuits, photonics, renewable energy and bio-medical

ECE 4313 Antennas: 3 hours.
(Prerequisite: Grade of C or better in ECE 3323). Three hours lecture. Introduction to antennas and electromagnetic radiation, antenna design and analysis, antenna performance measures, antenna types, and antenna arrays

ECE 4323 Electromagnetic Compatibility: 3 hours.
(Prerequisite: ECE 3323 or consent of instructor). Three hours lecture. Introduction to EMC EMC standards, EMC measurements emissions and susceptibility, non-ideal behavior of components, signal spectra, crosstalk and shielding

ECE 4333 RF and Microwave Engineering: 3 hours.
(Prerequisite:Grade of C or better in ECE 3323 or consent of instructor). Three hours lecture. Introduction to RF and microwave engineering, unguided and guided wave types, transmission lines, waveguides, microwave networks, impedance matching techniques, and microwave components

ECE 4411 Remote Sensing Seminar: 1 hour.
(Prerequisite:Junior Standing). One hour lecture. Lectures by remote sensing experts from industry, academia and governmental agencies on next- generation systems, applications, and economic and societal impact of remote sensing. May be repeated for credit up to four credits. (Same as PSS 4411/6411, FO 4411/6411, GR 4411/6411)

ECE 4413 Digital Signal Processing: 3 hours.
(Prerequisite: Grade of C or better in ECE 3443). Three hours lecture. Discrete time signals, Z-Transform, Discrete Fourier Transform, digital filter design including IIR, FIR, and FFT synthesis

ECE 4423 Introduction to Remote Sensing Technologies: 3 hours.
(Prerequisite: senior or graduate standing, or consent of instructor.) Three hours lecture. Electromagnetic interaction passive sensors, multispectral and hyperspectral optical sensors, active sensors, imaging radar, SAR, Lidar, digital image processing, natural resource applications. (Same as PSS 4483/6483 and ABE 4483/6483)

ECE 4433 Introduction to Radar: 3 hours.
(Prerequisite: ECE 3443 or permission of instructor). Three hours lecture. An overview of the basic concepts of radar including transmitters, receivers, target detection, antennas, signal processing, and tracking

ECE 4512 EE Design I: 2 hours.
(Prerequisite: Grade of C or better in ECE 3434, ECE 3443 and ECE 3724 and in either ECE 3323 or ECE 3614; co-registration in GE 3513; and consent of instructor). One hour lecture. Three hours laboratory. Students demonstrate engineering design cycle via working prototypes, documentation, and oral presentation

ECE 4522 EE Design II: 2 hours.
(Prerequisite:Grade of C or better in ECE 4512). One hour lecture. Three hours laboratory. Prototyping, documentation, and oral presentation of an engineering design project. Lectures on legal aspects and industry standards relating to design, professional ethics, career design skills

ECE 4532 CPE Design I: 2 hours.
(Prerequisite: Grade of C or better in CSE 3324 and ECE 4743 and in either ECE 3434 or ECE 3443; co-registration in GE 3513, and consent of instructor.) One hour lecture. Three hours laboratory. Students demonstrate engineering design cycle via working prototypes, documentation, and oral presentation

ECE 4542 CPE Design II: 2 hours.
(Prerequisite:Grade of C or better in ECE 3434 and ECE 4532) One hour lecture. Three hours laboratory. Development of design, teaming, presentation, and entrepreneurial skills. Teams must complete their project designs, and present written and oral results

ECE 4613 Power Transmission Systems: 3 hours.
(Prerequisite: Grade of C or better in ECE 3614). Three hours lecture. Transmission of power from generator to distribution system; transmission line design; load flow; symmetrical components; balanced/unbalanced faults; stability

ECE 4633 Power Distribution Systems: 3 hours.
(Prerequisite: Grade of C or better in ECE 3614). Three hours lecture. Distribution of power from transmission system to users; primary and secondary feeders; voltage regulation; distribution transformers; protective device coordination; system design; load management

ECE 4643 Power Systems Relaying and Control: 3 hours.
(Prerequisite:Grade of C of better in ECE 4613). Three hours lecture. Protection objectives and fundamentals; inputs; protection of generators, transformers, busses and lines; stability and control

ECE 4653 Introduction to Power Electronics: 3 hours.
(Prerequisite: Grade of C or better in both ECE 3614 and ECE 3424 or equivalent). Three hours lecture. Introduction to power electronic circuits, with emphasis on design and analysis of power semiconductor converters including DC-DC converters, PWM inverters, and DC power supplies

ECE 4663 Insulation Coordination in Electric Power Systems: 3 hours.
(Prerequisite: Credit or registration in ECE 4613). Three hours lecture. Lightning phenomena; switching surges and temporary system overvoltages; laboratory generation and application of high voltages and currents; basic insulation levels; surge arresters; system insulation design

ECE 4673 Fundamentals of High Voltage Engineering: 3 hours.
(Prerequisite:Grade of C or better in ECE 3614).Three hours lecture. Electrical fields, fields in multi-dielectrics, breakdown mechanisms in gases, liguids, and solid dielectrics, laboratory generation of high voltages, hight voltage insulators and cables

ECE 4713 Computer Architecture: 3 hours.
(Prerequisites:Grade of C or better in ECE 3724). Three hours lecture. Detailed design and implementation of a stored-program digital computer system. Designs for the CPU, I/O subsystems, and memory organizations. ALU design and computer arithmetic

ECE 4723 Embedded Systems: 3 hours.
(Prerequisites: Grade of C or better in CSE 3324 and ECE 3724 and in either ECE 3424 or CSE 4153). Two hours lecture. Three hours laboratory. Advanced topics in embedded systems design using contemporary practice. Interrupt-driven, reactive, real-time, object-oriented, and distributed client/server embedded systems

ECE 4743 Digital System Design: 3 hours.
(Prerequisites:Grade of C or better in ECE 3724. Credit or registration in ECE 3424). Two hours lecture. Three hours laboratory. Hierarchical digital design using available design software. Computer aided design workstations will be used to give students access to state-of-the-art design techniques

ECE 4763 Information and Computer Security: 3 hours.
(Prerequisite: Grade of C or better in CSE 4733/6733). Three hours lecture. Topics include encryption systems, network security, electronic commerce, systems threats, and risk avoidance procedures. (Same as CSE 4243/6243)

ECE 4783 Vision Based Guidance for MAVs: 3 hours.
(Prerequisite: Grade of C or better in both MA 3113 and MA 3253). Two hours lecture and one hour laboratory. This course covers the use of modern computer vision techniques applied to the control of micro air vehicles (MAVs)

ECE 4813 Communications Theory: 3 hours.
(Prerequisite: Grade of C or better in ECE 3443). Three hours lecture. The frequency and time domain; modulation; random signal theory; network analysis using nondeterministic signals; basic information theory; noise

ECE 4823 Digital Communications: 3 hours.
(Prerequisite:Grade of C or better in ECE 4813/6813 or equivalent). Three hours lecture. Digital communications systems design trade-offs and performance analysis in the presence of AWGN. Principle topics;transmission and detection, link analysis, channel coding, multiple access, spread-spectrum

ECE 4833 Data Communications and Computer Networks: 3 hours.
(Prerequisite: CSE 1384 or ECE 3732, and ECE 3724, both with a grade of C or better). Three hours lecture. The concepts and practices of data communications and networking to provide student with an understanding of the hardware and software used for data communications. (Same as CSE 4153/6153)

ECE 4843 Error Correcting Digital Codes: 3 hours.
(Prerequisite:Senior or Gradute Standing). Three hours lecture. A survey, in depth, of current error correcting coding techniques for providing digital data transmission with protection from random and burst noise sources. Many practical and currently used techniques are discussed in detail and some hands-on experience is provided

ECE 4853 Electro-Optics: 3 hours.
(Prerequisite:Grade of C or better in ECE 3424 or consent of instructor).Three hours lecture. Linear system theory of optical processes ; Electroptic systems;electro-optical information processing

ECE 4913 Feedback Control Systems I: 3 hours.
(Prerequisite: Grade of C or better in ECE 3443). Three hours lecture. Laplace transforms; transient and frequency response of feedback systems; transfer functions; Nyquist criterion, root locus; compensation of feedback systems; logarithmic analysis and design

ECE 4923 Feedback Control Systems II: 3 hours.
(Prerequisite:Grade of C or better in ECE 3443). Three hours lecture. Finite difference and recurrence equations. z-transform theory. Analysis of sampled-data control systems. Design of digital control systems

ECE 4933 State Space Design and Instruments: 3 hours.
(Prerequisite:Grade of C or better in ECE 3443). Three hours lecture. State space representation. Dynamic systems. Controllability and observability. Full-state feedback observers. Instrumentation: sensors and interfacing

ECE 4943 Automation, Data Acquisition, and PLCs: 3 hours.
(Prerequisite: ECE 3443). Two hours lecture, one hour laboratory. Automation and control of industrial processes, identification of sensors and data acquisition, and the use of PLCs to implement control processes

ECE 4990 Special Topics in Electrical and Computer Engineering: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

ECE 6193 Automotive Engineering: 3 hours.
Three hours lecture. Fundamentals of automotive engineering, including power units, mechanical systems, electrical systems, and industrial and systems engineering aspects. (Same as CHE/IE/ME 4193/6193)

ECE 6243 Introduction to Physical Electronics: 3 hours.
(Prerequisite:Grade of C or better in ECE 3424). Three hours lecture. Introduction to quantum mechanics and solid state physics. Physical principles of pn junctions, bipolar transistors, field effect transistors. Applications include electro-optics, integrated circuits, gaseous electronics

ECE 6263 Principles of VLSI Design: 3 hours.
(Prerequisites:Grade of C or better in both ECE 3724 and ECE 3424).Two hours lecture. Three hours laboratory. Classic and dynamic CMOS circuit design using state-of-the-art CAD tools, with emphasis on digital system cells and architecture

ECE 6273 Microelectronics Device Design: 3 hours.
(Prerequisite:Grade of C or better in ECE 3424). Three hours lecture. Theory of semiconductors in equilibrium and non-equilibrium, advanced theory of p-n junctions, bipolar junction transistor and advanced theory and operation of field dependent devices

ECE 6283 Microelectronics Process Design: 3 hours.
(Prerequisite: Grade of C or better in ECE 3424). Three hours lecture. Introduction to device fabrication technologies, semiconductor parameter measurement techniques, and the principles of design relative to the LSI technologies

ECE 6293 Nano-electronics: 3 hours.
(Prerequisites: ECE 3213, PH 2233 or PH 3613, or equivalent). Three hours lecture. Theoretical foundations of nano-electronics, overview of nano-fabrication, general principles of nan-electronic devices, modern applications including integrated circuits, photonics, renewable energy and bio-medical

ECE 6313 Antennas: 3 hours.
(Prerequisite: Grade of C or better in ECE 3323). Three hours lecture. Introduction to antennas and electromagnetic radiation, antenna design and analysis, antenna performance measures, antenna types, and antenna arrays

ECE 6323 Electromagnetic Compatibility: 3 hours.
(Prerequisite: ECE 3323 or consent of instructor). Three hours lecture. Introduction to EMC EMC standards, EMC measurements emissions and susceptibility, non-ideal behavior of components, signal spectra, crosstalk and shielding

ECE 6333 RF and Microwave Engineering: 3 hours.
(Prerequisite:Grade of C or better in ECE 3323 or consent of instructor). Three hours lecture. Introduction to RF and microwave engineering, unguided and guided wave types, transmission lines, waveguides, microwave networks, impedance matching techniques, and microwave components

ECE 6411 Remote Sensing Seminar: 1 hour.
(Prerequisite:Junior Standing). One hour lecture. Lectures by remote sensing experts from industry, academia and governmental agencies on next- generation systems, applications, and economic and societal impact of remote sensing. May be repeated for credit up to four credits. (Same as PSS 4411/6411, FO 4411/6411, GR 4411/6411)

ECE 6413 Digital Signal Processing: 3 hours.
(Prerequisite: Grade of C or better in ECE 3443). Three hours lecture. Discrete time signals, Z-Transform, Discrete Fourier Transform, digital filter design including IIR, FIR, and FFT synthesis

ECE 6423 Introduction to Remote Sensing Technologies: 3 hours.
(Prerequisite: senior or graduate standing, or consent of instructor.) Three hours lecture. Electromagnetic interaction passive sensors, multispectral and hyperspectral optical sensors, active sensors, imaging radar, SAR, Lidar, digital image processing, natural resource applications. (Same as PSS 4483/6483 and ABE 4483/6483)

ECE 6433 Introduction to Radar: 3 hours.
(Prerequisite: ECE 3443 or permission of instructor). Three hours lecture. An overview of the basic concepts of radar including transmitters, receivers, target detection, antennas, signal processing, and tracking

ECE 6613 Power Transmission Systems: 3 hours.
(Prerequisite: Grade of C or better in ECE 3614). Three hours lecture. Transmission of power from generator to distribution system; transmission line design; load flow; symmetrical components; balanced/unbalanced faults; stability

ECE 6633 Power Distribution Systems: 3 hours.
(Prerequisite: Grade of C or better in ECE 3614). Three hours lecture. Distribution of power from transmission system to users; primary and secondary feeders; voltage regulation; distribution transformers; protective device coordination; system design; load management

ECE 6643 Power Systems Relaying and Control: 3 hours.
(Prerequisite:Grade of C of better in ECE 4613). Three hours lecture. Protection objectives and fundamentals; inputs; protection of generators, transformers, busses and lines; stability and control

ECE 6653 Introduction to Power Electronics: 3 hours.
(Prerequisite: Grade of C or better in both ECE 3614 and ECE 3424 or equivalent). Three hours lecture. Introduction to power electronic circuits, with emphasis on design and analysis of power semiconductor converters including DC-DC converters, PWM inverters, and DC power supplies

ECE 6663 Insulation Coordination in Electric Power Systems: 3 hours.
(Prerequisite: Credit or registration in ECE 4613). Three hours lecture. Lightning phenomena; switching surges and temporary system overvoltages; laboratory generation and application of high voltages and currents; basic insulation levels; surge arresters; system insulation design

ECE 6673 Fundamentals of High Voltage Engineering: 3 hours.
(Prerequisite:Grade of C or better in ECE 3614).Three hours lecture. Electrical fields, fields in multi-dielectrics, breakdown mechanisms in gases, liguids, and solid dielectrics, laboratory generation of high voltages, hight voltage insulators and cables

ECE 6713 Computer Architecture: 3 hours.
(Prerequisites:Grade of C or better in ECE 3724). Three hours lecture. Detailed design and implementation of a stored-program digital computer system. Designs for the CPU, I/O subsystems, and memory organizations. ALU design and computer arithmetic

ECE 6723 Embedded Systems: 3 hours.
(Prerequisites: Grade of C or better in CSE 3324 and ECE 3724 and in either ECE 3424 or CSE 4153). Two hours lecture. Three hours laboratory. Advanced topics in embedded systems design using contemporary practice. Interrupt-driven, reactive, real-time, object-oriented, and distributed client/server embedded systems

ECE 6743 Digital System Design: 3 hours.
(Prerequisites:Grade of C or better in ECE 3724. Credit or registration in ECE 3424). Two hours lecture. Three hours laboratory. Hierarchical digital design using available design software. Computer aided design workstations will be used to give students access to state-of-the-art design techniques

ECE 6763 Information and Computer Security: 3 hours.
(Prerequisite: Grade of C or better in CSE 4733/6733). Three hours lecture. Topics include encryption systems, network security, electronic commerce, systems threats, and risk avoidance procedures. (Same as CSE 4243/6243)

ECE 6783 Vision Based Guidance for MAVs: 3 hours.
(Prerequisite: Grade of C or better in both MA 3113 and MA 3253). Two hours lecture and one hour laboratory. This course covers the use of modern computer vision techniques applied to the control of micro air vehicles (MAVs)

ECE 6813 Communications Theory: 3 hours.
(Prerequisite: Grade of C or better in ECE 3443). Three hours lecture. The frequency and time domain; modulation; random signal theory; network analysis using nondeterministic signals; basic information theory; noise

ECE 6823 Digital Communications: 3 hours.
(Prerequisite:Grade of C or better in ECE 4813/6813 or equivalent). Three hours lecture. Digital communications systems design trade-offs and performance analysis in the presence of AWGN. Principle topics;transmission and detection, link analysis, channel coding, multiple access, spread-spectrum

ECE 6833 Data Communications and Computer Networks: 3 hours.
(Prerequisite: CSE 1384 or ECE 3732, and ECE 3724, both with a grade of C or better). Three hours lecture. The concepts and practices of data communications and networking to provide student with an understanding of the hardware and software used for data communications. (Same as CSE 4153/6153)

ECE 6843 Error Correcting Digital Codes: 3 hours.
(Prerequisite:Senior or Gradute Standing). Three hours lecture. A survey, in depth, of current error correcting coding techniques for providing digital data transmission with protection from random and burst noise sources. Many practical and currently used techniques are discussed in detail and some hands-on experience is provided

ECE 6853 Electro-Optics: 3 hours.
(Prerequisite:Grade of C or better in ECE 3424 or consent of instructor).Three hours lecture. Linear system theory of optical processes ; Electroptic systems;electro-optical information processing

ECE 6913 Feedback Control Systems I: 3 hours.
(Prerequisite: Grade of C or better in ECE 3443). Three hours lecture. Laplace transforms; transient and frequency response of feedback systems; transfer functions; Nyquist criterion, root locus; compensation of feedback systems; logarithmic analysis and design

ECE 6923 Feedback Control Systems II: 3 hours.
(Prerequisite:Grade of C or better in ECE 3443). Three hours lecture. Finite difference and recurrence equations. z-transform theory. Analysis of sampled-data control systems. Design of digital control systems

ECE 6933 State Space Design and Instruments: 3 hours.
(Prerequisite:Grade of C or better in ECE 3443). Three hours lecture. State space representation. Dynamic systems. Controllability and observability. Full-state feedback observers. Instrumentation: sensors and interfacing

ECE 6943 Automation, Data Acquisition, and PLCs: 3 hours.
(Prerequisite: ECE 3443). Two hours lecture, one hour laboratory. Automation and control of industrial processes, identification of sensors and data acquisition, and the use of PLCs to implement control processes

ECE 6990 Special Topics in Electrical and Computer Engineering: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

ECE 7000 Directed Individual Study in Electrical and Computer Engineering: 1-6 hours.
Hours and credits to be arranged

ECE 8000 Thesis Research/ Thesis in Electrical and Computer Engineering: 1-13 hours.
Hours and credits to be arranged

ECE 8063 Parallel Computer Arch I: 3 hours.
(Prerequisite: ECE 4713/6713/ CS 4113/6113). Three hours lecture. Study of hardware structures relevant to concurrent computing; evaluation and design methods associated with memory, pipelining, and multiple processors

ECE 8223 Analog Integrated Circuit Design: 3 hours.
(Prerequisite: ECE 3434). Analysis and design of analog integrated circuits. Selected topics on operational amplifiers, A-to-D converters and communication circuits. Bi-polar and MOSFETS

ECE 8273 VLSI Systems I: 3 hours.
(Prerequisite: ECE 4263/6263). Three hours lecture VLSI design extended into controller concepts, self-timed logic; system design with CAD tools, parameterized block generators, silicon compilers, projects submitted to commercial silicon foundries

ECE 8313 Electromagnetic Theory: 3 hours.
(Prerequisite: ECE 3254). Three hours lecture. Static boundary value problems, conformal transformation; Schwarz-Christoffel transformation; harmonics; application of Maxwell's equations to plane waves in dielectrics and conductors; antennas; and radiation. (Same as PH 8313)

ECE 8323 Electromagnetic Theory II: 3 hours.
(Prerequisite: ECE 8313). Three hours lecture. Maxwell's theory of electromagnetism: Electromagnetic waves, radiation, antennas, waveguides, scattering, diffraction, and special relativity. (Same as PH 8323)

ECE 8333 Radar Signal Processing: 3 hours.
(Prerequisite: ECE 4413/6413 and ECE 4433/6433, or permission of instructor). Three hours lecture. An overview of radar signal processing, including waveform selection, Doppler processing, integration, pulse compression, target detection, and synthetic-aperture-radar processing

ECE 8401 Current Topics in Remote Sensing: 1 hour.
(Prerequisite: Credit or registration in ECE 4423/6423 or PSS 4483/6483 or ABE 4483/6483). One hour lecture. Review of current literature dealing with the technical issues of remote sensing technologies

ECE 8423 Adaptive Signal Processing: 3 hours.
(Prerequisites: ECE 3443 or consent of instructor). Three hours lecture. Adaptive filtering, theoretical foundation, algorithms, structures, and implementations. Applications are included

ECE 8433 Statical Signal Processing: 3 hours.
(Prerequisite: MA 4533/6533 or consent of instructor). Three hours lecture. Detection theory and design, statistical decisions, Bayes and Neyman-Pearson detection, asymptotic performance, signal processing applications

ECE 8443 Pattern Recognition: 3 hours.
(Prerequisite: MA 4533/6533 or consent of instructor). Three hours lecture. Classification description, and structure of pattern recognition, patterns and feature extractions, engineering approaches including statistical and syntactic, and signal processing applications

ECE 8453 Introduction to Wavelets: 3 hours.
(Prerequisite: ECE 3443 or consent of instructor). Three hours lecture. Wavelet-expansion systems, discrete wavelet transform, multiresolution analysis, time-frequency anaylsis, filter banks and the discrete wavelet transform, wavelet transform, wavelet design, wavelet-based applications

ECE 8473 Digital Image Processing: 3 hours.
(Prerequisites: CS 1233, CS 1284 or equivalent, ECE 4413/ 6413). Three hours lecture. A study of digital image processing principles, concepts, and algorithms; mathematical models; image perception; image sampling and quantization, transforms, image coding

ECE 8483 Image and Video Coding: 3 hours.
(Prerequisite: ECE 8473 or consent of instructor). Three hours lecture. Intraframe predictive coding, intraframe transform coding, still-image coding standards, motion compensation, video-coding standards, image transmission and error control

ECE 8493 Introduction to Neural Networks: 3 hours.
(Prerequisite:ECE 4413/6413 or equivalent). Three hours lecture. Neural network architectures, training algorithms,and applications in areas such as signal processing and pattern classification

ECE 8623 Stability and Control of Power Systems: 3 hours.
(Prerequisite: Consent of instructor). Three hours lecture. Transient and dynamic stability; effect of excitation on stability; control of system in steady state (AGC); economic dispatch

ECE 8633 Control of Distributed Energy Resource Systems: 3 hours.
(Prerequisite: ECE 3614 or ECE 4913 or consent of instructor). Three hours lecture. Control aspects of power electronic converters used as the interface in distributed and renewable energy systems including the power flow control, power quality aspects, grid supporting functions and stability issues

ECE 8663 High Voltage Engineering: 3 hours.
(Prerequisite: ECE 3313). Three hours lecture. Emission, mobility, breakdown, corona, arcs impulse generation, measurement, analysis, dielectric materials, design laboratory demonstration

ECE 8683 Power System Operation and Control.: 3 hours.
(Prerequisite: Grade of C or better in ECE 4613 or ECE 6613). Three hours lecture. Power generation characteristics; network modeling; economic dispatch; unit commitment; security constrained unit commitment; hydrothermal coordination

ECE 8713 Switching Theory I: 3 hours.
(Prerequisites:ECE 3434, ECE 4713/6713 or consent of instructor). Three hour lecture. Theory of combinational and sequential (synchronous and fundamental-mode) circuits with emphasis on performance, robustness, cost, and testability objectives

ECE 8723 Introduction to Computer Arithmetic: 3 hours.
(Prerequisite:ECE 4263/6263).Three hours lecture. Fixed point number systems:algorithms, and associated logic level implementation for fixed point addition, subtraction, multiplication, and division;floating-point formats and operation

ECE 8733 Parallel Computing Architectures I: 3 hours.
(Prerequisite:ECE 4713/6713, CSE 4113/6113). Three hours lecture. Study of hardware structures relevant to concurrent computing;evaluation and design methods associated with memory, pipelining, and multiple processors

ECE 8743 Advanced Robotics: 3 hours.
Three hours lecture. Rotations and their parameterization, Lie group theory, and shape determination of continuum robots

ECE 8753 Distributed Computing Systems: 3 hours.
(Prerequisites: An undergraduate course in operating systems or instructor approval). Three hours lecture. Advanced topics related to distributed computing systems including communication, client-server model, code migration, naming, locating entities, synchronization, replication and consistency, fault tolerance, and security issues

ECE 8803 Random Signals and Signs: 3 hours.
(Prerequisite:IE 4613 or MA 4523 or equivalent). Three hours lecture. Probability and random processes, auto-and cross-correlation, energy and power spectral densities, mean-square calculus,ergodicity. Response of linear systems to random signals, and Markov chains

ECE 8813 Information Theory: 3 hours.
(Prerequisite: ECE 8803 or consent of instructor). Three hours lecture. Entropy, the asymptotic equipartition property, entropy rate, data compression, channel capacity, differential entropy, the Gaussian channels, rate-distortion theory

ECE 8823 Wireless Networks: 3 hours.
(Prerequisite: ECE 4813/6813 Communications Theory or equivalent). Three hours lecture. Wireless network protocol design, theoretical analysis, and security and privacy. (Same as CSE 8753)

ECE 8833 Computational Intelligence: 3 hours.
(Prerequisites: MA 4523/6523 or ECE 8803, or consent of instructor). Three hours lecture. An overview of the field of computational intelligence for automated decision-making under uncertainty and pattern recognition with applications to signal and image processing

ECE 8923 Non-Linear Control Systems: 3 hours.
(Prerequisite: ECE 4913/6913 or equivalent). Three hours lecture. A study of techniques available to analyze non-linear systems and a study of associated synthesis procedures

ECE 8933 Random Processes in Automatic Control: 3 hours.
(Prerequisite: ECE 4913/6913 or equivalent). Three hours lecture. Principles and application of statistical design; random processes in automatic control; time invariant systems

ECE 8943 Optimal Control of Dynamic Systems: 3 hours.
(Prerequisite:ASE 4123 or ECE 4913/6913 or equivalent). Three hours lecture. State variable description of systems; maximum principle of Pontryagin, dynamic programming, optimization of linear systems with quadratic performance measures; time optimal and fuel optimal systems. (Same as ASE 8863)

ECE 8963 Digital Control Systems: 3 hours.
(Prerequisites: ECE 4913/6913 and ECE 4923/6923 or consent of instructor). Three hours lecture. z-transform theory and analysis; modified z-transform; design principles; digital state obervers; introduction to optimal control; introduction to computer-aided digital control system design and analysis

ECE 8990 Special Topics in Electrical and Computer Engineering: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years.)

ECE 9000 Dissertation Research /Dissertation in Electrical and Computer Engineering: 1-13 hours.
Hours and credits to be arranged

Educational Leadership (EDA) Courses

EDA 6990 Special Topics in Educational Leadership: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

EDA 7000 Directed Individual Study in Educational Leadership: 1-6 hours.
Hours and credits to be arranged

EDA 8163 Public School Finance: 3 hours.
Three hours lecture. Legal and other factors governing financial policies and practices in public schools; sources of revenue; budgeting; disbursement of funds; school plant; records; insurance

EDA 8190 Workshop in Educational Administration and Supervision: 1-3 hours.
This course is for practicing school administrators who need courses of varying length, format, and focus in areas not covered by the regular curriculum

EDA 8210 Internship in Supervision and Administration: 1-3 hours.
Opportunity under direct supervision of regular university staff for practical experience in the major area of interest. May be repeated for credit

EDA 8223 Seminar in Administration: 3 hours.
(Prerequisite: Administrative experience or graduate standing). Three hours lecture. Specialized study of selected problems in educational leadership. (Same as HED 8223)

EDA 8273 Educational Administration and Supervision: 3 hours.
(Prerequisite: Advanced graduate standing). Three hours lecture. Fundamental of leading and managing at the central office executive level, e.g., assistant superintendent. Emphasis of policy development, curriculum and instruction, planning, operations, and public relations

EDA 8283 Educational Leadership: 3 hours.
Three hours lecture. Nature of educational leadership. The roles of leadership in staff and program development, diffusion of innovations, and the uses of power in making educational decisions. (Same as HED 8283)

EDA 8293 Professional Development of Educational Personnel: 3 hours.
(Prerequisite :EDL 8143). Three hours lecture. Collaborative approaches to processes of individual and group professional development for instructional and non-instructional personnel; ensuring, supporting, enhancing best practices for teaching, learning, school improvement

EDA 8323 Educational Facilities Design: 3 hours.
Three hours lecture. Studies design issues in learning environments/ facilities, examines contemporary design models, their impact on learning, and uses this information in the design process

EDA 8353 Applications of Theory to Educational Administration: 3 hours.
Three hours lecture. The nature of theory; types of educational administrative theories; uses of organizational and administrative theory in administrative problem solving; applications of general systems theories in education. (Same as HED 8353)

EDA 8383 Ethical Decision Making in Educational Administration: 3 hours.
(Prerequisite: EDA 8283). Three hours lecture. Case studies are used to analyze educational decisions. Multiple decision models and ethical concepts are applied to problems and moral dilemmas. (Same as HED 8383)

EDA 8990 Special Topics in Educational Leadership: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

EDA 9000 Dissertation Research /Dissertation in Educational Leadership: 1-13 hours.
Hours and credits to be arranged

EDA 9913 Dissertation Seminar: 3 hours.
Optional or elective course for specialized study in developing dissertation research. May be repeated once for credit

Elementary Education Courses

EDE 2521 Introduction to Elementary Education: 1 hour.
One-hour lecture. Introduction to the elementary education profession. Topics include what it means to be an elementary teacher, professional dispositions, terminology used in the profession, and general best practices for the elementary classroom. Field experience required

EDE 2990 Special Topics in Curriculum, Instruction, and Special Education: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

EDE 3123 Early Childhood Education: 3 hours.
(Prerequisite: Admission to teacher education. Co-requisite: RDG 3113 and RDG 3123). Three hours lecture. Overview of early childhood education. Understanding young learners and creating learning environments. Assessing young children. Field experience

EDE 3223 Middle Level Education: 3 hours.
(Prerequisite: Admission to Teacher Education. Co-requisite: RDG 3413 and RDG 3423). Three hours lecture. Understanding the learning needs of young adolescents (grades 4-8); study of appropriate teaching strategies, engaging learning environments, and assessment for young adolescents

EDE 3233 Teaching Children's Literature at the Elementary and Middle Levels: 3 hours.
Three hours lecture. Teaching children's literature at the elementary and middle levels. Introduction, selection, presentation and utilization of a variety of children's literature

EDE 3343 Teaching Adolescent Literature: 3 hours.
Three hours lecture. A study of the types of literature read by older children and adolescents with emphasis upon the criteria for the choice of good books and knowledge of available books and teaching materials

EDE 3443 Creative Arts for Elementary and Middle Levels: 3 hours.
(Prerequisite: Admission to teacher education).Three hours lecture.An exploration of musical and artistic elements utilizing a variety of multicultural music, dance, drama, and aesthetic visuals.(Same as MU 3123)

EDE 3523 Foundations of Elementary & Middle Level Mathematics Education: 3 hours.
(Corequisite: RDG 3413, RDG 3423). Three hours lecture. Field based. The theoretical pedagogical foundations and current issues and perspectives of teaching elementary mathematics; a framework for the teaching of mathematics content and processes

EDE 4000 Directed Individual Study in Elementary Education: 1-6 hours.
Hours and credits to be arranged

EDE 4113 Teaching Elementary and Middle Level Science: 3 hours.
(Pre-requisites: Admission to Teacher Education; RDG 3113, RDG 3123, EDE 3123, EDF 3423, EDX 3213, RDG 3413, RDG 3423, EDE 3223, EDE 3523, and EDF 3333; Co-requisite: RDG 4133, EDE 4123, and EDE 4143). Two hours lecture. Two hours laboratory. Field based. Effectiveness of instructional practices and selection, organization, teaching and assessment for integrating language arts across content areas in K-8

EDE 4123 Teaching Elementary and Middle Level Mathematics: 3 hours.
(Pre-requisites: Admission to Teacher Education: RDG 3113, RDG 3123, EDE 3123, EDF 3423, EDX 3213, RDG 3413, RDG 3423, EDE 3223, EDE 3523, and EDF 3333;MA 1313,MA 1413 or an appropriate MA substitute, MA 1423 or an Appropriate MA substitute, and MA 1433 or an appropriate MA substitute. Co-requisite: EDE 4113, RDG 4133 and EDE 4143). Two hours lecture. Two hours laboratory. Field based. Effectiveness of instructional practices and selection, organization, teaching and assessment for integrating language arts across content areas in K-8

EDE 4143 Teaching Elementary and Middle Level Social Studies: 3 hours.
(Pre-requisites: Admission to Teacher Education: RDG 3113, RDG 3123, EDE 3123, EDF 3423, EDX 3213, RDG 3413, RDG 3423, EDE 3223, EDE 3523, and EDF 3333; Co-requisite: EDE 4113, EDE 4123, and RDG 4133). Two hours lecture. Two hours laboratory. Field based. Effectiveness of instructional practices and selection, organization, teaching and assessment for integrating language arts across content areas in K-8

EDE 4333 International Exploration in Education: 3 hours.
This course involves the examination of the education systems outside of the U.S., with particular attention to classrooms in the host country. (Same as EDS/EDX 4333)

EDE 4883 Managing the Elementary and Middle Level Classroom: 3 hours.
(Prerequisite: Admission to Teacher Education,completion of all professional education courses, and concurrent enrollment in EDE 4886). Three hours lecture. Developing and managing an appropriate learning environment for elementary and middle level students

EDE 4886 Elementary and Middle Level Teaching Internship: 6 hours.
(Prerequisite:Admission to Teacher Education,minimum grade point average of 2.5 overall and in major, and completion of all professional education courses with a C or better). Six hours internship. A supervised observation and teaching experience in an elementary and/or middle level classroom

EDE 4896 Elementary and Middle Level Teaching Internship: 6 hours.
(Prerequisite:Admission to Teacher Education, minimum grade point average of 2.5 overall and in major, and completion of all professional education courses with a C or better.) Six hours internship. A supervised observation and teaching experience in an elementary and/or middle level classroom

EDE 4990 Special Topics in Elementary Education: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

EDE 6990 Special Topics in Elementary Education: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

EDE 7000 Directed Individual Study in Elementary Education: 1-6 hours.
Hours and credits to be arranged

EDE 8000 Thesis Research/ Thesis in Elementary Education: 1-13 hours.
Hours and credits to be arranged

EDE 8113 Middle Level Management and the Young Adolescent: 3 hours.
Three hours lecture. Understanding the characteristics of middle level learners; study of appropriate classroom management for middle level children

EDE 8123 Foundations for Teaching Middle Level Mathematics: 3 hours.
Three hours lecture. The theoretical and pedagogical foundations, issues and perspectives of teaching middle level mathematics; a standards-based framework for relevant teaching of number and operations

EDE 8133 Middle Level Internship I: 3 hours.
(Prerequisites: Admission to MAT-M. EDE 8113 and EPY 8473).Three hours clinical instruction. First semester of directed teaching in a middle level classroom

EDE 8143 Middle Level Internship II: 3 hours.
(Prerequisites: Admission to MAT-M degree program. EDE 8113, EDE 8133, and EPY 8473). Three hours clinical instruction. Second semester of directed teaching in a middle level classroom

EDE 8153 Professional Roles of the Middle Level Educator: 3 hours.
Three hours lecture. Understanding developmentally responsive middle schools and the professional roles of middle level educators; study of professional roles

EDE 8163 Teaching Middle Level Mathematics Content: 3 hours.
Three hours lecture. Research-based pedagogy and current issues and perspectives of teaching the content of algebra, geometry, measurement, and data analysis and probability in the middle level

EDE 8173 Teaching Middle Level Social Studies: 3 hours.
Three hours lecture. An introduction to the history, purposes, and current issues associated with middle level social studies education. Course to include research, trends, methods, and materials

EDE 8183 Teaching Middle Level Sciences: 3 hours.
Theory, applied methods, and techniques for teaching middle level physical, life, and earth science. Content knowledge, inquiry, planning, and assessment for teaching

EDE 8313 Theory and Development of Early Childhood Education: 3 hours.
Three hours lecture. Seminar-type course in synthesis of methods and techniques applicable to elementary teaching; readings; reports; research

EDE 8423 Elementary School Methods: 3 hours.
Three hours lecture, Seminar-type course in synthesis of methods and techniques applicable of elementary teaching; readings; reports; research

EDE 8433 The Elementary School Curriculum: 3 hours.
Three hours lecture. Principles of curriculum construction as they apply to the elementary school program (taught spring of odd numbered years)

EDE 8443 Seminar in Elementary Education: 3 hours.
Three hours lecture. A study of current issues in elementary education. Designed for elementary and school administration majors

EDE 8463 Readings and Research in Children's Literature: 3 hours.
Three hours lecture. Research involving the characteristics of quality literature for children, investigation of illustrators, illustrations, authors, and the role of children's literature in schools

EDE 8473 The Elementary Social Studies Curriculum: 3 hours.
Three hours lecture. Seminar-type course to include research; trends, methods; provision for individual differences; multi-level materials

EDE 8513 Curriculum and Program Developments in Early Childhood: 3 hours.
Three hours lecture. The recent and most promising developments in curriculum for preschool through primary aged children

EDE 8523 Practicum: Language Arts and Literacy Development in Early Childhood Education: 3 hours.
(Prerequisites: EDE 4133, RDG 3113, RDG 3213, or the equivalent). Two hours lecture. Two hours laboratory. A study of language development; the language arts curriculum for young children. Observation and participation in a preschool

EDE 8533 Behavioral Experiences in Early Childhood Education: 3 hours.
Three hours lecture. The world of the child from preschool through early primary years with emphasis on child behavior

EDE 8543 Mathematics Experiences in Early Childhood Education: 3 hours.
(Prerequisites: EDE 4123 or the equivalent). Three hours lecture. Materials, methods and the preparation and use of instructional media in providing mathematical experiences for young children. Observation and participation in a preschool

EDE 8623 Content Area Literacy and Disciplinary Literacy Instruction: 3 hours.
Three hours lecture. Theory, research, and methods for teaching elementary school students to use literacy as a tool for learning

EDE 8633 The Teaching of Writing: 3 hours.
Two hours lecture. Two hours laboratory. Methods and materials for teaching writing in grades K-12. Formal and informal writing assessments. Writing across the curriculum

EDE 8713 Educating Young Adolescents: 3 hours.
Three hours lecture. Examination of issues influencing the education of young adolescents, including instructional methods, curricular models, organizational patterns, and developmentally responsive schools. Observation/participation in 4-8 settings

EDE 8733 Teaching Physical, Life, and Earth Science in the Elementary and Middle School Classroom: 3 hours.
Three hours lecture. Theory, applied methods, and techniques for teaching K-8 physical, life, and earth science. Content knowledge, inquiry, discovery learning, and technology of teaching

EDE 8763 Elementary and Middle Level Mathematics Education: 3 hours.
Three hours lecture. Methods and materials and the preparation and use of instructional and assessment tools to be used in providing research-based mathematical experiences for K-8 students

EDE 8893 Directed Readings in Teacher Education: 3 hours.
Intensive supervised readings in the field of teacher education. (Same as EDS 8643)

EDE 8990 Special Topics in Elementary Education: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

EDE 9000 Dissertation Research /Dissertation in Elementary Education: 1-13 hours.
Hours and credits to be arranged

EDE 9221 Professional Practice in Teacher Education: 1 hour.
One hour lecture. Students will examine potential careers for graduates with a doctorate in education and develop professional documents pertinent to their career paths. (Same as EDS 9221 and EDX 9221)

EDE 9413 Practicum in College Teaching: 3 hours.
Three hours practicum. Teaching of at least one course in education, under the supervision of a senior staff member. (Same as EDS 9413)

EDE 9420 Research Practicum in Early Childhood Education: 1-6 hours.
(Prerequisites: EDE 8513, EDE 8523, EDE 8533, EDE 8543). Research experiences through participation, observation, and experimental projects related to early childhood settings

EDE 9553 Teaching and Teacher Education: 3 hours.
Analysis of current research on teacher education including pre-service teacher education and professional development for practicing teachers. (Same as EDS 9553 and EDX 9553)

Educational Foundations Courses

EDF 1001 First Year Seminar: 1 hour.
One hour lecture. First-year seminars explore a diverse arrary of topics that provide students with an opportunity to learn about a specific discipline from skilled faculty members

EDF 2990 Special Topics in Educational Foundations: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

EDF 3333 Social Foundations of Education: 3 hours.
Three hours lecture. A study of the sociological, historical, political, legal, and philosophical bases of American education

EDF 3413 Writing for Thinking: 3 hours.
(Prerequisites: Completion of EN 1103 and 1113 or equivalent with grade of C or better in each and junior standing). Two hours lecture. Two hours laboratory. Designed to enhance participants' writing/thinking skills and to prepare participants to use writing as a learning process with groups they teach or lead

EDF 3423 Exploring Diversity Through Writing: 3 hours.
(Prerequisite:Admission to Teacher Education). Three hours lecture. Using writing to explore issues of diversity in the classroom. Creating a learning community for diverse learners

EDF 4000 Directed Individual Study in Educational Foundations: 1-6 hours.
Hours and credits to be arranged

EDF 4243 Planning for the Diversity of Learners: 3 hours.
(Prerequisites:Admission to Teacher Education) Three hours lecture. Study of variables contributing to the creation and management of a positive learning environment for the complexity and diversity of middle and high school students

EDF 4990 Special Topics in Educational Foundations: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

EDF 6243 Planning for the Diversity of Learners: 3 hours.
(Prerequisites:Admission to Teacher Education) Three hours lecture. Study of variables contributing to the creation and management of a positive learning environment for the complexity and diversity of middle and high school students

EDF 6990 Special Topics in Educational Foundations: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

EDF 7000 Directed Individual Study in Educational Foundations: 1-6 hours.
Hours and credits to be arranged

EDF 8243 Middle School Diversity: 3 hours.
Three hours lecture. A study of the theory and techniques for educating diverse middle school learners

EDF 8323 Comparative Education: 3 hours.
Three hours lecture. Contemporary educational movements in Denmark, France, Great Britain, India, the Soviet Union, and the United States; technical changes and their effects (taught every spring)

EDF 8353 Principles of Curriculum Development: 3 hours.
Three hours lecture. An examination of principles, problems, and practices influencing curriculum planning; relationships between elementary and secondary school curriculums; research in general curriculum problems

EDF 8363 Function and Methods of Research in Education: 3 hours.
Three hours lecture. The function of research in the development and conduct of the educational program; research methods and techniques in education and the contributions of research to public education; rules and principles governing evidence and conclusions

EDF 8383 Issues in Education: 3 hours.
Three hours lecture. A critical study of current issues in education (taught every summer)

EDF 8393 History of Education in the United States: 3 hours.
Three hours lecture. A history of the growth and development of education in the United States from earliest Colonial times to the present, including recent movements and trends (taught every summer)

EDF 8443 Evaluation of School Programs: 3 hours.
Three hours lecture. The course provides an overview of evaluation as an inquiry process. Frameworks and models for planning evaluation studies are discussed and applications are demonstrated

EDF 8553 Research in the Classroom: 3 hours.
Three hours lecture. An examination of research methods used by teachers in the classroom setting

EDF 8990 Special Topics in Educational Foundations: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

EDF 9313 Philosophy of Education: 3 hours.
Three hours lecture. An examination of educational beliefs and justification

EDF 9373 Educational Research Design: 3 hours.
(Prerequisites: EDF 8363 and EPY 8214 or equivalents; consent of instructor). Three hours lecture. A study of various designs of research and preparation of research proposals

EDF 9443 Single-Subject Research Designs for Education: 3 hours.
Three hours lecture. A detailed examination of single-subject research designs and their associated research methods including data collection and data evaluation techniques (taught spring of odd numbered years only). (Same as EPY 9443)

EDF 9453 Introduction to Qualitative Research in Education: 3 hours.
(Prerequisites: EPY 8214,EDF 9373). Three hours lecture. Introduction to qualitative research, including theoretical considerations and applied methods, techniques, and analysis of field-based educational research

EDF 9463 Qualitative Data Collection in Education: 3 hours.
(Prerequisite:EDF 9453). Three hours lecture. An in-depth examination of interviewing and observation as two primary qualitative data sources in educational settings

EDF 9473 Qualitative Data Analysis and Presentation in Education: 3 hours.
(Prerequisiste:EDF 9463), Three hours lecture. Examination, application, and assessment of a range of approaches to analysis and presentation in the design of qualitative research studies in educational settings

EDF 9913 Dissertation Seminar: 3 hours.
Optional or elective course for specialized study in developing dissertation research . May be repeated once for credit

Educational Leadership (EDL) Courses

EDL 7000 Directed Individual Study in Educational Leadership: 1-6 hours.
The purpose of this course is to allow the student to investigate areas of interest and report the results of investigation in a scholarly manner

EDL 8000 Thesis Research/ Thesis in Educational Leadership: 1-13 hours.
This course is designed to allow the Master's level student to undertake original research under the supervision of his/ her major professor and a committee

EDL 8113 Contexts of Educational Leadership: 3 hours.
Three hours lecture. Exploration of the educational leader's responses to historical, philosophical, sociocultural, democratic and educational contexts affecting leadership; school culture and climate; change processes for school improvement

EDL 8123 Principles of Educational Leadership: 3 hours.
Three hours lecture. Applying democratic processes to school governance and leadership; decision making; consensus building; empowerment; vision; mission; and school improvement

EDL 8143 Educational Leaders as Instructional Supervisors: 3 hours.
Three hours lecture. Applying interpersonal and clinical skills, techniques and approaches in the observation, supervision, and empowerment of teachers and in the facilitation of teaching and learning environments

EDL 8163 Educational Budgeting and Resource Allocation: 3 hours.
Three hours lecture. Administrative leadership for organization, management, allocation of resources to enhance and support teaching and learning; four modules: budgeting, facilities, personnel, student and family services

EDL 8173 Legal and Ethical Perspectives of Leadership in Schools: 3 hours.
Three hours lecture. Examination of legal and ethical issues in educational leadership. Analysis of impact of laws and legal decisions on policy formation and decision implementation in education

EDL 8193 Educational Environments: 3 hours.
(Prerequisites: EDL 8201 & EDL 8202). Three hours lecture. Capstone course of Master's/Specialist AA Certification program. Theories, roles, functions of leadership in educational environments; organizational structures; community and board relationships; policy; strategic planning

EDL 8213 Internship I: Observation and Field Applications: 3 hours.
(Prerequisites: EDL 8113, EDL 8123, EPY 8223). Interns experience designated observation, authentic application, and mentorship activities at educational sites under joint supervision of university and school-based leaders

EDL 8223 Internship II: Administrative Applications: 3 hours.
(Prerequisites: EDL 8163, EDL 8173, EPY 9263, EDL 8213). Interns observe and apply techniques of administrative leadership in authentic educational situations under joint supervision of university and school-based staff at school sites

EDL 8233 Internship III: Instructional Applications: 3 hours.
(Prerequisites: EPY 8223, EDL 8143, EDL 8193, EDL 8213, EDL 8223 or approval of instructor). Focus on instructional leadership experiences; designated culminating internship activities at school sites; joint supervision by university staff and school-and/or district-based leadership

EDL 8313 Assessing Content Knowledge for Teacher Leadership: 3 hours.
Three hours lecture. This course addresses the assessment of content knowledge necessary to be an effective teacher leader. It involves developing an understanding of the relationship between content knowledge, pedagogy, and assessment. Students learn strategies for these key elements of the teaching profession

EDL 8323 Differentiation of Instruction for Teacher Leadership: 3 hours.
Three hours lecture. This course will address the importance of differentiated instruction in effective teacher leadership. It will involve developing teacher-leaders' abilities to evaluate students' learning styles, plan and implement differentiated instruction, and analyze instructional strategies and materials based on ongoing assessment

EDL 8333 Teaching Practice and Learning Environment for Teacher Leadership: 3 hours.
Three hours lecture. This course will address the knowledge of teaching practices and learning environments necessary to be an effective teacher leader. This will include content in instructional planning, pedagogical strategies, student engagement, development of motivational, safe learning environments, and assessment of these best practices

EDL 8343 Effective and Reflective Practitioner for Teacher Leadership: 3 hours.
Three hours lecture. This course involves developing teacher-leaders' abilities in applying knowledge of students as well as collaborating with all educational stakeholders to develop learning communities. Ultimately, this course enhances the teacher leader's commitment to advancing student learning and achievement in the K-12 setting

EDL 8353 Teacher Leadership Internship: 3 hours.
Three hours clinical instruction. A field-based component is required. This course requires students to take the theory, pedagogy, and leadership knowledge they have learned in the required coursework and apply teacher-leadership practices in a school setting

EDL 8413 School Legal and Ethical Perspectives: 3 hours.
Three hours lecture. Focus of the course is on an introduction to school law, policy development, and ethical leadership

EDL 8423 School Leadership: 3 hours.
Three hours lecture. The focus of the course is on effectively leading and managing the school within the political and social context of high stakes accountability for student learning

EDL 8433 Using Data for School Improvement: 3 hours.
Three hours lecture. The course focuses on using data as a tool to enhance the decision-making processes for comprehensive school reform and improvement

EDL 8513 School Leadership Internship I: 3 hours.
Clinical Instruction. The course requires students to apply leadership practices to the real-world setting of a P-12 school

EDL 8523 Educating Diverse Learners: 3 hours.
Three hours lecture. This course focuses on leading schools that address the needs of all learners in academically, socially, and emotionally responsive classrooms

EDL 8613 School Leadership Internship II: 3 hours.
(Prerequisites: EDL 8513 and consent of instructor). Clinical Instruction. This course is a culminating internship that requires students to apply leadership practices to the real-world setting of a P-12 school

EDL 8623 Leading Curriculum, Instruction and Assessment: 3 hours.
Three hours lecture. The course covers educational leaders' responsibilities relative to national and state curricula standards, effective instructional practices, and the use of assessments to support student achievement

EDL 8633 Human Resources Leadership for Schools: 3 hours.
Three hours lecture. This course addresses leadership of various human resources functions that impact the effectiveness of P-12 schools

EDL 8713 School Business and Facilities: 3 hours.
Three hours lecture. Focus of the course is on providing effective leadership for school operations such as managing the budget, campus safety and security, and buildings and grounds

EDL 8723 Leadership for Positive School Culture: 3 hours.
Three hours lecture. The course focuses on the role of the school leader to shape a productive academic learning culture in his/her school

EDL 8990 Special Topics in Educational Leadership: 1-9 hours.
Titles to be arranged. These courses are used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to 2 offerings under one title within two academic years.)

EDL 9000 Dissertation Research /Dissertation in Educational Leadership (EDL): 1-13 hours.

Secondary Education Courses

EDS 2990 Special Topics in Secondary Education: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

EDS 3411 Practicum in Secondary Education: 1 hour.
(Prerequisite:Admission to Teacher Education.) One hour lecture. Field-based. An introduction to the organization and activities of middle and secondary schools

EDS 3633 Secondary Mathematics Education: 3 hours.
(Prerequisite: Admission to Teacher Education). Three hours lecture. Examine the concepts and tools used to teach mathematics in the secondary classroom, connections between algebra and geometry concepts, and national and state mathematics standards

EDS 3643 Secondary Social Studies Education: 3 hours.
(Prerequisite: Admission to teacher education). Three hours lecture. An introduction to the history, purposes, and current issues associated with middle and secondary social studies education

EDS 3653 Secondary Science Education: 3 hours.
(Prerequisite: Admission to Teacher Education). Three hours lecture. Fundamentals of science education including the National Science Education Standards and NSTA recommendations required for teaching science in grades 7-12

EDS 3673 Secondary Language Arts Education: 3 hours.
(Prerequisite:Admission to Teacher Education). Three hours lecture. Essential knowledge, skills and attitudes necessary for the successful teaching of the language arts

EDS 4000 Directed Individual Study in Secondary Education: 1-6 hours.
Hours and credits to be arranged

EDS 4333 International Exploration in Education: 3 hours.
This course involves the examination of the education systems outside of the U.S., with particular attention to classrooms in the host country. (Same as EDE/EDX 4333)

EDS 4633 Methods of Teaching Mathematics: 3 hours.
(Prerequisite: Admission to Teacher Education, EDS 3633). Three hours lecture. Field based. Aims and purposes of teaching mathematics in high school, curriculum problems, organization and presentation of subject matter, methods of teaching and evaluation

EDS 4643 Methods of Teaching Social Studies: 3 hours.
(Prerequisite: Admission to teacher education, EDS 3643). Three hours lecture. An examination of teaching methods and instructional materials and media appropriate for use in middle schools and secondary social studies classrooms

EDS 4653 Methods of Teaching Science: 3 hours.
(Prerequisite: Admission to Teacher Education, EDS 3653) Three hours lecture. Field based. Students will gain insight into the methods of teaching science in grades 7-12, including selection, organization, presentation and assessment required by NSES

EDS 4673 Methods of Teaching Language Arts: 3 hours.
(Prerequisite: Admission to Teacher Education, EDS 3673). Three hours lecture. Field based. Objectives in English/Language Arts; content, organization, methods of teaching language, literature, and composition. Primarily for secondary teachers or language arts

EDS 4873 Seminar in Managing the Secondary Classroom: 3 hours.
(Prerequisites: Admisions to Teacher Education.Co-requisite: EDS 4886 and EDS 4896) Three hours lecture. A seminar that addresses classroom management issues, theories, and practices

EDS 4886 Teaching Internship in Secondary Education: 6 hours.
(Prerequisite:Admission to Teacher Education,minimun grade point average of 2.5 overall and in major, and completion of all professional education courses with a grade of C or better). Supervised observation and directed teaching in respective field of endorsement

EDS 4896 Teaching Internship in Secondary Education: 6 hours.
(Prerequisites:Admission to Teacher Education, minimum grade point average of 2.5 overall and in major, and completion of all professional education courses with grade of C or better). Supervised observation and directed teaching in respective field of endorsement

EDS 4990 Special Topics in Secondary Education: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

EDS 6633 Mathematics Education Pedagogy: 3 hours.
(Co-requisite: EDS 8886 or EDS 8896 or consent of instructor.) Three hours lecture. Field-based. A comprehensive examination of the effective practices for teaching and evaluating mathematics students in the secondary setting

EDS 6643 Social Studies Education Pedagogy: 3 hours.
(Co-requisite: EDS 8883 or EDS 8893 or consent of instructor). Three hours lecture. Field-based. A comprehensive examination of the effective practices for teaching and evaluating social studies in secondary education

EDS 6653 Science Education Pedagogy: 3 hours.
(Co-requisite: EDS 8883 or EDS 8893 or consent of instructor). Three hours lecture. Field-based. A comprehensive examination of the effective practices for teaching and evaluating science for middle and secondary students

EDS 6673 Language Arts Education Pedagogy: 3 hours.
Three hours lecture. (Co-requisite: EDS 8883 or EDS 8893 or consent of instructor). Field-based. A comprehensive examination of the effective practices for teaching and evaluating English/Language Arts students in secondary education

EDS 6990 Special Topics in Secondary Education: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

EDS 7000 Directed Individual Study in Secondary Education: 1-6 hours.
Hours and credits to be arranged

EDS 8000 Thesis Research/ Thesis in Secondary Education: 1-13 hours.
Hours and credits to be arranged

EDS 8103 Advanced Methodologies in Middle and Secondary Education: 3 hours.
Three hours lecture. Advanced study of pedagogical methods and teaching practices

EDS 8113 Classroom Management in Secondary Education: 3 hours.
(Prerequisite: Admission to MAT-S). An exploration of the essential considerations for establishing a safe, effective, and efficient classroom environment for diverse populations of secondary students

EDS 8153 Professional Roles of the Secondary Educator: 3 hours.
(Prerequisite: Admission to MAT-S. Co-requisite: EDS 8886 Secondary Internship I or consent of instructor). An exploration of the professional roles and effective practices of secondary educators

EDS 8243 Advanced Planning and Managing of Learning: 3 hours.
Three hours lecture. An advanced study of variables contributing to efficiency and competency in planning for teacher-learner activities and the creation and maintenance of positive learning environments

EDS 8613 Middle and Secondary School Curriculum: 3 hours.
Three hours lecture. Principles of curriculum construction as they apply to the middle and secondary schools for the various subject areas

EDS 8623 Principles of Effective Instruction in Secondary Schools: 3 hours.
Three hours lecture. An examination of the theories, trends, best practices, issues, challenges, and complexitites pertinent to teaching and learning in secondary schools

EDS 8633 Problems of Secondary Education: 3 hours.
(Prerequisite: Master's degree or consent of instructor). Three hours lecture. Study of critical problems in secondary education

EDS 8643 Directed Reading in Teacher Education: 3 hours.
Intensive supervised readings in the field of teacher education. (Same as EDE 8893)

EDS 8653 Issues of Accountability in Schools: 3 hours.
(Prerequisite:EPY 3253 or EPY 6313 or permission of instructor).Three hours lecture. Study of critical educational issues in school-based accountability. Particular attention will be given to the impact accountability has on student learning in the classroom

EDS 8663 Improving Instruction in Secondary Schools: 3 hours.
Three hours lecture. Field based. An exploration of classroom-based inquiry, exploration, and action research as means of improving teaching and learning in secondary schools

EDS 8683 Dispositions and Reflective Practice in Teaching: 3 hours.
(Prerequisite:EDS 8623 or permission of instructor). Three hours lecture. Study of teaching behavior and reflective practices as catalysts for instructional improvement

EDS 8693 Advanced Foreign Language Pedagogy: 3 hours.
Three hours lecture. Field-based. Advanced examination of effective practices for teaching and evaluating foreign language students. Same as FL 8693

EDS 8713 Curriculum Adjustments: 3 hours.
Three hours lecture. Adjusting the school curriculum to meet individual pupil differences

EDS 8883 Secondary Internship I: 3 hours.
Three hours clinical instruction. (Prerequisites: Admission to MAT-S, EDS 8113, and EPY 8473. Co-requisite: EDS 8153.) Professional and supervised full-day public school teaching experience for 8 weeks (320 hours) in respective field of endorsement

EDS 8886 Dimensions of Learning I: 6 hours.
(Prerequisities:Admission to MATS Program. EDS 8243,EPY6313, and EDS 6633 or EDS 6653 or EDS 6673 or other related methods course). Six hours clinical instruction. Supervised observation and directed teaching in respective field of endorsement

EDS 8893 Secondary Internship II.: 3 hours.
Three hours clinical instruction. (Prerequisites: Admission to MAT-S and EDS 8883). Professional and supervised full-day public-school directed teaching experience for 8 weeks (320 hours) in respective field of endorsement

EDS 8896 Dimensions of Learning II: 6 hours.
(Prerequisites:Admissions to MATS Program,EDS 8243,EPY 6313, and EDS 6633 or EDS 6643 or EDS 6653 or EDS 6673 or other related methods course). Six hours clinical instruction. Supervised observation and directed teaching in respective field of endorsement

EDS 8990 Special Topics in Secondary Education: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

EDS 9000 Dissertation Research /Dissertation in Secondary Education: 1-13 hours.
Hours and credits to be arranged

EDS 9221 Professional Practice in Teacher Education: 1 hour.
One hour lecture. Students will examine potential careers for graduates with a doctorate in education and develop professional documents pertinent to their career paths. (Same as EDE 9221 and EDX 9221)

EDS 9413 Practicum in College Teaching: 3 hours.
Three hours practicum. Teaching of at least one course in education, under the supervision of a senior staff member. (Same as EDE 9413)

EDS 9553 Teaching and Teacher Education: 3 hours.
Analysis of current research on teacher education including pre-service teacher education and professional development for practicing teachers. (Same as EDE 9553 and EDX 9553)

Special Education Courses

EDX 2990 Special Topics in Special Education: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

EDX 3203 Introduction to Learning Disabilities: 3 hours.
Three hours lecture. Integrities for learning; receptive, associative, and expressive disorders; specific learning disabilities

EDX 3213 Individualizing Instruction for Exceptional Children: 3 hours.
Three hours lecture. Introduction to differentiating and individualizing instruction for students with mild/moderate disabilities

EDX 3223 Introduction to Emotional/Behavioral Disorders: 3 hours.
Three hours lecture. Understanding children with emotional/behavioral disorders. Overview of the theoretical approaches to their education

EDX 3233 Contingency Management: 3 hours.
Three hours lecture. A study of the components of contingency management with emphasis on application in the field with exceptional children

EDX 4000 Directed Individual Study in Special Education: 1-6 hours.
Hours and credits to be arranged

EDX 4103 Introduction to Teaching Students with Intellectual and Developmental Disabilities: 3 hours.
(Prerequisites: EDX 3213 or permission from the instructor). Three hours lecture. Introduction to special education challenges for students with intellectual and developmental disabilities including challenges of providing full educational inclusion and community integration from ages 6-21

EDX 4113 Methods and Materials for Early Childhood Students with Disabilities: 3 hours.
(Prerequisite: Admission to Teacher Education). Three hours lecture. Field based. Assessment and individualized programming utilizing methods and materials for preschool and primary level children with disabilities

EDX 4123 Methods and Materials for Elementary Students with Disabilities: 3 hours.
(Prerequisite: Admission to Teacher Education). Three hours lecture. Field based. Assessment and individualized programming utilizing methods and materials for elementary age children with disabilities

EDX 4133 Methods and Materials for Secondary Students with Disabilities: 3 hours.
(Prerequisite: Admission to Teacher Education). Three hours lecture. Field based. Assessment and individualized programming utilizing methods and materials for secondary age children with disabilities

EDX 4333 International Exploration in Education: 3 hours.
This course involves the examination of the education systems outside of the U.S., with particular attention to classrooms in the host country. (Same as EDE/EDS 4333)

EDX 4353 Assistive Technology in Special Education: 3 hours.
Three hours lecture. Application of assistive technology in the education of students with special needs

EDX 4413 Working with Families of Students with Disabilities: 3 hours.
Three hours lecture. A study of the development, goals, and objectives of family groups. A study of problems of families who have children with disabilities

EDX 4423 Teaching the Disadvantaged Child: 3 hours.
The study of the disadvantaged child in terms of theories, concepts, cultures, and techniques of teaching and exploration of curricular innovations

EDX 4503 Teaching Students with Severe Disabilities: 3 hours.
Three hours lecture. A survey of operational models and techniques to be implemented with students who have severe disabilities to include curriculum, methods and administrative educational adjustments

EDX 4603 Students with Physical/Multiple Disabilities: 3 hours.
Three hours lecture. Educational implications and adaptations of procedures in schools, homes, hospitals and special schools for students with orthopedic and/or neurological impairments

EDX 4613 Teaching Students with Physical/Multiple Disabilities: 3 hours.
(Prerequisite: Admission to Teacher Education). Three hours lecture. Methods and materials applicable to teaching students with physical or multiple conditions which are the results of neurological or orthopedic impairments

EDX 4623 Adaptations for Students with Physical/Multiple Disabilities.: 3 hours.
Three hours lecture. The study of motor functions including range of motion, gait training, and other environmental adjustments that can be implemented by classroom teachers

EDX 4873 Professional Seminar in Special Education: 3 hours.
Three hours lecture. A seminar dealing with legal, professional, administrative, and curriculum issues as they relate to special education in the schools

EDX 4886 Teaching Internship in Special Education: 6 hours.
(Prerequisites: Admission to Teacher Education, minimum GPA 2.5 overall and in major, and completion of all professional education courses with a C or better.) Professional full-day public school teaching experience in two consecutive 8-week placements in diverse settings and grade levels under direction of supervising teachers and university supervisor

EDX 4896 Teaching Internship in Special Education: 6 hours.
(Prerequisites: Admission to Teacher Education, minimum GPA 2.5 overall and in major, and completion of all professional education courses with C or better.) Professional full-day public school teaching experience in two consecutive 8-week placements in diverse settings and grade levels under direction of supervising teachers and university supervisor

EDX 4953 Introduction to Sign Language: 3 hours.
Development of basic sign language skills, study of special needs of deaf persons, and understanding use of interpreters. (Same as CO 4953/6953)

EDX 4990 Special Topics in Special Education: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

EDX 6103 Introduction to Teaching Students with Intellectual and Developmental Disabilities: 3 hours.
(Prerequisites: EDX 3213 or permission from the instructor). Three hours lecture. Introduction to special education challenges for students with intellectual and developmental disabilities including challenges of providing full educational inclusion and community integration from ages 6-21

EDX 6113 Methods and Materials for Early Childhood Students with Disabilities: 3 hours.
(Prerequisite: Admission to Teacher Education). Three hours lecture. Field based. Assessment and individualized programming utilizing methods and materials for preschool and primary level children with disabilities

EDX 6123 Methods and Materials for Elementary Students with Disabilities: 3 hours.
(Prerequisite: Admission to Teacher Education). Three hours lecture. Field based. Assessment and individualized programming utilizing methods and materials for elementary age children with disabilities

EDX 6133 Methods and Materials for Secondary Students with Disabilities: 3 hours.
(Prerequisite: Admission to Teacher Education). Three hours lecture. Field based. Assessment and individualized programming utilizing methods and materials for secondary age children with disabilities

EDX 6173 Introduction to Contingency Management: 3 hours.
Three hour lecture. Introduction to the principles and procedures of contingency management and applied behavioral analysis for teaching individuals with disabilities

EDX 6193 Advanced Planning in Special Education: 3 hours.
Provides a greater understanding of planning and managing in special education. Suggests methods and techniques to be used in teaching students with disabilities

EDX 6353 Assistive Technology in Special Education: 3 hours.
Three hours lecture. Application of assistive technology in the education of students with special needs

EDX 6413 Working with Families of Students with Disabilities: 3 hours.
Three hours lecture. A study of the development, goals, and objectives of family groups. A study of problems of families who have children with disabilities

EDX 6503 Teaching Students with Severe Disabilities.: 3 hours.
Three hours lecture. A survey of operational models and techniques to be implemented with students who have severe disabilities to include curriculum, methods and administrative educational adjustments

EDX 6603 Students with Physical/Multiple Disabilities: 3 hours.
Three hours lecture. Educational implications and adaptations of procedures in schools, homes, hospitals and special schools for students with orthopedic and/or neurological impairments

EDX 6613 Teaching Students with Physical/Multiple Disabilities: 3 hours.
(Prerequisite: Admission to Teacher Education). Three hours lecture. Methods and materials applicable to teaching students with physical or multiple conditions which are the results of neurological or orthopedic impairments

EDX 6623 Adaptations for Students with Physical/Multiple Disabilities.: 3 hours.
Three hours lecture. The study of motor functions including range of motion, gait training, and other environmental adjustments that can be implemented by classroom teachers

EDX 6813 Introduction to Assessment Issues in Special Education: 3 hours.
Assessment as it relates specifically to working with special education students. Topics to be covered will include Special Education Law, IEP development, and related topics

EDX 6953 Introduction to Sign Language: 3 hours.
Development of basic sign language skills, study of special needs of deaf persons, and understanding use of interpreters. (Same as CO 4953/6953)

EDX 6990 Special Topics in Special Education: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

EDX 7000 Directed Individual Study in Special Education: 1-6 hours.
Hours and credits to be arranged

EDX 8000 Thesis Research/ Thesis in Special Education: 1-13 hours.
Hours and credits to be arranged

EDX 8013 Fundamentals of Teaching Individuals with Intellectual and Developmental Disorders: 3 hours.
Three hours lecture. Characteristics of students with intellectual and developmental disabilities. Theories, principles and methods for teaching individuals with intellectual and developmental disabilities

EDX 8023 Fundamentals of Teaching Individuals with Learning Disabilities: 3 hours.
Three hours lecture. Characteristics of students with learning disabilities. Theories, principles, and methods for teaching individuals with learning disabilities

EDX 8053 Fundamentals of Teaching Individuals with Emotional and Behavioral Disorders: 3 hours.
Three hours lecture. The curriculum, methods, principles and problems of working with individuals with emotional disabilities

EDX 8103 Advanced Contingency Management: 3 hours.
Three hours lecture. This course is designed to utilize the principles and procedures of contingency management and applied behavioral analysis research to design, implement, and evaluate behaviorally oriented programs

EDX 8123 Organization and Supervision of Special Education: 3 hours.
Three hours lecture. Organizational theory of special education. Leadership behavior and role of special education supervisor; grant writing

EDX 8133 Readings and Research in Exceptional Education: 3 hours.
Three hours lecture. Emphasis on current literature in all areas of exceptionality. Understanding and interpretation of psychological diagnosis. Individual and group research

EDX 8143 Early Education for Students with Disabilities: 3 hours.
Three hours lecture. Rationale, characteristics, educational approaches, exemplary programs, and research in the field

EDX 8163 Teaching Strategies for Students who are Gifted: 3 hours.
(Prerequisite: Consent of instructor). Teaching approaches, development of special problems, selection of materials, and remediation of problems related to learning

EDX 8173 Special Education in the Regular Classroom: 3 hours.
Three hours lecture. Provides a greater understanding of children with disabilities who may be in the regular classroom and suggests methods and techniques for teaching students with disabilities in the regular classroom

EDX 8183 Seminar in Learning Disabilities: 3 hours.
(Prerequisite: EDX 3203 or equivalent). Three hours lecture. An advanced course dealing with the condition of learning disabilities. Current research dealing with causes, treatments, and prevention strategies will be studied

EDX 8213 Remediation of Students with Disabilities: 3 hours.
Three hours lecture. Field based. Selection, utilization, and evaluation of specialized remedial materials and techniques with special education populations

EDX 8233 Special Education Internship I: 3 hours.
Three hours clinical instruction. (Co-Requisite EDX 6173; prerequisites: Admission to MAT-X. EDX 8173, EDX 6813 and EDX 6193). First semester of directed teaching in a special education classroom

EDX 8243 Special Education Internship II: 3 hours.
Three hours clinical instruction. (Prerequisites: Admission to MAT-X degree program. EDX 8233). Second semester of directed teaching in a special education classroom

EDX 8303 Seminar in Intellectual Disabilities: 3 hours.
(Prerequisite: EDX 8103). Three hours seminar. An advanced course dealing with intellectual disabilities. Educational implications and research involving people with intellectual disabilities

EDX 8393 Seminar in Emotional/Behavioral Disabilities: 3 hours.
Three hours seminar. A comprehensive study of contributing factors in emotional disabilities and educational technology for the treatment of students with emotional and behavioral disorders

EDX 8403 Teaching Students with Emotional/Behavioral Disabilities: 3 hours.
Three hours lecture. Field based. The curriculum, methods, and principles and problems of working with students with emotional and behavioral disabilities

EDX 8423 Special Education Internship II: 3 hours.
Three hours clinical instruction. (Prerequisites: Admission to MAT-X degree program. EDX 8233). Second semester of directed teaching in a special education classroom

EDX 8780 Internship in Special Education: 3-6 hours.
Three hours practicum. Supervised observation, participation, and teaching of exceptional children in classrooms and resource rooms. Supervised experiences in community, state departments, supervisory positions

EDX 8990 Special Topics in Special Education: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

EDX 9000 Thesis Research/ Thesis in Special Education: 1-13 hours.

EDX 9221 Professional Practice in Teacher Education: 1 hour.
One hour lecture. Students will examine potential careers for graduates with a doctorate in education and develop professional documents pertinent to their career paths. (Same as EDS 9221 and EDE 9221)

EDX 9413 Practicum in College Teaching in Special Education: 3 hours.
Three hours practicum.Supervised experience in design, delivery, and evaluation of a college course in special education

EDX 9553 Teaching and Teacher Education: 3 hours.
Analysis of current research on teacher education including pre-service teacher education and professional development for practicing teachers. (Same as EDS 9553 and EDE9553)

Engineering Graphics Courses

EG 1142 Engineering Graphics: 2 hours.
Two hours lecture. One hour demonstration. Presentation of sketching techniques, lettering and computer aided drafting with traditional engineering drawing topics, including orthographic projection, engineering documentation, auxiliary views, and working drawings

EG 1143 Graphic Communication: 3 hours.
Three hours lecture. Orthographic projection, instrumental drawing, point, line, plane identities, computer assisted design and drafting using personal computers

EG 1443 Technology Graphics: 3 hours.
Two hours lecture. Two hours laboratory. The use of drawing to communicate ideas of manufacturing and maintenance in machining, electricity/electronics, welding, and hydraulics/pneumatics

EG 2990 Special Topics in Engineering Graphics: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

EG 4000 Directed Individual Study in Engineering Graphics: 1-6 hours.
Hours and credits to be arranged

EG 4990 Special Topics in Engineering Graphics: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

EG 6990 Special Topics in Engineering Graphics: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

EG 7000 Directed Individual Study in Engineering Graphics: 1-6 hours.
Hours and credits to be arranged

EG 8990 Special Topics in Engineering Graphics: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

Engineering Mechanics Courses

EM 2413 Engineering Mechanics I: 3 hours.
(Prerequisites: Grade of C or better in MA 1723 and PH 2213).Three hours lecture or three hours recitation with online content delivery. Concepts of forces, moments and other vector quantities; analysis of force systems; conditions of equilibrium; friction; centroids and moments of inertia

EM 2433 Engineering Mechanics II: 3 hours.
(Prerequisites:Grade of C or better in EM 2413 and MA 2733). Three hours lecture. Kinematics of particles and rigid bodies, kinetics of particles and rigid bodies using force-mass-acceleration, energy, momentum methods

EM 2990 Special Topics in Engineering Mechanics: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

EM 3213 Mechanics of Materials: 3 hours.
(Prerequisite:Grade of C or better in EM 2413 and MA 2733). Three hours lecture. Free body diagrams, equilibrium of simple structures; shear and bending moment diagrams; analysis of stress and strain; deflections of beams

EM 3313 Fluid Mechanics: 3 hours.
(Prerequisite: Grade of C or better in EM 2413 and MA 2733). Three hours lecture. Fluid statics; analysis of fluid motion using the continuity, momentum and energy relationships; introduction to viscous flows

EM 3413 Vibrations: 3 hours.
(Prerequisites:Grade of C or better in EM 2433, MA 3253 and MA 3113).Three hours lecture. Fundamentals of free vibration, energy methods; forced and damped vibration, single degree of freedom; two degrees of freedom

EM 4000 Directed Individual Study in Engineering Mechanics: 1-6 hours.
Hours and credits to be arranged

EM 4123 An Introduction to the Finite Element Method: 3 hours.
(Prerequisite: Consent of Instructor). Three hours lecture. Introduction to the mathematical theory, formulation, and computer implementation of the finite element method. App- lication to one-and two-dimensional problems in engineering mechanics

EM 4133 Mechanics of Composite Materials: 3 hours.
(Prerequisites: EM 3213 and MA 3253.) Three hours lecture. Stress, strain, constituative relations for anisotropic material, lamina properties, laminate properties, composite beams and plates

EM 4143 Engineering Design Optimization: 3 hours.
(Prerequisite:Consent of instructor) Three hours lecture. Introduction to optimality criteria and optimization techniques for solving constrained or unconstrained optimization problems. Sensitivity analysis and approximation. Computer application in optimization. Introduction to MDO. (Same as ASE 4553/6553 and IE 4743/6743)

EM 4213 Advanced Mechanics of Materials: 3 hours.
(Prerequisite: EM 3213). Three hours lecture. Stress, strain, stress-strain relationships, strain energy, failure theories, curved beams, unsymmetrical bending, shear center, torsion of noncircular sections, energy principles, Castigliano's theorem, inelastic behavior

EM 4990 Special Topics in Engineering Mechanics: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

EM 6123 An Introduction to the Finite Element Method: 3 hours.
(Prerequisite: Consent of Instructor). Three hours lecture. Introduction to the mathematical theory, formulation, and computer implementation of the finite element method. App- lication to one-and two-dimensional problems in engineering mechanics

EM 6133 Mechanics of Composite Materials: 3 hours.
(Prerequisites: EM 3213 and MA 3253.) Three hours lecture. Stress, strain, constituative relations for anisotropic material, lamina properties, laminate properties, composite beams and plates

EM 6143 Engineering Design Optimization: 3 hours.
(Prerequisite:Consent of instructor) Three hours lecture. Introduction to optimality criteria and optimization techniques for solving constrained or unconstrained optimization problems. Sensitivity analysis and approximation. Computer application in optimization. Introduction to MDO. (Same as ASE 4553/6553 and IE 4743/6743)

EM 6213 Advanced Mechanics of Materials: 3 hours.
(Prerequisite: EM 3213). Three hours lecture. Stress, strain, stress-strain relationships, strain energy, failure theories, curved beams, unsymmetrical bending, shear center, torsion of noncircular sections, energy principles, Castigliano's theorem, inelastic behavior

EM 6990 Special Topics in Engineering Mechanics: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

EM 7000 Directed Individual Study in Engineering Mechanics: 1-6 hours.
Hours and credits to be arranged

EM 8000 Thesis Research/ Thesis in Engineering Mechanics: 1-13 hours.
Hours and credits to be arranged

EM 8113 Theory of Continuous Media: 3 hours.
(Prerequisite: MA 3353 or consent of the instructor). Three hours lecture. An introduction to the general theory of continuous media and its application to the theories of elasticity and fluid mechanics

EM 8203 Applied Elasticity: 3 hours.
Three hours lecture. Analysis of stress and strain; stress-strain relations; bending and torsion of beams; stress functions; strain energy

EM 8213 Fracture Mechanics: 3 hours.
(Prerequsite: EM 3213 or consent of instructor). Three hours lecture. History of fracture and development of fracture mechanics principles. Linear elastic and elastic-plastic stress analysis of cracked bodies. ASTM standards and applications

EM 8313 Advanced Dynamics: 3 hours.
(Prerequisites: EM 2433 and MA 3253). Three hours lecture. Fundamental considerations, Hamilton's principle, Lagrange's equations, rigid body dynamics

EM 8323 Advanced Vibrations: 3 hours.
(Prerequisite: EM 3413). Three hours lecture. Oscillatory systems, matrix formulation by Lagrange's equations, natural modes of discrete and continuous systems, approximate methods, modal analysis

EM 8990 Special Topics in Engineering Mechanics: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

English Courses

EN 0003 Developmental English: 3 hours.
Emphasizes the use of standard American English. Offered only to students required to enroll in developmental studies; prerequisite to any English courses applicable to requirements

EN 0103 Basic English: 3 hours.
(Prerequisite: A score of 16 or below on the English section of the ACT). Three hours lecture. A study of grammar and mechanics as basic to composition, with emphasis on the sentence and the paragraph. Does not count toward any degree

EN 1001 First Year Seminar: 1 hour.
One hour lecture. First-year seminars explore a diverse array of topices that provide students with an opportunity to learn about a specific discipline from skilled faculty members

EN 1103 English Composition I: 3 hours.
(Prerequisite: A score of 17 or above on the English section of the ACT or a final grade of C or higher in EN 0103). Three hours lecture. A study of logical and rhetorical principles and organizational strategies that contribute to effective writing. Honors section available

EN 1111 English Studies: 1 hour.
One hour lecture. Introduction to English Studies: a survey of the profession, including disciplinary assumptions, research processes, sub-fields, and career opportunities

EN 1113 English Composition II: 3 hours.
(Prerequisite: EN 1103, 1163, or 1183). Three hours lecture. An expanded study of and practice in stylistics, logic, and research as contributions to analytical writing

EN 1163 Accelerated Composition I: 3 hours.
(Prerequisite: A score of 29 or above on the English section of the ACT or consent of the instructor). Three hours lecture. An expanded study of and practice in stylistics, logic, and research as contributions to expository writing, designed for students who exhibit command of basic rhetorical principles

EN 1173 Accelerated Composition II: 3 hours.
(Prerequisite: EN 1163 or an ACT sub-score in English of 28 or higher). Three hours lecture. An expanded study of and practice in stylistics, logic, and research as contributions to analytical writing, with emphasis on extensive study of diverse rhetorical models

EN 2203 Introduction to Literature: 3 hours.
(Prerequisite: Completion of freshman composition). (Not open to English majors or honors students who complete EN 1183 or 1193). Three hours lecture. The critical and appreciative study of masterpieces in various genres chosen from English and world literature

EN 2213 English Literature Before 1800: 3 hours.
(Prerequisite: Completion of freshman composition). Three hours lecture. A survey of English literature from the Medieval to the Neo-classical periods, including works by Shakespeare, Milton and Pope

EN 2223 English Literature After 1800: 3 hours.
(Prerequisite: Completion of freshman composition). Three hours lecture. A survey of English literature including the Romantic, Victorian, and Modernist periods

EN 2243 American Literature Before 1865: 3 hours.
(Prerequisite: Completion of freshman composition). Three hours lecture. A survey of American literature and culture, including letters, sermons, essays, fiction and poetry, from the fifteenth century through the antebellum period’s “American Renaissance

EN 2253 American Literature After 1865: 3 hours.
(Prerequisite: Completion of freshman composition). Three hours lecture. Survey of representative authors, texts, and periods that demonstrate the richness and diversity of American literature and culture after 1865

EN 2273 World Literature Before 1600: 3 hours.
(Prerequisite: Completion of freshman composition). Three hours lecture. Selected works from ancient times to 1600 in translation

EN 2283 World Literature After 1600: 3 hours.
(Prerequisite: Completion of freshman composition). Three hours lecture. Selected works since 1600, excluding literature of the U.S., Britain, and Ireland

EN 2363 Introduction to African American Literature: 3 hours.
Three hour lecture. (Prerequisites: EN 1103 or 1113 or their equivalent). An introductory course that examines the major authors and texts of the African American Literary Tradition. (Same as AAS 2363)

EN 2403 Introduction to the Study of Language: 3 hours.
Three hours lecture. Students will be introduced to the subfields of linguistics to answer questions they have about language and to provide evidence about language acquisition and use. (Same as AN 2403)

EN 2434 Literature and Film: 4 hours.
(Prerequisite: Completion of English composition requirements). Three hours lecture. One laboratory. Introduction to literary and cinematic techniques, methods of analysis, and structures

EN 2443 Introduction to Science Fiction: 3 hours.
(Prerequisite: Completion of English requirements of the student's major field). Three hours lecture. A study of major science fiction writers of the past two centuries, with emphasis on human experience in a technological society

EN 2503 Teaching Grammar: 3 hours.
(Prerequisite:Sophomore status). Three hour lecture. The study of English grammar and strategies used to teach grammar in modern classrooms

EN 2904 Introduction to Film: 4 hours.
Three hours lecture. Two hours lab. A basic introduction to the study of film language, history, and theory, emphasizing aesthetic, technological, and socio-cultural developments of film form. (Same as CO 2904 and ART 2904)

EN 2990 Special Topics in English: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

EN 3303 Creative Writing: 3 hours.
(Prerequisite: Completion of freshman composition). Three hours lecture. Basic techniques in writing fiction and poetry; meter and rhyme, metaphor and image, plot, characterization, dramatic detail

EN 3313 Writing for the Workplace: 3 hours.
Prerequisite: EN 1113 or equivalent. Three hours lecture. Advanced writing course focused on communication in the workplace, including correspondence, technical descriptions, instruction writing, proposals, and recommendation reports

EN 3414 Critical Writing and Research in Literary Studies: 4 hours.
(Prerequisite: twelve hours of English). Four hours lecture. An introduction to the application of critical theories and research methods in writing about literature, for English and English Education majors

EN 3423 Descriptive English Grammar: 3 hours.
(Prerequisite: Twelve hours of English). Three hours lecture. Advanced course in English grammar

EN 3513 Women and Literature: Selected Topics: 3 hours.
(Prerequisites: Completion of freshman composition). Three hours lecture. A study of literary works by or about women. Texts are selected according to theme, genre, and/or historical period.(Same as GS 3513)

EN 3523 Shakespeare and Film: 3 hours.
(Prerequisite:EN 1103 and EN 1113 or their equivalent). Three hours lecture.This course ofers a forcused study of Shakespeare on page and screen. Specific play and film adaptations are selected by the instructor

EN 3533 Selected Authors: 3 hours.
(Prerequisites:EN 1103 and EN 1113 or their equivalent). Three hours lecture. This course offers a focused study on the major works by selected authors. Authors and texts are selected by the instructor

EN 3803 Intermediate Poetry Writing: 3 hours.
(Prerequisite: EN 3303) Three hours lecture. An intermediate course in the craft and art of poetry writing, focusing on techniques such as lineation, formal strategies, and poetic language

EN 3903 Intermediate Fiction Writing: 3 hours.
(Prerequisite: EN 3303). Three hours lecture. An intermediate course in the craft and art of fiction writing, focusing on techniques such as setting, dialogue, and characterization

EN 4000 Directed Individual Study in English: 1-6 hours.
Hours and credits to be arranged

EN 4111 Portfolios and Reflective Writing: 1 hour.
(Prerequisite: Senior standing). One hour lecture. The study and practice of writing application letters/resumes and preparing academic portfolios

EN 4124 Topics in Film: 4 hours.
Three hours lecture. Two hours lab. Repeatable, under different subtitles, with advisor approval. An advanced investigation of specific topics in Film, Film History, Directors, Genre, and/or approaches to its production. Readings and discussions, supplemented by lectures/labs and film screenings. (Same as ART 4124/6124 and CO 4124/6124)

EN 4223 Principles of Legal Writing: 3 hours.
(Prerequisite:EN 1103 and EN 1113 or their equivalent and Junior standing or consent of instructor).Three hours lecture. Introduction to prose of the legal profession, emphasizing rhetorical strategy and style. Advanced composition, including work with contracts, letters, regulations, memoranda of law, and briefs

EN 4233 Composition Pedagogy: 3 hours.
(Prerequisite:EN 1113 or Consent of Instructor).Three hours lecture. Introduction to practices and debates in college compositon pedogogies. Develops practical strategies for instruction in composition;introduces historical and theoretical scholarship in rhetoric and composition

EN 4243 Writing Center Tutor Training: 3 hours.
(Prerequisite:Grade of B or better in EN 1113 and consent of instructor).Three hours lecture. Introduction to the practices and theories of college writing consultation in Writing Centers

EN 4303 Craft of Poetry: 3 hours.
(Prerequisite: EN 3803 or consent of instructor). (Graduate students may take EN 6303 for credit twice, even if they have already taken EN 4303 as undergraduates). Three hours lecture. The craft and practice of writing poetry

EN 4313 Craft of Fiction: 3 hours.
(Prerequisite: EN 3903 or consent of instructor). (Graduate students may take EN 6313 for credit twice, even if they have already taken EN 4313 as undergraduates). Three hours lecture. The craft and practice of writing fiction

EN 4323 Literary Criticism from Plato-Present: 3 hours.
(Prerequisite: Completion of English requirements in the student's major). Three hours lecture. A survey of literary criticism from Plato to the present

EN 4333 Southern Literature: 3 hours.
(Prerequisite: Completion of English requirements in the student's major). Three hours lecture. A survey of southern literature from the antebellum period to the "post southern" present. Features selected works representing the diverse literary heritage of the U.S. South

EN 4343 Studies in African American Literature: 3 hours.
(Prerequisite: Completion of English requirements in the student's major). Three hours lecture. A study of selected authors and/or topics in African American literature. (Same as AAS 4343)

EN 4353 Critical Theory Since 1900: 3 hours.
(Prerequisite: Completion of English requirements in the student's major). Three hours lecture. A study of major strategies of interpretation since 1900, including psychoanalysis, Marxism, structuralism, feminism, deconstruction

EN 4393 Postcolonial Literature and Theory: 3 hours.
(Prerequisite: Completion of English requirements in the student's major). Three hours lecture. A critical introduction to postcolonial studies, examining the literatures of colonized or previously colonized peoples and their diasporas. (Same as AAS 4393)

EN 4403 Introduction to Linguistics: 3 hours.
Three hours lecture. The descriptive and historical study of language; linguistic analysis and comparisons; language classification; language in its social and cultural setting. (Same as AN 4403/6403)

EN 4413 History of the English Language: 3 hours.
(Prerequisite: Twelve hours of English). Three hours lecture. The origin and development of the English language; past and ongoing changes in sounds and structure; influence of social history on language variation and change

EN 4433 Approaches to TESOL: 3 hours.
Three hours lecture. This course covers various approaches to language teaching, including course design, classroom management, and sociocultural and sociopolitical issues surrounding being a language teacher

EN 4443 English Syntax: 3 hours.
(Prerequisites: Either EN 4403/6403, AN 4403/6403, or Instructor Consent). Three hours lecture. Grammatical analysis of English with emphasis on pedagogical applications to teaching English as a foreign/second language

EN 4453 Methods in TESOL: 3 hours.
Three hours lecture. This course covers the various practical pedagogical approaches common in TESOL including methods for teaching reading, listening, speaking, and writing as well as communicative approaches

EN 4463 Studies in Second Language Acquisition: 3 hours.
(Prerequisite: EN 4403/6403 or consent of instructor). Three hours lecture. A survey of the major theories of language acquisition, concentrating on accounts of second language acquisition

EN 4473 Phonetics: 3 hours.
(Prerequisites: Either EN 4403/6403, AN 4403/6403, or Instructor Consent). Three hours lecture. This course focuses on the physical and linguistic aspects of speech sounds, including how they are produced, transcribed, measured, and perceived. (Same as PSY 4473/6473)

EN 4493 TESOL Practicum: 3 hours.
(Prerequisite:EN 4403/6403).Three hour practicum. A pedagogical practice class that focuses on the practical application of TESOL approaches, methods, and techniques

EN 4503 Shakespeare: 3 hours.
(Prerequisite: Completion of English requirements in the student's major). Three hours lecture. Shakespeare's plays through 1599

EN 4513 Shakespeare: 3 hours.
(Prerequisite: Completion of English requirements in the student's major). Three hours lecture. Shakespeare's plays from 1600

EN 4523 Chaucer: 3 hours.
(Prerequisite: Completion of English requirements in the student's major). Three hours lecture. Studies in the major works of Chaucer. Readings in Middle English

EN 4533 Milton: 3 hours.
(Prerequisite: Completion of English requirements in the student's major). Three hours lecture. The principal writings of Milton, including all of PARADISE LOST and PARADISE REGAINED, and some of the chief prose works

EN 4623 Language and Culture: 3 hours.
Three hours lecture. Examination of language as a part of culture, a source of knowledge about other aspects of culture, and a social behavior. (Same as AN 4623/6623 and SO 4623/6623)

EN 4633 Language and Society: 3 hours.
Three hours lecture. Examination of relationship between language and society. How language varies regionally and socially; people's use of and attitudes toward different ways of speaking. (Same as AN 4633/6633 and SO 4633/6633)

EN 4643 The Eighteenth-Century British Novel: 3 hours.
(Prerequisite: Completion of Twelve hours of English). Three hours lecture. A study of the early cultural and critical history of the novel, focusing on the novelists who invented and refined the form

EN 4653 The Nineteenth-Century British Novel: 3 hours.
(Prerequisite: Completion of English requirements in the student's major). Three hours lecture. A study of the major nineteenth-century British novelists

EN 4663 British and Irish Novel Since 1900: 3 hours.
(Prerequisite: Completion of English requirements in the student's major). Three hours lecture. A study of British and Irish novelists from Conrad and Woolf to Rushdie and Byatt, as well as literary movements including modernism, postmodernism, and postcolonialism

EN 4703 English Literature of the Sixteenth Century: 3 hours.
(Prerequisites: Completion of English requirements in the student's major). Study of the development of the English literary tradition, including works by Wyatt, Sidney, Spenser, Marlowe and others in their cultural and historical contexts

EN 4713 English Literature of the Seventeenth Century: 3 hours.
(Prerequisite: Completion of Twelve hours of English). Three hours lecture. Study of major works of poetry, prose, and drama, including works by Donne, Jonson, Wroth and others in their literary, cultural, and historical contexts

EN 4723 British Literature and Culture from 1600-1700: 3 hours.
(Perquisites: Completion of English requirements in the student's major). An exploration of the literature and culture of the Restoration and late seventeenth century. Covers a variety of genres

EN 4733 British Literature and Culture of the Eighteenth Century: 3 hours.
(Prerequisite: Completion of the English requirements in the student's major.). Three hours lecture. An exploration of important literary, political and cultural phenomena from the British eighteenth century. Covers a variety of genres

EN 4743 British Literature and Culture of the Romantic Period: 3 hours.
(Prerequisite: Completion of English requirements in the student's major). Three hours lecture. An exploration of literature (excluding poetry) and culture of the British Romantic period

EN 4803 Types of Drama Since 1900: 3 hours.
(Prerequisite: Completion of English requirements in the student's major). Three hours lecture. The development of modern American, British, and Continental drama since Ibsen

EN 4813 The World Novel Since 1900: 3 hours.
(Prerequisite: Completion of English requirements in the student's major). Three hours lecture. Major world novelist since 1900, excluding British, Irish, and American

EN 4823 Poetry Since 1900: 3 hours.
(Prerequisite: Completion of English requirements in the student's major). Three hours lecture. Chief American and British poets; their verse technique and their contribution to poetic art

EN 4833 The American Short Story: 3 hours.
(Prerequisite: Completion of English requirements in the student's major) Three hours lecture. A study of the American short story from Washington Irving to the present, as well as relevant literary movements

EN 4863 Romantic Poetry: 3 hours.
(Prerequisite: Completion of English requirements in the student's major). Three hours lecture. An intensive study of British Romantic poetry and poetics

EN 4883 Victorian Poets and Prose Writers: 3 hours.
(Prerequisite: Completion of English requirements in the student's major). Three hours lecture. Intensive study of Tennyson, Browning, Arnold, Swinburne, and other Victorian poets, along with some of the non-fiction prose of the period

EN 4893 American Literature to 1800: 3 hours.
(Prerequisite: Completion of English requirements in the student's major). Three hours lecture. Studies of topics in American literature from its beginnings to 1800

EN 4903 American Literature: 1800-1860: 3 hours.
(Prerequisite: Completion of English requirements in the student's major). Three hours lecture. Studies in Irving, Cooper, Poe, Hawthorne, the Transcendentalists, and Southern Humorists. This course cannot be taken before EN 2243

EN 4913 American Literature: 1860-1900: 3 hours.
(Prerequisite: Completion of English requirements in the student's major). Three hours lecture. Studies in Twain, Whitman, Dickinson, James, Crane, and others. This course cannot be taken before EN 2253

EN 4923 American Novel Since 1900: 3 hours.
(Prerequisite: Completion of English requirements in the student's major). Three hours lecture. A study of the American novel since Dreiser

EN 4924 Film Theory: 4 hours.
Three hours lecture. Two hours lab. This course will introduce students to major theoretical positions and modes of analysis used to understand the various frameworks in which to view, criticize, analyze, and (re)contextualize film. (Same as ART 4924 and CO 4924/6924)

EN 4933 Survey of Contemporary Literature: 3 hours.
(Prerequisite: Completion of English requirements in the student's major). Three hours lecture. Significant trends in European and American literature since the outbreak of World War II

EN 4943 Form and Theory of Fiction: 3 hours.
(Prerequisite: Completion of English requirements in the student's major). Three hours lecture. Theoretical aspects of fictional technique, genre, style; readings include novels, short stories, and writings about the craft of fiction. Recommended complement to creative writing courses

EN 4953 Form and Theory of Poetry: 3 hours.
(Prerequisite: Completion of English requirements in the student's major). Three hours lecture. Poetic theory; formal conventions, techniques, and innovations in the tradition of English and American poetry. Recommended complement to creative writing courses

EN 4990 Special Topics in English: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

EN 6013 Internship in Compositional Theory and the Teaching of College Writing: 3 hours.
(Prerequisite: Acceptance as a teaching assistant in the Department of English). Compositional theory in relation to teaching and evaluating traditional modes of writing, coordinated with at least twenty hours per week of supervised professional experience

EN 6124 Topics in Film: 4 hours.
Three hours lecture. Two hours lab. Repeatable, under different subtitles, with advisor approval. An advanced investigation of specific topics in Film, Film History, Directors, Genre, and/or approaches to its production. Readings and discussions, supplemented by lectures/labs and film screenings. (Same as ART 4124/6124 and CO 4124/6124)

EN 6223 Principles of Legal Writing: 3 hours.
(Prerequisite:EN 1103 and EN 1113 or their equivalent and Junior standing or consent of instructor).Three hours lecture. Introduction to prose of the legal profession, emphasizing rhetorical strategy and style. Advanced composition, including work with contracts, letters, regulations, memoranda of law, and briefs

EN 6233 Composition Pedagogy: 3 hours.
(Prerequisite:EN 1113 or Consent of Instructor).Three hours lecture. Introduction to practices and debates in college compositon pedogogies. Develops practical strategies for instruction in composition;introduces historical and theoretical scholarship in rhetoric and composition

EN 6243 Writing Center Tutor Training: 3 hours.
(Prerequisite:Grade of B or better in EN 1113 and consent of instructor).Three hours lecture. Introduction to the practices and theories of college writing consultation in Writing Centers

EN 6303 Craft of Poetry: 3 hours.
(Prerequisite: EN 3803 or consent of instructor). (Graduate students may take EN 6303 for credit twice, even if they have already taken EN 4303 as undergraduates). Three hours lecture. The craft and practice of writing poetry

EN 6313 Craft of Fiction: 3 hours.
(Prerequisite: EN 3903 or consent of instructor). (Graduate students may take EN 6313 for credit twice, even if they have already taken EN 4313 as undergraduates). Three hours lecture. The craft and practice of writing fiction

EN 6323 Literary Criticism from Plato-Present: 3 hours.
(Prerequisite: Completion of English requirements in the student's major). Three hours lecture. A survey of literary criticism from Plato to the present

EN 6333 Southern Literature: 3 hours.
(Prerequisite: Completion of English requirements in the student's major). Three hours lecture. A survey of southern literature from the antebellum period to the "post southern" present. Features selected works representing the diverse literary heritage of the U.S. South

EN 6343 African American Literature: 3 hours.
(Prerequisite: Completion of English requirements in the student's major). Three hours lecture. A study of selected authors and/or topics in African American literature. (Same as AAS 4343)

EN 6353 Critical Theory Since 1900: 3 hours.
(Prerequisite: Completion of English requirements in the student's major). Three hours lecture. A study of major strategies of interpretation since 1900, including psychoanalysis, Marxism, structuralism, feminism, deconstruction

EN 6393 Postcolonial Literature and Theory: 3 hours.
(Prerequisite: Completion of English requirements in the student's major). Three hours lecture. A critical introduction to postcolonial studies, examining the literatures of colonized or previously colonized peoples and their diasporas. (Same as AAS 4393)

EN 6403 Introduction to Linguistics: 3 hours.
Three hours lecture. The descriptive and historical study of language; linguistic analysis and comparisons; language classification; language in its social and cultural setting. (Same as AN 4403/6403)

EN 6413 History of the English Language: 3 hours.
(Prerequisite: Twelve hours of English). Three hours lecture. The origin and development of the English language; past and ongoing changes in sounds and structure; influence of social history on language variation and change

EN 6433 Approaches to TESOL: 3 hours.
Three hours lecture. This course covers various approaches to language teaching, including course design, classroom management, and sociocultural and sociopolitical issues surrounding being a language teacher

EN 6443 English Syntax: 3 hours.
(Prerequisites: Either EN 4403/6403, AN 4403/6403, or Instructor Consent). Three hours lecture. Grammatical analysis of English with emphasis on pedagogical applications to teaching English as a foreign/ second language

EN 6453 Methods in TESOL: 3 hours.
Three hours lecture. This course covers the various practical pedagogical approaches common in TESOL including methods for teaching reading, listening, speaking, and writing as well as communicative approaches

EN 6463 Studies in Second Language Acquisition: 3 hours.
(Prerequisite: EN 4403/6403 or consent of instructor). Three hours lecture. A survey of the major theories of language acquisition, concentrating on accounts of second language acquisition

EN 6473 Phonetics: 3 hours.
(Prerequisites: Either EN 4403/6403, AN 4403/6403, or Instructor Consent). Three hours lecture. This course focuses on the physical and linguistic aspects of speech sounds, including how they are produced, transcribed, measured, and perceived. (Same as PSY 4473/6473)

EN 6493 TESOL Practicum: 3 hours.
(Prerequisite:EN 4403/6403).Three hour practicum. A pedagogical practice class that focuses on the practical application of TESOL approaches, methods, and techniques

EN 6503 Shakespeare: 3 hours.
(Prerequisite: Completion of English requirements in the student's major). Three hours lecture. Shakespeare's plays through 1599

EN 6513 Shakespeare: 3 hours.
(Prerequisite: Completion of English requirements in the student's major). Three hours lecture. Shakespeare's plays from 1600

EN 6523 Chaucer: 3 hours.
(Prerequisite: Completion of English requirements in the student's major). Three hours lecture. Studies in the major works of Chaucer. Readings in Middle English

EN 6533 Milton: 3 hours.
(Prerequisite: Completion of English requirements in the student's major). Three hours lecture. The principal writings of Milton, including all of PARADISE LOST and PARADISE REGAINED, and some of the chief prose works

EN 6623 Language and Culture: 3 hours.
Three hours lecture. Examination of language as a part of culture, a source of knowledge about other aspects of culture, and a social behavior. (Same as AN 4623/6623 and SO 4623/6623)

EN 6633 Language and Society: 3 hours.
Three hours lecture. Examination of relationship between language and society. How language varies regionally and socially; people's use of and attitudes toward different ways of speaking. (Same as AN 4633/6633 and SO 4633/6633)

EN 6643 The Eighteenth-Century British Novel: 3 hours.
(Prerequisite: Completion of Twelve hours of English). Three hours lecture. A study of the early cultural and critical history of the novel, focusing on the novelists who invented and refined the form

EN 6653 The Nineteenth-Century British Novel: 3 hours.
(Prerequisite: Completion of English requirements in the student's major). Three hours lecture. A study of the major nineteenth-century British novelists

EN 6663 British and Irish Novel Since 1900: 3 hours.
(Prerequisite: Completion of English requirements in the student's major). Three hours lecture. A study of British and Irish novelists from Conrad and Woolf to Rushdie and Byatt, as well as literary movements including modernism, postmodernism, and postcolonialism

EN 6703 English Literature of the Sixteenth-Century: 3 hours.
(Prerequisites: Completion of English requirements in the student's major). Study of the development of the English literary tradition, including works by Wyatt, Sidney, Spenser, Marlowe and others in their cultural and historical contexts

EN 6713 English Literature of the Seventeenth-Century: 3 hours.
(Prerequisite: Completion of Twelve hours of English). Three hours lecture. Study of major works of poetry, prose, and drama, including works by Donne, Jonson, Wroth and others in their literary, cultural, and historical contexts

EN 6723 British Literature and Culture from 1600-1700: 3 hours.
(Perquisites: Completion of English requirements in the student's major). An exploration of the literature and culture of the Restoration and late seventeenth century. Covers a variety of genres

EN 6733 British Literature and Culture of the Eighteenth-Century: 3 hours.
(Prerequisite: Completion of the English requirements in the student's major.). Three hours lecture. An exploration of important literary, political and cultural phenomena from the British eighteenth century. Covers a variety of genres

EN 6743 British Literature and Culture of the Romantic Period: 3 hours.
(Prerequisite: Completion of English requirements in the student's major). Three hours lecture. An exploration of literature (excluding poetry) and culture of the British Romantic period

EN 6746 British Literature and Culture of the Romantic Period: 3 hours.

EN 6803 Types of Drama Since 1900: 3 hours.
(Prerequisite: Completion of English requirements in the student's major). Three hours lecture. The development of modern American, British, and Continental drama since Ibsen

EN 6813 The World Novel Since 1900: 3 hours.
(Prerequisite: Completion of English requirements in the student's major). Three hours lecture. Major world novelist since 1900, excluding British, Irish, and American

EN 6823 Poetry Since 1900: 3 hours.
(Prerequisite: Completion of English requirements in the student's major). Three hours lecture. Chief American and British poets; their verse technique and their contribution to poetic art

EN 6833 The American Short Story: 3 hours.
(Prerequisite: Completion of English requirements in the student's major) Three hours lecture. A study of the American short story from Washington Irving to the present, as well as relevant literary movements

EN 6863 Romantic Poetry: 3 hours.
(Prerequisite: Completion of English requirements in the student's major). Three hours lecture. An intensive study of British Romantic poetry and poetics

EN 6883 Victorian Poets and Prose Writers: 3 hours.
(Prerequisite: Completion of English requirements in the student's major). Three hours lecture. Intensive study of Tennyson, Browning, Arnold, Swinburne, and other Victorian poets, along with some of the non-fiction prose of the period

EN 6893 American Literature to 1800: 3 hours.
(Prerequisite: Completion of English requirements in the student's major). Three hours lecture. Studies of topics in American literature from its beginnings to 1800

EN 6903 American Literature: 1800-1860: 3 hours.
(Prerequisite: Completion of English requirements in the student's major). Three hours lecture. Studies in Irving, Cooper, Poe, Hawthorne, the Transcendentalists, and Southern Humorists. This course cannot be taken before EN 2243

EN 6913 American Literature: 1860-1900: 3 hours.
(Prerequisite: Completion of English requirements in the student's major). Three hours lecture. Studies in Twain, Whitman, Dickinson, James, Crane, and others. This course cannot be taken before EN 2253

EN 6923 American Novel Since 1900: 3 hours.
(Prerequisite: Completion of English requirements in the student's major). Three hours lecture. A study of the American novel since Dreiser

EN 6924 Film Theory: 4 hours.
Three hours lecture. Two hours lab. This course will introduce students to major theoretical positions and modes of analysis used to understand the various frameworks in which to view, criticize, analyze, and (re)contextualize film. (Same as ART 4924 and CO 4924/6924)

EN 6933 Survey of Contemporary Literature: 3 hours.
(Prerequisite: Completion of English requirements in the student's major). Three hours lecture. Significant trends in European and American literature since the outbreak of World War II

EN 6943 Form and Theory of Fiction: 3 hours.
(Prerequisite: Completion of English requirements in the student's major). Three hours lecture. Theoretical aspects of fictional technique, genre, style; readings include novels, short stories, and writings about the craft of fiction. Recommended complement to creative writing courses

EN 6953 Form and Theory of Poetry: 3 hours.
(Prerequisite: Completion of English requirements in the student's major). Three hours lecture. Poetic theory; formal conventions, techniques, and innovations in the tradition of English and American poetry. Recommended complement to creative writing courses

EN 6990 Special Topics in English: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

EN 7000 Directed Individual Study in English: 1-6 hours.
Hours and credits to be arranged

EN 8000 Thesis Research/ Thesis in English: 1-13 hours.
Hours and credits to be arranged

EN 8103 Graduate Research in English: 3 hours.
Three hours lecture. A required introduction ot fields of study and to scholarly research and writing in English lang- uage and literature

EN 8333 Studies in Southern Literature: 3 hours.
Three hours lecture. Studies in the literature of the U.S. South

EN 8513 Studies in English Literature to 1485: 3 hours.

EN 8523 Studies in English Literature 1485-1660: 3 hours.

EN 8533 Studies in English Literature 1660-1832: 3 hours.

EN 8543 Studies in English Literature 1832-1900: 3 hours.

EN 8553 Studies in American Literature to the Civil War: 3 hours.

EN 8563 Studies in American Literature from Civil War-1914: 3 hours.

EN 8573 Studies in Literature Since 1900: 3 hours.

EN 8583 Selected Topics in Language and Literature: 3 hours.

EN 8593 Studies in Post-Colonial Literatures: 3 hours.
Three hours lecture. Studies in the literatures of the English-speaking world, excluding Great Britain and the United States

EN 8990 Special Topics in English: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

Engineering Education Courses

ENE 7000 Directed Individual Study in Engineering Education: 1-6 hours.
Hours and credits to be arranged

ENE 8003 Foundations in Engineering Education: 3 hours.
(Prerequisite: Graduate standing). Three hours lecture. An examination of engineering education principles through relevant literature and current topics. Focus on theories of engineering education learning and design

ENE 8303 Pedagogy & Assessment in Engineering Education: 3 hours.
(Prerequisite: graduate standing and consent of the instructor). Three hours lecture. Assessment issues and skills important for engineering faculty, including strengths and weakness of a variety of quantitative and qualitative assessment strategies. Assessment in course design, ABET engineering accreditation criteria and procedures

ENE 8703 Design in Engineering Education & Practice: 3 hours.
(Prerequisites: ENE 8003 and consent of the instructor). Three hours lecture. An examination of the nature of design and relative cognitive theories that aid in understanding how people learn and do design

ENE 8990 Special Topics in Engineering Education: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years.)

ENE 9000 Dissertation Research /Dissertation in Engineering Education: 1-13 hours.
Hours and credits to be arranged

Environmental Science Courses

ENS 2103 Introduction to Environmental Science: 3 hours.
Three hours lecture. A survey course to acquaint the beginning student with the various issues and disciplinary con- tributions regarding environmental science

ENS 4000 Directed Individual Study in Environmental Science: 1-6 hours.
Hours and credits to be arranged

ENS 4102 Practicum: 2 hours.
(Prerequisite: Permission of ES advisor). A directed field experience of an assigned environmental problem and an associated weekly seminar

Exercise Physiology Courses

EP 2013 Fundamentals of Kinesiology: 3 hours.
Three hours lecture. The course introduces the history of exercise science and examines the academic disciplines and professions comprising exercise science and kinesiology

EP 2990 Special Topics in Exercise Physiology: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

EP 3183 Exercise Psychology: 3 hours.
Three hours lecture. This course will explore the theory and research related to psychological and sociological perspectives of physical activity and how exercise may impact the individual's psychosocial health and behavior

EP 3233 Anatomical Kinesiology: 3 hours.
Three hours lecture. A functional account of body structure, analysis of human movement and related injury mechanisms

EP 3304 Exercise Physiology: 4 hours.
(Prerequisite: BIO 1004 or BIO 3014 and CH 1043 or CH 1213). Three hours lecture.Two hours laboratory. Examines physiological systems central to exercise performance, interrelationships of those systems during exercise, and adaptations of the human body during both acute and chronic exercise

EP 3613 Exercise Electrocardiography: 3 hours.
(Prerequisite: BIO 1004 or BIO 3014). Three hours lecture. Basic and intermediate electrocardiography including cardiac function, lead systems, rate, rhythm, axis, infarction, ischemia, hypertrophy and effects of cardiovascular drugs and exercise on the ECG

EP 3623 Exercise Physiology II: 3 hours.
(Prerequisite: PE 3303). Three hours lecture. This course examines the cardiovascular, respiratory, endocrine, immunologic, and osteogenic aspects of physiology and their application to acute and chronic exercise throughout the lifespan

EP 3643 Applied Anatomy and Pathophysiology: 3 hours.
(Prerequisites: BIO 1004 or BIO 3004). Three hours lecture. Anatomical foundation of the human body with related pathophysiology of the cardiovascular, peripheral and central nervous system, and musculoskeletal disease states

EP 3803 Advanced Exercise Physiology: 3 hours.
(Prerequisite: EP 3304). Three hours lecture. An examination of the physiological basis for human movement and exercise with emphasis of the cardiorespiratory systems and application to the rehabilitation setting

EP 4000 Directed Individual Study in Exercise Physiology: 1-9 hours.
Hours and credits to be arranged

EP 4113 Fitness Programs and Testing Procedures: 3 hours.
(Prerequisite: EP 3304).Two hours lecture. Two hours laboratory. Provides study of and practice in conducting adult fitness programs and fitness testing procedures

EP 4123 Aging and Physical Activity: 3 hours.
(Prerequisites: EP 3304).Three hours lecture. The effects on normative aging process on homeostatic mechanisms and how these changes relate to exercise and sport performance in later life

EP 4133 Exercise Programs for Clinical Populations: 3 hours.
(Prerequisite: EP 3304). Three hours lecture. This course describes the methods of prescribing exercise programs for individuals with medical conditions

EP 4143 Aging and Disability: 3 hours.
(Prerequisites: EP 4123).Three hours lecture. An examination of the disablement process chronic diseases, and aging. Issues and implications of disablement are discussed

EP 4153 Training Techniques for Exercise and Sport: 3 hours.
(Prerequisite: EP 3304). Three hours lecture. Training techniques used for exercise and sport and their acute and chronic effects

EP 4183 Exercise and Weight Control: 3 hours.
(Prerequisite: EP 3304). Three hours lecture. The course describes the relationship between physical activity and nutrition for the maintenance of ideal body weight and optimal health throughout life

EP 4504 Mechanical Analysis of Movement: 4 hours.
(Prerequisite: EP 3233). Three hours lecture. Two hours lab. Overview of biomechanical principles and applications to the musculoskeletal system with an emphasis on the clinical setting for the treatment and rehabilitation of orthopedic injuries

EP 4603 Physical Activity Epidemiology: 3 hours.
(Prerequisite:EP 3304). Three hour lecture. Survey of the health-related aspects of exercise, physical activity and physical fitness from the perspective of epidemiology. Biological mechanisms for healthy adaptations to physical activity are addressed. The behavioral determinants of physical activity and regular participation in exercise are reviewed

EP 4703 Neural Control of Human Movement: 3 hours.
(Prerequisite:BIO 1004 or BIO 3014;EP 3643) Three hours lecture. Overview of the neural processes associated with human movement with the major focus being the mechanistic control of coordinated movement

EP 4814 Exercise Science Internship: 4 hours.
(Prerequisites: senior status, completion of at least 12 of 15 hours within student's concentration, and receive both advisor and internship coordinator approval). A supervised observation and teaching experience in an exercise science setting

EP 4990 Special Topics in Exercise Physiology: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

EP 6153 Training Techniques for Exercise and Sport: 3 hours.
(Prerequisite: EP 3304). Three hours lecture. Training techniques used for exercise and sport and their acute and chronic effects

EP 6990 Special Topics in Exercise Physiology: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

EP 7000 Directed Individual Study in Exercise Physiology: 1-9 hours.
Hours and credit to be arranged

EP 8203 Advanced Exercise Physiology: 3 hours.
Two hours lecture. Two hours laboratory. Overview of major organ systems and cellular metabolism during exercise; physiological aspects of fatigue and factors influencing physical working capacity and performance; laboratory investigation/demonstration

EP 8243 Cardiorespiratory Exercise Physiology: 3 hours.
(Prerequisite: EP 3304 or equivalent).Three hours lecture. Advanced principles of cardiovascular and respiratory physiology,with special emphasis on the physiological responses of these systems to acute and chronic exercise

EP 8253 Doping and Supplement Use in Sports: 3 hours.
(Prerequisite: EP 3304 or equivalent, or consent of instructor). Three hours lecture. Examination of the pharmacological and nutritional agents used to enhance muscular development and athletic performance. Examination of commonly abused recreational drugs

EP 8263 Exercise Metabolism: 3 hours.
(Prerequisite:EP 3304) Three hour lecture. An advanced review of exercise metabolism with special emphasis on aerobic processes during muscular effort

EP 8283 Environmental Exercise Physiology: 3 hours.
(Prerequisite: EP 3304). Three hours lecture.Advanced principles and applications in exercise physiology including responses to acute exercise and chronic training in the heat, cold, and at high and low pressures

EP 8303 Heart/Lung Rehabilitation: 3 hours.
(Prerequisites: EP 3304 or equivalent). Three hours lecture. The physiological basis of cardiopulmonary rehabilitation theory and practice

EP 8443 Neuromuscular Mechanisms in Exercise: 3 hours.
(Prerequisite: EP 3304 or equivalent). Three hours lecture. Overview of the neural processes associated with movement with the major focus being the adaptation of the human muscular system to exercise

EP 8453 Biomechanics of Human Movement: 3 hours.
(Prerequisite :EP 3233 or equivalent). Three hours lecture. Overview of biomechanical principles/laws and their application to human movements (sport techniques and daily activities)

EP 8503 Occupational Physiology: 3 hours.
Three hours lecture. Evaluation of physiological, biomechanical, and ergonomic demands and responses to occupational demands, including task design and evaluation, employee selection and placement, and work-rest scheduling

EP 8990 Special Topics in Exercise Physiology: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

Entomology Plant Pathology Courses

EPP 1001 First Year Experience: 1 hour.

EPP 2213 Introduction to Insects: 3 hours.
Two hours lecture. Two hours laboratory. Introduction to structure, function, ecology, taxonomy and evolution of the largest and most diverse group of organisms and how they impact humans and their environment

EPP 2990 Special Topics in Entomology and Plant Pathology: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

EPP 3124 Forest Pest Management: 4 hours.
Three hours lecture. Three hours laboratory. Study of the biology, damage, survey techniques, and control of forest diseases and insects. Pest management in southern forests will be emphasized. Fall semester

EPP 3423 Ornamental and Turfgrass Insects: 3 hours.
Two hours lecture, two hours lab. Study of the life history, damage, economic importance and control strategies of pests on ornamental plants and turfgrass

EPP 4000 Directed Individual Study in Entomology and Plant Pathology: 1-6 hours.
Hours and credits to be arranged

EPP 4113 Principles of Plant Pathology: 3 hours.
(Prerequisites: BIO 1134 and Bio 1144 or consent of instructor). Two hours lecture. Three hours laboratory. Acquiring a general knowledge of the principles of plant pathology through a study of selected plant diseases of economic importance for Mississippi

EPP 4152 Advanced Fungal Taxonomy-Fungi Imperfecti: 2 hours.
(Prerequisite:Consent of Instructor). One hour lecture. Two hours laboratory. Methods and practice in identification of taxon-fungi imperfecti in different ecosystems. Includes conventional macroscopic and microscopic techniques for identification compared with molecular methods

EPP 4154 General Entomology: 4 hours.
Two hours lecture. Four hours laboratory. Fall semester. Biology of insects including morphology, physiology, development, ecology and emphasis on classification of orders and common families

EPP 4163 Plant Disease Management: 3 hours.
(Prerequisite: EPP 4113/6113 or consent of instructor). Two hours lecture. Three hours laboratory. Techniques and fundamentals of plant disease management. Disease dynamics related to management, avoidance, exclusion, eradication of pathogens; principles of plant protection, spraying techniques; biological control. Spring semester

EPP 4164 Insect Taxonomy: 4 hours.
(Prerequisite: EPP 4154). Two hours lecture. Six hours laboratory. Spring semester. Advanced study of insect classification

EPP 4173 Medical and Veterinary Entomology: 3 hours.
(Prerequisite:EPP 4154 or consent of instructor). Two hours lecture. Two hour laboratory. Exxentials of the biology, disease relationships, surveillance, and control of arthropods parastitic on humans and animals in the context of clincal and preventive medicine

EPP 4214 Diseases of Crops: 4 hours.
(Prerequisites: EPP 3113 or 3124). Three hours lecture. Two hours laboratory. Fundamentals and practical aspects of identification and control of selected diseases of crop plants grown in the southern U.S. Spring semester

EPP 4234 Field Crop Insects: 4 hours.
(Prerequisite: EPP 2213 or 4154). Three hours lecture. Two hours laboratory. Fall semester. Recognition, biology, distribution, damage, economic importance and methods of control of insect pests of agronomic and horticultural crops

EPP 4244 Aquatic Entomology: 4 hours.
(Prerequisites: EPP 4154 or instructors approval). Three hours lecture. Two hours laboratory. Study of basic biological and ecological principles important to aquatic insects and related arthropods, including life histories, evolutionary adaptations, community and species and identification

EPP 4254 Introduction to Mycology: 4 hours.
(Prerequisite: BIO 1134 or consent of instructor). Two hours lecture. Four hours laboratory. Subjects include fungal structures, function and physiology, reproduction, genetics, emphasis in taxonomy and influence of reproductive stages of Ascomycetes, Basidiomycetes on plant and forest ecosystems

EPP 4263 Principles of Insect Pest Management: 3 hours.
Two hours lecture. Two hours laboratory. Discussion of pest management concepts, insect control methods, sampling, and pest management systems. Laboratory involves sampling, calibration and other exercises related to pest management

EPP 4264 Advanced Mycology: 4 hours.
(Prerequisite: BIO 1134 or consent of instructor). Two hours lecture. Four hours laboratory. Subjects include fungal structures, function and physiology, reproduction, genetics, and taxonomy of Oomycota, Chytridiomycota, and Zygomycota (Glomeromycota) and other phyla on plant and forest ecosystems

EPP 4313 Forensic Entomology: 3 hours.
Two hours lecture. Two hours laboratory. Introduction to the identification and ecology of insects and other arthropods associated with corpses/carrion and related materials in the context of forensic science

EPP 4335 Anatomy and Physiology of Insects: 5 hours.
(Prerequisite: EPP 4154). Four hours lecture. Three hours laboratory. Spring semester. Introduction to the basic principles of structure and function of insect organ systems from a comparative and evolutionary viewpoint. (Same as PHY 6335)

EPP 4523 Turfgrass Diseases: 3 hours.
(Prerequisite: EPP 3113 or 3124) Two hours lecture Three hours laboratory. Study of the life cycle, damage, economic importance and control startegies of turfgrass diseases

EPP 4543 Toxicology and Insecticide Chemistry: 3 hours.
(Prerequisite: Organic Chemistry). Two hours lecture. Two hours laboratory. Spring semester. Chemistry, toxicity and mode of action of major groups of insecticides. Laboratory; bioassay methods, insecticide interactions, calculations

EPP 4613 Forensic Entomolgy: 3 hours.
Two hours lecture. Two hours Laboratory. Introduction to the identification and ecology of insects and other arthropods associated with corpses/carrion and related materials in the context of forensic science

EPP 4990 Special Topics in Entomology and Plant Pathology: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

EPP 6113 Principles of Plant Pathology: 3 hours.
(Prerequisites: BIO 1134 and Bio 1144 or consent of instructor). Two hours lecture. Three hours laboratory. Acquiring a general knowledge of the principles of plant pathology through a study of selected plant diseases of economic importance for Mississippi

EPP 6152 Advanced Fungal Taxonomy-Fungi Imperfecti: 2 hours.
(Prerequisite:Consent of Instructor). One hour lecture. Two hours laboratory. Methods and practice in identification of taxon-fungi imperfecti in different ecosystems. Includes conventional macroscopic and microscopic techniques for identification compared with molecular methods

EPP 6154 General Entomology: 4 hours.
Two hours lecture. Four hours laboratory. Fall semester. Biology of insects including morphology, physiology, development, ecology and emphasis on classification of orders and common families

EPP 6162 Advanced Fungal Taxonomy-Ascomycetes: 2 hours.
(Prerequisite: Consent of Instructor).One hour lecture. Two hours laboratory.Methods and practice in identification of taxon-ascomycetes in different ecosystems. Includes conventional macroscopic and microscopic techniques for identification compared with molecular methods

EPP 6163 Plant Disease Management: 3 hours.
(Prerequisite: EPP 4113/6113 or consent of instructor). Two hours lecture. Three hours laboratory. Techniques and fundamentals of plant disease management. Disease dynamics related to management, avoidance, exclusion, eradication of pathogens; principles of plant protection, spraying techniques; biological control. Spring semester

EPP 6164 Insect Taxonomy: 4 hours.
(Prerequisite: EPP 4154). Two hours lecture. Six hours laboratory. Spring semester. Advanced study of insect classification

EPP 6172 Advanced Fungal Taxonomy-Fleshy Basidiomycetes: 2 hours.
(Prerequisite: Consent of Instructor). One hour lecture. Two hours laboratory. Methods and practice in identification of taxon-basidiomycetes in different ecosystems.Includes conventional mascroscopic and microscopic techniques for identification compared with molecular methods

EPP 6173 Medical and Veterinary Entomology: 3 hours.
(Prerequisite:EPP 4154 or consent of instructor). Two hours lecture. Two hour laboratory. Exxentials of the biology, disease relationships, surveillance, and control of arthropods parastitic on humans and animals in the context of clincal and preventive medicine

EPP 6182 Advanced Fungal Taxonomy-Oomycetes and Zygomycetes: 2 hours.
(Prerequisites: Consent of Instructor). One hour lecture. Two hour laboratory. Methods and practice in identification of taxon-oomycetes and zygomycetes in different ecosystems. Includes conventional macroscopic and microscopic techniques for identification compared with molecular methods

EPP 6214 Diseases of Crops: 4 hours.
(Prerequisites: EPP 3113 or 3124). Three hours lecture. Two hours laboratory. Fundamentals and practical aspects of identification and control of selected diseases of crop plants grown in the southern U.S. Spring semester

EPP 6234 Field Crop Insects: 4 hours.
(Prerequisite: EPP 2213 or 4154). Three hours lecture. Two hours laboratory. Fall semester. Recognition, biology, distribution, damage, economic importance and methods of control of insect pests of agronomic and horticultural crops

EPP 6244 Aquatic Entomology: 4 hours.
(Prerequisites: EPP 4154 or instructors approval). Three hours lecture. Two hours laboratory. Study of basic biological and ecological principles important to aquatic insects and related arthropods, including life histories, evolutionary adaptations, community and species and identification

EPP 6254 Introduction to Mycology: 4 hours.
(Prerequisite: BIO 1134 or consent of instructor). Two hours lecture. Four hours laboratory. Subjects include fungal structures, function and physiology, reproduction, genetics, emphasis in taxonomy and influence of reproductive stages of Ascomycetes, Basidiomycetes on plant and forest ecosystems

EPP 6263 Principles of Insect Pest Management: 3 hours.
Two hours lecture. Two hours laboratory. Discussion of pest management concepts, insect control methods, sampling, and pest management systems. Laboratory involves sampling, calibration and other exercises related to pest management

EPP 6264 Advanced Mycology: 4 hours.
(Prerequisite: BIO 1134 or consent of instructor). Two hours lecture. Four hours laboratory. Subjects include fungal structures, function and physiology, reproduction, genetics, and taxonomy of Oomycota, Chytridiomycota, and Zygomycota (Glomeromycota) and other phyla on plant and forest ecosystems

EPP 6313 Forensic Entomology: 3 hours.
Two hours lecture. Two hours laboratory. Introduction to the identification and ecology of insects and other arthropods associated with corpses/carrion and related materials in the context of forensic science

EPP 6335 Anatomy and Physiology of Insects: 5 hours.
(Prerequisite: EPP 4154). Four hours lecture. Three hours laboratory. Spring semester. Introduction to the basic principles of structure and function of insect organ systems from a comparative and evolutionary viewpoint. (Same as PHY 6335)

EPP 6523 Turfgrass Diseases: 3 hours.
(Prerequisite: EPP 3113 or 3124) Two hours lecture Three hours laboratory. Study of the life cycle, damage, economic importance and control startegies of turfgrass diseases

EPP 6543 Toxicology and Insecticide Chemistry: 3 hours.
(Prerequisite: Organic Chemistry). Two hours lecture. Two hours laboratory. Spring semester. Chemistry, toxicity and mode of action of major groups of insecticides. Laboratory; bioassay methods, insecticide interactions, calculations

EPP 6613 Forensic Entomology: 3 hours.
Two hours lecture. Two hours Laboratory. Introduction to the identification and ecology of insects and other arthropods associated with corpses/carrion and related materials in the context of forensic science

EPP 6990 Special Topics in Entomology and Plant Pathology: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

EPP 7000 Directed Individual Study in Entomology and Plant Pathology: 1-6 hours.
Hours and credits to be arranged

EPP 8000 Thesis Research/ Thesis in Entomology and Plant Pathology: 1-13 hours.
Thesis Research/Thesis. Hours and credits to be arranged

EPP 8111 Seminar: 1 hour.
Consideration of recent advances and problems in Entomology and Plant Pathology; student participation, general discussion

EPP 8113 Plant Nematology: 3 hours.
(Prerequisite: EPP 3113). Two hours lecture. Three hours laboratory. Basic morphology, taxonomy, and nomenclature; discussion of plant pathogenic general, symptomatology, methods of isolation, control methods, and interrelationship of nematodes to other plant pathogens. Fall semester, even years

EPP 8121 Seminar: 1 hour.
Consideration of recent advances and problems in Entomology and Plant Pathology; student participation, general discussion

EPP 8123 Plant Virology: 3 hours.
(Prerequisite: EPP 4133/6133 or equivalent). Two hours lecture. Three hours laboratory. Morphology and structure of infectious entity; characteristics of plant virus groups including symptomatology, transmission, vectors, etc. Methods of assay and purification. Spring semester, even years

EPP 8133 Plant Bacteriology: 3 hours.
(Prerequisite:EPP 4113,EPP 6133 or consent of instructor). Two hours lecture. Three hours Laboratory. Morphology, biology and taxonomy of plant-associated bacteria and physio-biochemical and molecular mechanisms involved in their interactions with plants; development and management of plant bacterial diseases

EPP 8143 Advanced Plant Pathology I: 3 hours.
(Prerequisite: EPP 3113). Three hours lecture. The dynamic nature of disease. Genetics and variability of the major groups of plant pathogens. Epidemiology. Genetics of the host-parasitic interaction. Fall semesters

EPP 8144 Transmission Electro Microscopy: 4 hours.
(Prerequisite:Consent of Instructor). One hour lecture. Six hours laboratory. Introduction to TEM including life sciences (tissue) and engineering (crystalline materials) topics. (Same as ME 8144)

EPP 8173 Clinical Plant Pathology: 3 hours.
(Prerequisites: EPP 3113 and EPP 4114). Two four-hour laboratories. Clinical techniques, procedures, and experience in diagnosing plant diseases in the laboratory and field. Covers diseases caused by bacteria, fungi, MLO, nematodes, unfavorable environment and viruses. Summer

EPP 8223 Scanning Electron Microscopy: 3 hours.
(Prerequisite: Graduate Student, consent of instructor). Two hours lecture. Three hours laboratory . Fall semester. Introduction to scanning electron microscopy and associated techniques

EPP 8253 Advanced Plant Pathology II: 3 hours.
(Prerequisites: EPP 4113/6113, BIO 4214/6214, or consent of instructor). Three hours lecture. Infection processes, weapons utilized by pathogens in attack, and resultant alterations in ultrastructure, function and metabolism

EPP 8263 Insect Rearing: Principles and Procedures: 3 hours.
(Prerequisite: EPP 2213, EPP 4154, or instructor permission.) Two hours lecture. Two hours laboratory. Principles and procedures for hearing high quality insects including safety, genetics environments, diets, diet contamination, disease, and quality control

EPP 8272 Empirical Research in Theory and Practice: 2 hours.
Two hours lecture. Introduction to the nature, process, and societal role of research; logical basis, role of chance, researcher attributes, grantsmanship, publication, ethics, and public policy

EPP 8333 Advanced Toxicology: 3 hours.
(Prerequisite: EPP 4543. Three hours lecture. Fall semester. Physiological and biochemical actions of pesticides and therapeutic drugs. Pesticide metabolism and resistance. Insecticide synergism. Natural toxins and venoms. (Same as PHY 8333)

EPP 8483 Ecological Genetics: 3 hours.
(Prerequisites: PO 3103 or equivalent and BIO 4113/6113 or consent of instructor). Three hours lecture. Spring semester, odd-numbered years. Introduction to the application of genetic methods and theory to the study of adaptation in natural populations. (Same as GNS 8483)

EPP 8624 Population Ecology of Insects: 4 hours.
(Prerequisite:A course in general ecology) Three hours lecture. Two hours laboratory. Effects of abiotic and biotic factors on distribution and population dynamics of insects mediated through taxis, dispersal, migration, diapause, circadian rhythm,phenology, natality/mortality, and developmental rate

EPP 8990 Special Topics in Entomology and Plant Pathology: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

EPP 9000 Dissertation Research /Dissertation in Entomology and Plant Pathology: 1-13 hours.
Hours and credits to be arranged

Educational Psychology Courses

EPY 1001 First Year Seminar: 1 hour.
One hour lecture. First-year seminars explore a diverse arrary of topics that provide students with an opportunity to learn about a specific discipline from skilled faculty members

EPY 2513 Human Growth and Development: 3 hours.
Three hours lecture. Psychological principles in the scientific study of people from conception to death; major theories of human growth and development and application in practical settings; biological, cognitive, and psychosocial perspectives of change and/or continuity throughout the life span

EPY 2990 Special Topics in Educational Psychology: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

EPY 3063 Psychology of Individual Differences and Exceptional Ability: 3 hours.
Three hours lecture. Individual differences and exceptional ability in children/youth that deviate from norm in physical, mental, emotional, and social characteristics. Definitions, etiology, identification, learning strategies, application

EPY 3143 Human Development and Learning Strategies in Education: 3 hours.
(Prerequisities: PSY 1013 and admission to Teacher Education or consent of department head). Three hours lecture. A study of developmental perspectivies of learning with emphasis on teaching

EPY 3253 Evaluating Learning: 3 hours.
(Prerequisite: Admission to teacher education). Three hours lecture. A study of instructional evaluation for the purpose of assessing individual pupil progress and general effectiveness of instruction

EPY 3503 Principles of Educational Psychology: 3 hours.
Three hours lecture. Application of psychological principles to the educational process; topics covered include learning, humanism, motivation, cognitive development, creativity, intelligence, exceptionality, classroom management, measurement, and evaluation

EPY 3513 Writing in the Behavioral Sciences: 3 hours.
(Prerequisite:EN 1103 and EN 1113; junior standing; EPY majors should also enroll concurrently in EPY 3503). Three hours lecture. An introduction to writing skills in the behavioral sciences

EPY 3543 Psychology of Adolescence: 3 hours.
Three hours lecture. Physical, intellectual, emotional, and social growth processes from late childhood toward early adulthood; pubertal problems; mental hygiene of adolescence; family and peer relationships

EPY 3553 Giftedness/Creativity: 3 hours.
Three hours lecture. An introduction to giftedness and creativity emphasizing uniqueness of gifted/creative individuals; a survey of creative problem-solving approaches

EPY 4000 Directed Individual Study in Educational Psychology: 1-6 hours.
Hours and credits to be arranged

EPY 4033 Application of Learning Theories in Educational and Related Settings: 3 hours.
(Prerequisite: EPY 3513 or permission of instructor). Three hours lecture. Critical review of literature on learning in applied settings

EPY 4073 Personal and Motivational Factors in Education: 3 hours.
Three hours lecture. Theories of personality development and motivation in education settings with special attention to culture and interpersonal relations

EPY 4113 Principles of Behavior Analysis: 3 hours.
Three hours lecture. The study of basic concepts and principles of behavior analysis. Although the school setting may be discussed, emphasis is on these topics as they are applied in a non-school setting. Cannot be used for special education certification

EPY 4123 Applications of School Psychology: 3 hours.
(Prerequisite: Permission of instructor). Three hour lecture. Practical application of concepts and principles related to educational and school psychology, implementation and analysis of intervention procedures. 100 hours clinic work required

EPY 4133 Data-based Decision Making for Interventions in the School Setting: 3 hours.
(Prerequisite: Not for EPY majors)Three hour lecture. Data-based decision making and case methodology to teach theory, techniques, and procedures for educational support teams to address behavioral and academic difficulty in school-aged children

EPY 4214 Educational and Psychological Statistics: 4 hours.
Three hours lecture and three hours laboratory. A course in statistics for education and educational psychology majors. Analysis, description of and inference from various types of data

EPY 4313 Measurement and Evaluation: 3 hours.
Three hours lecture. Measurement and evaluation of learning activities and achievement of elementary school pupils and high school students; standardized tests; test construction; statistical techniques

EPY 4513 Introduction to Research in Educational Psychology: 3 hours.
Three hours lecture. (Prerequisites: EPY 4214 and 3503). An introduction to conducting educational research focusing on planning and designing research for applied education settings

EPY 4553 Creativity/Innovation: 3 hours.
(Pre-requisite: Junior or graduate standing or consent of the instructor). Three hours lecture. Introduction to creativity/innovation emphasizing uniqueness of creative individuals. Exploration of origins of creative/ innovative behavior. Application of creativity/innovation enhancing techniques

EPY 4683 Advanced Issues in Educational Psychology: 3 hours.
(Prerequisites: Jr. Standing, EPY 3503, and EPY 3513). Topics to cover contemporary issues in educational psychology, job and graduate school placement and practical experience and/or observation

EPY 4990 Special Topics in Educational Psychology: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

EPY 6033 Application of Learning Theories in Educational and Related Settings: 3 hours.
(Prerequisite: EPY 3513 or permission of instructor). Three hours lecture. Critical review of literature on learning in applied settings

EPY 6073 Personal and Motivational Factors in Education: 3 hours.
Three hours lecture. Theories of personality development and motivation in education settings with special attention to culture and interpersonal relations

EPY 6113 Principles of Behavior Analysis: 3 hours.
Three hours lecture. The study of basic concepts and principles of behavior analysis. Although the school setting may be discussed, emphasis is on these topics as they are applied in a non-school setting. Cannot be used for special education certification

EPY 6123 Applications of School Psychology: 3 hours.
(Prerequisite: Permission of instructor). Three hour lecture. Practical application of concepts and principles related to educational and school psychology, implementation and analysis of intervention procedures. 100 hours clinic work required

EPY 6133 Data-based Decision Making for Interventions in the School Setting: 3 hours.
(Prerequisite: Not for EPY majors)Three hour lecture. Data-based decision making and case methodology to teach theory, techniques, and procedures for educational support teams to address behavioral and academic difficulty in school-aged children

EPY 6214 Educational and Psychological Statistics: 4 hours.
Three hours lecture and three hours laboratory. A course in statistics for education and educational psychology majors. Analysis, description of and inference from various types of data

EPY 6313 Measurement and Evaluation: 3 hours.

EPY 6513 Ed Research: 3 hours.
Three hours lecture. (Prerequisites: EPY 4214 and 3503). An introduction to conducting educational research focusing on planning and designing research for applied education settings

EPY 6553 Creativity/Innovation: 3 hours.
(Pre-requisite: Junior or graduate standing or consent of the instructor). Three hours lecture. Introduction to creativity/innovation emphasizing uniqueness of creative individuals. Exploration of origins of creative/ innovative behavior. Application of creativity/innovation enhancing techniques

EPY 6610 Sem In Education Psy: 1-6 hours.
(Prerequisite: 9 hours in Psychology and consent of instructor). Credit and title to be arranged. One to six lectures. Examination of specific topics of interest to faculty and students

EPY 6990 Special Topics in Educational Psychology: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

EPY 7000 Directed Individual Study in Educational Psychology: 1-6 hours.
Hours and credits to be arranged

EPY 8000 Thesis Research/ Thesis in Educational Psychology: 1-13 hours.
Hours and credits to be arranged

EPY 8113 History and Systems of Psychology: 3 hours.
Three hours lecture. Seminar class for students at the advanced level in psychology fields. Examines the history and systems in psychology

EPY 8123 Assessment of Infants, Toddlers, and Special Populations: 3 hours.
Two hours lecture and two hours practicum. Legal and professional aspects involve in assessment of young children. Administration, interpretation, and decision making in evaluation of infants, toddlers, and difficult-to-assess populations

EPY 8133 Crisis Prevention and Intervention in Schools and Related Settings: 3 hours.
Three hour seminar. Study of school crisis prevention and intervention strategies with emphasis on preventing, preparing for, responding to, and recovering from crisis impacting students and schools

EPY 8214 Intermediate Educational and Psychological Statistics: 4 hours.
(Prerequisite: EPY 4214/6214 or its equivalent.) Three hours lecture and three hours laboratory. ANOVA techniques and regression analysis are discussed with emphasis upon the design and analysis of research problems in education and psychology

EPY 8223 Psychological Foundations of Education: 3 hours.
Three hours lecture. The role of psychology in a changing context of organized education; the learner, content, structure, and management of the learning situation; studies of persistent problems

EPY 8253 Child & Adolescent Development & Psychopathology: 3 hours.
Three hours lecture. Critical survey of recent problems, methods, and research in both the normal and abnormal psychological development of children and adolescents

EPY 8263 Psychological Testing in Educational and Related Settings: 3 hours.
Three hours lecture. Principles and techniques involved in selecting, administering, scoring and interpreting tests of personality, interest, vocational aptitude, achievement, and intelligence

EPY 8273 Neuropsychology: 3 hours.
(Prerequisite: Consent of instructor). Three hours lecture. Study of brain-based relationships with emphasis on neuroscience. Overview of assessment techniques, rehabilitation planning, and research contributions

EPY 8293 Cognitive and Affective Development: 3 hours.
Three hours lecture. The study of cognitive and affective development including the theories derived from the work of information-processing, Jean Piaget, Lev Vygotsky, and current scholarship

EPY 8473 Middle Level Assessment and Evaluation: 3 hours.
A study of middle level assessment and instructional evaluation for monitoring individual student progress, general effectiveness of instruction, and communicating assessment results

EPY 8493 Social-Emotional and Behavioral Assessment: 3 hours.
(Prerequisites: EPY 8263 or consent of the department). Three hours lecture. Theory and practice of social and behavioral assessment will be emphasized; including identification of presenting concerns, selection of assessment techniques, interpretation of data, and report writing

EPY 8513 Psychometric Theory: 3 hours.
(Prerequisites: EPY 6214, EPY 8214, and EPY 8263). Three hour lecture. Classical and modern models and their application to solving measurement problems, including developing and evaluation assessment instruments

EPY 8523 Psychology of the Gifted: 3 hours.
Three hours lecture. Characteristics, identification and evaluation of gifted individuals. Social, physical, emotional, and intellectual development of the gifted

EPY 8533 Practicum in Teaching Educational Psychology: 3 hours.
(Prerequisite: EPY 8223). One hour lecture. Two hours practicum. Establishing objectives; selecting and organizing learning experiences; guiding and evaluating learning; supervised practicum in teaching educational psychology

EPY 8690 Supervised Experiences in School Psychology I: 1-6 hours.
(1-6). Applied supervised school psychology experiences in educational and related settings utilizing psychological principles and techniques in teaching/learning problems. May be repeated 4 times for credit

EPY 8703 School Psychology: 3 hours.
Two hours lecture, two hours field experience. A course covering the history, current objectives, organization and administration of school psychology combined with appropriate field experience

EPY 8723 Individual Assessment for Educational and Related Settings: 3 hours.
(Prerequisite: EPY 8263 or equivalent). Two hours lecture, two hours practicum. Training in administering individual psychometric instruments; verbal and nonverbal linguistic techniques; interpretation of scores, writing psychometric reports

EPY 8763 Advanced Applied Behavior Analysis: 3 hours.
(Prerequisite: EPY 4113/6113, EPY 8253). Three hours lecture. The focus will be on the identification, analysis, treatment, and evaluation of behavioral problems presented by children and youth. Emphasis is on these topics as they are applied in a non-school setting

EPY 8773 Assessment and Interventions for Academic Skills Deficits: 3 hours.
Three hours lecture. Study of theories, techniques, and procedures that have been shown to prevent and remedy academic skills deficits

EPY 8780 Internship in School Psychology: 3,6 hours.
(Prerequisite: Consent of instructor). Supervised professional experience in an appropriate setting. Three hundred clock hours required for three semester hours credit. May be taken a total of 2 times

EPY 8790 Supervised Experiences in School Psychology II: 1-6 hours.
Applied supervised school psychology experiences in educational and related settings unilizing psychological principles and tecnhiques in teacahing/learning problems. May be repeated 4 times for credit

EPY 8890 Supervised Experiences in School Psychology: III: 1-6 hours.
Applied supervised school psychology experiences in educational and related settings utlizing psychological principles and techniques in teaching/learning problems.May be repeated 4 times for credit

EPY 8933 Integrated Psycho-Educational Assessment: 3 hours.
(Prerequisite: EPY 8723). Two hours lecture, two hours practicum. Development of interpretation, appraisal, and report writing skills for the WISC-R. S-B. and other psychometric instruments

EPY 8990 Special Topics in Educational Psychology: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

EPY 9000 Dissertation Research /Dissertation in Educational Psychology: 1-13 hours.
Hours and credits to be arranged

EPY 9213 Multivariate Analysis in Educational Research: 3 hours.
(Prerequisites: EPY 6214 and EPY 8214, or equivalent course work). Three hours lecture. An examination of multivariate data analytic techniques for investigating research problems in education

EPY 9263 Applied Research Seminar: 3 hours.
(Prerequisites: EPY 6214, EDF 8363, and EDF 9373). Three hours lecture. Study of advances in thought on research approaches and doing research in educational psychology

EPY 9313 Education Evaluation Methods: 3 hours.
(Prerequisites: EPY 8214; EDF 9373 or equivalent course work). Three hours lecture. Introduction to evaluation contract development procedures, and planning and management of program evaluation in education and related settings

EPY 9443 Single Subject Research Designs in Education: 3 hours.
Three hours lecture. A detailed examination of single-subject research designs and their associated research methods including data collection and data evaluation techniques (same as EDF 9443)

EPY 9703 Contemporary, Legal, Ethical, and Professional Issues in School and Educational Psychology: 3 hours.
Three hours lecture. (Prerequisite: consent of instructor). Psychology as a profession: Foundations of practice, roles and functions, professional issues and standards with emphasis on legal and ethical means in psychology

EPY 9713 Advanced Psychological Consulting: Theory and Practice: 3 hours.
(Prerequisite: Consent of the instructor). Two hours lecture. Two hours practicum. Systematic investigation and application of psychological consultation and supervision in schools/human service settings. Consultation and supervision as applied to individuals and organizational structures

EPY 9723 Seminar in Contemporary Educational/School Psychology: 3 hours.
(Prerequisite: consent of instructor). Study of current issues and problems related to educational and school psychology

EPY 9730 Doctoral Internship in School Psychology: 3-6 hours.
(Prerequisite: consent of instructor). Supervised internship involving the theory and practice of evaluations, consultation, interventions, research, and related activities within a school, clinic, or other human service agency. May be taken a total of 3 times

English as Second Language Courses

ESL 4000 Directed Individual Study in English as a Second Language: 1-6 hours.
Hours and credits to be arranged

ESL 5110 American Language and Culture I: 1-18 hours.
(Prerequisite: TOEFL score between 475 and 499 or consent of the instructor). Credit to be arranged. An intermediate level English language course designed to improve the oral communication and literacy skills of international students. (Does not count toward any degree)

ESL 5120 American Language and Culture II: 1-18 hours.
(Prerequisite: ESL 5110, or TOEFL score between 500 and 524, or consent of the instructor). Credit to be arranged. An advanced level English language course designed to improve the oral communication and literacy skills of international students. (Does not count toward any degree)

ESL 5313 Classroom and Communication and Presentation: 3 hours.
(Prerequisites:ESP 5120 or TOEFL score above 525) Three hours lecture. An English language course designed to prepare second language speakers for university-level course work. This course is designed to improve students' communication in classroom settings. (Does not count toward any degree)

ESL 5323 Academic Research and Writing: 3 hours.
(Prerequisites: ESL 5120 or TOEFL score above 500). An English language course designed to prepare second language speakers for university-level course work. This course is designed to improve students' research and writing skills. (Does not count toward any degree)

ESL 5333 Critical Reading: 3 hours.
(Prerequisities: ESL 5120 or TOEFL score above 500). Three hours lecture. An English language course designed to prepare second language speakers for university-level course work. This course is designed to improve students' authentic reading and comprehension skills (Does not count toward any degree)

Experiental Learning Courses

EXL 0190 Experiential Learning: 1-12 hours.
(Prerequisite: Permission of Department) Non-classroom learning experience arranged through agreement of student and department; written approval required. Registration provides equivalent of full time enrollment status but no academic credit. Coordinated through Academic Affairs

EXL 1191 Leadership Studies Internship I: 1 hour.
(Prerequisites:Permission of Leadership Studies minor advisor in student's major department and prior completion of 12 hours towards leadership studies minor). Brief internship for leadership studies minor. Arranged with departmental leadership studies minor advisor. Registration provides equivalent of full time enrollment status. Coordinated through Academic Affairs

EXL 1193 Leadership Studies Internship II: 3 hours.
(Prerequisites:Permission of Leadership Studies minor advisor in student's major department and prior completion of 12 hours towards leadership studies minor). Internship for leadership minor. Arranged with departmental leadership studies minor advisor. Registration provides equivalent of full time enrollment status. Coordinated through Academic Affairs

EXL 3100 Career Center Professional Practice Internship I: 3 hours.
(Prerequisites: 60 hours, 2.75 GPA and permission of Career Center). Career-related work experience arranged through mutual agreement of the student and employer with confirmation by the Career Center. Coordinated by the Career Center. This course will NOT contribute to a student's academic standing or earn credit toward graduation

EXL 3200 Career Center Professional Practice Internship II: 3 hours.
(Prerequisites: EXL 3100, 2.75 GPA and permission of Career Center). Career-related work experience arranged through mutual agreement of the student and employer with confirmation by the Career Center. Coordinated by the Career Center. This course will NOT contribute to a student's academic standing or earn credit for graduation

Fashion Design Merchandising Courses

FDM 1001 First Year Seminar: 1 hour.
One hour lecture. First-year seminars explore a diverse array of topics that provide students with an opportunity to learn about a specific discipline from skilled faculty members

FDM 1523 Visual Design in Dress: 3 hours.
Three hours lecture. Application of basic art principles to selection and design of clothing; physical, cultural, social, aesthetic, and psychological aspects of dress

FDM 1533 Apparel Construction: 3 hours.
One hour lecture. Four hours laboratory. Principles of clothing construction; problems involving fabric selection, use of industrial patterns, and basic fitting

FDM 2123 Product Development I: 3 hours.
Two hours lecture. Two hours laboratory. Introduction to the product development lifecycle in relation to the apparel industry. Emphasis is placed on technology applications at various stages of product development

FDM 2153 Fashion Apparel Analysis: 3 hours.
Three hours lecture. Terms and processes relevant to the apparel product development life-cycle and quality indicators/control measures for finished apparel products

FDM 2333 Intro to Buying and Management: 3 hours.
(Prerequisites: FDM 2553). Three hours lecture. Concepts and theories in apparel buying and management; roles and responsibilities of merchandise buyers; domestic and foreign merchandise resources and negotiation

FDM 2524 Textiles for Apparel: 4 hours.
Three hours lecture. Two hours lab. An introductory study of textile fibers, yarns, fabrics, colorants, and finishes; and the factors that influence the selection, appearance, care, and serviceability of textiles for apparel

FDM 2553 Introduction to Merchandising: 3 hours.
Three hours lecture. A survey of the entire consumer goods industry as it relates to merchandising

FDM 2573 Fashion Portfolio Development: 3 hours.
Two hours lecture. Two hours laboratory. Creation of printed and electronic portfolios and related materials for fashion-related careers. Includes project selection; layout and graphics; photography; photo-editing; writing; use of appropriate software

FDM 2593 Product Development II: 3 hours.
(Prerequisites: FDM 2123). Three hours lecture. Analysis of product development and manufacturing related to the apparel industry including terminology, design processes, product development, sewn product analysis and quality control

FDM 3221 Internship Preparation: 1 hour.
(Prerequisite: consent of instructor). One-hour lecture. Preparation for an internship in a chosen specialization

FDM 3553 Merchandise Retail Pricing and Inventory Management: 3 hours.
(Prerequisites: FDM 2553 and ST 2113 or MA 2113 or BQA 2113 or consent of instructor). Two hours lecture. Two hours laboratory. Specific problems, procedures and practices in fashion retailing

FDM 3563 Visual Merchandising: 3 hours.
(Prerequisite: FDM 2553). Two hours lecture. Two hours laboratory. Principles of window and interior display, individual and group participation in designing and executing displays for commercial and educational purposes

FDM 3573 Historic Costume: 3 hours.
Two hours lecture. Two hours laboratory. Survey of costume from prehistoric to modern times with emphasis on social, cultural, political, and technological changes impacting fashion, preservation, documentation, and exhibition of artifacts

FDM 3593 Merchandising and Promotion Strategies: 3 hours.
(Prerequisite: FDM 2553 and junior standing or consent of instructor). Three hours lecture. A study of fashion presentation techniques and production requirements in the primary, secondary and retail settings

FDM 4000 Directed Individual Study in FDM: 6 hours.
Hours and credits to be arranged

FDM 4343 Pattern Making and Design: 3 hours.
(Prerequisite: FDM 1533). Two hours lecture. Two hours laboratory. Advanced problems and techniques for clothing construction and creative expression through application of drafting and flat pattern design techniques

FDM 4363 Draping: 3 hours.
(Prerequisite: FDM 1533). One hour lecture. Four hours laboratory. Principles of apparel design through the three dimensional manipulation of fabric on industry standard dress forms. Analysis of fit and design, problem solving and interaction of fabric characteristics with style features

FDM 4424 Teaching Methods in Agricultural and Human Sciences: 4 hours.
(Prerequisite: CALS major and junior standing). Three hours lecture. Two hours laboratory. Planning instruction; selecting teaching techniques; developing teaching plans; teaching agricultural/human sciences topics; using instructional technologies; and evaluating learner progress. Same as AELC 4424

FDM 4513 Fashion Consumer Behavior: 3 hours.
(Prerequisites: SO 1003 or PSY 1013 and junior standing). Three hours lecture. Application of concepts and theories from the social sciences related to the study of consumer behavior related to dress, textile and apparel products, and retail experiences. Experience in conducting consumer research

FDM 4533 Merchandise Planning and Buying: 3 hours.
Three hours lecture. Capstone course in planning, buying and managing inventory in a fashion retail environment

FDM 4583 Fashion Entrepreneurship: 3 hours.
Three hours lecture. Application of principles of entrepreneurship with emphasis on retail/fashion; exploration of issues in entrepreneurship relative to apparel, retailing, and design; development of skills necessary to establish and maintain successful business

FDM 4593 Creative Design Techniques: 3 hours.
(Prerequisite: FDM 1533 or consent.) Two hours lecture. Two hours laboratory. Students will learn a variety of surface and other design techniques and apply them to existing and original garments and accessories. Students will also utilize multicultural, historic, and other inspirations for their designs

FDM 4603 Global Sourcing in the Textile and Apparel Industry: 3 hours.
(Prerequisites: FDM 2553 and FDM 4513 or equivalent or consent of instructor). Three hours lecture. Evaluation of global issues facing the textile complex-fiber, textile and apparel industries. Students will learn about international trade and global issues in the textile complex

FDM 4693 Digital Merchandising: 3 hours.
Three hours lecture. A study of electronic merchandising and its application to consumer products and services for business to business and business to consumer. Introduction to electronic merchandising theory, terminology, resources, industry participants and career opportunities

FDM 4711 FDM Senior Showcase: 1 hour.
(Prerequisite: Graduating senior status). Two hours laboratory. Hands-on laboratory to prepare final senior portfolio presentations for faculty review. Fashion Design and Merchandising majors only

FDM 4733 Computer-Aided Design for Fashion: 3 hours.
(Prerequisite: FDM 4343). Two hours lecture. Two hours laboratory. Applications of various computer-aided design software to the fashion industry, including illustration and the design of fabric, garments, and accessories

FDM 4763 FDM Internship: 3 hours.
(Prerequisite: FDM 3221). Individual work experience in an approved apparel, textiles, or merchandising setting under supervision of Miss. State University faculty. (Course may be taken for credit up to two times)

FDM 4990 Special Topics in Fashion Design and Merchandising: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

FDM 6343 Pattern Making and Design: 3 hours.
(Prerequisite: FDM 1533). Two hours lecture. Two hours laboratory. Advanced problems and techniques for clothing construction and creative expression through application of drafting and flat pattern design techniques

FDM 6363 Draping: 3 hours.
(Prerequisite: FDM 1533). One hour lecture. Four hours laboratory. Principles of apparel design through the three dimensional manipulation of fabric on industry standard dress forms. Analysis of fit and design, problem solving and interaction of fabric characteristics with style features

FDM 6424 Teaching Methods in Agricultural and Human Sciences: 4 hours.
(Prerequisite: CALS major and junior standing). Three hours lecture. Two hours laboratory. Planning instruction; selecting teaching techniques; developing teaching plans; teaching agricultural/human sciences topics; using instructional technologies; and evaluating learner progress. Same as AELC 4424

FDM 6443 Advanced Patternmaking and Design: 3 hours.
(Prerequisite: FDM 4343). One hour lecture. Four hours laboratory. Advanced study of creative design of clothing through the flat pattern method

FDM 6513 Fashion Consumer Behavior: 3 hours.
(Prerequisites: SO 1003 or PSY 1013 and junior standing). Three hours lecture. Application of concepts and theories from the social sciences related to the study of consumer behavior related to dress, textile and apparel products, and retail experiences. Experience in conducting consumer research

FDM 6563 Advanced Draping: 3 hours.
One hour lecture. Four hours lab. Advanced apparel design through the three-dimensional manipulation of fabric on industry standard dress forms. Analysis of fit and design, problem solving and interaction of fabric characteristics with style features

FDM 6583 Fashion Entrepreneurship: 3 hours.
Three hours lecture. Application of principles of entrepreneurship with emphasis on retail/fashion; exploration of issues in entrepreneurship relative to apparel, retailing, and design; development of skills necessary to establish and maintain successful business

FDM 6593 Creative Design Techniques: 3 hours.
(Prerequisite: FDM 1533 or consent.) Two hours lecture. Two hours laboratory. Students will learn a variety of surface and other design techniques and apply them to existing and original garments and accessories. Students will also utilize multicultural, historic, and other inspirations for their designs

FDM 6603 Global Sourcing in the Textile and Apparel Industry: 3 hours.
(Prerequisites: FDM 2553 and FDM 4513 or equivalent or consent of instructor). Three hours lecture. Evaluation of global issues facing the textile complex-fiber, textile and apparel industries. Students will learn about international trade and global issues in the textile complex

FDM 6613 Research in Fashion Consumer Behavior: 3 hours.
Three hours lecture. Application of concepts and theories from the social sciences related to the study of consumer behavior related to dress, textile and apparel products, and retail experiences. Experience in conducting consumer research

FDM 6683 Research and Application in Fashion Entrepreneurship: 3 hours.
Three hours Lecture. Research and application of principles of entrepreneurship with an emphasis on retail and fashion; exploration of issues in entrepreneurship relative to apparel, retailing, and design; development of skills necessary to establish and maintain a successful business

FDM 6693 Digital Merchandising: 3 hours.
Three hours lecture. A study of electronic merchandising and its application to consumer products and services for business to business and business to consumer. Introduction to electronic merchandising theory, terminology, resources, industry participants and career opportunities

FDM 6733 Computer-Aided Design for Fashion: 3 hours.
(Prerequisite: FDM 4343). Two hours lecture. Two hours laboratory. Applications of various computer-aided design software to the fashion industry, including illustration and the design of fabric, garments, and accessories

FDM 6783 Experimental Fashion Design: 3 hours.
(Prerequisite: FDM 4343 or consent of instructor). One hour lecture. Four hours laboratory. A theoretical and practical approach to designing fashionable and functional clothing

FDM 6793 Research and Application in Digital Fashion Retailing: 3 hours.
Three hours lecture. Research in electronic merchandising and its application to consumer products and services for business to business and business to consumer. Research in electronic merchandising theory, digital technologies, terminology, resources, industry participants and career opportunities

FDM 6873 Advanced Computer-Aided Design for Fashion: 3 hours.
One hour lecture. Four hours lab. The use of apparel designated computer systems as a design tool, to conceptualize apparel design ideas and create patterns, markers, and original designs

FDM 6990 Special Topics in Fashion Design and Merchandising: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

FDM 7000 Directed Individual Study in FDM: 6 hours.
Hours and credits to be arranged

FDM 8000 Thesis Research/ Thesis in Fashion Design and Merchandising: 1-13 hours.
Hours and credits to be arranged

FDM 8100 Creative Component Project in Fashion Design and Merchandising: 1-13 hours.
(1-13 hours). Capstone experience supervised by student's major professor and master’s committee. This course is for non-thesis hours Fashion Design and Merchandising majors only. (Hours and credits to be arranged). Students will be graded satisfactory/unsatisfactory (S/U)

FDM 8990 Special Topics in Fashion Design and Merchandising: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

Finance Courses

FIN 1001 First Year Seminar: 1 hour.
One hour lecture. First-year seminars explore a diverse arrary of topics that provide students with an opportunity to learn about a specific discipline from skilled faculty members

FIN 2003 Personal Money Management: 3 hours.
Three hours lecture. The individuals acquisition and management of an optional personal income and expenditure pattern over a lifetime to best meet his/her financial objectives. (Same as INS 2003. Not open to finance majors or as a part of GBA Finance Concentration)

FIN 2990 Special Topics in Finance: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

FIN 3113 Financial Systems: 3 hours.
(Prerequisites: EC 2113, EC 2123, or AEC 2713). Three hours lecture. Study of interest rates, basic security valuation, money and capital markets

FIN 3123 Financial Management: 3 hours.
(Prerequisites: EC 2123, ACC 2013, and BQA 2113). Three hours lecture. Study of objectives, tools, methods, and problems of financial management; financial analysis, planning, control, sources/uses of funds, capital budgeting decisions and working capital

FIN 3203 Financial Statement Analysis: 3 hours.
(Prerequisiste: ACC 2023). Three hours lecture. For non-accounting majors. A study of financial statements from an external users perspective;an analysis of statements for purposes of determining loan and investment potential. (Same as ACC 3203)

FIN 3723 Financial Markets and Institutions: 3 hours.
(Prerequisites: Grade of B or better in FIN 3123). Three hours lecture. Study of the functions of financial markets. Major topics include interest rates, their role in securities markets and financial institutions, and interest rate risk

FIN 4000 Directed Individual Study in Finance: 1-6 hours.
Hours and credits to be arranged

FIN 4111 TVA Panel I: 1 hour.
(Prerequisite: ACC 2013 or equivalent, junior/graduate standing, and consent of instructor). One hour lecture. Experience analyzing and selecting stocks for the Tennessee Valley Authority's asset decommissioning trust portfolio. Section open through invitation only. Course may be taken two times

FIN 4112 TVA Panel II: 2 hours.
(Prerequisites: FIN 4111/6111, junior/graduate standing, and consent of instructor). Two hours lecture. Experience selecting and analyzing portfolio strategies for the Tennessee Valley Authority's Investment Challenge. Section open through invitation only. Course may be taken two times

FIN 4123 Financial and Commodities Futures Marketing: 3 hours.
(Prerequisite: Junior standing). Three hours lecture. Discussion of the purpose, function mechanics, analysis and application of financial and commodity futures markets in pricing and hedging opportunities (Same as AEC 4123/6123)

FIN 4223 Intermediate Financial Management: 3 hours.
(Prerequisite: Grade of B or better in FIN 3123). Three hours lecture. Building on foundational concepts, this course provides a more in-depth coverage of financial analysis, valuation principles, the financial environment, capital budgeting and capital structure

FIN 4233 Working Capital Management: 3 hours.
(Prerequisite: FIN 3123.) Three hours lecture. Analysis of selected problems in the short-term financial management of the firm, including cash management, investment opportunities, financing requirements, budgeting and planning

FIN 4243 Senior Seminar in Financial Management: 3 hours.
(Prerequisites: Grade of C or better in FIN 3723 and grade of C or better in FIN 4223). Three hours seminar. Comprehensive case study to bring out the problems involved in organizing, financing, and managing various types of business enterprises

FIN 4323 Entrepreneurial Finance: 3 hours.
(Prerequisite: Grade of C or better in FIN 3123 or IE 3913). Three hours lecture. Development, implementation, and control of financial plans, strategies, and policies by owner-managers of small and medium-sized firms; analysis of alternatives and decision making

FIN 4423 Investments: 3 hours.
(Prerequisite: Grade of B or better in FIN 3123). Three hours lecture. Survey of various financial instruments and their characteristics, investor choice, and an introduction to the basics of security analysis, portfolio management, and speculative markets

FIN 4433 Senior Seminar in Portfolio Management: 3 hours.
(Prerequisites: Grade of C or Better in FIN 4223 and Grade of C or Better in FIN 4423.) Three hours seminar. Analysis of individual investments, creation and management of investment portfolios to achieve specific investor goals, and evaluation of portfolio performance

FIN 4723 Bank Management: 3 hours.
(Prerequisites: FIN 3723). Three hours lecture. Study of banking environment, functional areas of banking, and tools and techniques required to effectively manage a bank in a highly competitive, dynamic environment

FIN 4733 Advanced Bank Management: 3 hours.
(Prerequisites: FIN 4723 or FIN 3123 and Instructor Consent.) Three hours seminar. Applications of financial management techniques to bank management decisions through experiential learning opportunities. Computer-based analysis, simulations, and written and oral presentations

FIN 4743 Consumer Finance: 3 hours.
(Prerequisite: Grade of C or better in FIN 3123; prerequisite or co-requisite FIN 3723). Three hours lecture. Supply and demand for consumer credit products, their role in the lending landscape, economic impact of the consumer finance industry, its workings, and its regulation

FIN 4923 International Financial Management: 3 hours.
(Prerequisites: FIN 3123 or consent of instructor). Three hours lecture. A study of the theory and actual behavior of international financial management,foreign financial markets, exchange rate risk management, and foreign direct investments

FIN 4990 Special Topics in Finance: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

FIN 6111 TVA Panel I: 1 hour.
(Prerequisite: ACC 2013 or equivalent, junior/graduate standing, and consent of instructor). One hour lecture. Experience analyzing and selecting stocks for the Tennessee Valley Authority's asset decommissioning trust portfolio. Section open through invitation only. Course may be taken two times

FIN 6112 TVA Panel II: 2 hours.
(Prerequisites: FIN 4111/6111, junior/graduate standing, and consent of instructor). Two hours lecture. Experience selecting and analyzing portfolio strategies for the Tennessee Valley Authority's Investment Challenge. Section open through invitation only. Course may be taken two times

FIN 6123 Financial and Commodities Futures Marketing: 3 hours.
(Prerequisite: Junior standing). Three hours lecture. Discussion of the purpose, function mechanics, analysis and application of financial and commodity futures markets in pricing and hedging opportunities (Same as AEC 4123/6123)

FIN 6323 Entrepreneurial Finance: 3 hours.
(Prerequisite: Grade of C or better in FIN 3123 or IE 3913). Three hours lecture. Development, implementation, and control of financial plans, strategies, and policies by owner-managers of small and medium-sized firms; analysis of alternatives and decision making

FIN 6743 Consumer Finance: 3 hours.
(Prerequisite: Grade of C or better in FIN 3123; prerequisite or co-requisite FIN 3723). Three hours lecture. Supply and demand for consumer credit products, their role in the lending landscape, economic impact of the consumer finance industry, its workings, and its regulation

FIN 6923 International Financial Management: 3 hours.
(Prerequisites: FIN 3123 or consent of instructor). Three hours lecture. A study of the theory and actual behavior of international financial management,foreign financial markets, exchange rate risk management, and foreign direct investments

FIN 6990 Special Topics in Finance: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

FIN 7000 Directed Individual Study in Finance: 1-6 hours.
Hours and credits to be arranged

FIN 8000 Thesis Research/ Thesis in Finance: 1-13 hours.
Hours and credits to be arranged

FIN 8113 Corporate Finance: 3 hours.
(Prerequisite: Graduate Standing and FIN 3123 or equivalent). Three hours lecture. An examination of the interaction between financial accounting, cash flow estimation, capital budgeting, risk and return, capital structure, and working capital management

FIN 8733 Financial Markets, Rates and Flows: 3 hours.
(Prerequisite: FIN 8112 and FIN 8122 or equivalent). Three hours lecture. An analysis of money and capital market instruments; a study of interest rates and financial flows; the effect of public policy on credit conditions

FIN 8990 Special Topics in Finance: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

FIN 9000 Dissertation Research /Dissertation in Finance: 1-13 hours.
Hours and credits to be arranged

FIN 9213 Advanced Financial Management: 3 hours.
(Prerequisites: FIN 8113 or the equivalent). Three hours lecture. A study of the theory and application of valuation, risk return analysis, capital budgeting decisions, and capital structure. Analysis of how these decisions affect firm value

FIN 9223 Seminar in Corporate Financial Theory: 3 hours.
(Prerequisites: FIN 8113 or the equivalent). Three hours seminar. Analyses of financial management cases involving working capital, financial analyses, valuation concepts, risk and return, capital budgeting, cost of capital, and financial planning

FIN 9233 Seminar in Corporate Finance: 3 hours.
(Prerequisites: FIN 8113 or the equivalent.) Doctoral seminar. Analysis and discussion of the literature dealing with topics in corporate finance. Also, students prepare and present research projects

FIN 9423 Investment and Portfolio Theory: 3 hours.
(Prerequisites: Fin 8113 or the equivalent). Three hours lecture. The application of contemporary investment theory for decision-making purposes in portfolio management, and the formulation of portfolio policies for different types of investors

FIN 9433 Seminar in Portfolio Theory: 3 hours.
(Prerequisites: FIN 8423 or equivalent). Doctoral seminar. Analysis and discussion of the literature dealing with topics in portfolio theory and management. Also students prepare and present research projects. mean-variance concept, option pricing and arbitrage pricing

FIN 9733 Seminar in Financial Markets and Institutions: 3 hours.
(Prerequisites: FIN 8733 or the equivalent.) Doctoral seminar. Analysis and discussion of the literature dealing with topics in financial markets and institutions. Students prepare and present research projects

Foreign Languages Courses

FL 1001 First Year Seminar: 1 hour.
One hour lecture. First-year seminars explore a diverse arrary of topics that provide students with an opportunity to learn about a specific discipline from skilled faculty members

FL 2990 Special Topics in Foreign Languages: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

FL 4000 Directed Individual Study in Foreign Languages: 1-6 hours.
Hours and credits to be arranged

FL 4023 Introduction to Literary Criticism: 3 hours.
Three hours lecture. An introduction to key theories and practices of literary analysis designed for foreign languages majors

FL 4133 Roman Civilization: 3 hours.
Three hours lecture. A study of the history, literature and culture of ancient Rome from its origins in the VIII century B.C. through the fall of the Empire

FL 4143 Classical Mythology: 3 hours.
Three hours lecture. Myths and legends of Greece and Rome and their use in literature and the arts through the ages. (Same as REL 4143/6143)

FL 4493 Greek Comedy and Tragedy: 3 hours.
Three hours lecture. A study in English translation of the works of such authors as Aeschylus, Sophocles, Euripides, Aristophanes, and Menander in their historical and cultural context

FL 4503 Ghost Tales from China and Japan, 14th-19th Centuries: 3 hours.
Three hours lecture. A Study of early modern Chinese and Japanese ghost tales in English translation

FL 4773 The Age of Homer: 3 hours.
Three hours lecture. A study of Greek epic in English translation, with a consideration of the archeological and iconographical evidence for the story of Troy

FL 4990 Special Topics in Foreign Languages: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

FL 6023 Introduction to Literary Criticism: 3 hours.
Three hours lecture. An introduction to key theories and practices of literary analysis designed for foreign language majors

FL 6143 Classical Mythology: 3 hours.
Three hours lecture. Myths and legends of Greece and Rome and their use in literature and the arts through the ages. (Same as REL 4143/6143)

FL 6990 Special Topics in Foreign Languages: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

FL 7000 Directed Individual Study in Foreign Languages: 1-6 hours.
Hours and credits to be arranged

FL 8113 Capstone Seminar: 3 hours.
Graduate seminar on selected topics in classical and modern literatures

FL 8693 Advanced Foreign Language Pedagogy: 3 hours.
Three hours lecture. Field-based. Advanced examination of effective practices for teaching and evaluating college level foreign language students. Same as EDS 8693

FL 8990 Special Topics in Foreign Languages: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

Chinese Courses

FLC 1113 Chinese I: 3 hours.

FLC 1123 Chinese II: 3 hours.
(Prerequisite: FLC 1113 or permission of instructor). Two hours lecture, two hours lab. A continuation of Chinese I, where students continue to develop skills in reading, writing, speaking and listening in a cultural context

FLC 2133 Chinese III: 3 hours.
(Prerequisite: FLC 1123 or permission of instructor). Three hours lecture. A continuation of Chinese II, where students continue to develop their skills in reading, writing, speaking and listening in a cultural context

FLC 2143 Chinese IV: 3 hours.
(Prerequisite: FLC 2133 or permission of instructor). Three hours lecture. A continuation of Chinese III, where students will bring their Chinese to the intermediate level through intensive reading, writing, speaking and listening practice

FLC 2990 Special Topics in Chinese: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

FLC 3153 Chinese V: 3 hours.
(Prerequisite: FLC 2143 or equivalent). Three hours lecture. An integrated development of skills in Chinese grammar, reading, writing, and oral-aural proficiency at the mid-intermediate level

FLC 3163 Chinese VI: 3 hours.
(Prerequisite FLC 3153 or equivalent). Three hours lecture. An expansion of skills in Chinese grammar, reading, writing, and oral-aural proficiency through social contexts. Advanced instruction in public speaking and other oral communications

FLC 3203 Survey of Chinese Literature: 3 hours.
Three hours lecture. An introduction to Chinese literature in English translation. Reading of major works, genres, and writers in Chinese literary history from the 6th century B.C. to the present

FLC 3303 Survey of Chinese Culture: 3 hours.
Three hours lecture. An English language introduction to Chinese thought, art, society, history, and everyday life. An examination of the construction of national culture and identity in China

FLC 4000 Directed Individual Study in Chinese: 1-6 hours.
Hours and credits to be arranged

FLC 4990 Special Topics in Chinese: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

French Courses

FLF 1113 French I: 3 hours.
Two hours lecture. Two hours recitation. An introduction to conversational French

FLF 1123 French II: 3 hours.
(Prerequisite: FLF 1113 or equivalent). Two hours lecture. Two hours recitation. Conversational French. Reading of graded texts

FLF 1800 Beginning French Study Abroad: 3-6 hours.
(Prerequisite: Consent of the instructor). Credit and hours to be arranged. (3-6 hours) Beginning level study abroad of the French language and culture

FLF 2133 French III: 3 hours.
(Prerequisite: FLF 1123 or equivalent). Three hours lecture. Rapid review of French grammar; oral-aural practice; reading of intermediate texts

FLF 2143 French IV: 3 hours.
(Prerequisite: FLF 2133 or equivalent). Three hours lecture. Oral-aural practice; reading of intermediate texts. Honors section available

FLF 2163 Intensive French Expression I.: 3 hours.
(Prerequisite FLF 2143 or consent of instructor). This communicative course focuses on production in the three modes of communication (interpersonal, interpretive, presentational)

FLF 2800 Intermediate French Study Abroad: 3-6 hours.
(Prerequisite: Consent of the instructor). (3 to 6 hrs) Credit and hours to be arranged.Intermediate level study abroad of the French language and culture

FLF 2990 Special Topics in French: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

FLF 3114 Advanced French Composition: 4 hours.
(Prerequisite: FLF 2143, FLF 2125 or equivalent or consent of instructor). Three hours lecture and laboratory. Required of all majors. Advanced instruction in all aspects of the written language

FLF 3124 Advanced French Conversation: 4 hours.
(Prerequisite: FLF 2143, FLF 2125 or equivalent or consent of instructor). Three hours lecture and laboratory. Required of all majors. A continuation of FLF 3114. Advanced instsruction in all aspects of the spoken language

FLF 3143 French Civilization: 3 hours.
(Prerequisite: FLF 2143, FLF 2125 or equivalent or consent of instructor). Three hours lecture. Illustrated survey of French cultural heritage

FLF 3163 Intensive French Expression II: 3 hours.
(Prerequisite FLF 2143 or consent of instructor). The communicative course focuses on advanced-level tasks in the three modes of communication (interpersonal, interpretive, presentational)

FLF 3313 Business French I: 3 hours.
(Prerequisite: FLF 2143, FLF 2125 or equivalent or consent of instructor). Three hours lecture. The French language as used in business practices and marketing; emphasis on acquisition and application of French commercial terminology in import/export correspondence

FLF 3513 Survey of French Literature: 3 hours.
(Prerequisite:FLF 2143 or FLF 2125 or equivalent or consent of instructor). Three hours lecture. Required by all majors. A survey of French literataure from the Middle ages to the Seventeenth - Century

FLF 3523 Survey of French Literature: 3 hours.
(Prerequisite: FLF 2143 or FLF 2125 or equivalent or consent of instructor). Three hours lecture. Required of all majors. A survey of French literature from the 18th century to the present

FLF 3800 Advanced French Study Abroad: 3-6 hours.
(Prerequisite: Consent of instructor). Credit and hours to be arranged. An advanced-level course for French students studying abroad. (3 to 6 hrs)

FLF 4000 Directed Individual Study in French: 1-6 hours.
Hours and credits to be arranged

FLF 4053 19th Century Studies: Baudelaire Seminar: 3 hours.
(Prerequisite:FLF 3124 or consent of instructor). Three hours lecture. A close study of Baudelaire's literary and critical work

FLF 4073 French Drama of the 20th Century: 3 hours.
(Prerequisite: FLF 3523 or consent of instructor). Three hours lecture. Reading of works of outstanding writers and discussion of literary currents of the century

FLF 4103 French Novel and Short Story of the 20th Century: 3 hours.
(Prerequisite: FLF 3523 or consent of instructor). Three hours lecture. Reading and critical evaluation of modern French novels and short stories of various literary schools

FLF 4163 Francophone Literature: 3 hours.
(Prerequisite FLF 2143 or graduate standing). Three hours lecture. A survey of important authors and literary movements from around the French-speaking world outside of mainland France

FLF 4173 Introduction to Francophone Cinema: 3 hours.
(Prerequisiste:FLF 3124 or consent of instructor). Three hours lecture. A study of landmark Francophone films, their regions and cultures

FLF 4183 Francophone Theater: 3 hours.
(Prerequisite FLF 2143 or graduate standing). Three hours lecture. An in-depth exploration of Francophone theater from many different playwrights from many different regions of the Francophone world

FLF 4193 18th Century French Literature: 3 hours.
(Prerequisiste:FLF 2143 or the equivalent). Three hours lecture. An introduction to French Literature and essential literary movements from the 18th century

FLF 4223 French Novel Before 1945: 3 hours.
(Prerequisite: FLF 2143 or the equivalent). Three hours lecture. A course dedicated to the major French novelists for the first half of the twentieth-century and the literary movements that they represent

FLF 4233 Modern French Poetry: 3 hours.
(Prerequisiste:FLF 2143). Three hours lecture. An introduction into modern French poetry and the literary movements that epitomize this time peroid

FLF 4273 The Human Condition: 3 hours.
(Prerequisite:FLF 2143 or the equivalent). Three hours lecture. A course emphasizing the concepts of the "Human Condition" as conceptualized by seminal French writers and thinkers

FLF 4323 Studies in the 20th Century: Le Clezio Seminar: 3 hours.
(Prerequisite:FLF 2143 or the equivalent). Three hours lecture. A profound exploration of the diverse literary repertoire of one of France's greatest comtemporary authors, J.M.G.Le Clezio

FLF 4333 19th Century Studies: Decadents, Dandies, and Bohemians: 3 hours.
(Prerequisite: FLF 3124 or consent of instructor). Three hours lecture. A study of three subcultures of modernity in the 19th century France

FLF 4990 Special Topics in French: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

FLF 6053 19th Century Studies: Baudelaire Seminar: 3 hours.
(Prerequisite:FLF 3124 or consent of instructor). Three hours lecture. A close study of Baudelaire's literary and critical work

FLF 6073 French Drama of the 20th Century: 3 hours.
(Prerequisite: FLF 3523 or consent of instructor). Three hours lecture. Reading of works of outstanding writers and discussion of literary currents of the century

FLF 6083 Survey of French Lyric Poetry: 3 hours.
(Prerequisite: 3513). Three hours lecture. Reading and interpretation of masterpieces. Discussion of literary currents and personalities of the century

FLF 6103 French Novel and Short Story of the 20th Century: 3 hours.
(Prerequisite: FLF 3523 or consent of instructor). Three hours lecture. Reading and critical evaluation of modern French novels and short stories of various literary schools

FLF 6163 Francophone Literature: 3 hours.
(Prerequisite FLF 2143 or graduate standing). Three hours lecture. A survey of important authors and literary movements from around the French-speaking world outside of mainland France

FLF 6173 Introduction to Francophone Cinema: 3 hours.
(Prerequisiste:FLF 3124 or consent of instructor). Three hours lecture. A study of landmark Francophone films, their regions and cultures

FLF 6183 Francophone Theater: 3 hours.
(Prerequisite FLF 2143 or graduate standing). Three hours lecture. An in-depth exploration of Francophone theater from many different playwrights from many different regions of the Francophone world

FLF 6193 18th Century French Literature: 3 hours.
(Prerequisiste:FLF 2143 or the equivalent). Three hours lecture. An introduction to French Literature and essential literary movements from the 18th century

FLF 6213 History of French Grammar: 3 hours.
(Prerequisites: FLF 3114 and 3124 or consent of instructor). A history of the French language from the Strasbourg Oaths to Montaigne

FLF 6223 French Novel Before 1945: 3 hours.
(Prerequisite: FLF 2143 or the equivalent). Three hours lecture. A course dedicated to the major French novelists for the first half of the twentieth-century and the literary movements that they represent

FLF 6233 Modern French Poetry: 3 hours.

FLF 6273 The Human Condition: 3 hours.
(Prerequisite:FLF 2143 or the equivalent). Three hours lecture. A course emphasizing the concepts of the "Human Condition" as conceptualized by seminal French writers and thinkers

FLF 6323 Studies in the 20th Century: Le Clezio Seminar: 3 hours.
(Prerequisite:FLF 2143 or the equivalent). Three hours lecture. A profound exploration of the diverse literary repertoire of one of France's greatest comtemporary authors, J.M.G.Le Clezio

FLF 6333 19th Century Studies: Decadents, Dandies, and Bohemians: 3 hours.
(Prerequisite: FLF 3124 or consent of instructor). Three hours lecture. A study of three subcultures of modernity in the 19th century France

FLF 6990 Special Topics in French: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

FLF 7000 Directed Individual Study in French: 1-6 hours.
Hours and credits to be arranged

FLF 8000 Thesis Research/ Thesis in French: 1-13 hours.
Hours and credits to be arranged

FLF 8063 Seminar in 19th Century French Drama: 3 hours.
(Prerequisite: Graduate standing)

FLF 8073 Seminar in French Drama of the 20th Century: 3 hours.
(Prerequisite: Graduate standing)

FLF 8093 Seminar in the French Novel of the 19th Century: 3 hours.
(Prerequisite: Graduate Standing)

FLF 8103 Seminar in the French Novel of the 20th Century: 3 hours.
(Prerequisite: Graduate standing)

FLF 8113 Seminar in French Classical and Neo-Classical Comedy: 3 hours.
(Prerequisite: Graduate standing)

FLF 8123 Seminar in the French Novel and Short Story of the Renaissance and Classical Period: 3 hours.
(Prerequisite: Graduate standing)

FLF 8163 Seminar in Francophone Literature: 3 hours.
A close reading of seminal writers and thinkers from outside of mainland France

FLF 8183 Seminar in Francophone Theater: 3 hours.
A close reading of Francophone playwrights and the works of contemporary theater theorists

FLF 8990 Special Topics in French: 1-9 hours.
(Prerequisite: Graduate standing). Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

German Courses

FLG 1113 German I: 3 hours.
Two hours lecture. Two hours recitation. An introduction to conversational German

FLG 1123 German II: 3 hours.
(Prerequisite: FLG 1113 or equivalent). Two hours lecture. Two hours recitation. Conversational German. Reading of graded texts

FLG 2133 German III: 3 hours.
(Prerequisite: FLG 1123). Three hours lecture. Rapid review of German grammar; oral-aural practice; reading of intermediate texts

FLG 2143 German IV: 3 hours.
(Prerequisite: FLG 2133). Three hours lecture. Oral-aural practice; reading of intermediate texts

FLG 2990 Special Topics in German: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

FLG 3114 Advanced German Composition: 4 hours.
(Prerequisite: FLG 2143 or consent of instructor). Three hours lecture. Two hour laboratory. Required of all majors. Advanced instruction concentrating on German composition

FLG 3124 Advanced German Conversation: 4 hours.
(Prerequisiste:FLG 2143 or consent of instructor). Three hours lecture. Two hours laboratory. Required of all majors. Advanced instruction concentrating on German conversation

FLG 3143 German Civilization: 3 hours.
(Prerequisite: FLG 2143 or equivalent.) Three hours lecture. A survey of German cultural heritage

FLG 3153 Modern German Culture: 3 hours.
Three hours lecture. (Prerequisite: FLG 2143 or equivalent). A survey of German culture and life today

FLG 3313 Business German I: 3 hours.
(Prerequisites: FLG 2143). Three hours lecture. The German language as used in business; emphasis on acquisition and application of German commercial terminology on import/export correspondence

FLG 3323 Business German II: 3 hours.
(Prerequisite: FLG 2143). Three hours lecture. The German language as used in the German stock market, trade, and exchange controls; acquisition and application of written and oral German business terminology

FLG 4000 Directed Individual Study in German: 1-6 hours.
Hours and credits to be arranged

FLG 4143 Verwandlungen: 3 hours.
(Prerequisite:FLG 2143 or equivalent). Three hours lecture. A study of the theme of "metamorphosis" in various literary genres of the German-speaking countries

FLG 4163 History of the German Language: 3 hours.
(Prerequisite: FLG 3124). Three hours lecture. The relationship of High German to the parent Indo-European and to the remaining Germanic dialects; linguistic development from the earliest times to the present

FLG 4303 German Film: 3 hours.
(Prerequisiste: FLG 2143 or equivalent). Three hours lecture. Study of films from the German-speaking countries from the early twentieth century to today

FLG 4353 German Novella: 3 hours.
(Prerequisite:FLG 2143 or equivalent).Three hours lecture. Study of novellas written in German

FLG 4463 German Drama of the 20th Century: 3 hours.
(Prerequisite: FLG 3513). Three hours lecture. Reading of works of outstanding writers and discussion of literary currents of the century

FLG 4493 Mysteries in Literature and Film: 3 hours.
(Prerequisite:FLG 2143 or equivalent). Three hours lecture. A study of the genre of mysteries in German-language literature and film

FLG 4503 German Literature to 1750: 3 hours.
(Prerequisite:FLG 2143 or equivalent).Three hours lecture. German literature from it origins to Storm and Stress

FLG 4523 German Literature from 1750 to Present: 3 hours.
(Prerequisite:FLG 2143 or eequivalent).Three hours lecture. A survey of German literature from the Enlightment to the present

FLG 4533 Art, Politics, and Propaganda: 3 hours.
(Prerequisite: FLG 2143 or equivalent or consent of instructor). Three hours lecture. A study of the inter-connections of German aesthetics, artistic movements, and political theory from the age of Enlightenment through the 20th Century

FLG 4990 Special Topics in German: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

FLG 6143 Verwandlungen: 3 hours.
(Prerequisite:FLG 2143 or equivalent). Three hours lecture. A study of the theme of "metamorphosis" in various literary genres of the German-speaking countries

FLG 6163 History of the German Language: 3 hours.
(Prerequisite: FLG 3124). Three hours lecture. The relationship of High German to the parent Indo-European and to the remaining Germanic dialects; linguistic development from the earliest times to the present

FLG 6303 German Film: 3 hours.
(Prerequisiste: FLG 2143 or equivalent). Three hours lecture. Study of films from the German-speaking countries from the early twentieth century to today

FLG 6353 German Novella: 3 hours.
(Prerequisite:FLG 2143 or equivalent).Three hours lecture. Study of novellas written in German

FLG 6463 German Drama of the 20th Century: 3 hours.
(Prerequisite: FLG 3513). Three hours lecture. Reading of works of outstanding writers and discussion of literary currents of the century

FLG 6493 Mysteries in Literature and Film: 3 hours.
(Prerequisite:FLG 2143 or equivalent). Three hours lecture. A study of the genre of mysteries in German-language literature and film

FLG 6503 German Literature to 1750: 3 hours.
(Prerequisite:FLG 2143 or equivalent).Three hours lecture. German literature from it origins to Storm and Stress

FLG 6523 German Literature from 1750 to Present: 3 hours.
(Prerequisite:FLG 2143 or eequivalent).Three hours lecture. A survey of German literature from the Enlightment to the present

FLG 6533 Art, Politics, and Propaganda: 3 hours.
(Prerequisite: FLG 2143 or equivalent or consent of instructor). Three hours lecture. A study of the inter-connections of German aesthetics, artistic movements, and political theory from the age of Enlightenment through the 20th Century

FLG 6990 Special Topics in German: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

FLG 7000 Directed Individual Study in German: 1-6 hours.
Hours and credits to be arranged

FLG 8000 Thesis Research/ Thesis in German: 1-13 hours.
Hours and credits to be arranged

FLG 8443 Eighteenth-Century German Drama: 3 hours.
(Prerequisite: Graduate standing). Three hours lecture. A study of dramas from the Enlightenment, Sensibility, and Storm-and-Stress periods

FLG 8483 Twentieth-Century German Short Story: 3 hours.
(Prerequisite Graduate standing). Three hours lecture. A study of twentieth-century short prose fiction in German

FLG 8990 Special Topics in German: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

Greek Courses

FLH 1113 Greek I: 3 hours.
Three hours lecture. An introduction to Biblical and Classical Greek

FLH 1123 Elementary Ancient Greek II: 3 hours.
Three hours lecture. A continuation of FLH 1113

FLH 2133 Greek III: 3 hours.
(Prerequisite: FLH 1123 or equivalent). Three hours lecture. Introduction to ancient Greek literature. Selected readings from Homer, Herodotus, and Plato

FLH 2143 Greek IV: 3 hours.
(Prerequisite: FLH 2133 or equivalent). Three hours lecture. Introduction to ancient Greek literature. Selected readings from Aristotle, the New Testament, and the Church Fathers

FLH 2990 Special Topics in Greek: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

FLH 3013 Plato: 3 hours.
(Prerequisite: FLH 2143 or the equivalent.) Three hours lecture. A study of Plato’s Greek text and representation of Socrates

FLH 4000 Directed Individual Study: 1-9 hours.
Subject matter, hours, and credits to be arranged

FLH 4990 Special Topics in Greek: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

FLH 6990 Special Topics in Greek: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

FLH 8990 Special Topics in Greek: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

Italian Courses

FLI 1001 First Year Seminar: 1 hour.
One hour lecture. First-year seminars explore a diverse arrary of topics that provide students with an opportunity to learn about a specific discipline from skilled faculty members

FLI 1113 Italian I: 3 hours.
Two hours lecture, two hours laboratory. An introduction to written and spoken Italian in a cultural context

FLI 1123 Italian II: 3 hours.
(Prerequisites: FLI 1113 or equivalent). Two hours lecture, two hours laboratory. A continuation of Italian I, emphasizing oral expression, reading comprehension, and writing

FLI 1800 Italian Study Abroad: 3-6 hours.
(Prerequisite: Consent of the instructor; at least one previous class of Italian). Credit and hours to be arranged. Beginning-intermediary level course designed for students learning Italian language and culture abroad

FLI 2133 Italian III: 3 hours.
(Prerequisites: FLI 1123 or equivalent). Three hours lecture. This course will expand students' skill in Italian, focusing on speaking, understanding, reading, and writing in a cultural context

FLI 2143 Italian IV: 3 hours.
(Prerequisites: 2133 or equivalent). Three hours lecture. This course focuses on reviewing and expanding functional skills in Italian, including reading, writing, and oral proficiency through the study of modern masterpieces of Italian literature and arts

FLI 2990 Special Topics in Italian: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

FLI 4000 Directed Individual Study in Italian: 1-6 hours.

FLI 4990 Special Topics in Italian: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

Japanese Courses

FLJ 1113 Japanese I: 3 hours.
Two hours lecture. Two hours recitation. An introduction to conversational Japanese

FLJ 1123 Japanese II: 3 hours.
(Prerequisite: FLJ 1113 or equivalent). Two hours lecture Two hours recitation. An introduction to conversational Japanese

FLJ 2133 Japanese III: 3 hours.
(Prerequisite: FLJ 1124 or equivalent). Three hours lecture. Rapid review of Japanese grammar; oral-aural practice; reading of intermediate texts

FLJ 2143 Japanese IV: 3 hours.
(Prerequisite: FLJ 2133 or equivalent). Three hours lecture. Oral-aural practice; reading and discussion of intermediate texts

FLJ 2990 Special Topics in Japanese: 1-9 hours.
Credit and tltle to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one tltle within two academic years)

FLJ 3153 Japanese V: 3 hours.
(Prerequisite: FLJ 2143 or equivalent). Three hours lecture. An integrated development of skills in Japanese grammar, reading, writing, and oral-aural proficiency at the mid-intermediate level. Specific attention is paid to the cultural contexts in which these skills are used

FLJ 3163 Japanese VI: 3 hours.
(Prerequisite FLJ 3153 or equivalent). Three hours lecture. An expansion of skills in Japanese grammar, reading, writing, and oral-aural proficiency through social contexts. Advanced instruction in public speaking and other oral communications

FLJ 3203 Survey of Japanese Literature: 3 hours.
Three hours lecture. An introduction to Japanese literature in English translation. Reading of major works, genres, and writers in Japanese literary history from the 10th century to the present

FLJ 3303 Survey of Japanese Culture: 3 hours.
Three hours lecture. An English language introduction to Japanese contemporary life as well as intellectual, artistic, and historical traditions. An examination of the construction of Japanese national culture and identity

FLJ 4000 Directed Individual Study in Japanese: 1-6 hours.
Hours and credits to be arranged

FLJ 4990 Special Topics in Japanese: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

FLJ 6990 Special Topics in Japanese: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

FLJ 7000 Directed Individual Study in Japanese: 1-6 hours.
Hours and credits to be arranged

FLJ 8990 Special Topics in Japanese: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

Latin Courses

FLL 1113 Latin I: 3 hours.
Three hours lecture. An introduction to the Latin language

FLL 1123 Latin II: 3 hours.
(Prerequisite: FLL 1113 or equivalent). Three hours lecture. Grammar; elementary reading

FLL 2133 Latin III: 3 hours.
(Prerequisite: FLL 1123 or equivalent). Three hours lecture. Review of Latin grammar; reading of intermediate texts

FLL 2143 Latin IV: 3 hours.
(Prerequisite: 2133 or equivalent). Three hours lecture. Reading of intermediate texts

FLL 2990 Special Topics in Latin: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

FLL 3111 Latin Prose Composition I: 1 hour.
(Prerequisite: FLL 2133 or the equivalent.) One hour lecture. Composition exercises in Latin prose, with a review of Latin grammar

FLL 3121 Latin Prose Composition II: 1 hour.

FLL 3131 Latin Prose Composition III: 1 hour.
(Prerequisite: FLL 2133 or the equivalent.) One hour lecture. Composition exercises in Latin prose involving the use of the gerunds, gerundives, idiomatic clauses, and indirect speech

FLL 3173 Augustan Literature and Culture: 3 hours.
(Prerequisite: FLL 2143 or the equivalent.) Three hours lecture. A literary and cultural survey of the Augustan era (27 B.C. to A.D. 14)

FLL 4000 Directed Individual Study in Latin: 1-6 hours.
(Prerequisite: Junior standing). Subject matter, hours, and credits to be arranged

FLL 4443 Caesar: 3 hours.
(Prerequisite: FLL 2143 or the equivalent.) Three hours lecture. A study of the Latin works of Julius Caesar in their historical context

FLL 4990 Special Topics in Latin: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

FLL 6990 Special Topics in Latin: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

FLL 7000 Directed Individual Study in Latin: 1-6 hours.
Hours and credits to be arranged

FLL 8990 Special Topics in Latin: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

Russian Courses

FLR 1113 Russian I: 3 hours.
Two hours lecture. Two hours recitation. An introduction to conversational Russian

FLR 1123 Russian II: 3 hours.
(Prerequisite: FLR 1113 or equivalent). Two hours lecture. Two horus recitation. Conversational Russian. Reading of graded texts

FLR 2133 Russian III: 3 hours.
(Prerequisite: FLR 1124). Three hours lecture. Rapid review of Russian grammar; oral-aural practice; reading of intermediate texts

FLR 2143 Russian IV: 3 hours.
(Prerequisite: FLR 2133). Three hours lecture. Oral-aural practice; reading of intermediate texts

FLR 2990 Special Topics in Russian: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

FLR 4000 Directed Individual Study in Russian: 1-6 hours.
Hours and credits to be arranged

FLR 4990 Special Topics in Russian: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

FLR 6990 Special Topics in Russian: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

FLR 8990 Special Topics in Russian: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

Spanish Courses

FLS 1001 First Year Seminar: 1 hour.
One hour lecture. First-year seminars explore a diverse arrary of topics that provide students with an opportunity to learn about a specific discipline from skilled faculty members

FLS 1113 Spanish I: 3 hours.
Two hours lecture. Two hours recitation. An introduction to conversational Spanish

FLS 1123 Spanish II: 3 hours.
(Prerequisite: FLS 1113 or equivalent). Two hours lecture. Two hours recitation. Conversational Spanish. Reading of graded texts

FLS 1213 Spanish for the Green Industry I: 3 hours.
Three hours lecture. Conversational Spanish for students majoring in agricultural related professions

FLS 1223 Spanish for the Green Industry II: 3 hours.
(Prerequisite:FLS 1213 or the equivalent). Three hours lecture.Conversational Spanish for students majoring in agricultural related professions

FLS 2133 Spanish III: 3 hours.
(Prerequisite: FLS 1123 or equivalent). Three hours lecture. Rapid review of Spanish grammar; oral-aural practice; reading of intermediate texts. Honors section available

FLS 2143 Spanish IV: 3 hours.
(Prerequisite: FLS 2133 or equivalent). Three hours lecture. Oral-aural practice; reading of intermediate texts. Honors section available

FLS 2990 Special Topics in Spanish: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

FLS 3111 Advanced Spanish Laboratory: 1 hour.
(Prerequisite: FLS 2143 or FLS 2125). Three hours laboratory. A laboratory course to accompany FLS 3113 or to be taken separately. Required of all majors

FLS 3113 Advanced Spanish Composition: 3 hours.
(Prerequisite: FLS 2143 or FLS 2125). Three hours lecture. Required of all majors. Instruction in written composition through study of advanced grammar and writing techniques

FLS 3121 Advanced Spanish Conversation Practicum: 1 hour.
(Prerequisite: FLS 2143 or consent of department). One hour practicum. Required of all majors. A practicum to complement FLS 3233

FLS 3143 Hispanic Civilization: 3 hours.
(Prerequisite: FLS 2143 or FLS 2125). Three hours lecture. Illustrated survey of Hispanic cultural heritage

FLS 3233 Advanced Spanish Conversation: 3 hours.
(Prerequisite:FLS 2143 or equivalent).Required of all majors. Advanced instruction in Spanish with emphasis on an oral communication skills

FLS 3313 Economics of the Spanish-Speaking World: 3 hours.
(Prerequisite:FLS 2143 or equivalent). Thre hours lecture. Study of the economic structures and business cultures of Spanish-speaking countries, with emphasis on economic terminology

FLS 3323 Enterprises in the Spanish-Speaking World: 3 hours.
(Prerequisite:FLS 2143 or equivalent).Three hours lecture. Designed to provide a functional command of conversational and written Spanish for business interactions in the modern world

FLS 3413 Intensive Spanish: 3 hours.
An intensive study of Spanish language and culture, designed to prepare students to live or study abroad

FLS 3613 Spanish Literature: Middle Ages-Golden Age: 3 hours.
(Prerequisite:FLS 2143 or equivalent). Three hours lecture. A survey of Spanish Literature from the Middle Ages to the Golden Age. (c.1000-1640)

FLS 3623 Introduction to Spanish Literature, 19th Century – Present: 3 hours.
An introduction to Peninsular Spanish literature from the 19th century to the present

FLS 4000 Directed Individual Study in Spanish: 1-6 hours.
Hours and credits to be arranged

FLS 4213 Modern Spanish Women Writers: 3 hours.
(Prerequisite:FLS 3113, FLS 3223 or equivalent, or consent of instructor). Three hours lecture. An introduction to modern Spanish women writers

FLS 4223 Spanish Novel of the Golden Age: 3 hours.
(Prerequisite: FLS 3513). Three hours lecture. A study of the picaresque novel and the short novel of the Golden Age

FLS 4243 Modern Spanish Essay: 3 hours.
(Prerequisite:FLS 3113,FLS 3233 or equivalent, or consent of instructor).Three hours lecture. An introduction to modern Spanish Essay

FLS 4263 20th Century Spanish Novel and Short Stories: 3 hours.
(Prerequisite: FLS 3513). Three hours lecture. Reading and critical evaluation of selected Spanish novels and short stories from the Generation of 1898 to the present

FLS 4273 Modern Spanish Drama: 3 hours.
(Prerequisite:FLS 3113,FLS 3223 or equivalent, or consent of instructor).Three hours lecture. An introduction to modern Spanish drama

FLS 4283 The Contemporary Spanish-American Novel and Short Story: 3 hours.
(Prerequisite: FLS 3523 or consent of instructor). Three hours lecture. A study of major contemporary Spanish-American novels and short stories

FLS 4293 Cinema in the Context of Spanish Culture: 3 hours.
(Prerequiste:FLS 3113,FLS 3223 or equivalent, or consent of instructor). Three hours lecture. An introduction to Spanish cinema

FLS 4323 Spanish Drama of the Golden Age: 3 hours.
(Prerequisite: FLS 3513). Three hours lecture. A study of dramatic works of Lope de Vega, Tirso de Molina, Calderon, and minor dramatic writers of the 17th century

FLS 4423 Survey of Spanish Lyric Poetry: 3 hours.
(Prerequisite: FLS 3513). Three hours lecture. Reading and interpretation of masterpieces of Spanish lyric poetry and poetic theory from the Middle Ages to the present

FLS 4453 Spanish Culture, 1898-1936: 3 hours.
(Prerequisite: FLS 3113 or equivalent). Three hours lecture. A study of the literary and cultural production of early 20th century Spain, including literary works, visual art, architecture, music, and film from the loss of empire until the Civil War

FLS 4523 The Renaissance: 3 hours.
(Prerequisite: FLS 3513). Three hours lecture. Spanish literature and thought of the Renaissance

FLS 4543 Survey of Modern Spanish-American Literature: 3 hours.
(Prerequisite:FLS 3223 or equivalent). Three hours lecture. A survey of Spanish-American Literature from Modernism to the present

FLS 4573 Contemporary Spanish-American Drama: 3 hours.
(Prerequisite:FLS 3223 or equivalent).Three hours lecture. An analysis of representative works of twenty-century Spanish-American dramatic literature

FLS 4613 Spanish-American Cinema: 3 hours.
(Prerequisite: FLS 3513).Three hours lecture. An overview of the cultural and historic trends in Spanish-American cinema

FLS 4633 Introduction to Spanish Linguistics: 3 hours.
(Prerequisites: FLS 3233 or consent of instructor). Three hours lecture . Introduction to linguistic analyses and their application to the syntactic, morphological,semantic, phonological, historical, and sociolinguistic aspects of the Spanish language

FLS 4643 Spanish Phonology: 3 hours.
(Prerequisite: FLS 3233 or consent of instructor). Three hours lecture. Introduction to the articulatory classification of Spanish sounds. Discussion of the mental organization of these sounds, and the processes which transform them during speech

FLS 4843 Literary Masterpieces by an Emblematic Hispanic Author: 3 hours.
(Prerequisite: FLS 3113) Three hours lecture. A study of the major works by an influential and emblematic Hispanic author

FLS 4853 Survey of Spanish-American Poetry: 3 hours.
(Prerequisite:FLS 3513 or equivalent).Three hours lecture. A panoramic study of the Spanish-American poetry from early to present times

FLS 4883 Senior Seminar in FLS: 3 hours.
(Prerequisite: Senior standing in CMLL, with concentration in Spanish). Three hours seminar. This senior-level seminar allows students to explore a specific topic in Hispanic Languages and Literatures from skilled faculty members, and complete a work of substantial independent research upon completion of the course

FLS 4990 Special Topics in Spanish: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

FLS 6213 Modern Spanish Women Writers: 3 hours.
(Prerequisite:FLS 3113, FLS 3223 or equivalent, or consent of instructor). Three hours lecture. An introduction to modern Spanish women writers

FLS 6223 Spanish Novel of the Golden Age: 3 hours.
(Prerequisite: FLS 3513). Three hours lecture. A study of the picaresque novel and the short novel of the Golden Age

FLS 6243 Modern Spanish Essay: 3 hours.
(Prerequisite:FLS 3113,FLS 3233 or equivalent, or consent of instructor).Three hours lecture. An introduction to modern Spanish Essay

FLS 6273 Modern Spanish Drama: 3 hours.
(Prerequisite:FLS 3113,FLS 3223 or equivalent, or consent of instructor).Three hours lecture. An introduction to modern Spanish drama

FLS 6283 The Contemporary Spanish-American Novel and Short Story: 3 hours.
(Prerequisite: FLS 3523 or consent of instructor). Three hours lecture. A study of major contemporary Spanish-American novels and short stories

FLS 6293 Cinema in the Context of Spanish Culture: 3 hours.
(Prerequiste:FLS 3113,FLS 3223 or equivalent, or consent of instructor). Three hours lecture. An introduction to Spanish cinema

FLS 6323 Spanish Drama of the Golden Age: 3 hours.
(Prerequisite: FLS 3513). Three hours lecture. A study of dramatic works of Lope de Vega, Tirso de Molina, Calderon, and minor dramatic writers of the 17th century

FLS 6453 Spanish Culture, 1898-1936: 3 hours.
(Prerequisite: FLS 3113 or equivalent). Three hours lecture. A study of the literary and cultural production of early 20th century Spain, including literary works, visual art, architecture, music, and film from the loss of empire until the Civil War

FLS 6543 Survey of Modern Spanish-American Literature: 3 hours.
(Prerequisite:FLS 3223 or equivalent). Three hours lecture. A survey of Spanish-American Literature from Modernism to the present

FLS 6633 Introduction to Spanish Linguistics: 3 hours.
(Prerequisites: FLS 3233 or consent of instructor). Three hours lecture . Introduction to linguistic analyses and their application to the syntactic, morphological,semantic, phonological, historical, and sociolinguistic aspects of the Spanish language

FLS 6643 Spanish Phonology: 3 hours.
(Prerequisite: FLS 3233 or consent of instructor). Three hours lecture. Introduction to the articulatory classification of Spanish sounds. Discussion of the mental organization of these sounds, and the processes which transform them during speech

FLS 6843 Literary Masterpieces by an Emblematic Hispanic Author: 3 hours.
(Prerequisite: FLS 3113) Three hours lecture. A study of the major works by an influential and emblematic Hispanic author

FLS 6990 Special Topics in Spanish: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

FLS 7000 Directed Individual Study in Spanish: 1-6 hours.
Hours and credits to be arranged

FLS 8000 Thesis Research/ Thesis in Spanish: 1-13 hours.
Hours and credits to be arranged

FLS 8223 Seminar in the Picaresque Novel: 3 hours.
(Prerequisite: Graduate standing)

FLS 8253 Avant-Garde Literature: 3 hours.
A study of avant-garde Spanish and Latin American literature in the 20th century

FLS 8263 Seminar in the Novel of the 20th Century: 3 hours.
(Prerequisite: Graduate standing)

FLS 8283 The Contemporary Spanish-American Novel and Short Story: 3 hours.
(Prerequisite: Graduate standing). Three hours lecture. A study of major contemporary Spanish-American novels and short stories

FLS 8990 Special Topics in Spanish: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

Food, Nutrition Health Promo Courses

FNH 1001 First Year Seminar: 1 hour.
One hour lecture. First-year seminars explore a diverse arrary of topics that provide students with an opportunity to learn about a specific discipline from skilled faculty members

FNH 1003 Introduction to Vitamins and Supplements: 3 hours.
Three hours lecture. An introductory course to understanding the basics related to the scope, potency, and interplay of regulatory vitamins and supplements in human health and illness

FNH 1103 Introduction to Food Science, Nutrition and Health Promotion: 3 hours.
Three hours lecture. An introductory course that relates the importance of food science, nutrition, and health promotion to the community to consideration of current trends in these fields

FNH 2011 Career Planning and Success Skills in Food Science: 1 hour.
One hour lecture.The course will introduce students to the job opportunities and skills necessary for success in food industries

FNH 2112 Food Products Evaluation: 2 hours.
One hour lecture. Two hours laboratory. Sensory examination of food products; common defects, causes, and remedies. Basic methods of evaluation of different types of foods

FNH 2203 Science of Food Preparation: 3 hours.
(Prerequisites: Grade of “C” or better in CH 1213/1221 or HS major). One hour lecture. Four hours laboratory. A study of foods and the principles underlying handling and preparation of food products to maintain the highest standards of quality. (Same as HS 2203)

FNH 2233 Meal Management: 3 hours.
One hour lecture. Four hours laboratory. Planning, preparing and serving meals; emphasis on management of time, energy, and money in relation to feeding the family. (HS 2233)

FNH 2283 Child Health and Nutrition: 3 hours.
Three hours lecture. Nutrition requirements during pregnancy and lactation, and of infants and young children; birth defects from metabolic errors; related health of young children. (Same as HS 2283)

FNH 2293 Individual and Family Nutrition: 3 hours.
Three hours lecture. Fundamental principles of human nutrition and the practical application of this knowledge in the selection of adequate diets. (Same as HS 2293)

FNH 2990 Special Topics in Food Science, Nutrition and Health Promotion: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

FNH 3003 Nutrition Field Experience: 3 hours.
(Prerequisite: Grade of "C" or better in FNH 3701 and Junior or Senior Standing). Supervised work experience for nutrition students in an approved situation

FNH 3103 Introduction to Health Professions: 3 hours.
Three hours lecture. Course provides an overview of the types of careers one can pursue in the health care industry. Students will review desired prerequisite courses, entrance exam requirements, and admissions criteria. An in-depth analysis of the roles and responsibilities of each health care professional will be conducted

FNH 3111 Food Science, Nutrition and Health Promotion Seminar: 1 hour.
One hour lecture. Preparation and presentation on specially assigned current topics in Food Science, Nutrition, and Health Promotion

FNH 3142 Meats Judging I: 2 hours.
Spring semester. Four hours laboratory. Grading and judging meat carcasses and cuts, study of packing house operations. (Same as ADS 3142)

FNH 3163 Basic Principles of Health Promotion: 3 hours.
Three hours lecture. Basic concepts of health promotion. Role of health/fitness professional in developing wellness/prevention oriented interventions to promote healthy lifestyles

FNH 3263 Research Methods in Food and Nutrition: 3 hours.
(Prerequisites: Grade of "C" or better in ST 2113 and Junior or Senior Standing, or Consent of Instructor). Two hours lecture. Three hours laboratory. Introduction to food and nutrition research methods, application of computer and related technologies in nutrition research through design and development of a research project

FNH 3283 The Food Service System: 3 hours.
(Prerequisite: Grade of "C" or higher in FNH 2203 and Junior or Senior Standing, or PGM major). Three hours lecture. Introduction to the food service system concept, functional subsystems, and management of financial and human resources

FNH 3314 Introduction to Meat Science: 4 hours.
(Prerequisites: ADS 1114 or FNH 1103). Three hour lecture. Two hours laboratory. Introduction to survey of the muscle food industry including history, production of meat including harvesting, inspection, evaluation and fabrication, storage and value added manufacturing of meat. (Same as ADS 3314)

FNH 3701 Nutrition Professional Development: 1 hour.
(Prerequisite: Junior or Senior standing and consent of instructor). Preparation for nutrition field experience, dietetic internship, and careers

FNH 3723 Community Nutrition: 3 hours.
(Prerequisite: Grade of "C" or higher in FNH 2293 and Junior or Senior Standing). Three hours lecture. The course addresses the biological economic, social-cultural and policy issues that impact communities by understanding and evaluating the various solutions to improving community health outcomes

FNH 4000 Directed Individual Study in Food Science, Nutrition and Health Promotion: 1-6 hours.
Hours and credits to be arranged

FNH 4013 Nutrition Assessment: 3 hours.
(Prerequisites: Grade of "C" or better in FNH 2293 and KI 2603 and Junior Standing). Two hours lecture. Two hours laboratory. Selection, utilization, interpretation, and evaluation of anthropometric, laboratory, clinical and dietary methods available for the assessment of nutritional status

FNH 4114 Analysis of Food Products: 4 hours.
(Prerequisites: CH 2503). Three hours lecture. Three hours laboratory. Chemistry and technology of food products processing and physical and chemical methods of analyzing foods and biological products

FNH 4123 Nutrition and Chronic Disease: 3 hours.
(Prerequisites: Grade of "C" or better in FNH 4013/6013 and Junior or Senior Standing). Three hours lecture. The study of principles of nutrition and pathophysiology of chronic diseases and medical and nutrition management/treatment of chronic diseases and impact on nutritional status

FNH 4143 Dairy Foods Processing: 3 hours.
Two hours lecture. Two hours laboratory. Basic concepts of processing, freezing, and concentrating milk and milk products. Emphasis on fluid milk products, frozen dairy desserts, and dried products

FNH 4164 Quality Assurance of Food Products: 4 hours.
(Prerequisite: BIO 3304). Two hours lecture. Four hours laboratory. Principles, methods, and techniques involved in evaluating essential parameters for commercial, state and federal control of food products

FNH 4173 Food Packaging: 3 hours.
(Prerequisite: Consent of instructor). Three hours lecture. Objectives and requirements of packaging; composition, characteristics, chemical and physical properties, selection and adaptation of packaging materials and packages

FNH 4193 Social-Cultural Aspects of Food: 3 hours.
Three hours lecture. A study of international, regional and religious history, customs, beliefs and other impacts upon food preparation and consumption

FNH 4200 Dual Enroll MUW Culinology Pgm: 1-12 hours.

FNH 4223 Sports Nutrition: 3 hours.
(Prerequisite: FNH 2293 or consent of instructor). Three hours lecture. Integration of nutrition and exercise physiology illustrating links between training, increased demand for nutrients, appropriate intake of foods, beverages and supplements and performance

FNH 4233 Medical Nutrition Therapy: 3 hours.
(Prerequisite:Grade of C or better in FNH 4013/6013 or consent of instructor) Three hours lecture. The study and application of the principles of medical nutrition therapy in stress, trauma and specific disease conditions

FNH 4241 Applied Food Chemistry: 1 hour.
(Prerequisite: BCH 3613 and prior credit for/or current enrollment in FNH 4243/6243). Two hour laboratory. Basic laboratory experiments to provide understanding of the function and interactions of chemical components in food

FNH 4243 Composition and Chemical Reactions of Foods: 3 hours.
(Prerequisites: Grade of "C" or better in CH 1213, and CH 2503 or equivalent, and Junior or Senior Standing). Three hours lecture. Nature and chemical behavior of food constituents including proteins, lipids, carbohydrates, minerals, water, enzymes and pigments; properties of food systems as related to commercial preparation. (Same as ADS 4243/6243)

FNH 4253 Macronutrients: Human Metabolism: 3 hours.
(Prerequisites: FNH Majors: Grade of "C" or better or concurrent enrollment in BCH 4013 and Junior or Senior Standing; or BCH Major). Three hours face to face lecture or web-based distance instruction. In-depth study of the chemistry and functionality of macronutrients in food systems and their biochemical impact on the human body. (Same as BCH 4253/6253)

FNH 4283 Purchasing Food and Equipment for Food Service Systems: 3 hours.
Three hours lecture. Procuring food and equipment for food service systems. Product specifications, cost-effectiveness, value analysis and quality standards

FNH 4284 Quantity Food Production and Service: 4 hours.
(Prerequisite: Grade of "C" or higher in FNH 2203 and FNH 3283 and Senior Standing). One hour lecture. Eight hours laboratory. Principles and methods of preparation and service of food in quantity

FNH 4293 Micronutrients: Human Metabolism: 3 hours.
(Prerequisites: Grade of "C" or better in BCH 4013 and Junior or Senior Standing). Three hours lecture. Advanced human nutrition and metabolism of regulatory micronutrients

FNH 4313 Advanced Science of Muscle Foods: 3 hours.
(Prerequisite: Junior standing or greater, ADS/FNH 3314, CH 1223 and/or Instructor Consent). Three hours lecture. Exploration of the ultra-structure of muscle, (pre- and post-harvest), and the microbiology, inspection and safety, nutritional properties, and sensory characteristics of muscle foods. (Same as ADS 4313/6313.)

FNH 4333 Food Law: 3 hours.
(Prerequisite: Consent of instructor). Two hours lecture. Two hours laboratory. Role of law, mandatory and optional food regulations exercised by state, federal and international agencies on food quality, safety, wholesomeness, nutrition and security

FNH 4353 Nutrition Throughout the Life Cycle: 3 hours.
(Prerequisite: Grade of C or better in FNH 4013/6013,FNH 4123/6123, FNH 4233/6233 and Senior Standing). Three hours lecture. Study of interrelationships of physiological, biochemical and sociological factors and nutrient needs of individuals and groups during the life cycle; infancy through the later years

FNH 4363 Research Methods in Food and Nutrition: 3 hours.
(Prerequisites: ST 2113 Introduction to Statistics and FNH 2293 Individual and Family Nutrition). Three hour lecture. Introduction to food and nutrition research methods, application of computer and related technologies in nutrition research through design and development of a research project

FNH 4373 Nutrition Education and Counseling Skills: 3 hours.
(Prerequisite: Grade of "C" or better in FNH 3723 and Junior or Senior Standing). Three hours lecture. Examination of nutrition education and counseling in the delivery of food/nutrition interventions. Use of technology, interviewing, activities, and application strategies to enhance dietary change

FNH 4393 Prevention and Control of Disease: 3 hours.
(Prerequisite: FNH 3163, or consent of instructor). Three hours lecture. An examination of how food science, nutrition and health promotion relate to chronic diseases. Prevention, control and detection are examined

FNH 4414 Microbiology of Foods: 4 hours.
(Prerequisite: BIO 3404).Two hours lecture. Four hours laboratory. Isolation and classification of the microorganisms associated with spoilage of commercial and domestic preserved foods. (Same as BIO 4414/6414)

FNH 4463 Community Food Systems: 3 hours.
Two hours lecture. Two hours laboratory. Exploration of aspects in community food systems including planning and design, sustainable growing practices, and human nutrition and health. (Same as LA 4463/6463 and PSS 4463/6463)

FNH 4480 Food Science Internship: 3-6 hours.
(Prerequisites: Consent of instructor/advisor). Individual work experience in food science; students will gain faculty supervised experience in industrial, government, and /or University research settings. (May be taken twice for credit.)

FNH 4512 Poultry Products Safety and Sanitation: 2 hours.
(Prerequisite: Junior standing or greater.) Two hours lecture. Poultry product safety hazards, food safety systems (HACCP), principles and practices of food sanitation related to poultry products and poultry safety regulations. (Same as PO 4512/6512)

FNH 4514 Poultry Processing: 4 hours.
Three hours lecture. Two hours laboratory. Study of commercial poultry processing including poultry inspection, regulations, processed poultry products, egg processing, and food safety. (Same as PO 4514/6514)

FNH 4553 Current Issues in Food Science: 3 hours.
Three hours lecture. Discussion of selected topics in the area of food science. Emphasis on topics published by the IFT's Expert Panel on Food Safety and Nutrition and the IFT Office of Scientific and Public Affairs

FNH 4563 Food Products Evaluation: 3 hours.
Basic principles and applications in food product measurements, including physical (viscosity, texture), chemical (ph, acidity), microbiological (bacteria, yeast), and sensory methods will be discussed. (This course is designed for certification programs and not for students enrolled in degree programs at MSU)

FNH 4573 Food Engineering Fundamentals: 3 hours.
(Prerequisites: MA 1713, PH 1123 or consent of instructor). Three hours lecture. Fundamentals of engineering as applied to food and agricultural products. Emphasis on units and dimensions, thermodynamics, mass and energy balances, fluid flow and heat transfer

FNH 4583 Food Preservation Technology: 3 hours.
Two hours lecture. Two hours laboratory. Basics and unit operations on thermal processing, refrigeration/ freezing, concentration/dehydration, fermentation, preservatives, baking, low thermal processes, modified atmospheres, waste-water, and shelf-life will be discussed

FNH 4593 New Food Product Development: 3 hours.
(Prerequisite: Senior level standing). Two hours lecture. Two hours laboratory. New product development, original idea through preliminary appraisal, economic and technological feasibility studies, laboratory developments, organoleptical and consumer testing, and revisions to final decision making

FNH 4613 Seafood Processing: 3 hours.
Two hours lecture. Two hours laboratory. A study of basic food science and technology principles directed toward seafood and aquaculture food harvesting, processing, marketing and regulation

FNH 4773 Introduction to Environmental Health: 3 hours.
(Prerequisite: FNH 3163, or consent of instructor). Three hours lecture. Examines the relationship of people to their environment, how the environment can influence physical well-being, and importance of environmental protection to overall community health

FNH 4783 School and Community Drug Use Prevention: 3 hours.
(Prerequisite: FNH 3163, or consent of instructor). Three hours lecture. Evidence-based prevention program for alcohol, tobacco, and other drugs in schools and communities. Focus on prevention through the Coordinated School Health Programs

FNH 4793 Health Promotion in the Workplace: 3 hours.
(Prerequisite: FNH 3163 or permission of instructor). Three hours lecture. Skills and competencies for the development of evidence based workplace health promotion programs. Emphasis is placed on key concepts, resources and tools for creation of wellness teams and creation of health-enhancing workplace environments

FNH 4990 Food Science, Nutrition and Health Promotion: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years.)

FNH 6013 Nutrition Assessment: 3 hours.
(Prerequisites: Grade of "C" or better in FNH 2293 and KI 2603 and Junior Standing). Two hours lecture. Two hours laboratory. Selection, utilization, interpretation, and evaluation of anthropometric, laboratory, clinical and dietary methods available for the assessment of nutritional status

FNH 6114 Analysis of Food Products: 4 hours.
(Prerequisites: CH 2503). Three hours lecture. Three hours laboratory. Chemistry and technology of food products processing and physical and chemical methods of analyzing foods and biological products

FNH 6123 Nutrition and Chronic Disease: 3 hours.
(Prerequisites: Grade of "C" or better in FNH 4013/6013 and Junior or Senior Standing). Three hours lecture. The study of principles of nutrition and pathophysiology of chronic diseases and medical and nutrition management/treatment of chronic diseases and impact on nutritional status

FNH 6143 Dairy Foods Processing: 3 hours.
Two hours lecture. Two hours laboratory. Basic concepts of processing, freezing, and concentrating milk and milk products. Emphasis on fluid milk products, frozen dairy desserts, and dried products

FNH 6164 Quality Assurance of Food Products: 4 hours.
(Prerequisite: BIO 3304). Two hours lecture. Four hours laboratory. Principles, methods, and techniques involved in evaluating essential parameters for commercial, state and federal control of food products

FNH 6173 Food Packaging: 3 hours.
(Prerequisite: Consent of instructor). Three hours lecture. Objectives and requirements of packaging; composition, characteristics, chemical and physical properties, selection and adaptation of packaging materials and packages

FNH 6193 Social-Cultural Aspects of Food: 3 hours.
Three hours lecture. A study of international, regional and religious history, customs, beliefs and other impacts upon food preparation and consumption

FNH 6223 Sports Nutrition: 3 hours.
(Prerequisite: FNH 2293 or consent of instructor). Three hours lecture. Integration of nutrition and exercise physiology illustrating links between training, increased demand for nutrients, appropriate intake of foods, beverages and supplements and performance

FNH 6233 Medical Nutrition Therapy: 3 hours.
(Prerequisite:Grade of C or better in FNH 4013/6013 or consent of instructor) Three hours lecture. The study and application of the principles of medical nutrition therapy in stress, trauma and specific disease conditions

FNH 6241 Applied Food Chemistry: 1 hour.
(Prerequisite: BCH 3613 and prior credit for/or current enrollment in FNH 4243/6243). Two hour laboratory. Basic laboratory experiments to provide understanding of the function and interactions of chemical components in food

FNH 6243 Composition and Chemical Reactions of Foods: 3 hours.
(Prerequisites: Grade of "C" or better in CH 1213, and CH 2503 or equivalent, and Junior or Senior Standing). Three hours lecture. Nature and chemical behavior of food constituents including proteins, lipids, carbohydrates, minerals, water, enzymes and pigments; properties of food systems as related to commercial preparation. (Same as ADS 4243/6243)

FNH 6253 Macronutrients: Human Metabolism: 3 hours.
(Prerequisites: FNH Majors: Grade of "C" or better or concurrent enrollment in BCH 4013 and Junior or Senior Standing; or BCH Major). Three hours face to face lecture or web-based distance instruction. In-depth study of the chemistry and functionality of macronutrients in food systems and their biochemical impact on the human body. (Same as BCH 4253/6253)

FNH 6283 Purchasing Food and Equipment for Food Service Systems: 3 hours.
Three hours lecture. Procuring food and equipment for food service systems. Product specifications, cost-effectiveness, value analysis and quality standards

FNH 6293 Micronutrients: Human Metabolism: 3 hours.
(Prerequisites: Grade of "C" or better in BCH 4013 and Junior or Senior Standing). Three hours lecture. Advanced human nutrition and metabolism of regulatory micronutrients

FNH 6313 Advanced Science of Muscle Foods: 3 hours.
(Prerequisite: Junior standing or greater, ADS/FNH 3314, CH 1223 and/or Instructor Consent). Three hours lecture. Exploration of the ultra-structure of muscle, (pre- and post-harvest), and the microbiology, inspection and safety, nutritional properties, and sensory characteristics of muscle foods. (Same as ADS 4313/6313.)

FNH 6333 Food Law: 3 hours.
(Prerequisite: Consent of instructor). Two hours lecture. Two hours laboratory. Role of law, mandatory and optional food regulations exercised by state, federal and international agencies on food quality, safety, wholesomeness, nutrition and security

FNH 6353 Nutrition Throughout the Life Cycle: 3 hours.
(Prerequisite: Grade of C or better in FNH 4013/6013,FNH 4123/6123, FNH 4233/6233 and Senior Standing). Three hours lecture. Study of interrelationships of physiological, biochemical and sociological factors and nutrient needs of individuals and groups during the life cycle; infancy through the later years

FNH 6363 Research Methods in Food and Nutrition: 3 hours.
(Prerequisites: ST 2113 Introduction to Statistics and FNH 2293 Individual and Family Nutrition). Three hour lecture. Introduction to food and nutrition research methods, application of computer and related technologies in nutrition research through design and development of a research project

FNH 6373 Nutrition Education and Counseling Skills: 3 hours.
(Prerequisite: Grade of "C" or better in FNH 3723 and Junior or Senior Standing). Three hours lecture. Examination of nutrition education and counseling in the delivery of food/nutrition interventions. Use of technology, interviewing, activities, and application strategies to enhance dietary change

FNH 6393 Prevention and Control of Disease: 3 hours.
(Prerequisite: FNH 3163, or consent of instructor). Three hours lecture. An examination of how food science, nutrition and health promotion relate to chronic diseases. Prevention, control and detection are examined

FNH 6414 Microbiology of Foods: 4 hours.
(Prerequisite: BIO 3404).Two hours lecture. Four hours laboratory. Isolation and classification of the microorganisms associated with spoilage of commercial and domestic preserved foods. (Same as BIO 4414/6414)

FNH 6463 Community Food Systems: 3 hours.
Two hours lecture. Two hours laboratory. Exploration of aspects in community food systems including planning and design, sustainable growing practices, and human nutrition and health. (Same as LA 4463/6463 and PSS 4463/6463)

FNH 6512 Poultry Products Safety and Sanitation: 2 hours.
(Prerequisite: Junior standing or greater.) Two hours lecture. Poultry product safety hazards, food safety systems (HACCP), principles and practices of food sanitation related to poultry products and poultry safety regulations. (Same as PO 4512/6512)

FNH 6514 Poultry Processing: 4 hours.
Three hours lecture. Two hours laboratory. Study of commercial poultry processing including poultry inspection, regulations, processed poultry products, egg processing, and food safety. (Same as PO 4514/6514)

FNH 6573 Food Engineering Fundamentals: 3 hours.
(Prerequisites: MA 1713, PH 1123 or consent of instructor). Three hours lecture. Fundamentals of engineering as applied to food and agricultural products. Emphasis on units and dimensions, thermodynamics, mass and energy balances, fluid flow and heat transfer

FNH 6583 Food Preservation Technology: 3 hours.
Two hours lecture. Two hours laboratory. Basics and unit operations on thermal processing, refrigeration/ freezing, concentration/dehydration, fermentation, preservatives, baking, low thermal processes, modified atmospheres, waste-water, and shelf-life will be discussed

FNH 6593 New Food Product Development: 3 hours.
(Prerequisite: Senior level standing). Two hours lecture. Two hours laboratory. New product development, original idea through preliminary appraisal, economic and technological feasibility studies, laboratory developments, organoleptical and consumer testing, and revisions to final decision making

FNH 6613 Seafood Processing: 3 hours.
Two hours lecture. Two hours laboratory. A study of basic food science and technology principles directed toward seafood and aquaculture food harvesting, processing, marketing and regulation

FNH 6773 Introduction to Environmental Health: 3 hours.
(Prerequisite: FNH 3163, or consent of instructor). Three hours lecture. Examines the relationship of people to their environment, how the environment can influence physical well-being, and importance of environmental protection to overall community health

FNH 6783 School and Community Drug Use Prevention: 3 hours.
(Prerequisite: FNH 3163, or consent of instructor). Three hours lecture. Evidence-based prevention program for alcohol, tobacco, and other drugs in schools and communities. Focus on prevention through the Coordinated School Health Programs

FNH 6793 Health Promotion in the Workplace: 3 hours.
(Prerequisite: FNH 3163 or permission of instructor). Three hours lecture. Skills and competencies for the development of evidence based workplace health promotion programs. Emphasis is placed on key concepts, resources and tools for creation of wellness teams and creation of health-enhancing workplace environments

FNH 6990 Special Topics in Food Science, Nutrition and Health Promotion: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years.)

FNH 7000 Directed Individual Study in Food Science, Nutrition and Health Promotion: 1-6 hours.
Hours and credit to be arranged

FNH 8000 Thesis Research/Thesis in Food Science, Nutrition and Health Promotion: 1-13 hours.
Thesis Research/Thesis. Hours and credits to be arranged

FNH 8111 Food Science, Nutrition, and Health Promotion Seminar: 1 hour.
One hour lecture. Preparation and presentation of reports on specially assigned current topics in Food Science

FNH 8113 Advanced Food Microbiology: 3 hours.
(Prerequisite: BIO 4414 or equivalent). A specialized study of food poisoning outbreaks, including methods used in tracing origins and the investigation of etiological agents. Preventive measures considered

FNH 8121 Food Science Nutrition and Health Promotion Seminar: 1 hour.
One hour lecture. Preparation of reports on specially assigned current topics in Food Science

FNH 8131 Food Science Nutrition and Health Promotion Seminar: 1 hour.
One hour lecture. Preparation and presentation of reports on specially assigned current topics in Food Science

FNH 8163 Flavor and Food Acceptance: 3 hours.
(Prerequisite:CH 2503) Three hours lecture. Sensory responses with emphasis on smell, taste, tact, and appearance as related to foods. Techniques of panel and physicochemical methods of testing

FNH 8193 Problems in Health Education: 3 hours.
Three hours lecture. Includes current information relating to various health problems in our society. Stresses methods of prevention and wellness at different levels of curriculum organization

FNH 8233 Maternal, Infant, and Child Nutrition: 3 hours.
Three hours lecture. Nutritional needs during reproduction and growth; problems in nourishing women during the reproductive period, infants, and children; indices of growth and development

FNH 8243 Community Nutrition: 3 hours.
(Prerequisite: HS 3213 or consent of instructor). Three hours lecture. Nutrition services and problems in the community. Supervised experience in methods of determining and implementing action programs in nutrition education

FNH 8253 Nutrition and Food Science Research Techniques: 3 hours.
Spring Semester. One hour lecture. Six hours laboratory. Application of various instruments and techniques for assay of food and biological material

FNH 8263 Nutritional Genomics: 3 hours.
(Prerequisite: Grade of C or better in FNH 4253/6253, or consent of instructor). Three hours lecture. An in-depth study of the reciprocal interactions between genomic variations and nutrients and how they impact health

FNH 8273 Advanced Clinical Nutrition: 3 hours.
(Prerequisite: Senior level Medical Nutrition Therapy course) Three hours lecture. Study of advanced knowledge of principles of nutrition, pathophysiology and medical management of specific disease states and impact on nutritional status, including current research

FNH 8286 Supervised Practice Experience: 6 hours.
(Prerequisite: Admission in the Dietetic Internship/Graduate Studies Program). Supervised practice experience in clinical, community, and food service systems setttings. May be repeated for credit

FNH 8293 Molecular Nutrition: 3 hours.
(Prerequisite: Grade of C or better in FNH 4243/6243 and FNH 4253/6253, or consent of instructor). Three hours lecture. An in-depth study of the mechanisms of nutrients and their impact on human nutrition and health

FNH 8333 Food Safety and Security in Public Health: 3 hours.
(Prerequisite: Enrolled in graduate school or permission of instructor). Three hours lecture. Epidemiology and risk factors of illness from microbial food contaminates. Pre- and post-harvest interventions will be addressed. (Same as CVM 8333)

FNH 8423 Meat Science: 3 hours.
Three hours lecture. Basic study of the value of meat and how this information is applied to the evaluation, processing, and preservation of meat, meat products, and meat by-products. (Same as ADS 8423)

FNH 8443 Health Center Practicum: 3 hours.
(Prerequisites: FNH 6393, FNH 8513, FNH 8523, FHN 8553, AND primary advisor's permission). Three hours clinical instruction. Supervised rotations and internship in health promotion and wellness coaching in a clinical setting, including the Longest Health Center

FNH 8473 Advanced Sports Nutrition: 3 hours.
(Prerequisite: FNH 2293). Three hours lecture. The course integrates nutrition and exercise physiology principles to illustrate the links between training, increased demand for nutrients as a result of training, appropriate intake of foods, beverages and supplements, and excellent performance

FNH 8513 Theory and Practice of Health Education: 3 hours.
Three hours lecture. Historical perspectives and current status of health education/promotion. Fundamental constructs of the discipline in school, community, and worksite settings

FNH 8523 Health Promotion Techniques: 3 hours.
Three hours lecture. Examination of techniques utilized in delivery of health promotion interventions. Emphasizes uses of technology in development of activities suitable for diverse audiences and settings

FNH 8543 Health Education for Diverse Populations: 3 hours.
Three hours lecture. This course is designed to help students identify and develop programs to overcome the health disparities that exist in diverse populations

FNH 8553 Behavioral Epidemiology: 3 hours.
Three hour lecture. Behavioral and social environmental issues related to premature morbidity and mortality patterns Current research literature and application of epidemiological principles to health education/promotion

FNH 8556 Clinical Health Promotion and Wellness Coaching Internship: 6 hours.
(Prerequisites: FNH 6393, FNH 8513, FNH 8523, FHN 8553, FNH 8443, AND primary advisor's approval). Six hours clinical instruction. Field-based internship in clinical health promotion and wellness coaching at an approved health care facility

FNH 8563 Principles of Epidemiology and Health Science Research: 3 hours.
Development of skills to interpret epidemiological research. Evaluation of various study design commonly used in the field of epidemiology related to health sciences

FNH 8572 Advanced Food Technology: 2 hours.
(Prerequisite: FNH 6583 and/or consent of instructor). Two hours lecture. Introduction and discussion of recent developments in Food Science and Technology including aseptic processing, microwave technology, food irradiation separation techniques, and modified atmosphere packaging

FNH 8613 Design and Administration of Health Promotion Programs: 3 hours.
Three hours lecture. Principles of health promotion planning models applicable to school, community, and worksite programs. Investigation of existing programs and current literature

FNH 8623 Current Issues in School Health: 3 hours.
Three hours seminar. Examination of the role of the health educator in the Coordinated School Health Program. Review of current curricular approaches and issues in school health

FNH 8653 Implementation and Evaluation of Health Promotion Programs: 3 hours.
(Prerequisite: FNH 8613, or consent of instructor). Three hours lecture. Development and application of evaluation protocols for health promotion programs. Process, impact and outcome measures are examined

FNH 8673 Applied Projects for Certified Health Education Specialists: 3 hours.
(Prerequisite: FNH 8513; FNH 8523; FNH 8553; FNH 8613; and FNH 8653, or consent of instructor.) Three hours directed individual study or special project. Experiential projects in health promotion program assessment, design, delivery, and evaluation. Utilization of skills of a Certified Health Education Specialist

FNH 8983 Ingredient Technology: 3 hours.
Three hours lecture. A special study of the major food ingredients including functionality, applications, formulations, and legal considerations for formulated products

FNH 8990 Special Topics in Food Science, Nutrition and Health Promotion: 1-9 hours.
Credit and title to be arranged. This course is to be offered on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years.)

FNH 9000 Dissertation Research/Dissertation in Food, Nutrition and Health Promotion: 1-13 hours.
Hours and credits to be arranged

Forestry Courses

FO 1001 First Year Seminar: 1 hour.
One hour lecture. First-year seminars explore a diverse arrary of topics that provide students with an opportunity to learn about a specific discipline from skilled faculty members

FO 1101 Forest Resources Survey: 1 hour.
One hour lecture. Survey of the professional resource manager's role and career opportunities in providing forest-based goods and services. Not open to Forest Resources majors with senior standing

FO 2113 Dendrology: 3 hours.
(Prerequisite: BIO 1144 or BIO 2113 or equivalent). Two hours lecture. Four hours laboratory. Introduction to the identification and systematic classification of trees and other woody plants. Field exercises to promote the recognition and identification of trees and other woody plants

FO 2213 Forest Measurements: 3 hours.
(Prerequsite: ST 2113 or equivalent). Three hours lecture. Principles of measurement for standing and felled trees. Inventory and sampling theory for forested lands

FO 2443 Essentials of Biotechnology: 3 hours.
Three hours lecture. An introduction to principles and applications of biotechnology. (Same as CVM 2443)

FO 2990 Special Topics in Forestry: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

FO 3003 Internship in Forestry: 3 hours.
(Prerequisite: Junior standing or consent of instructor). Professional work experience with firms or companies, non-governmental organizations, government agencies and other relevant entities. May be taken for credit up to four times but only once as a professional elective

FO 3012 Introduction to Forest Communities: 2 hours.
(Prerequisites: PSS 3301, PSS 3303, FO 2113). Field exercises to gain practical knowledge of soil-geology-ecology interrelationships through trips to various physiographic regions

FO 3015 Forest Description and Analysis: 5 hours.
(Prerequisite: ST 2113 and FO 2213). Field and laboratory exercises to gain practical experience with forest and land measurement techniques and equipment. Mapping, inventory, and analysis of forested tracts

FO 3103 Computer Application in Forest Resources: 3 hours.
(Prerequisite: Three hours of courses in the College of Forest Resources or consent of instructor). Two hours lecture. Two hours laboratory. Application of computer concepts in forest resources with emphasis in forestry. Practice and demonstration of general and professional software packages used in upper level courses and professional settings

FO 3113 Forest Recreation Management: 3 hours.
Three hours lecture. Studies of the management of forest resources for outdoor recreation. (Same as NREC 3113)

FO 3203 Forest Fire: 3 hours.
Two hours lecture. Three hours laboratory. Basic aspects of fire history, fire behavior, fire weather, fire effects, and management of fire. Emphasis on the use of prescribed burning in forest management

FO 3213 Tree Physiology: 3 hours.
(Prerequisites: BIO 1134 and BIO 1144). Three hours lecture. Physiological principles (photosynthesis, water relations and nutrient uptake) in the context of the unique physical attributes of trees including their large multi-dimensional crowns, long distance transport systems, woody stems, and longevity

FO 4000 Directed Individual Study in Forestry: 1-6 hours.
Hours and credits to be arranged

FO 4113 Forest Resource Economics: 3 hours.
(Prerequisites: AEC 2713 or equivalent). Three hours lecture. Basic principles of forest resource valuation; economics applied to production, conversion, marketing and consumption of forest products and benefits

FO 4123 Forest Ecology: 3 hours.
(Prerequisite: FO 3012). Three hours lecture. Four hours laboratory. Natural principles governing establishment, development, and functioning of forest ecosystems. Includes ecology, genetics, physiology, tree growth, reproduction, site, stand dynamics, energetics, hydrology, nutrition, and succession

FO 4213 Forest Biometrics: 3 hours.
(Prerequisite: ST 2113 or equivalent or consent of instructor). Three hours lecture. Applications of mensurational and statistical principles and techniques in determination of forest growth and yield. Advanced topics of forest resource inventory

FO 4221 Practice of Silviculture Laboratory: 1 hour.
(Prerequisite: FO 4123/6123 or WF 4223; co-requisite: FO 4223/6223). Four hours laboratory. Application of silvicultural practices and operations under given forest land management objectives

FO 4223 Practice of Silviculture: 3 hours.
(Prerequisite: FO 4123/6123, FO 4121/6121 or WF 3133 and WF 4223; co-requisite: FO 4221/6221). Three hours lecture. Manipulation to obtain desired reproduction and to attain optimum development under given forest land management objectives

FO 4231 Introduction to Wood Supply Systems: 1 hour.
(Co-requisite: FO 3015). Investigative field and laboratory exercises used to gain practical knowledge into the structure and performance of wood supply systems

FO 4233 Forest Operations and Harvesting: 3 hours.
(Prerequisites: FO 3015, FO 4231/6231, or consent of instructor). Three hours lecture. Study of practical, managerial, and logistic considerations associated with harvesting and other forest operations, as well as their social, environmental, and legal influences

FO 4253 Timber Procurement: 3 hours.
(Prerequisites: FO 4231/6231, FO 4233/6233, or consent of instructor). Lectures and field exercises dealing with the problems of timber procurement to include planning for harvest, methods of handling and transport, legal and safety considerations

FO 4313 Spatial Technologies in Natural Resources Management: 3 hours.
(Prerequisite: FO 3015 or GR 2313 or consent of instructor). Three hours lecture. Three hours laboratory. Fundamentals of scale, area, height, and stand volume determinations from aerial imagery; planimetric and topographic mapping; image interpretation; GPS and GIS; applications to natural resources. (Same as NREC 4313)

FO 4323 Forest Resource Management: 3 hours.
(Prerequisites: FO 4113/6113, FO 4223/6223, FO 4233/6233, FO 4231/6231, FO 4213/6213). Three hours lecture.Three hours laboratory Application of quantitative decision making techniques to to stand-level and forest -wide management problems. Topics include land classification, forest production, optimal rotation analysis, and harvest scheduling

FO 4343 Forest Administration and Organization: 3 hours.
(Prerequisite: Junior standing or instructor consent). Three hours lecture. Hierarchy and land structuring of forest organizations. Legal aspects of administering forest land holdings

FO 4353 Natural Resource Law: 3 hours.
(Perquisite: Junior standing or consent of instructor). Three hours lecture. A comprehensive study of the laws relating to natural resources and forestry with emphasis on tort law, real property law, environmental law, taxation law and contract law. (Same as NREC 4353)

FO 4411 Remote Sensing Seminar: 1 hour.
(Prerequisites: Junior Standing). One hour lecture. Lectures by remote sensing experts from industry, academia, and governmental agencies on next-generation systems, applications, and economic and societal impact of remote sensing. May be repeated for credit up to four credits. (Same as PSS 4411/6411, ECE4411/6411, GR 4411/6411)

FO 4413 Natural Resources Policy: 3 hours.
(Prerequisite: Senior standing). Three hours lecture. Current topics relating to natural resources policy which affect management decisions and practices in the public and private sectors of natural resources use. (Same as NREC 4413)

FO 4423 Professional Practice: 3 hours.
(Prerequisite: FO 4323/6323) Three hours lecture. Four hours laboratory. Forest resource data collection and analysis. Development of forest resource alternatives and recommendations for a specific forest property

FO 4443 International Forest Resources and Trade: 3 hours.
(Prerequisite: consent of instructor). Three hours lecture. A study of the world's wood consumption, marketing arrangements, community forestry, and forestry in economic development

FO 4453 Remote Sensing Applications: 3 hours.
(Prerequisite: A basic image interpretation or mote sensing course or consent of instructor). Two hours lecture. Three hours laboratory. An introduction to remote sensing with emphasis on analysis and application of digital image data in inventory, monitoring, and management of renewable natural resources

FO 4463 Forest Hydrology and Watershed Management: 3 hours.
(Prerequisite: PSS 3303, FO 3012, FO 4123/6123, or consent of instructor). Three hours lecture. Synthesis of current information on the fundamental properties and processes of forest soils, hydrology, and water quality with emphasis on watershed and ecosystem management factors. (Same as NREC 4463)

FO 4471 GIS for Natural Resource Management Lab: 1 hour.
(Prerequisite: Junior standing; Co-requisite: FO 4472/6472). Three hours laboratory. Computer laboratory exercises that stress development, management, and use of digital geographical data for management of natural resources. management of natural resources

FO 4472 GIS for Natural Resource Management: 2 hours.
(Prerequisite: Junior standing; Co-requisite: FO 4471/6471). Two hours lecture. Introduction to geographic information systems (GIS) with emphasis on collection, encoding, storage, retrieval, and analysis of spatial data for use in management of natural resources

FO 4483 Forest Soils: 3 hours.
(Prerequisite: PSS 3303, FO 3012, FO 4123/6123, FO 4121/6121, or consent of instructor). Three hours lecture. Synthesize current information on fundamental properties and processes of forest soils with emphasis on applications to silviculture, soil conservation, and sustainable management of forested ecosystems

FO 4513 Forestry and Conservation for Educators.: 3 hours.
(Two hours lecture; two hours lab). Importance of forestry and natural resources conservation, application of forestry and conservation principles and practices to educational settings. For non-forestry majors

FO 4573 Ecology of Managed Forests: 3 hours.
(Prerequisite: Graduate standing, upper-level FO undergraduate student, or consent of instructor). Three hours lecture. Examination of the ecological factors that influence silvicultural practice in North America. (Same as NREC 4573)

FO 4663 Consulting Forestry: 3 hours.
(Prerequisite: FO major, senior or graduate standing and consent of instructor). Three hours lecture. Review of business, legal, and economic issues integral to applying the science of forestry as a service based enterprise

FO 4683 Introduction to Urban and Community Forestry: 3 hours.
Three hours lecture. Addresses urban forest management issues and opportunities as well as educational extension/outreach program strategies within the urban forest context. (Same as NREC 4683)

FO 4771 Seeing the Forest for the Trees: A Career Exploration: 1 hour.
One hour lecture plus laboratory experience. A course for upper-level, non-Forestry majors providing an overview of forest management, wood products, manufacturing facilities, and career opportunities for non-foresters

FO 4990 Special Topics in Forestry: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

FO 6113 Forest Resource Economics: 3 hours.
(Prerequisites: AEC 2713 or equivalent). Three hours lecture. Basic principles of forest resource valuation; economics applied to production, conversion, marketing and consumption of forest products and benefits

FO 6123 Forest Ecology: 3 hours.
(Prerequisite: FO 3012). Three hours lecture. Four hours laboratory. Natural principles governing establishment, development, and functioning of forest ecosystems. Includes ecology, genetics, physiology, tree growth, reproduction, site, stand dynamics, energetics, hydrology, nutrition, and succession

FO 6213 Forest Biometrics: 3 hours.
(Prerequisite: ST 2113 or equivalent or consent of instructor). Three hours lecture. Applications of mensurational and statistical principles and techniques in determination of forest growth and yield. Advanced topics of forest resource inventory

FO 6221 Practice of Silviculture Laboratory: 1 hour.
(Prerequisite: FO 4123/6123 or WF 4223; co-requisite: FO 4223/6223). Four hours laboratory. Application of silvicultural practices and operations under given forest land management objectives

FO 6223 Practice of Silviculture: 3 hours.
(Prerequisite: FO 4123/6123, FO 4121/6121 or WF 3133 and WF 4223; co-requisite: FO 4221/6221). Three hours lecture. Manipulation to obtain desired reproduction and to attain optimum development under given forest land management objectives

FO 6231 Introduction to Wood Supply Systems: 1 hour.
(Co-requisite: FO 3015). Investigative field and laboratory exercises used to gain practical knowledge into the structure and performance of wood supply systems

FO 6233 Forest Operations and Harvesting: 3 hours.
(Prerequisites: FO 3015, FO 4231/6231, or consent of instructor). Three hours lecture. Study of practical, managerial, and logistic considerations associated with harvesting and other forest operations, as well as their social, environmental, and legal influences

FO 6253 Timber Procurement: 3 hours.
(Prerequisites: FO 4231/6231, FO 4233/6233, or consent of instructor). Lectures and field exercises dealing with the problems of timber procurement to include planning for harvest, methods of handling and transport, legal and safety considerations

FO 6313 Spatial Technologies in Natural Resources Management: 3 hours.
(Prerequisite: FO 3015 or GR 2313 or consent of instructor). Three hours lecture. Three hours laboratory. Fundamentals of scale, area, height, and stand volume determinations from aerial imagery; planimetric and topographic mapping; image interpretation; GPS and GIS; applications to natural resources. (Same as NREC 4313)

FO 6323 Forest Resource Management: 3 hours.
(Prerequisites: FO 4113/6113, FO 4223/6223, FO 4233/6233, FO 4231/6231, FO 4213/6213). Three hours lecture.Three hours laboratory Application of quantitative decision making techniques to to stand-level and forest -wide management problems. Topics include land classification, forest production, optimal rotation analysis, and harvest scheduling

FO 6343 Forest Administration and Organization: 3 hours.
(Prerequisite: Junior standing or instructor consent). Three hours lecture. Hierarchy and land structuring of forest organizations. Legal aspects of administering forest land holdings

FO 6353 Natural Resource Law: 3 hours.
(Perquisite: Junior standing or consent of instructor). Three hours lecture. A comprehensive study of the laws relating to natural resources and forestry with emphasis on tort law, real property law, environmental law, taxation law and contract law. (Same as NREC 4353)

FO 6411 Remote Sensing Seminar: 1 hour.
(Prerequisites: Junior Standing). One hour lecture. Lectures by remote sensing experts from industry, academia, and governmental agencies on next-generation systems, applications, and economic and societal impact of remote sensing. May be repeated for credit up to four credits. (Same as PSS 4411/6411, ECE4411/6411, GR 4411/6411)

FO 6413 Natural Resources Policy: 3 hours.
(Prerequisite: Senior standing). Three hours lecture. Current topics relating to natural resources policy which affect management decisions and practices in the public and private sectors of natural resources use. (Same as NREC 4413)

FO 6423 Professional Practice: 3 hours.
(Prerequisite: FO 4323/6323) Three hours lecture. Four hours laboratory. Forest resource data collection and analysis. Development of forest resource alternatives and recommendations for a specific forest property

FO 6443 International Forest Resources and Trade: 3 hours.
(Prerequisite: consent of instructor). Three hours lecture. A study of the world's wood consumption, marketing arrangements, community forestry, and forestry in economic development

FO 6453 Remote Sensing Applications: 3 hours.
(Prerequisite: A basic image interpretation or mote sensing course or consent of instructor). Two hours lecture. Three hours laboratory. An introduction to remote sensing with emphasis on analysis and application of digital image data in inventory, monitoring, and management of renewable natural resources

FO 6463 Forest Hydrology and Watershed Management: 3 hours.
(Prerequisite: PSS 3303, FO 3012, FO 4123/6123, or consent of instructor). Three hours lecture. Synthesis of current information on the fundamental properties and processes of forest soils, hydrology, and water quality with emphasis on watershed and ecosystem management factors. (Same as NREC 4463)

FO 6471 GIS for Natural Resource Management Lab: 1 hour.
(Prerequisite: Junior standing; Co-requisite: FO 4472/6472). Three hours laboratory. Computer laboratory exercises that stress development, management, and use of digital geographical data for management of natural resources. management of natural resources

FO 6472 GIS for Natural Resource Management: 2 hours.
(Prerequisite: Junior standing; Co-requisite: FO 4471/6471). Two hours lecture. Introduction to geographic information systems (GIS) with emphasis on collection, encoding, storage, retrieval, and analysis of spatial data for use in management of natural resources

FO 6483 Forest Soils: 3 hours.
(Prerequisite: PSS 3303, FO 3012, FO 4123/6123, FO 4121/6121, or consent of instructor). Three hours lecture. Synthesize current information on fundamental properties and processes of forest soils with emphasis on applications to silviculture, soil conservation, and sustainable management of forested ecosystems

FO 6513 Forestry and Conservation for Educators: 3 hours.
(Two hours lecture; two hours lab). Importance of forestry and natural resources conservation, application of forestry and conservation principles and practices to educational settings. For non-forestry majors

FO 6573 Ecology of Managed Forests: 3 hours.
(Prerequisite: Graduate standing, upper-level FO undergraduate student, or consent of instructor). Three hours lecture. Examination of the ecological factors that influence silvicultural practice in North America. (Same as NREC 4573)

FO 6663 Consulting Forestry: 3 hours.
(Prerequisite: FO major, senior or graduate standing and consent of instructor). Three hours lecture. Review of business, legal, and economic issues integral to applying the science of forestry as a service based enterprise

FO 6683 Introduction to Urban and Community Forestry: 3 hours.
Three hours lecture. Addresses urban forest management issues and opportunities as well as educational extension/outreach program strategies within the urban forest context. (Same as NREC 4683)

FO 6990 Special Topics in Forestry: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

FO 7000 Directed Individual Study in Forestry: 1-6 hours.
Hours and credits to be arranged

FO 8000 Thesis Research/ Thesis in Forestry: 1-13 hours.
Hours and credits to be arranged

FO 8111 Graduate Seminar: 1 hour.
Credit in 2 semesters allowed. Review of and discussion of current forestry issues. Presentation of student reports

FO 8143 Advanced Forest Economics: 3 hours.
Three hours lecture. Application of current theory and techniques of economics to forestry. Emphasis is on the use of quantitative tools to improve decision-making in forest resource management

FO 8153 Quantitative Forest Ecology: 3 hours.
(Prerequisites: MA 1723 and ST 8114 or consent of instructor). Three hours lecture. Analytical models, fitting model coefficients to data, life tables, spatial patterns, interspecific competition, and species diversity

FO 8163 Nonmarket Forest Values: 3 hours.
(Prerequisite: FO 4113 or equivalent or consent of instructor). The course will deal with the valuation or nonmarket, non-timber outputs or amenities derived from the forest

FO 8173 Advanced Spatial Technologies: 3 hours.
(Prerequisite: an introductory course in remote sensing and/or geographical information systems or consent of instructor). Three hours lecture. Group discussion and application of integrated remote sending, image analysis and GIS software tools for assessment of natural resources

FO 8211 Graduate Seminar: 1 hour.
Credit in 2 semesters allowed. Review of and discussion of current forestry issues. Presentation of student reports

FO 8213 Advanced Silviculture: 3 hours.
(Prerequisite: FO 4223 or consent of instructor). Three hours of lecture and/or field trips once per week. Spring semester. Silvicultural practices in context of the total ecological principles in decision making process. Emphasis on silviculture of bottomland hardwoods

FO 8233 Advanced Forest Inventory: 3 hours.
Three hours lecture. Design and analysis of forest resource inventories. Growth functions, yield tables, measures of site quality and stocking, and advanced sampling topics

FO 8243 Advanced Forest Resource Management and Planning: 3 hours.
(Prerequisite: FO 8143). Three hours lecture. Emphasis is on the assessment of multiple-use alternatives. Data needs, resource trade-offs, and economic and policy implications are discussed

FO 8293 Professional Paper: 3 hours.
(For Master of Science non-thesis option students only). Demonstration of ability to compile, synthesize, and evaluate information, and to effectively communicate analyses and conclusions

FO 8300 Thesis Research/Thesis in Forestry - International: 1-13 hours.
Thesis research involving international travel. Hours and credits to be arranged

FO 8313 Spatial Statistics for Natural Resources: 3 hours.
(Prerequisite:ST 4313/6313, and an introductory GIS course, or consent of instructor). Three hours lecture. Concepts and methods of spatial statistics as applied to natural resource monitoring and management

FO 8323 Forest Ecophysiology: 3 hours.
Three hours lecture. Physiological processes occurring in forests at the leaf, tree, and ecosystem scale to determine the balance of energy, water, and carbon fluxes within the system

FO 8353 Ecological Modeling in Natural Resources: 3 hours.
(Prerequisites: ST 8114 or ST 8253 or equivalent).Three hours lecture.This course introduces the concepts and methods of ecological modeling as applied to natural resources monitoring and management

FO 8443 International Forest Resources and Trade: 3 hours.
(Prerequisite: consent of instructor). Three hours lecture. A study of the world's wood consumption, marketing arrangements, dynamics of deforestation, agroforestry and community forestry, country specific forestry issues, and forestry in economic development

FO 8571 Emerging Issues in Forest Ecosystems: 1 hour.
(Prerequisite: Graduate standing or consent of instructor). One hour seminar. Overview of the major biological, ecological, and socio-economic issues facing forest conservation

FO 8673 Planning and Evaluation in Natural Resources Outreach Education: 3 hours.
Three hours lecture. Presents methods for needs assessment of forestry extension/outreach education, development of programs to meet client needs, and evaluation of the effectiveness of such programs

FO 8961 Nobel Topics in Physiology/Medicine and Chemistry: 1 hour.
(Prerequisite: Graduate standing or consent of instructor). One hour seminar. The course will provide historic and current understanding of topics awarded with a Nobel Prize.May be repeated three times for credit. (Same as CVM 8961 and GNS 8961)

FO 8973 Scientific Writing: 3 hours.
(Prerequisite: Graduate standing and consent of instructor) Three hours lecture. The course provides advanced training in research proposal, grant proposal,and manuscript writing. (Same as ADS 8973 and CVM 8973)

FO 8983 Advanced Biotechnology: 3 hours.
(Prerequisite:BCH 6603,BCH 6613,BCH 6713 or consent of instructor).Three house lecture. Advanced biotechnology course with an emphasis on environmental,biopharmaceutical,industrial, and medical technologies. (Same as CVM 8983)

FO 8990 Special Topics in Forestry: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

FO 9000 Dissertation Research/Dissertation in Forestry: 1-13 hours.
Hours and credits to be arranged

FO 9300 Dissertation Research - International: 1-13 hours.
Dissertation research involving international travel. Hours and credits to be arranged

First Year Experience Courses

FYE 1000 Maroon U 1000: 0 hours.

FYE 1001 First Year Experience: 1 hour.

FYE 1101 Freshman Success Strategies I: 1 hour.
One hour lecture. Aids students in the transition from high school to college, providing information and experiences designed to help students succeed academically and socially, and progress toward graduation and fulfilling lives and careers

General Agriculture Courses

GA 1111 Survey of Agriculture: 1 hour.
One hour lecture. A study of the overall function, organization and operation of the agricultural industry in the United States and the world

GA 2001 Leadership Development: 1 hour.
(Prerequisite:Application required and approval by instructor). One hour lecture. For Ambassadors of College of Agriculture and Life Sciences only. Focus on recruitment,discussion and study of each department, and community service outreach

GA 2103 Seminar in International Studies in Agricultural Systems: 3 hours.
Introduction to world agriculture, farming systems and technologies, crops, trade, and food production and processing. Influence of population and climate on global agriculture. Ethical issues surrounding environment, social, political, and financial aspects of agriculture. (Same as AIS 2103)

GA 2990 Special Topics in General Agriculture: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

GA 4000 Directed Individual Study in Agriculture: 1-6 hours.
Hours and credits to be arranged

GA 4710 Study Tour: 6 hours.
Experiential learning through travel in the United States or abroad focusing on specialized areas of study in agriculture. Variable credit, 1-6 hours, and repeatable

GA 4990 Special Topics in General Agriculture: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

GA 6710 Study Tour: 6 hours.
Experiential learning through travel in the United States or abroad focusing on specialized areas of study in agriculture. Variable credit, 1-6 hours, and repeatable

GA 6990 Special Topics in General Agriculture: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

GA 7000 Directed Individual Study: 6 hours.

GA 8990 Special Topics in General Agriculture: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

General Engineering Courses

GE 1001 First Year Seminar: 1 hour.
One hour lecture. First-year seminars explore a diverse arrary of topics that provide students with an opportunity to learn about a specific discipline from skilled faculty members

GE 1011 Introduction to Engineering for Pre-engineers: 1 hour.
One hour lecture. Introduction to engineering disciples. Overview of techniques for success in engineering including time management, study skills, technical communication, and career planning. Required for pre-engineering majors

GE 1021 Engineering Success: 1 hour.
One hour lecture. This course is designed to facilitate: professional, academic, and personal development. Also, it provides an orientation to Mississippi State University

GE 1501 Engineering Design Competition: 1 hour.
(Prerequisite: Consent of Instructor). One hour practicum. May be repeated for credit. Credit received will not be counted towards degree. Students participate in student design competition team, contributing to design and fabrication tasks, writing weekly progress reports, and presenting data

GE 1711 Project Lead The Way (PLTW) Intro to Engineering Design (IED): 1 hour.
Credit for Project Lead The Way Introduction to Engineering Design (IED). Requires a high school grade of B or higher in the class and score of 70% or higher on a nationally-normed End of Course Assessment. (Offered only at designated PLTW High Schools.)

GE 1721 Project Lead The Way (PLTW) Principles of Engineering (PoE): 1 hour.
Credit for Project Lead The Way Principles of Engineering (PoE). Requires a high school grade of B or higher in the class and score of 70% or higher on a nationally-normed End of Course Assessment. (Offered only at designated PLTW High Schools.)

GE 1731 Project Lead The Way (PLTW) Engineering Design and Development (EDD): 1 hour.
Credit for Project Lead The Way Engineering Design and Development (EDD). Requires a high school grade of B or higher in the class and score of 70% or higher on a nationally-normed End of Course Assessment. (Offered only at designated PLTW High Schools.)

GE 1741 Project Lead The Way (PLTW) Elective: 1 hour.
Credit for Project Lead The Way elective courses. Requires a high school grade of B or higher in the class and score of 70% or higher on a nationally-normed End of Course Assessment. (Offered only at designated PLTW High Schools.)

GE 1911 Introduction to Engineering: 1 hour.
(Prerequisite: Must be engineering freshman or transfer students). Two hours laboratory. Introduction to engineering disciplines and fundamental engineering principles through problem-based learning, including engineering mechanics, engineering materials, mass balances, heat/fluid transfer, electrical circuits, technical writing and teamwork

GE 2713 Introduction to Engineering and Public Policy: 3 hours.
(Prerequisitie:EN 1113 or equivalent) Three hours lecture. A multidisciplinary analysis of public policy issues involving engineering and technology and the use of policy science to explore complex policy issues. (Same as PS 2713)

GE 2990 Special Topics in General Engineering: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

GE 3011 Engineering Entrepreneurship Seminar: 1 hour.
Two hours seminar. Current topics in engineering entrepreneurship to enable students to better understand the role of the entrepreneur in creating start-up companies and leading young existing companies

GE 3513 Technical Writing: 3 hours.
(Prerequisite: Completion of English Composition require- ments; junior standing). Three hours lecture. Instruction and practice in technical writing for scientific and engineering fields, emphasizing analysis and development of correspondence, progress and research reports, instruction, and proposals

GE 3813 Challenges in Global Engineering: 3 hours.
(Prerequisite: Junior standing in an engineering major or consent of instructor). Three hours lecture. Issues of globalization in the engineering profession are examined. Critical concepts of international engineering projects and their complex interactions are discussed

GE 4000 Directed Individual Study in General Engineering: 1-6 hours.

GE 4990 Special Topics in General Engineering: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

GE 6513 Engineering Writing and Presenting: 3 hours.
(Prerequisite: Graduate standing in an engineering discipline). Three hours lecture. Instruction in writing and presenting for engineering graduate students. Writing/presenting principles and strategies as applied to manuscripts, thesis/dissertation chapters, presentation delivery/slides, and posters

GE 6990 Special Topics in General Engineering: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

GE 7000 Directed Individual Study in General Engineering: 1-6 hours.
Hours and credit to be arranged

GE 8003 Master of Engineering Capstone Course: 3 hours.
Three hours lecture. An individualized professional project course open only to candidates for the Master of Engineering. Formal written paper and presentation are required

GE 8303 Introduction to Military Engineering: 3 hours.
Three hours lecture. An introduction course on the history and development of military engineering. A background on the development of the missions associated with military engineering and how risks associated with military operations adapts or changes common engineering practices

GE 8990 Special Topics in General Engineering: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

GE 9000 Dissertation Research /Dissertation in General Engineering: 1-13 hours.
Hours and credits to be arranged

Geology Courses

GG 1111 Earth Sciences I Laboratory: 1 hour.
Two hours laboratory. Laboratory for GG 1113, but may be scheduled without GG 1113. Includes study of earth materials, maps, and aerial photographs. Planned primarily as a science elective for the non-geology major

GG 1113 Survey of Earth Sciences I: 3 hours.
Three hours lecture. Study of the Earth in space, the materials of which the Earth is composed, and the processes affecting change on the Earth. Planned primarily as a science elective for the non-geology major

GG 1121 Earth Sciences II Laboratory: 1 hour.
Two hours laboratory. Laboratory for GG 1123, but may be scheduled without GG 1123. Includes the study of fossils, geologic maps, and geologic cross sections. Planned primarily as a science elective for the non-geology major

GG 1123 Survey of Earth Sciences II: 3 hours.
(Prerequisite: GG 1113, or equivalent). Three hours lecture. Origin and development of the Earth through geologic time. Planned primarily as a science elective for the non-geology major

GG 1133 Planetary Geology: 3 hours.
Three hours lecture. Process oriented examination of the planets and their satellites with emphasis on the "Earth-like" planets and moons

GG 2990 Special Topics in Geosciences: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

GG 3133 Introduction to Environmental Geology: 3 hours.
(Prerequisite: GG 1113). Three hours lecture. Consideration of those aspects of earth science concerned with problems arising from intensive use of earth by modern society

GG 3603 Introduction to Oceanography: 3 hours.
(Prerequisite: GG 1113). Three hours lecture. A survey of the basic principles and applications of science to the study of the marine environment

GG 3613 Water Resources: 3 hours.
(Prerequisite: GG 1113 or equivalent or consent of instructor.) Three hours lecture. Introduction to the location, use, recovery and environmental problems of surface and subsurface waters

GG 4000 Directed Individual Study in Geosciences: 1-6 hours.
(Prerequisite: Junior standing). Hours and credits to be arranged

GG 4033 Resources and the Environment: 3 hours.
(Prerequisite: Consent of instructor). Three hours lecture. Formation and development of natural resources involving the basic evolution, planning, and design of a typical lignite coal mine, including environmental monitoring and reclamation

GG 4063 Earth and Atmospheric Energy Resources: 3 hours.
Three hours lecture. Formation, deposition, and extraction of fossil fuel resources, including coal, conventional, and unconventional hydrocarbons. Introduction to the geologic, geographic, and climatic aspects of Earth and atmospheric-sourced renewable resources

GG 4113 Micropaleontology: 3 hours.
(Prerequisite: GG 1123 or equivalent). Three hours lecture. A study of microscopic fossils. May be taken with GG 4201

GG 4114 Mineralogy: 4 hours.
(Prerequisites: GG 1113 and CH 1223, or equivalents). Three hours lecture. Three hours laboratory. The physical and chemical properties of minerals; crystallography, origin, distribution, association, uses, and identification of minerals

GG 4123 Petrology: 3 hours.
(Prerequisite: GG 4114, or equivalent). Two hours lecture. Three hours laboratory. The origin, occurrence, and classification of the major rock types

GG 4133 Principles of Paleocology: 3 hours.
(Prerequisite: GG 1123 or equivalent or consent of instructor). Three hours lecture. A study of paleoecology with special emphasis on marine paleoecology. May be taken with GG 4201

GG 4153 Engineering Geology: 3 hours.
(Prerequisite: GG 1113 or equivalent). Two hours lecture. Two hours laboratory. Application of geologic principles to location and construction of engineering structures; engineering properties of geologic materials; engineering application of equipment used by geologists

GG 4201 Practicum on Paleontology: 1 hour.
(Prerequisites: GG 1123 or equivalent). One hour lecture. Two hours laboratory. Laboratory for GG 4203, but may instead be taken with GG 4113 or GG 4133. A practicum in morphology of fossils, biostratigrapgy, and paleoecology

GG 4203 Principles of Paleobiology: 3 hours.
(Prerequisites: GG 1123 or equivalents). Three hours lecture. Three hours laboratory. An introductory study of topics in paleobiology. May be taken with GG 4201

GG 4233 Applied Geophysics: 3 hours.
(Prerequisite: Consent of instructor). Three hours lecture. A survey of the basic principles and applications of geophysics with major emphasis on petroleum exploration

GG 4304 Principles of Sedimentary Deposits I: 4 hours.
(Prerequisite: GG 4114/6114 or consent of instructor. Three hours lecture. Three hours laboratory. Treatment of sediment and sedimentary rock. Emphasis on texture, fluid processes, deposition, structure, and diagenesis; stratigraphic analysis; and application to subsurface flow systems

GG 4333 Geowriting: 3 hours.
Three hours lecture. Prepares students to present geosciences information through research papers and other forms of professional communication. Emphasizes writing for careers or advanced study in the geosciences

GG 4403 Gulf Coast Stratigraphy: 3 hours.
(Prerequisite: GG 4304 or consent of instructor). Three hours lecture or field trips. Systematic study of the stratigraphy of the Gulf Coast; actual field experience substituted for class work,when conditions permit

GG 4413 Structural Geology: 3 hours.
(Prerequisites: GG 4123 or consent of instructor). Two hours lecture. Two hours laboratory. Application of the principles of mechanics to the forces deforming the rocks of the Earth's crust; emphasis on structures in sedimentary rocks

GG 4433 Subsurface Methods: 3 hours.
(Prerequisite: GG 4443 and GG 4413, or equivalent). One hour lecture. Four hours laboratory. The study of subsurface geologic methods including contouring, sampling study, various types of logging, and the interpretation of subsurface data

GG 4443 Principles of Sedimentary Deposits II: 3 hours.
(Prerequisite: GG 4304). Three hours lecture. Application of principles from GG 4304. Introduces facies associations produced in depositional environments, systems, and systems tracts, tectonics and sedimentation, basin classification, and sequence analysis

GG 4446 Summer Geology Field Camp: 6 hours.
Three hours lecture and three hours lab. Geologic maps, stratographic columns, structural cross-sections and reports will be prepared based on field data collected by the student

GG 4503 Geomorphology: 3 hours.
(Prerequisite: Consent of instructor). Three hours lecture. The origin and characteristics of land forms based on a consideration of geologic processes, stages of development, and geological structure

GG 4523 Coastal Environments: 3 hours.
(Prerequisite: GG 1113 or consent of instructor). Three hours lecture. An introduction to world coastal environments, with emphasis upon major shoreline-shaping processes, geographical variation in coastal landforms, human impacts, and environmental concerns

GG 4533 Geosciences Study Abroad: 3 hours.
(Prerequisite: consent of instructor). Three hours study abroad. Identification of landforms and geomorphic processes and the field data collection techniques. Emphasis on human-environmental interactions

GG 4613 Physical Hydrogeology: 3 hours.
(Prerequisite: GG 3613 or consent of instructor). Three hours lecture. Advanced study of the interrelationship of ground water and its geologic environment with emphasis on occurrence, distribution, and movement

GG 4623 Chemical Hydrogeology: 3 hours.
(Prerequisite: CE 3523, CE 8563, or GG 4613/6613 or consent of instructor). Three hours lecture. Advanced study of groundwater and its environment with emphasis on the chemical interaction of water with porous solids and the transport of chemical constituents

GG 4633 Introduction to Geochemistry: 3 hours.
(Prerequisite: CH 1223, or consent of instructor). Three hours lecture. Survey of fundamental geochemical principles and methods. Learning in this course will be achieved by participation in analysis of published or unpublished datasets with further interpretation and application to the natural systems

GG 4990 Special Topics in Geosciences: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

GG 6033 Resources and the Environment: 3 hours.
(Prerequisite: Consent of instructor). Three hours lecture. Formation and development of natural resources involving the basic evolution, planning, and design of a typical lignite coal mine, including environmental monitoring and reclamation

GG 6063 Earth and Atmospheric Energy Resources: 3 hours.
Three hours lecture. Formation, deposition, and extraction of fossil fuel resources, including coal, conventional, and unconventional hydrocarbons. Introduction to the geologic, geographic, and climatic aspects of Earth and atmospheric-sourced renewable resources

GG 6103 Geology I: Processes and Products: 3 hours.
(Prerequisite: Consent of instructor). Three hours lecture (video and online). Principles of physical geology with emphasis on earth materials and processes, rock and mineral identification, and landscape development. Primarily for K-12 science teachers

GG 6113 Micropaleontology: 3 hours.
(Prerequisite: GG 1123 or equivalent). Three hours lecture. A study of microscopic fossils. May be taken with GG 4201

GG 6114 Mineralogy: 4 hours.
(Prerequisites: GG 1113 and CH 1223, or equivalents). Three hours lecture. Three hours laboratory. The physical and chemical properties of minerals; crystallography, origin, distribution, association, uses, and identification of minerals

GG 6123 Petrology: 3 hours.
(Prerequisite: GG 4114, or equivalent). Two hours lecture. Three hours laboratory. The origin, occurrence, and classification of the major rock types

GG 6133 Principles of Paleocology: 3 hours.
(Prerequisite: GG 1123 or equivalent or consent of instructor). Three hours lecture. A study of paleoecology with special emphasis on marine paleoecology. May be taken with GG 4201

GG 6153 Engineering Geology: 3 hours.
(Prerequisite: GG 1113 or equivalent). Two hours lecture. Two hours laboratory. Application of geologic principles to location and construction of engineering structures; engineering properties of geologic materials; engineering application of equipment used by geologists

GG 6201 Practicum in Paleontology: 1 hour.
(Prerequisites: GG 1123 or equivalent). One hour lecture. Two hours laboratory. Laboratory for GG 4203, but may instead be taken with GG 4113 or GG 4133. A practicum in morphology of fossils, biostratigrapgy, and paleoecology

GG 6203 Principles of Paleobiology: 3 hours.
(Prerequisites: GG 1123 or equivalents). Three hours lecture. Three hours laboratory. An introductory study of topics in paleobiology. May be taken with GG 4201

GG 6233 Applied Geophysics: 3 hours.
(Prerequisite: Consent of instructor). Three hours lecture. A survey of the basic principles and applications of geophysics with major emphasis on petroleum exploration

GG 6304 Principles of Sedimentary Deposits I: 4 hours.
(Prerequisite: GG 4114/6114 or consent of instructor. Three hours lecture. Three hours laboratory. Treatment of sediment and sedimentary rock. Emphasis on texture, fluid processes, deposition, structure, and diagenesis; stratigraphic analysis; and application to subsurface flow systems

GG 6333 Geowriting: 3 hours.
Three hours lecture. Prepares students to present geosciences information through research papers and other forms of professional communication. Emphasizes writing for careers or advanced study in the geosciences

GG 6403 Gulf Coast Stratigraphy: 3 hours.
(Prerequisite: GG 4304 or consent of instructor). Three hours lecture or field trips. Systematic study of the stratigraphy of the Gulf Coast; actual field experience substituted for class work,when conditions permit

GG 6413 Structural Geology: 3 hours.
(Prerequisites: GG 4123 or consent of instructor). Two hours lecture. Two hours laboratory. Application of the principles of mechanics to the forces deforming the rocks of the Earth's crust; emphasis on structures in sedimentary rocks

GG 6433 Subsurface Methods: 3 hours.
(Prerequisite: GG 4443 and GG 4413, or equivalent). One hour lecture. Four hours laboratory. The study of subsurface geologic methods including contouring, sampling study, various types of logging, and the interpretation of subsurface data

GG 6443 Principles of Sedimentary Deposits II: 3 hours.
(Prerequisite: GG 4304). Three hours lecture. Application of principles from GG 4304. Introduces facies associations produced in depositional environments, systems, and systems tracts, tectonics and sedimentation, basin classification, and sequence analysis

GG 6446 Summer Geology Field Camp: 6 hours.
Three hours lecture and three hours lab. Geologic maps, stratographic columns, structural cross-sections and reports will be prepared based on field data collected by the student

GG 6503 Geomorphology: 3 hours.
(Prerequisite: Consent of instructor). Three hours lecture. The origin and characteristics of land forms based on a consideration of geologic processes, stages of development, and geological structure

GG 6523 Coastal Environments: 3 hours.
(Prerequisite: GG 1113 or consent of instructor). Three hours lecture. An introduction to world coastal environments, with emphasis upon major shoreline-shaping processes, geographical variation in coastal landforms, human impacts, and environmental concerns

GG 6533 Geosciences Study Abroad: 3 hours.
(Prerequisite: consent of instructor). Three hours study abroad. Identification of landforms and geomorphic processes and the field data collection techniques. Emphasis on human-environmental interactions

GG 6613 Physical Hydrogeology: 3 hours.
(Prerequisite: GG 3613 or consent of instructor). Three hours lecture. Advanced study of the interrelationship of ground water and its geologic environment with emphasis on occurrence, distribution, and movement

GG 6623 Chemical Hydrogeology: 3 hours.
(Prerequisite: CE 3523, CE 8563, or GG 4613/6613 or consent of instructor). Three hours lecture. Advanced study of groundwater and its environment with emphasis on the chemical interaction of water with porous solids and the transport of chemical constituents

GG 6633 Introduction to Geochemistry: 3 hours.

GG 6990 Special Topics in Geosciences: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

GG 7000 Directed Individual Study in Geosciences: 1-6 hours.
Hours and credits to be arranged. (Prerequisite: Consent of student's advisor and instructor). Same as G.C.R.L. MS-700

GG 8000 Thesis Research/ Thesis in Geosciences: 1-13 hours.
Hours and credits to be arranged

GG 8123 Geology II: Earth, Time and Life: 3 hours.
(Prerequisite: GG 6103 or consent of instructor). Three hours lecture, video and online. Principles of historical geology with emphasis on geological time, earth history, fossils, evolution, and extinction. Primarily for K-12 science teachers

GG 8133 Rocks and Minerals: 3 hours.
Three hours video and online. Prinicples of mineralogy with an emphasis on rock formation and classification

GG 8203 Ocean Science: 3 hours.
(Prerequisite:GG 6103 or consent of instructor).Three hours video and online. Comprehensive examination of the ocean world, focusing on the topography, physics, chemistry, and circulation of the oceans. Primarily for K-12 science teachers

GG 8233 Environmental Geoscience: 3 hours.
(Prerequisite: GG 6103 or consent of instructor). Three hours video and online. Study of current environmental problems associated with the earth science realms; atmosphere, bioshpere, hydroshpere, and lithosphere. Primarily for K-12 science teachers

GG 8313 History of Life: 3 hours.
(Prerequisite:Consent of instructor). Three hours video and online. Paleontological principles with an emphasis on history of life through geological time

GG 8333 Planetary Science: 3 hours.
(Prerequisite: GG 6103 or consent of instructor). Three hours lecture, video and online. Examination of mineral matter and geological processes of the moon, the planets, asteroids, comets and meteorites. Primarily for K-12 teachers

GG 8343 Paleontology of Dinosaurs: 3 hours.
Three hours lecture video and online. Application of evolutionary and taxonomic principles to the study of dinosaurs and their paleoenvironments. This course is designed as a distance learning course for in-service teachers who are required to teach earth science topics with little or no background knowledge in this subject

GG 8423 Earthquakes and Volcanoes: 3 hours.
Three hours video and online. A study of plate tectonic boundary interactions with an emphasis on earthquakes and volcanoes

GG 8503 Landforms: 3 hours.
(Prerequisite: Consent of instructor). Three hours video and online. Geomorphological principles with an emphasis on landforms of North America and their formation

GG 8561 Geoscience Seminar: 1 hour.
(Prerequisite: Graduate standing). Review of current geoscience literature; preparation and presentation of formal papers

GG 8572 Geologic Literature: 2 hours.
(Prerequisite: Major in geology). A reading course with emphasis on library research

GG 8613 Hydrology: 3 hours.
(Prerequisite: GG 6103 or consent of instructor). Three hours lecture, video and online. Investigation of the occurrence, distribution, movement, and chemistry of earth's waters. Emphasis on geological controls of surface and groundwater. Primarily for K-12 science teachers

GG 8633 Water Biogeochemistry: 3 hours.
(Prerequisite: GG 4633/6633 Geochemistry or Consent of Instructors). Two hours lecture. Two hours laboratory. Inter-disciplinary study of the factors that characterizes oceans, wetlands and inland aquatic systems; global water and nutrient cycling; human effects on biogeochemical cycles

GG 8713 Regional Geology of Eastern North America: 3 hours.
(Prerequisite: Major in geology). Three hours lecture. A study of physiography, structure, and stratigraphy of eastern North America

GG 8733 Geology of North America: 3 hours.
(Prerequisite:Consent of instructor). Three hours video and online. Plate tectonic evolution of the North American continent with emphasis on both process and stratigraphic development

GG 8743 Basin Analysis: 3 hours.
Three hours lecture. Advanced geologic basin analysis taught through the application of stratigraphic, structural, geophysical, and sedimentologic techniques and professional tools

GG 8913 Research, Readings, and Techniques in Geosciences: 3 hours.
(Prerequisite: consent of instructor). Three hours seminar. Writing and discussion of topics related to the conduct of research in the Geosciences with a focus on faculty research areas

GG 8990 Special Topics in Geosciences: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

GG 9000 Dissertation Research /Dissertation in Geology: 1-13 hours.
Hours and credit to be arranged

Gen Liberal Arts Courses

GLA 4000 Directed Individual Study in General Liberal Arts: 1-6 hours.
Hours and credit to be arranged

GLA 4001 Senior Project: 1 hour.
(Retricted to GLA majors or permission of the instructor) One hour lecture. Cohesive capstone course that draws together the diverse threads of the liberal arts. This course encourages analysis and criticism of social, ethical, and related issues that challenge the modern world

GLA 4990 Special Topics in GLA: 1-9 hours.
This course is to be used on a limited basis to offer developing subject matter areas not coverd in existing courses

Genetics Courses

GNS 2990 Special Topics in Genetics: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

GNS 3103 Genetics I: 3 hours.
Two hours lecture. Two hours laboratory. (Prerequisites: MA 1313 or higher, BIO 1134 or higher or BIO 2113 or higher). Principles of heredity, genetic material, and gene expressions. (Same as BIO 3103, PO 3103)

GNS 4133 Human Genetics: 3 hours.
(Prerequisite: BIO 1504 or consent of instructor). Three hours lecture. Principles of Mendelian and molecular genetics as applied to humans. Description and causes of human genetic diseases and other anomalies. (Same as BIO 4133/6133)

GNS 4990 Special Topics in Genetics: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

GNS 6133 Human Genetics: 3 hours.
(Prerequisite: BIO 1504 or consent of instructor). Three hours lecture. Principles of Mendelian and molecular genetics as applied to humans. Description and causes of human genetic diseases and other anomalies. (Same as BIO 4133/6133)

GNS 6990 Special Topics in Genetics: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

GNS 7000 Directed Individual Study in Genetics: 1-6 hours.
Hours and credits to be arranged

GNS 8000 Thesis Research/ Thesis in Genetics: 1-13 hours.
Hours and credits to be arranged

GNS 8961 Nobel Topics in Physiology/Medicine and Chemistry: 1 hour.
(Prerequisite:Graduate standing or consent of instructor). One hour seminar. The course will provide historic and current understanding of topics awarded with a Nobel Prize.(Same as CVM 8961 and FO 8961). May be repeated three times for credit)

GNS 8990 Special Topics in Genetics: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

GNS 9000 Dissertation Research /Dissertation in Genetics: 1-13 hours.

Geography Courses

GR 1001 First Year Seminar: 1 hour.
One hour lecture. First-year seminars explore a diverse array of topices that provide students with an opportunity to learn about a specific discipline from skilled faculty members

GR 1114 Elements of Physical Geography: 4 hours.
Three hours lecture. Two hours laboratory. Systematic study of the elements of the environmental process that form and characterize the earth's natural landscapes. May be taken as a science elective

GR 1123 Introduction to World Geography: 3 hours.
Three hours lecture. A survey of the world's regions, with emphasis upon locational aspects, physical and cultural diversity, and environmental issues

GR 1604 Weather and Climate: 4 hours.
Three hours lecture, two hours lab. Descriptive study of weather with the objective of gaining appreciation of the variety of atmospheric phenomena. Explanation of daily weather events, their causes and impacts

GR 2013 Cultural Geography: 3 hours.
Three hours lecture. Study of human occupance of the Earth, treating geographic aspects of population, settlement, origin and diffusion of cultural traits, resource utilizing systems, and political factors

GR 2313 Maps and Remote Sensing: 3 hours.
Two hours lecture. Two hours laboratory. Fundamental principles of cartography and remote sensing, including types and applications. Attention is given to interpretation of surface features, environmental problem solving, and environmental planning

GR 2990 Special Topics in Geography: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

GR 3113 Conservation of Natural Resources: 3 hours.
Three hours lecture. Consideration of the current problems associated with the conservation of soils, forests, waters, minerals, and wild life in the United States and the world

GR 3303 Survey of Geospatial Technologies: 3 hours.
(Prerequisite:GR 2313 or Consent of Instructor).Three hours lecture. Geographic Information Systems,Remote Sensing and Global Positioning Systems applied to earth systems and science. Includes field excursions for hands on experience with currrent technologies

GR 4000 Directed Individual Study in Geography: 1-6 hours.
Hours and credits to be arranged

GR 4123 Urban Geography: 3 hours.
Three hours lecture. Historic trends in distribution and growth of urban settlements, urban location theory; economic bases, functions, and structure of cities and metropolitan areas; urban problems; planning

GR 4203 Geography of North America: 3 hours.
Three hours lecture. A regional survey of the United States and Canada with emphasis upon place names, physical landscapes, historical settlement patterns, cultural regions, and environmental issues

GR 4213 Geography of Latin America: 3 hours.
Three hours lecture. A regional survey of Latin America with emphasis upon place names, physical environments, cultural landscapes and their evolution, and environmental issues

GR 4223 Geography of Europe: 3 hours.
Three hours lecture. A regional survey of Europe with emphasis upon placements, physical environments, cultural landscapes, geopolitical evolution, and environment issues

GR 4233 Geography of Asia: 3 hours.
Three hours lecture. A regional survey of Asia with emphasis upon placenames, physical geography, cultural diversity and cultural landscapes, geopolitical conflicts, and environmental issues

GR 4243 Geography of Russia and the Former Soviet Republics: 3 hours.
Three hours lecture. A regional survey of the former Soviet Union republics with emphasis upon placenames, physical environments, ethnic diversity, geopolitical evolution, and environmental issues

GR 4253 Geography of Africa: 3 hours.
Three hours lecture. A regional survey of the African continent with emphasis upon placenames, physical geography, cultural diversity and cultural landscapes, geopolitical changes, and environmental issues

GR 4263 Geography of the South: 3 hours.
Three hours lecture. A regional survey of the South with emphasis upon physical and cultural landscapes, settlement patterns, ethnic diversity, tourism development, and environmental issues

GR 4283 Geography of Islamic World: 3 hours.
A regional survey of Islamic countries of the world with emphasis upon physical landscapes, cultural landscapes and their evolution, geopolitical conflicts and environmental issues

GR 4303 Principles of GIS: 3 hours.
(Prerequisite: Junior or graduate standing or consent of instructor) Two hours lecture and two hours laboratory. Spatial analysis and topological relationships of geographic data using Geographic Information Systems, with emphasis on GIS theory

GR 4313 Advanced GIS: 3 hours.
(Prerequisite:GR 4303/6303 or consent of instructor). Two hours lecture. Two hours laboratory. Vector-based file structure and GIS queries using spatial and geodatabases attributes. Descriptive and prescriptive modeling in the raster domain including regression and linear weighted modeling

GR 4323 Cartographic Sciences: 3 hours.
(Prerequisite: Junior or graduate standing or consent of instructor.) Two hours lecture. Two hours laboratory. Principles of cartographic theory and map design. Types of maps, map projections, proportional symbols, use of color, mapping and statistics, interactive maps, and map animation

GR 4333 Remote Sensing of the Physical Environment: 3 hours.
(Prerequisite: GR 3303, GR 3311 or consent of instructor). Two hours lecture. Two hours laboratory. Examines remote sensing methods applicable to large-area analyses of watershed-level drainage systems, urban landscape, landscape vegetation metrics, physical landscape structural components and atmospheric features

GR 4343 Advanced Remote Sensing in Geosciences: 3 hours.
(Prerequisite: Either GR 4333/6333, ECE 4423/6423, or FO 4452/6452 or consent of instructor). Two hours lecture. Two hours laboratory. Geospatial image analysis; Theoretical basis of radiative transfer in atmosphere and water column; Quantitative remote sensing techniques and geospatial product development

GR 4353 Geodatabase Design: 3 hours.
(Prerequisite: GR 4303/6303 or consent of instructor). Three hours lecture. Examination of Geodatabase structures. Integration of relational databases with Geographic Information Systems. Management of spatial data using geodatabases. Implementation of Geodatabase processes through spatial programming

GR 4363 Geographic Information Systems Programming: 3 hours.
(Prerequisite: Either GR 4303/6303 or consent of instructor). Two hours lecture. Two hours laboratory. Design and implementation of geoprocessing scripts. Incorporation of modeling languages within geographic information systems (GIS) analysis. Seamless integration of other software programs with GIS software

GR 4402 Weather Analysis I: 2 hours.
(Prerequisite: GR 1603 or equivalent). One hour lecture. Two hours laboratory. Introduction to real-time weather information such as Difax charts, satellite and radar imagery, and text data. Emphasis on Nowcasting

GR 4411 Remote Sensing Seminar: 1 hour.
(Prerequisite:Junior Standing). One hour lecture. Lectures by remote sensing experts from industry, academia, and governmental agencies on the next- generation systems, applications, and economic and societal impact of remote sensing. May be repeated for credit up to four credits. (Same as PSS 4411/6411, ECE 4411/6411, FO 4411/6411)

GR 4412 Weather Analysis II: 2 hours.
(Prerequisite: GR 4402/6402). One hour lecture. Two hours laboratory. Continuation of Weather Analysis I. Advanced analysis of weather data in Nowcasting

GR 4422 Weather Forecasting I: 2 hours.
(Prerequisite: GR 4412/6412). One hour lecture. Two hours laboratory. Introduction to the process of creating and disseminating weather forecasts. Use of current weather data in creating daily forecsts for the local area

GR 4432 Weather Forecasting II: 2 hours.
(Prerequisite:GR 4422/6422). One hour lecture. Two hours laboratory. Continuation of Weather Forecasting I. Emphasis placed on disseminating both oral and written forecasts for the local area

GR 4443 Weather Prediction I: 3 hours.
(Prerequisite: GR 1604 or consent of instructor). Three hours lecture. Weather analysis and forecasting. Emphasis on local, short-term forecasting techniques, including temperature forecasting, precipitation forecasting, and convective forecasting

GR 4453 Weather Prediction II: 3 hours.
(Prerequisite: GR 4443 or consent of instructor). Three hours video and online. Continuation of GR 4443. Case studies of weather forecasts. Emphasis on special weather events and places

GR 4473 Numerical Weather Prediction: 3 hours.
(Prerequisite: Consent of Instructor). This course provides students with an overview of the theory, processes, developments and applications of existing numerical weather prediction platforms

GR 4502 Practicum in Broadcast Meteorology I: 2 hours.
(Prerequisite: GR 1603 or equivalent). One hour lecture. Two laboratory. Introduction to developing a weather story with emphasis on producing weather graphics for television, chroma key mechanics, and weathercast communication

GR 4512 Practicum in Broadcast Meteorology II: 2 hours.
(Prerequisite:GR 4502/6502). One hour lecture. Two hours laboratory. Continuation of Practicum in Broadcast Meteorology I with emphasis on weather graphics production, weathercast performance, image, and communication. Supported by lab practice

GR 4522 Practicum in Broadcast Meteorology III: 2 hours.
Prerequisite: GR 4512/6512. One hour lecture. Two hours laboratory. Emphasis on advanced weathercasting, including field reporting, severe weather, and building graphics. Students are assigned actual television weather shows, with performance emphasis in the lab

GR 4532 Practicum in Broadcast Meteorology IV: 2 hours.
(Prerequisite:GR 4522/6522).One hour lecture.Two hours laboratory. Emphasis on the weathercasting job market in television. Students create actual television weather shows, and focus on producing a resume tape during the semester

GR 4553 Computer Methods in Meteorology: 3 hours.
(Prerequisite: GR 1603 or graduate status). Two hours lecture, two hours lab. Overview of computational methods and techniques commonly used in operational meteorology, focusing on scientific visualization and analysis, and numerical weather prediction

GR 4603 Climatology: 3 hours.
(Prerequisite: GR 1114 or GR 1123, or equivalent). Three hours lecture. Study of the elements and controls of weather and climate, distribution and characteristics of climatic regions

GR 4613 Applied Climatology: 3 hours.
(Prerequisites: GR 1603 or equivalent.) Two hours lecture. Two hours laboratory. Problem solving in today's world in topics such as bioclimatology, agricultural climatology and land use climatology

GR 4623 Physical Meteorology: 3 hours.
(Prerequisite:GR 1603). An investigation of cloud physics/precipitation processes and solar/terrestrial radiation, including atmospheric dynamics, atmospheric electricity, optics, and instrumentation

GR 4633 Statistical Climatology: 3 hours.
(Prerequisites: GR 1603 or GG 1113 or equivalent and MA 1313 or MA 1713).Two hours lecture. Two hours laboratory. A survey of the types of statistical weather data available. Manipulation of the data on various temporal and spatial scales

GR 4640 Meteorological Internship: 1-6 hours.
(Prerequisite: Consent of Instructor). Hours and credits to be arranged. Internship with television station, private company or government agency under supervision of instructor

GR 4643 Physical Climatology: 3 hours.
(Prerequisite: GR 1603 Introduction to Meteorology). Three hours lecture. An investigation of the physical aspects of Earth's climate, including interactions between the atmosphere, hydrosphere, and land surface, and how they are affected by climate variability and change

GR 4713 Synoptic Meteorology I: 3 hours.
(Prerequisites: GR 1603 or equivalent.) Two hours lecture. Two hours laboratory. Fundamental principles behind weather forecasting. Physical processes in the atmosphere, atmospheric circulation systems, air mass analysis, frontogenesis and frontolysis

GR 4733 Synoptic Meteorology: 3 hours.
(Prerequisite:GR 1603 and MA 1713) Three hour lecture. Principles and derivation of meteorological theory. Emphasis on energy exchanges, atmospheric moisture, physical processes of atmospheric motion, air masses and fronts, and cyclogenesis

GR 4753 Satellite and Radar Meteorology: 3 hours.
(Prerequisite: GR 1603.) Three hours lecture. Study of the history, the operations, and the applications of satellites and radar in weather analysis. Theory of meteorological measurements in determinations of atmospheric structure

GR 4783 Satellite Meteorology: 3 hours.
(Prerequisites: GR 4733, GR 4643). Two hours lecture, two hours laboratory. Overview of remote sensing methods and techniques commonly used in satellite meteorology, focusing on physical mechanisms, atmospheric image analysis, and real-time weather applications

GR 4813 Natural Hazards and Processes: 3 hours.
(Prerequisites: GR 1114 or equivalent.) Three hours lecture. A survey of natural phenomena in geology, oceanography and astronomy as applied to meteorology. Detailed study of earthquakes, volcanoes, ocean movements, and solar activity

GR 4823 Dynamic Meteorology I: 3 hours.
(Prerequisite:GR 4733/6733) Three hours lecture. In-depth examination of theoretical methods for determining atmospheric stability and the tools necessary to interrogate the vertical profile of the atmosphere

GR 4841 Observations of Severe Local Storms: 1 hour.
(Prerequisite: Consent of instructor). One hour field experience. Real-world practice in forecasting,nowcasting observation, and reporting of severe storms in U.S. Great Plains

GR 4842 Forecasting Severe Local Storms: 2 hours.
(Prerequisite: Consent of Instructor.) One hour lecture and two hour lab. This course provides a theoretical overview and practical application of the severe local storms forecasting process

GR 4843 Field Methods of Severe Local Storms: 3 hours.
Prerequisite: consent of instructor). Two hours lecture. One hour field experience. Application of the latest synoptic and mesoscale severe weather forecasting methods concluding with field operations in the U.S. Great Plains

GR 4883 Radar Meteorology: 3 hours.
(Prerequisite: GR 4733.) Two hours lecture. Two hours lab. Study of the history, the operation, and the application of radar in weather analysis. Theory and application of radar measurements in the determination of meteorological threats

GR 4913 Thermodynamic Meteorology: 3 hours.
(Prerequisite:GR 4723/6723 or equivalent). Three hours lecture. Examination of the meteorological stability within the earth's atmosphere. Focus on analysis of the various stability indices related to predicting severe weather

GR 4923 Severe Weather: 3 hours.
(Prerequisities: GR 4913/6913 or equivalent).Three hours lecture. Descriptive study of severe and unusual weather across the earth. Explanation of variations in severe weather in both spatial and temporal scales

GR 4933 Dynamic Meteorology II: 3 hours.
Three hours lecture. (Prerequisite GR 4823/6823 and MA 2733) Quantitative analysis and consideration of atmospheric circulation including jet streams, mid-latitude cyclones, vorticity and atmospheric kinetics

GR 4943 Tropical Meteorology: 3 hours.
(Prerequisite: Consent of Instructor). Three hours lecture. Topics include the dynamics and circulation of the tropical atmosphere, characteristics of tropical cyclones, and forecasting methodologies for tropical weather

GR 4963 Mesoscale Meteorology: 3 hours.
(Prerequisite:GR 4913/6913). Three hours lecture. Descriptive and physical understanding of Mesoscale processes and their relevance to the synoptic environment. A strong focus will be placed upon Severe Local Storms

GR 4990 Special Topics in Geography: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

GR 6113 Meteorology I: Observations: 3 hours.
Three hours lecture(online) Principles of meteorology with emphasis on elements, controls, and forecasting of atmospheric phenomena. Concentration on daily weather observation and the movement of weather systems. Primarily for K-12 teachers

GR 6123 Urban Geography: 3 hours.
Three hours lecture. Historic trends in distribution and growth of urban settlements, urban location theory; economic bases, functions, and structure of cities and metropolitan areas; urban problems; planning

GR 6203 Geography of North America: 3 hours.
Three hours lecture. A regional survey of the United States and Canada with emphasis upon place names, physical landscapes, historical settlement patterns, cultural regions, and environmental issues

GR 6213 Geography of Latin America: 3 hours.
Three hours lecture. A regional survey of Latin America with emphasis upon place names, physical environments, cultural landscapes and their evolution, and environmental issues

GR 6223 Geography of Europe: 3 hours.
Three hours lecture. A regional survey of Europe with emphasis upon placements, physical environments, cultural landscapes, geopolitical evolution, and environment issues

GR 6233 Geography of Asia: 3 hours.
Three hours lecture. A regional survey of Asia with emphasis upon placenames, physical geography, cultural diversity and cultural landscapes, geopolitical conflicts, and environmental issues

GR 6243 Geography of Russia and the Former Soviet Republics: 3 hours.
Three hours lecture. A regional survey of the former Soviet Union republics with emphasis upon placenames, physical environments, ethnic diversity, geopolitical evolution, and environmental issues

GR 6253 Geography of Africa: 3 hours.
Three hours lecture. A regional survey of the African continent with emphasis upon placenames, physical geography, cultural diversity and cultural landscapes, geopolitical changes, and environmental issues

GR 6263 Geography of the South: 3 hours.
Three hours lecture. A regional survey of the South with emphasis upon physical and cultural landscapes, settlement patterns, ethnic diversity, tourism development, and environmental issues

GR 6283 Geography of Islamic World: 3 hours.
A regional survey of Islamic countries of the world with emphasis upon physical landscapes, cultural landscapes and their evolution, geopolitical conflicts and environmental issues

GR 6303 Principles of GIS: 3 hours.
(Prerequisite: Junior or graduate standing or consent of instructor) Two hours lecture and two hours laboratory. Spatial analysis and topological relationships of geographic data using Geographic Information Systems, with emphasis on GIS theory

GR 6313 Advanced GIS: 3 hours.
(Prerequisite:GR 4303/6303 or consent of instructor). Two hours lecture. Two hours laboratory. Vector-based file structure and GIS queries using spatial and geodatabases attributes. Descriptive and prescriptive modeling in the raster domain including regression and linear weighted modeling

GR 6323 Cartographic Sciences: 3 hours.
(Prerequisite: Junior or graduate standing or consent of instructor.) Two hours lecture. Two hours laboratory. Principles of cartographic theory and map design. Types of maps, map projections, proportional symbols, use of color, mapping and statistics, interactive maps, and map animation

GR 6333 Remote Sensing of the Physical Environment: 3 hours.
(Prerequisite: GR 3303, GR 3311 or consent of instructor). Two hours lecture. Two hours laboratory. Examines remote sensing methods applicable to large-area analyses of watershed-level drainage systems, urban landscape, landscape vegetation metrics, physical landscape structural components and atmospheric features

GR 6343 Advanced Remote Sensing in Geosciences: 3 hours.
(Prerequisite: Either GR 4333/6333, ECE 4423/6423, or FO 4452/6452 or consent of instructor). Two hours lecture. Two hours laboratory. Geospatial image analysis; Theoretical basis of radiative transfer in atmosphere and water column; Quantitative remote sensing techniques and geospatial product development

GR 6353 Geodatabase Design: 3 hours.
(Prerequisite: GR 4303/6303 or consent of instructor). Three hours lecture. Examination of Geodatabase structures. Integration of relational databases with Geographic Information Systems. Management of spatial data using geodatabases. Implementation of Geodatabase processes through spatial programming

GR 6363 Geographic Information Systems Programming: 3 hours.
(Prerequisite: Either GR 4303/6303 or consent of instructor). Two hours lecture. Two hours laboratory. Design and implementation of geoprocessing scripts. Incorporation of modeling languages within geographic information systems (GIS) analysis. Seamless integration of other software programs with GIS software

GR 6402 Weather Analysis I: 2 hours.
(Prerequisite: GR 1603 or equivalent). One hour lecture. Two hours laboratory. Introduction to real-time weather information such as Difax charts, satellite and radar imagery, and text data. Emphasis on Nowcasting

GR 6411 Remote Sensing Seminar: 1 hour.
(Prerequisite:Junior Standing). One hour lecture. Lectures by remote sensing experts from industry, academia, and governmental agencies on the next- generation systems, applications, and economic and societal impact of remote sensing. May be repeated for credit up to four credits. (Same as PSS 4411/6411, ECE 4411/6411, FO 4411/6411)

GR 6412 Weather Analysis II: 2 hours.
(Prerequisite: GR 4402/6402). One hour lecture. Two hours laboratory. Continuation of Weather Analysis I. Advanced analysis of weather data in Nowcasting

GR 6422 Weather Forecasting I: 2 hours.
(Prerequisite: GR 4412/6412). One hour lecture. Two hours laboratory. Introduction to the process of creating and disseminating weather forecasts. Use of current weather data in creating daily forecsts for the local area

GR 6432 Weather Forecasting II: 2 hours.
(Prerequisite:GR 4422/6422). One hour lecture. Two hours laboratory. Continuation of Weather Forecasting I. Emphasis placed on disseminating both oral and written forecasts for the local area

GR 6443 Weather Prediction I: 3 hours.
(Prerequisite: GR 1604 or consent of instructor). Three hours lecture. Weather analysis and forecasting. Emphasis on local, short-term forecasting techniques, including temperature forecasting, precipitation forecasting, and convective forecasting

GR 6473 Numerical Weather Prediction: 3 hours.
(Prerequisite: Consent of Instructor). This course provides students with an overview of the theory, processes, developments and applications of existing numerical weather prediction platforms

GR 6502 Practicum in Broadcast Meteorology I: 2 hours.
(Prerequisite: GR 1603 or equivalent). One hour lecture. Two laboratory. Introduction to developing a weather story with emphasis on producing weather graphics for television, chroma key mechanics, and weathercast communication

GR 6512 Practicum in Broadcast Meteorology II: 2 hours.
(Prerequisite:GR 4502/6502). One hour lecture. Two hours laboratory. Continuation of Practicum in Broadcast Meteorology I with emphasis on weather graphics production, weathercast performance, image, and communication. Supported by lab practice

GR 6522 Practicum in Broadcast Meteorology III: 2 hours.
Prerequisite: GR 4512/6512. One hour lecture. Two hours laboratory. Emphasis on advanced weathercasting, including field reporting, severe weather, and building graphics. Students are assigned actual television weather shows, with performance emphasis in the lab

GR 6532 Practicum in Broadcast Meteorology IV: 2 hours.
(Prerequisite:GR 4522/6522).One hour lecture.Two hours laboratory. Emphasis on the weathercasting job market in television. Students create actual television weather shows, and focus on producing a resume tape during the semester

GR 6553 Computer Methods in Meteorology: 3 hours.
(Prerequisite: GR 1603 or graduate status). Two hours lecture, two hours lab. Overview of computational methods and techniques commonly used in operational meteorology, focusing on scientific visualization and analysis, and numerical weather prediction

GR 6603 Climatology: 3 hours.
(Prerequisite: GR 1114 or GR 1123, or equivalent). Three hours lecture. Study of the elements and controls of weather and climate, distribution and characteristics of climatic regions

GR 6613 Applied Climatology: 3 hours.
(Prerequisites: GR 1603 or equivalent.) Two hours lecture. Two hours laboratory. Problem solving in today's world in topics such as bioclimatology, agricultural climatology and land use climatology

GR 6623 Physical Meteorology: 3 hours.
(Prerequisite:GR 1603). An investigation of cloud physics/precipitation processes and solar/terrestrial radiation, including atmospheric dynamics, atmospheric electricity, optics, and instrumentation

GR 6633 Statistical Climatology: 3 hours.
(Prerequisites: GR 1603 or GG 1113 or equivalent and MA 1313 or MA 1713).Two hours lecture. Two hours laboratory. A survey of the types of statistical weather data available. Manipulation of the data on various temporal and spatial scales

GR 6640 Meteorological Internship: 1-6 hours.
(Prerequisite: Consent of Instructor). Hours and credits to be arranged. Internship with television station, private company or government agency under supervision of instructor

GR 6643 Physical Climatology: 3 hours.
(Prerequisite: GR 1603 Introduction to Meteorology). Three hours lecture. An investigation of the physical aspects of Earth’s climate, including interactions between the atmosphere, hydrosphere, and land surface, and how they are affected by climate variability and change

GR 6713 Synoptic Meteorology I: 3 hours.
(Prerequisites: GR 1603 or equivalent.) Two hours lecture. Two hours laboratory. Fundamental principles behind weather forecasting. Physical processes in the atmosphere, atmospheric circulation systems, air mass analysis, frontogenesis and frontolysis

GR 6733 Synoptic Meteorology: 3 hours.
(Prerequisite:GR 1603 and MA 1713) Three hour lecture. Principles and derivation of meteorological theory. Emphasis on energy exchanges, atmospheric moisture, physical processes of atmospheric motion, air masses and fronts, and cyclogenesis

GR 6753 Satellite and Radar Meteorology: 3 hours.
(Prerequisite: GR 1603.) Three hours lecture. Study of the history, the operations, and the applications of satellites and radar in weather analysis. Theory of meteorological measurements in determinations of atmospheric structure

GR 6783 Satellite Meteorology: 3 hours.
(Prerequisites: GR 4733, GR 4643). Two hours lecture, two hours laboratory. Overview of remote sensing methods and techniques commonly used in satellite meteorology, focusing on physical mechanisms, atmospheric image analysis, and real-time weather applications

GR 6813 Natural Hazards and Processes: 3 hours.
(Prerequisites: GR 1114 or equivalent.) Three hours lecture. A survey of natural phenomena in geology, oceanography and astronomy as applied to meteorology. Detailed study of earthquakes, volcanoes, ocean movements, and solar activity

GR 6823 Dynamic Meteorology I: 3 hours.
(Prerequisite:GR 4733/6733) Three hours lecture. In-depth examination of theoretical methods for determining atmospheric stability and the tools necessary to interrogate the vertical profile of the atmosphere

GR 6841 Observations of Severe Local Storms: 1 hour.
(Prerequisite: Consent of instructor). One hour field experience. Real-world practice in forecasting,nowcasting observation, and reporting of severe storms in U.S. Great Plains

GR 6842 Forecasting Severe Local Storms: 2 hours.
(Prerequisite: Consent of Instructor.) One hour lecture and two hour lab. This course provides a theoretical overview and practical application of the severe local storms forecasting process

GR 6843 Field Methods of Severe Local Storms: 3 hours.
Prerequisite: consent of instructor). Two hours lecture. One hour field experience. Application of the latest synoptic and mesoscale severe weather forecasting methods concluding with field operations in the U.S. Great Plains

GR 6883 Radar Meteorology: 3 hours.
(Prerequisite: GR 4733.) Two hours lecture. Two hours lab. Study of the history, the operation, and the application of radar in weather analysis. Theory and application of radar measurements in the determination of meteorological threats

GR 6913 Thermodynamic Meteorology: 3 hours.
(Prerequisite:GR 4723/6723 or equivalent). Three hours lecture. Examination of the meteorological stability within the earth's atmosphere. Focus on analysis of the various stability indices related to predicting severe weather

GR 6923 Severe Weather: 3 hours.
(Prerequisities: GR 4913/6913 or equivalent).Three hours lecture. Descriptive study of severe and unusual weather across the earth. Explanation of variations in severe weather in both spatial and temporal scales

GR 6933 Dynamic Meteorology II: 3 hours.
Three hours lecture. (Prerequisite GR 4823/6823 and MA 2733) Quantitative analysis and consideration of atmospheric circulation including jet streams, mid-latitude cyclones, vorticity and atmospheric kinetics

GR 6943 Tropical Meteorology: 3 hours.
(Prerequisite: Consent of Instructor). Three hours lecture. Topics include the dynamics and circulation of the tropical atmosphere, characteristics of tropical cyclones, and forecasting methodologies for tropical weather

GR 6963 Mesoscale Meteorology: 3 hours.
(Prerequisite:GR 4913/6913). Three hours lecture. Descriptive and physical understanding of Mesoscale processes and their relevance to the synoptic environment. A strong focus will be placed upon Severe Local Storms

GR 6990 Special Topics in Geography: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

GR 7000 Directed Individual Study in Geography: 1-6 hours.
Hours and credits to be arranged

GR 8000 Thesis Research/ Thesis in Geography: 1-13 hours.
Hours and credits to be arranged

GR 8123 Meteorology II: Forecasting and Storms: 3 hours.
(Prerequisite: GR 6113 or consent of instructor). Three hours lecture, video and online. Continuation of Meteorology I. Emphasis on the forecasting of daily weather events and on severe weather. Primarily for K-12 science teachers

GR 8133 Foundations in Forecasting: 3 hours.
(Prerequisite: GR 8123 or consent of instructor). Three hours lecture (online). Emphasis on daily weather forecasting at the synoptic and meso scales and introduction and investigation of advanced methods

GR 8143 Advanced Forecasting Techniques: 3 hours.
(Prerequisite: Consent of instructor), Three hours lecture. Regional and mesoscale forecasting topics and techniques, including coastal meteorology,mountain meteorology, fire weather, aviation meteorology and winter weather

GR 8191 Geoscience Review: 1 hour.
(Prerequisites: 30 hours of GR/GG graduate work and consent of instructor.) One hour seminar. Conduit for interactions with faculty members to assist students in preparing for comprehensive assessment in distance learning degree programs

GR 8303 Advanced Geodatabase Systems: 3 hours.
(Prerequisite:GR 4353/6353 or Consent of instructor.) Two hours lecture. Two hours laboratory. Examination of database structures utilized in geospatial information systems. Design and use of geospatial databases through spatial programming in development and implementation of spatial models

GR 8313 Advanced Cultural Geography: 3 hours.
(Prerequisite: Consent of instructor). Three hours lecture. Study and analysis of population distribution, densities, and movements; rural and urban settlement patterns and features; principles of cultural geography

GR 8333 Field Techniques in Remote Sensing: 3 hours.
(Prerequisite: Either GR 4333/6333, ECE 4423/6423 or FO 4452/6452 or consent of instructor). Two hours lecture and two hours laboratory. Field spectroscopy or proximal sensing; experimental design and data collection using in situ sensors; data analysis, model calibration, and validation for quantifying biophysical parameters

GR 8400 Field Methods in Geosciences: 1-3 hours.
(Prerequisite: Consent of Instructor). Hours and credits to be arranged. May be taken twice. Provides field experience in the geosciences through planned and supervised outdoor projects and field trips

GR 8410 Field Methods Seminar: 3-4 hours.
(3-4 hours, credits to be arranged). (Prerequisite: Consent of instructor). May be repeated for credit two times. A seminar providing synthesis of multiple Geoscience subtopics held in rotating field experience locations

GR 8453 Quantitative Analysis in Climatology: 3 hours.
(Prerequisite: Consent of Instructor). Three hours lecture. Implementation of quantitative methods in climatology, including modeling, resampling methods and spatial techniques, emphasizing climate analysis software packages and data formats

GR 8542 Geographic Literature: 2 hours.
(Prerequisite: Major or minor in geography). A reading course with emphasis on library research

GR 8553 Research Methods in Geoscience: 3 hours.
(Prerequisite: Consent of instructor). Three hours seminar and forum. Defining research problems, formulating hypotheses, collecting data, using analytical techniques, substantiating conclusions for geoscience topics; written and oral presentations of research projects required

GR 8563 GIS Research Applications: 3 hours.
(Prerequisite: GR 6333, GR 6313, ST 8114 or equivalent, or consent of instructor). Two hours lecture. Two hours laboratory. This course examines the research cycle from proposal to peer-reviewed publication via case studies in GIS with applications for medical epidemiology, wildfire, and emergency management

GR 8573 Research in Applied Meteorology: 3 hours.
(Prerequisite: Consent of Instructor). Seminar. Discussion and application of current research in applied meteorology. Individual or small group projects with research presentations

GR 8613 Hydrometeorology: 3 hours.
(Prerequisite: Consent of Instructor). Three hours lecture-video and online. Hydrometeorological principles with an emphasis on flood forecasting

GR 8633 Climate Change: 3 hours.
(Prerequisite: Consent of Instructor). Three hours lecture. In-depth examination of changes in earth's climate through time. Focus is placed on causes, measurement, implications and complexity of climate change

GR 8813 Advanced Hazards and Disasters: 3 hours.
(Prerequisite: Consent of Instructor). Three hours lecture. Advanced study of the processes, distribution and impacts of hazards and disasters

GR 8833 Weather and Society: 3 hours.
(Prerequisite: Consent of Instructor). Three hours lecture. Study of the role of weather in and on society through readings, discussion and research

GR 8843 Advanced Mesoscale Meteorology: 3 hours.
(Prerequisite: MA 1713 or Consent of Instructor) Three hours seminar. Readings, writings and discussion of topics related to the mesoscale atmospheric environment with a strong focus on severe local storms

GR 8913 Philosophy and Ethics in Geosciences: 3 hours.
(Prerequisite: consent of instructor). Three hours seminar. Writing and discussion of topics related to the history and philosophy of science, professional and academic ethics, and epistemological issues related to the Geosciences

GR 8990 Special Topics in Geography: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

GR 9000 Dissertation Research /Dissertation in Geography: 1-13 hours.
Hours and credits to be arranged

Graduate Studies Courses

GRD 9011 Graduate Degree Completion: 1 hour.
Designed for graduate students who completed all graduation requirements except thesis/dissertation Library submission deadlines for the previous semester. Registration serves to meet the university's continuous enrollment policy. Non-repeatable

Gender Studies Courses

GS 1001 First Year Seminar: 1 hour.
One hour lecture. First-year seminars explore a diverse arrary of topics that provide students with an opportunity to learn about a specific discipline from skilled faculty members

GS 1173 Introduction to Gender Studies: 3 hours.
Three hours lecture. An introduction to theoretical concepts in Gender Studies. This course will examine the influence of the women's movement on the academic development of Gender Studies. (Same as SO 1173 and AN 1173)

GS 2990 Special Topic In GS: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

GS 3513 Women and Literature: Selected Topics: 3 hours.
(Prerequisites:Completon of EN 1103).Three hours lecture. A study of literary works by or about women.Texts are selected according to theme, genre, and/or historical period. (Same as EN 3513)

GS 3713 History of African American Women: 3 hours.
Three hours lecture. Examination of black women from their African origins to the present; emphasizes the social, economic and political engagement of women in American society, including reform movements, family life, business, and the arts. (Same as HI 3713/AAS 3713)

GS 4000 Directed Individual Study in Gender Studies: 1-6 hours.
Hours and credits to be arranged

GS 4233 Gender and Media: 3 hours.
A critical exploration of discourses of gender and its intersections with sexuality, race, and class as represented in popular forms of media. (Same as CO 4233/6233)

GS 4263 Gender Communication: 3 hours.
Three hours lecture. An investigation of the ways in which communication impacts the construction, performance, evaluation, and negotiation of gender. (Same as CO 4263/6263)

GS 4403 Gender and Sport: 3 hours.
Three hours lecture. An exploration of how ideologies and inequalities related to gender may be constructed, perpetuated, and/or challenged in and through sport. (Same as SS 4403/6403)

GS 4990 Special Topics in Gender Studies: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

GS 6233 Gender and Media: 3 hours.
A critical exploration of discourses of gender and its intersections with sexuality, race, and class as represented in popular forms of media. (Same as CO 4233/6233)

GS 6263 Gender Communication: 3 hours.
Three hours lecture. An investigation of the ways in which communication impacts the construction, performance, evaluation, and negotiation of gender. (Same as CO 4263/6263)

GS 6403 Gender and Sport: 3 hours.
Three hours lecture. An exploration of how ideologies and inequalities related to gender may be constructed, perpetuated, and/or challenged in and through sport. (Same as SS 4403/6403)

GS 6990 Special Topics in Gender Studies: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

GS 7000 Directed Individual Study in Gender Studies: 1-6 hours.
Hours and credits to be arranged

GS 8963 Exploring Issues in Gender: 3 hours.
(Prerequisite:Graduate standing and enrollment in the Diveristy Certificate Program).Three hours lecture. An intensive introduction to theories of gender structures social, economic and cultural inequalities. Designed for online Diversity Certificate Program students. (Same as SO 8963)

GS 8973 Gender and Work: 3 hours.
(Prerequisite: Graduate standing and enrollment in the Diversity Certificate Program).Three hours lecture. An intensive examination of how gender impacts experiences of work from the home to the corporation. Designed for online Diversity Certificate Program Students. (Same as SO 8973)

GS 8990 Special Topic In GS: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

Healthcare Administration Courses

HCA 3313 Healthcare Systems: 3 hours.
(Prerequisite:BIS 3233) Three hours lecture. Analysis of hospital information systems using an integration approach of patient records, and billing through third parties. Review of systems design and reporting objectives. (Meridian Campus)

HCA 3813 Healthcare Regulations: 3 hours.
Three hours lecture. A review of corporate systems approach to meet state and national regulatory agency mandates for the healthcare industry utilizing best practice methodologies. (Meridian Campus only)

HCA 4013 Ethical Issues in Healthcare: 3 hours.
Three hours lecture. Managerial approaches into the ethical basis of patient care exploring the legal,theistic, cost-benefit, and humanist perspectives used to set corporate policy. (Meridian Campus)

HCA 4243 Managed Care: 3 hours.
(Prerequisite:MGT 3113) .Three hours lecture. An examination of the healthcare as a progressive system of primary care to long term care. Emphasis on managing costs-best choice services for the patient. (Meridian Campus)

HCA 4443 Healthcare Internship: 3 hours.
(Prerequisite:HCA 3313 and HCA 3813). Internship. A supervised work experience with health care provider. Student will provide a written report to the assigned faculty member at completion of internship

HCA 4803 Healthcare Policy: 3 hours.
(Prerequisite:HCA 3813). Three hours lecture. A detailed study of the health care industry using an analysis of the internal resources and external environmental policies utilized by health care providers. (Meridian Campus)

HCA 4990 Special Topics in Healthcare Administration: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

HCA 6990 Special Topics in Health Care Administration: 1-9 hours.

Human Development Family Sci Courses

HDFS 1813 Individual and Family Development through the Lifespan: 3 hours.
Three hours lecture. Introduction to individual and family development through the lifespan, conception to death, focusing on social and emotional development, contextual influences on development, and application

HDFS 2023 Trauma Informed Practice: 3 hours.
Three hours lecture. This course prepares students to recognize signs of trauma and apply trauma-informed practices when working with children and families. The course is designed for students majoring in HDFS, psychology, and other disciplines where knowledge of the impact of trauma on children and families is pertinent

HDFS 2123 Perspectives on Child Maltreatment and Child Advocacy: 3 hours.
Three hours lecture. This course is the introductory course for child advocacy studies. This course covers the history, comparative perspectives, legal framework, reporting, identification and effects of child maltreatment and professional/community responses to child maltreatment

HDFS 2803 Prenatal and Infant Development: 3 hours.
Two hours lecture. Two hours laboratory. Biological and environmental influences; behavioral and developmental patterns, from the onset of pregnancy to toddlerhood

HDFS 2813 Child Development: 3 hours.
(Prerequisite: HDFS 1813 or consent of instructor). Two hours lecture. Two hours laboratory. Developmental characteristics of children with emphasis on the early years; implications for care and guidance

HDFS 2990 Special Topics in Human Development and Family Science: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

HDFS 3000 Field Experience: 1-6 hours.
(Prerequisite: Consent of Instructor). Supervised field experience for Human Development and Family Science students in approved settings; pre-internship learning experience

HDFS 3123 Global Child Advocacy Issues: 3 hours.
Three hours lecture. Exploration of global child advocacy issues and the multidisciplinary cultural approaches used to address them

HDFS 3303 Consumer Economics: 3 hours.
Three hours lecture. Economic principles as they apply to consumer situations, and the consumer's relation to the American and world economy

HDFS 3803 Creativity & Play in Young Children: 3 hours.
Prerequisite: HDFS 2813. Two hours lecture. Two hours laboratory. Selection of appropriate equipment, materials, and activities; program planning for birth to age 5; observation and participation at the Child Development and Family Studies Center

HDFS 3813 Lifespan Theory: 3 hours.
(Prerequisites: HDFS 2813 or HDFS 1813). Three hours lecture. An intensified exploration of human development theory, research and methodology used in the study of individuals across the lifespan

HDFS 3823 Methods & Materials for Early Care and Education Programs: 3 hours.
(Prerequisites: HDFS 2813, HDFS 3803 and junior standing.) Two hours lecture. Two hours laboratory. Designing curriculum and programming for children birth to 5 years of age with emphasis on children's developmental characteristics as related to appropriate learning experiences

HDFS 3833 Human Development in the Context of Leisure and Recreation: 3 hours.
(Prerequisite: HDFS 1813). Three hours lecture. Introduces historical, theoretical, and empirical content focused on leisure and recreation as a context for human development across the lifespan

HDFS 3843 Guiding Young Children's Behavior & Social Development: 3 hours.
(Prerequisites: HDFS 2803 and HDFS 2813). Three hours lecture. Examine and design appropriate guidance techniques based on developmental growth patterns and individual differences in young children from birth to 5 years old

HDFS 4000 Directed Individual Study in Human Development and Family Science: 1-6 hours.
Hours and credits to be arranged

HDFS 4313 Family Resource Management: 3 hours.
Three hours lecture. Decision-making in the family and operation of the household as affected by family values, philosophies, resources, and socio-economic conditions

HDFS 4333 Families, Legislation and Public Policy: 3 hours.
(Prerequisite: Junior/senior writing or consent of instructor). Three hours lecture. An examination of the impact of legislation and public policy on the well being of the family with emphasis on policy and family change

HDFS 4403 Introduction to Gerontology: 3 hours.
Three hours lecture. An introduction to the dynamics of the aging process and strategies for maximizing life satisfaction during aging

HDFS 4424 Teaching Methods in Agricultural and Human Sciences: 4 hours.
(Prerequisite: CALS major and junior standing). Three hours lecture. Two hours laboratory. Planning instruction; selecting teaching techniques; developing teaching plans; teaching agricultural/human sciences topics; using instructional technologies; and evaluating learner progress. Same as AELC 4424

HDFS 4462 Curriculum in FCS Education: 2 hours.
(Prerequisites: Senior standing and admission to teacher education). Two hours lecture. Basis for curriculum planning; exemplar curriculums; and customizing curriculums

HDFS 4740 PreK-K Teacher Candidacy Internship: 12 hours.
(Prerequisite: Senior standing and consent of instructor). Individual work experience in an approved preschool/PreK-K setting under supervision of Mississippi State University faculty

HDFS 4760 Child Development Internship: 12 hours.
(Prerequisite: Successful completion of all academic coursework and consent of instructor.) Individual work experience in an approved child development setting under supervision of Mississippi State University faculty

HDFS 4770 Child Life Internship: 12 hours.
(Prerequisite: Successful completion of all academic coursework and consent of instructor). Individual work experience in an approved child life setting under supervision of Mississippi State University faculty

HDFS 4780 Youth Development Internship: 12 hours.
(Prerequisite: Successful completion of all academic coursework and consent of instructor.) Individual work experience in an approved youth development setting under supervision of Mississippi State University faculty

HDFS 4790 Family Science Internship: 12 hours.
(Prerequisite: Successful completion of all academic coursework and consent of instructor.) Individual work experience in an approved family services setting under supervision of Mississippi State University faculty

HDFS 4803 Parenting: 3 hours.
(Prerequisite: HDFS 1813 and junior/senior writing, or consent of instructor). Three hours lecture. Study of the child as a part of the family in a dynamic human ecological system

HDFS 4813 Adult Development: The Middle Years: 3 hours.
Three hours lecture. Theory and perspectives on adulthood in contemporary society, adjustment to internal and environmental changes, role structures, supportive networks and public policy issues

HDFS 4823 Development and Administration of Child Service Programs: 3 hours.
(Prerequisite: HDFS 3813 or concurrent enrollment). Three hours lecture. Planning, administering, and evaluating the organizational structure of a variety of child service programs

HDFS 4831 Child Life Foundations: 1 hour.
(Prerequisites: HDFS 2813, junior standing and permission of instructor). One hour lecture. Foundations and history of child life practice including impact of illness on child and family, elements of therapeutic play and medical preparation

HDFS 4832 Child Life Clinical: 2 hours.
(Prerequisites: HDFS 2813, HDFS 4833, junior standing and permission of the instructor). Four hours laboratory. This course provides the student with a child life practicum experience in a pediatric health care facility

HDFS 4833 The Hospitalized Child: 3 hours.
(Prerequisites: HDFS 3803 and HDFS 3813 or concurrent enrollment, junior standing or permission of the instructor). Three hours lecture. A pre-practicum development approach to the special needs of the hospitalized infant, child and adolescent

HDFS 4843 Family Interaction: 3 hours.
Three hours lecture. Interaction within functional families; focus on the family as a system, on diversity and roles, and on effective interactions

HDFS 4853 The Family: A Human Ecological Perspective: 3 hours.
Three hours lecture. The impact of internal and external factors on the development of individual and family relationships throughout the life cycle

HDFS 4863 Consumer Aspects of Aging: 3 hours.
Three hours lecture. Analysis of the decisions, issues and research related to the consumer aspects of aging from a global and national perspective

HDFS 4873 Positive Youth Development: 3 hours.
(Prerequisite: HDFS 1813 and junior/senior writing class or consent of instructor). Three hours lecture. Examines theoretical and empirical foundations of the growing field of Positive Youth Development; examines school and community-based programs that foster PYD

HDFS 4883 Risk, Resilience and Preventive Interventions: 3 hours.
(Prerequisite: HDFS 1813 and junior/senior writing; or consent of instructor). Three hours lecture. Theory and research relevant to understanding risk and resilience in human development and family studies application of risk/resilience framework to individual and family preventive interventions

HDFS 4886 Teaching Internship in FCS Education: 6 hours.
(Prerequisites: Admissions to Teacher Education, minimum grade point average of 2.5 overall and in major, and completion of all professional education courses with a grade of C or better). Supervised observation and directed teaching in respective field of endorsement

HDFS 4896 Teaching Internship in FCS Education: 6 hours.
(Prerequisites: Admission to Teacher Education, minimum grade point average of 2.5 overall and in major, and completion of all professional education courses with a grade of C or better). Supervised observation and directed teaching in respective field of endorsement

HDFS 4990 Special Topics in Human Development and Family Science: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

HDFS 6313 Family Resource Management: 3 hours.
Three hours lecture. Decision-making in the family and operation of the household as affected by family values, philosophies, resources, and socio-economic conditions

HDFS 6333 Families, Legislation and Public Policy: 3 hours.
(Prerequisite: Junior/senior writing or consent of instructor). Three hours lecture. An examination of the impact of legislation and public policy on the well being of the family with emphasis on policy and family change

HDFS 6403 Introduction to Gerontology: 3 hours.
Three hours lecture. An introduction to the dynamics of the aging process and strategies for maximizing life satisfaction during aging

HDFS 6424 Teaching Methods in Agricultural and Human Sciences: 4 hours.
(Prerequisite: CALS major and junior standing). Three hours lecture. Two hours laboratory. Planning instruction; selecting teaching techniques; developing teaching plans; teaching agricultural/human sciences topics; using instructional technologies; and evaluating learner progress. Same as AELC 4424

HDFS 6803 Parenting: 3 hours.
(Prerequisite: HDFS 1813 and junior/senior writing, or consent of instructor). Three hours lecture. Study of the child as a part of the family in a dynamic human ecological system

HDFS 6813 Adult Development: The Middle Years: 3 hours.
Three hours lecture. Theory and perspectives on adulthood in contemporary society, adjustment to internal and environmental changes, role structures, supportive networks and public policy issues

HDFS 6823 Development and Administration of Child Service Programs: 3 hours.
(Prerequisite: HDFS 3813 or concurrent enrollment). Three hours lecture. Planning, administering, and evaluating the organizational structure of a variety of child service programs

HDFS 6833 The Hospitalized Child: 3 hours.
(Prerequisites: HDFS 3803 and HDFS 3813 or concurrent enrollment, junior standing or permission of the instructor). Three hours lecture. A pre-practicum development approach to the special needs of the hospitalized infant, child and adolescent

HDFS 6843 Family Interaction: 3 hours.
Three hours lecture. Interaction within functional families; focus on the family as a system, on diversity and roles, and on effective interactions

HDFS 6853 The Family: A Human Ecological Perspective: 3 hours.
Three hours lecture. The impact of internal and external factors on the development of individual and family relationships throughout the life cycle

HDFS 6863 Consumer Aspects of Aging: 3 hours.
Three hours lecture. Analysis of the decisions, issues and research related to the consumer aspects of aging from a global and national perspective

HDFS 6873 Positive Youth Development: 3 hours.
(Prerequisite: HDFS 1813 and junior/senior writing class or consent of instructor). Three hours lecture. Examines theoretical and empirical foundations of the growing field of Positive Youth Development; examines school and community-based programs that foster PYD

HDFS 6883 Risk, Resilience and Preventive Interventions: 3 hours.
(Prerequisite: HDFS 1813 and junior/senior writing; or consent of instructor). Three hours lecture. Theory and research relevant to understanding risk and resilience in human development and family studies application of risk/resilience framework to individual and family preventive interventions

HDFS 6990 Special Topics in Human Development and Family Science: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

HDFS 7000 Directed Individual Study in Human Development and Family Science: 1-6 hours.
Hours and credits to be arranged

HDFS 8000 Research and Thesis in Human Development and Family Science: 1-13 hours.
Hours and credits to be arranged

HDFS 8113 Trends in Infant and Child Development: 3 hours.
Three hours lecture. Overview of current research in infant and child development; implications for program development and advocacy

HDFS 8123 The Effects of Poverty on Children and Families: 3 hours.
Three hours lecture. Exploration of the impact of poverty on children and families, identification of risk/protective factors, and development of family and child interventions to reduce risk

HDFS 8313 Contemporary Youth Issues: 3 hours.
Three hours lecture. Current topics in the areas of youth studies and adolescent development

HDFS 8413 Issues in Family Science: 3 hours.
Three hours lecture. Extensive examination of current theoretical and research scholarship in critical topics of interest in the study of families

HDFS 8423 Development of Intimate Relationships: 3 hours.
Three hours lecture. A multidisciplinary investigation of how intimate relationships in contemporary U.S. society form, develop, maintain, and dissolve

HDFS 8503 Medical Aspects of Developmental Disabilities in Young Children: 3 hours.
Three hours lecture. The course provides the early intervention professional with information on health care issues, diagnostic testing, and medical conditions relevant to infants and young children with disabilities

HDFS 8513 Inclusion and Family-Centered Early Intervention: 3 hours.
Three hours lecture. The course will focus on the knowledge and skills needed to work effectively with very young children (birth to 5 years), and their families in inclusive and natural environments. Students will explore issues related to the impact that disability has on development

HDFS 8533 Instructional Strategies and Practice for Early Intervention: 3 hours.
Three hours lecture. This course is designed to create a framework for the effective application of instructional strategies in early intervention. Instructional design and strategies will be illustrated through hands-on activities. Course content is linked to developmental learning theories and evidence-based teaching practices

HDFS 8543 Practicum I: 3 hours.
Prerequisite(s): Must be enrolled as a graduate student in the MS in Early Intervention program and have a 3.00 GPA to be eligible for this course. Three hours practicum. University-supervised student teaching experience in an IDEA-Part C home visiting/intervention program

HDFS 8553 Practicum II: 3 hours.
Prerequisite(s): Must be enrolled as a graduate student in the MS in Early Intervention and have a 3.00 GPA to be eligible for this course. Three hours practicum. Student teaching experience in inclusive preschool programs for children with disabilities under the direction of a cooperating teacher

HDFS 8813 Seminar in Human Development and Family Science: 3 hours.
Three hours lecture. An introduction to the graduate program, faculty research, and policies and procedures. Skills in writing a literature review, grant writing, and giving professional presentations will be learned

HDFS 8823 Advanced Theories of Human Development and Family Relations: 3 hours.
Three hours lecture. Advanced study of theories of human development and family studies across the lifespan

HDFS 8833 Foundations of Human Development and Family Studies: 3 hours.
(Prerequisite: Consent of Instructor). Three hours lecture. Examination of the philosophical and theoretical foundations of Human Development and Family Studies

HDFS 8853 Current Issues in Human Development and Family Studies: 3 hours.
Three hours lecture. An in-depth examination of particular HDFS topics of current interest to faculty and students. Critical evaluation of current research

HDFS 8990 Special Topics in Human Development and Family Science: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

HDFS 9000 Research and Dissertation in Human Development and Family Science: 1-13 hours.
Hours and credits to be arranged

Higher Education Courses

HED 4990 Special Topic In HED: 1-9 hours.

HED 6990 Special Topic In HED: 1-9 hours.

HED 7000 Directed Individual Study in Higher Education: 1-6 hours.
Hours and credits to be arranged

HED 8010 Practicum: 3-6 hours.
(Prerequisite: Approval of instructor). Three or six hours supervised field experience and seminar in Student Affairs/Higher Education administration. (Repeatable for up to 6 total credits)

HED 8113 Administrative Leadership in Student Affairs & Higher Education: 3 hours.
(Prerequisite: 27 hours of completed coursework in Student Affairs & Higher Education program or approval of instructor). Three hours lecture. A leadership-focused capstone course applying theory to student affairs practice in the context of higher education organizations

HED 8123 Organization and Governance in Higher Education: 3 hours.
Three hours lecture. Conceptual and theoretical understandings of organization and governance, along with the context, structure, and operations associated with higher education institutions

HED 8133 Curriculum and Instruction in Higher Education: 3 hours.
Three hours lecture. A study of teaching methods and techniques, development of course content and instructional aids, and evaluation of student performance in the college and university setting

HED 8143 U/Cc Seminar: 3 hours.
Three hours lecture. An in-depth analysis of current problems, strengths and issues confronting community college and university administrators and faculty

HED 8223 Seminar in Administration: 3 hours.
(Prerequisite: Administrative experience or graduate standing). Three hours lecture. Specialized study of selected problems in educational leadership. (Same as EDA 8223)

HED 8283 Educational Leadership: 3 hours.
Three hours lecture. Nature of educational leadership. The roles of leadership in staff and program development, diffusion of innovations, and the uses of power in making educational decisions. (Same as EDA 8283)

HED 8353 Applications of Theory to Educational Administration: 3 hours.
Three hours lecture. The nature of theory; types of educational administrative theories; uses of organizational and administrative theory in problem solving; applications of general systems theory. (Same as EDA 8353)

HED 8383 Ethical Decision Making in Educational Administration: 3 hours.
(Prerequisite: HED 8283). Three hours lecture. Case studies are used to analyze educational decisions. Multiple decision models and ethical concepts are applied to problems and moral dilemmas. (Same as EDA 8383)

HED 8523 Student Development Theory: 3 hours.
Three hours lecture. Overview of theories of student development in higher education

HED 8543 Legal Issues in Student Affairs: 3 hours.
Three hours lecture. Legal and ethical issues related to the student experience and the field of Student Affairs in American higher education

HED 8553 Student Affairs in Higher Education: 3 hours.
Three hours lecture. Overview of the student affairs profession in higher education. Emphasis on history, philosophical foundations, organization, and the role of functional areas within student affairs divisions

HED 8563 Assessment Strategy in Student Affairs & Higher Education: 3 hours.
Three hours lecture. Introduces the methods and tools used in Student Affairs and higher education to design program assessment plans and strategies; provides opportunities to implement the use of these tools in specific Student Affairs settings

HED 8573 Applied Assessment in Student Affairs & Higher Education: 3 hours.
(Prerequisite: HED 8563 or approval of instructor). Three hours lecture. Advanced methods for assessment in Student Affairs and Higher Education with a particular focus on basic statistical principles and implementing data collection, analysis, and reporting procedures

HED 8583 Administrative Competency in Stu Affairs & Higher Ed: Budgets & Supervision: 3 hours.
Three hour lecture. Examines the theory and application of budgeting and supervision practices in Student Affairs and Higher Education settings, with a particular focus on college students and college student organizations

HED 8593 Administrative Competency in Stu Affairs & Higher Ed: Technology, Communication, & Crisis: 3 hours.
Three hour lecture. Examines the theory and application of technology, communication, and crisis response practices in Student Affairs and Higher Education settings, with a particular focus on college students and college student environments

HED 8613 Academic Scholarship in Higher Education: 3 hours.
Three hours lecture. Introduces students to scholarly research, writing, and theoretical traditions in the academic fields of higher education through extensive reading and critique of literature

HED 8623 Diversity, Globalization and the College Student: 3 hours.
Three hours lecture. History and theory of social identity within the context of higher education, and exploration of the student experience from the perspective of diverse identity groups, and the relationship of social identity to college student success

HED 8633 History of American Higher Education: 3 hours.
Three hours lecture. A study of the evolution of higher education in the United States. Focus is on its origin and trends along with the social, political, cultural, and economic contexts of institutions and their distinctive features

HED 8643 Advanced Legal Principles in Higher Education: 3 hours.
Three hours lecture. A study of the law as it affects administrators, employees, faculty, and students in higher education

HED 8653 Finance and Higher Education: 3 hours.
Three hours lecture. A study of financial policies, allocation, planning, and budgeting in higher education institutions with emphasis placed on financial analysis and management, patterns of expenditure, sources of revenue, expenditures, and grant writing

HED 8673 Planning and Institutional Research in Higher Education: 3 hours.
Three hours lecture. An overview of planning models and approaches, effective reporting techniques, and common functions carried out by institutional research offices. Focus is on concepts, methodologies, research practices, and information systems that support institutional decision-making for improvements

HED 8683 Policy Issues in Higher Education: 3 hours.
Three hours lecture. A study of the major policies that shape and inform American higher education. The course explores the theories of policy and policy-making along with the benefits, challenges, and controversies associated with federal, state, system, and institutional policies

HED 8990 Special Topics in Higher Education: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

HED 9000 Dissertation Research /Dissertation in Higher Education: 1-13 hours.
Hours and credits to be arranged

History Courses

HI 1003 History of Science in Six Ideas: 3 hours.
A survey of the historical context and consequences of six concepts (the body, the senses, humanity, nature, power, the cosmos) in the Western world

HI 1013 History of Technology in Six Objects: 3 hours.
Three hours lecture. A survey of the history of technology in modern society through a study of six technological artifacts and systems

HI 1063 Early U.S. History: 3 hours.
Three hours lecture. A survey of U.S. history through Reconstruction

HI 1073 Modern U.S. History: 3 hours.
Three hours lecture. A continuation of HI 1063, covering the period from Reconstruction to the present

HI 1163 World History Before 1500: 3 hours.
Three hours lecture. A survey of world history since prehistory until about 1500

HI 1173 World History Since 1500: 3 hours.
Three hours lecture. A survey of world history since about 1500 until the present

HI 1213 Early Western World: 3 hours.
Three hours lecture. A survey of western world history from ancient times to about 1600

HI 1223 Modern Western World: 3 hours.
Three hours lecture. A continuation of HI 1213, covering the period from the 17th century to the present

HI 1313 East Asian Civilizations to 1300: 3 hours.
Three hours lecture. A survey of China and Japan and their peoples through a multi-disciplinary approach from pre-history until the the thirteenth century

HI 1323 East Asian Civilizations since 1300: 3 hours.
Three hours lecture. A survey of China and Japan and their peoples through a multi-disciplinary approach from 1300 to the present

HI 2990 Special Topics in History: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

HI 3013 African American History to 1865: 3 hours.
Three hours lecture. An historical examination of the live and culture of African Americans in the United States from European colonization to the end of the Civil War. (Same as AAS 3013)

HI 3023 African American History since 1865: 3 hours.
Three hours lecture. An historical examination of the live and culture of African Americans in the United States from European colonization to the end of the Civil War. (Same as AAS 3013)

HI 3133 History of U.S. Popular Culture: 3 hours.
Three hours lecture. An historical analysis of the development of popular culture, related industries and their impact on American society

HI 3183 World Environmental History: 3 hours.
(Prerequisite: Completion of any 1000-level history course). A historical analysis of the interaction of humans and the natural world from the Neolithic period to the present

HI 3333 Mississippi History: 3 hours.
(Prerequisite: Completion of any 1000-level history course). Three hours lecture. A survey of Mississippi history examining economic, social, political, geographical, and cultural aspects of the state's past

HI 3343 Delta History Service and Experiential Spring Break: 3 hours.
(Prerequisite: Consent of Instructor) One and a half hours lecture. One and a half hours field experience. Survey of historical and contemporary issues facing the Mississippi Delta region, with week-long service-learning trip to the Mississippi Delta during Spring Break

HI 3363 History of U.S. Transportation: 3 hours.
Three hours lecture. Course examines the history of transportation in the United States from the colonial period to the present and its role in constructing an American identity

HI 3703 The Western Church: Beginning to Reformation: 3 hours.
(Prerequisites: Completion of any 100-level course in history or philosophy and religion). Three hours lecture. An examination of the institutions, doctrines, and spirituality of the Western Church and their impact on Western European politics, society, and cluture. (Same as REL 3703)

HI 3713 History of African American Women: 3 hours.
Three hours lecture. Examination of black women from their African origins to the present; emphasizes the social, economic and political engagement of women in American society, including reform movements, family life, business, and the arts. (Same as AAS 3713/GS 3713)

HI 3743 History of England: 3 hours.
(Prerequisite: Completion of any 1000-level history course). Three hours lecture. A survey of English history from its origins to the present

HI 3763 Hitler and Nazi Germany: 3 hours.
(Prerequisite: Completion of any 1000-level history course. Three hours lecture. A study of Adolf Hitler's personality and rise to power; and examination of the theory and practice of National Socialism

HI 3773 History of the Holocaust: 3 hours.
Prerequisite: Completion of any 1000-level history course or consent of the instructor). Three hours lecture. An examination of the role of perpetrators, victims, and bystanders during the Holocaust

HI 3783 Modern European Imperialism: 3 hours.
Prerequisite: Completion of a 1000-level history course or consent of instructor. Three hours lecture. The course surveys European imperialism from 1815 to the post-colonial world

HI 3813 Modern Latin America: 3 hours.
(Prerequisite: Completion of any 1000 level history course). Three hours lecture. An introduction to the modern history of the major Latin America nations and their importance to the United States

HI 3853 The United States and Latin America: 3 hours.
(Prerequisite: Completion of any 1000 level history course). Three hours lecture. History of foreign policies and diplomatic relations in the nineteenth and twentieth centuries with an emphasis on strategic and security issues

HI 3893 20th Century World History: 3 hours.
(Prerequisite: completion of any 1000 level history course). Three hours lecture. Study of the world since 1900 concentrating on the themes of imperialism, nationalism, war, and industrialization

HI 3903 Historiography and Historical Method: 3 hours.
(Prerequisites: Junior or Senior standing). Three hours lecture. The writings and interpretations of leading European and American historians, bibliographical aids, methods of research, preparation of bibliographies, practice in writing a research paper

HI 4000 Directed Individual Study in History: 1-6 hours.
Hours and credits to be arranged

HI 4103 Colonial America: 3 hours.
(Prerequisite: Completion of any 1000-level history course). Three hours lecture. Study of the earliest English settlements to 1740. Emphasis on Puritanism, interaction with other people, expansion and forming of societal and political institutions

HI 4123 Jacksonian America 1825 to 1850: 3 hours.
(Prerequisites: Completion of any 1000-level history course). Three hours lecture. America from the beginnings of the Jacksonian movement, its political, economic and social battles, through trans-continental expansion and the Mexican War

HI 4133 Civil War and Reconstruction 1850 to 1877: 3 hours.
(Prerequisites: Completion of any 1000-level history course). Three hours lecture. Origins of the secessionist movement and the Civil War, the political and military battles of the War, and the struggle to reunify the nation

HI 4143 Revolutionary America: 3 hours.
(Prerequisite: Completion of any 1000-level history course). Three hours lecture. American provinces from 1740 until 1783. Emphasis on maturation. pluralism, role in British empire, religion, Enlightenment, and causes, idealogy, and conduct of the Revolution

HI 4153 U.S. History 1877 to 1917: 3 hours.
(Prerequisites: Completion of any 1000-level history course). Three hours lecture. A survey of political, economic, social, and constitutional developments

HI 4163 U.S. 1917 - 1945: 3 hours.
(Prerequisites: Completion of any 1000-level history course). Three hours lecture. A study of all major aspects of American government and life through World War II

HI 4173 U.S. History since 1945: 3 hours.
(Prerequisite: Completion of any 1000-level history course). Three hours lecture. A study of all major aspects of American government and life since the end of World War II

HI 4183 U.S. Economic History: 3 hours.
(Prerequisite: Completion of any 1000-level history course). Three hours lecture. An intensive study of economic change in the United States and its impact on political and social development. (Same as EC 4183/6183)

HI 4193 U.S. Environmental History: 3 hours.
(Prerequisite:Any 1000 level history course) Three hours lecture.
A survey of the impact of the environment in shaping the American culture,literature,politics, and economy from European colonization to the present

HI 4203 Diplomatic History of the U.S.: 3 hours.
(Prerequisites: Completion of any 1000-level history course). Three hours lecture. A study of American foreign policy from the founding of the Republic to the present time

HI 4213 History of Grand Strategy & International Security: 3 hours.
(Prerequisiste: Completion of any 1000 level history course) Three hours seminar. A discussion of the historic literature of grand strategy and key events in the history of international relations

HI 4223 Intelligence Gathering in the 20th Century: 3 hours.
(Prerequisite:Completion of any 1000-level history course or consent of instructor). Three hour lecture. A discussion of myth/reality of intelligence gathering and its use as a military or diplomatic tool

HI 4233 American Military History: 3 hours.
(Prerequisites: Completion of any 1000-level history course). Three hours lecture. A survey of the military history of the United States from colonial times to the present

HI 4243 American Life and Thought: 3 hours.
Three hours lecture. A survey of the changing lives and ideas of Americans from colonial to modern times. Family life, religion, recreation, dress, communities, social theories, medicine

HI 4253 History of Religion in America: 3 hours.
(Prerequisite: Completion of any 1000 level history course). Three hours lecture. Surveys history of religion in America, emphasizing interaction with social and political developments

HI 4263 America's Vietnam War: 3 hours.
(Prerequisite: Completion of any 1000-level history course). Three hours lecture. Analysis of the U.S. conduct of Vietnam War, such as: Cold War context, presidential decision-making, military doctrine, domestic opposition, and legacy

HI 4273 Women in American History: 3 hours.
(Prerequisite: Completion of any 1000-level history course). Three hours lecture. A study of the economic, political, and social activities of women in American history. Emphasis on Southern women

HI 4283 History of Southern Women: 3 hours.
Three hours lecture. The lives and images of women in the South from colonial times to the present. Native-,African-, and European-American woman to be studied

HI 4293 History of Gender and Science: 3 hours.
Three hours seminar. Historical survey of scientific research on sex, the role of gender in the culture of science, and the contributions of women to scientific practice

HI 4303 The Old South: 3 hours.
(Prerequisite: Completion of any 1000-level history course). Three hours lecture. Development of the Old South from colonization through the slavery controversy and the Civil War

HI 4313 The New South: 3 hours.
(Prerequisites: Completion of any 1000-level history course). Three hours lecture. Southern life from Reconstruction times to the present

HI 4323 The American West: 3 hours.
(Prerequisites: Completion of any 1000-level history course). Three hours lecture. A survey of the western frontier in American history from colonial times to 1900

HI 4333 Native American History to 1830: 3 hours.
(Prerequisite:completion of any 1000 level history course). Three hour lecture, Native American history at 1830, concentrating on the theme of survival and adaption to changes wrought by contact with Europeans

HI 4343 Immigration and Ethnicity in the United States: 3 hours.
(Prerequisite: Completion of any 1000-level history course). Three hours lecture. A history of American immigration from the colonial period to the present day. Outlines immigration patterns, policies, and the immigrant experience

HI 4363 African-American History and Culture: 3 hours.
(Prerequisite: Completion of any 1000-level history course) African-Americans from their African origins to the present, emphasizing black-white relations in the making of America.(Same as AAS 4363)

HI 4373 History of Modern Civil Rights Movement: 3 hours.
(Prerequisite: Completion of any 1000-level history course). Three hours lecture. A history of the Black struggle for equality in the United States between 1930 and 1970. (Same as AAS 4373)

HI 4383 Native American History Since 1830: 3 hours.
(Prerequisite: completion of any 1000-level history course) Three hours lecture. Study of American Indian history to the present with emphasis on the loss of Indian autonomy and the struggles to regain it

HI 4393 Rural America: 3 hours.
Examines the transformation and cultural significance of rural America from the colonial era to the early 21st century

HI 4403 The Ancient Near East: 3 hours.
(Prerequisite: Completion of any 1000-level history course). Three hours lecture. A study of the origins and development of civilizations in Mesopotamia, Egypt, and Syria-Palestine from prehistoric times to the end of the Persian period. (Same as MEC 4403/6403 and REL 4403/6403)

HI 4413 Ancient Greece and Rome: 3 hours.
(Prerequisite: Completion of any 1000-level history course). Three hours lecture. A survey of the civilization of ancient Greece and Rome

HI 4493 Terrorism in America: 3 hours.
Three hours lecture. Survey of the impact of domestic and international terrorism on American politics, society, and foreign policy since the Civil War

HI 4533 History of the Cold War: 3 hours.
(Prerequisite: Completion of any 1000-level history course). Three hours lecture. The political, social, cultural, and economic history of the Cold War, from its origins in the early twentieth century to its conclusion in 1991

HI 4553 Science and Technology to Newton: 3 hours.
Three hours lecture. An examination of the history of science and technology from pre-history to Newton

HI 4583 China Since 1800: 3 hours.
(Prerequisite: Completion of any 1000-level history course or consent of instructor). Three hours lecture. China's tumultuous centuries of imperial decline, foreign assault, and nationalist and communist revolutions. Cultural and social transformations and the quest for institutional and economic modernization

HI 4593 Japan Since 1600: 3 hours.
(Prerequisite: Completion of any 1000-level history course or consent of instructor). Three hours lecture. Examines the major political, cultural, economic, military and diplomatic events that have brought Japan from sheltered feudalism to international preeminence

HI 4603 Medieval Civilization: 3 hours.
(Prerequisite: Completion of any 1000-level history course). Three hours lecture. An intensive study of medieval institutions and culture

HI 4613 History of the Soviet Union: 3 hours.
(Prerequisite: Completion of any 1000-level history course). Three hours lecture. The political, social, cultural and economic developement of the Soviet Union from its pre-Revolutionary origins to its collapse in 1991

HI 4643 Renaissance and Reformation: 3 hours.
(Prerequisite: Completion of any 1000-level history course). Three hours lecture. The Renaissance and its relation to religion, politics, and social life; origins of the Reformation movement and its effect on Europe in early modern times

HI 4653 History of Science and Technology: 3 hours.
(Prerequisite: Completion of any 1000-level history course). Three hours lecture. Science and technology from Newton to the present, emphasizing the relationship between scientific innovation and technological application

HI 4673 Europe, 1789-1914: 3 hours.
(Prerequisite: Completion of any 1000-level history course). Three hours lecture. A study of the political, economic, and intellectual foundations of nineteenth century society

HI 4683 Europe: The First World War to Hitler: 3 hours.
(Prerequisite: Completion of any 1000-level history course). Three hours lecture. European development from the beginning of the First World War to the beginning of the Second World War

HI 4693 Europe: The Second World War to the Common Market: 3 hours.
(Prerequisite: Completion of any 1000-level history course). Three hours lecture. European development from the beginning of the Second World War to the present time

HI 4713 Tudor and Stuart England: 3 hours.
(Prerequisite: Completion of any 1000-level history course). Three hours lecture. The development of English institutions during the Tudor and Stuart periods

HI 4723 History of Britain Since 1688: 3 hours.
Three hours seminar. Historical survey of Britian since 1688 with particular emphasis on political, economic and cultural change and relations between the component nationalities with the United Kingdom

HI 4743 Evolution of International Politics: 3 hours.
Three hours seminar. Historical survey of international politics since the eighteenth century within its economic, cultural, and military context

HI 4753 History of Russia: 3 hours.
(Prerequisite: Completion of any 1000-level history course.) Three hours lecture. The political, social, cultural, and economic development of Russia from Kievan to Soviet times

HI 4763 History of Modern Germany: 3 hours.
(Prerequisite: Completion of any 1000-level history course). Three hours lecture. The history of German institutions in modern times

HI 4773 History of Modern France: 3 hours.
(Prerequisite: Completion of any 1000-level history course). Three hours lecture. The history of French institutions in modern times

HI 4783 African Civilization to 1880: 3 hours.
(Prerequisite: Completion of any 1000-level history course or consent of instructor). Three hours lecture. This is a survey course which traces the major developments in Africa to 1880. (Same as AAS 4783)

HI 4793 Modern Africa: 3 hours.
(Prerequisite: Completion of any 1000-level history course or consent of instructor). Three hours lecture. This course traces Africa's history from 1880 to the present. It discusses how Africa lost and regained its sovereignty and the dilemma of independence. (Same as AAS 4793)

HI 4853 Modern Mexico: 3 hours.
(Prerequisite: Completion of any 1000-level history course). Three hours lecture. The political, economic, and social development of the Mexican nation from Independence through the age of dictators to the Great Revolution and its aftermath

HI 4883 U.S. History of Medicine: 3 hours.
Three hour lecture. Survey of the development of the medical profession and public health in the United States. Medical education and practice, scientific research, epidemics and illness emphasized

HI 4903 The Far East: 3 hours.
(Prerequisite: Completion of any 1000-level history course). Three hours lecture. A study of the impact of western civilization on China, Japan, and India in the nineteenth and twentieth centuries

HI 4983 African Americans and the Law: 3 hours.
Prerequisite: Sophomore standing or higher).Three hours lecture. Analysis of the legal and constitutional history of African Americans from the codification of slavery and discrimination in the North to the rise of segregation. (Same as AAS 4983)

HI 4990 Special Topics in History: 1-9 hours.
(Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

HI 6133 Civil War and Reconstruction 1850 to 1877: 3 hours.
(Prerequisites: Completion of any 1000-level history course). Three hours lecture. Origins of the secessionist movement and the Civil War, the political and military battles of the War, and the struggle to reunify the nation

HI 6143 Revolutionary America: 3 hours.
(Prerequisite: Completion of any 1000-level history course). Three hours lecture. American provinces from 1740 until 1783. Emphasis on maturation. pluralism, role in British empire, religion, Enlightenment, and causes, idealogy, and conduct of the Revolution

HI 6153 U.S. History 1877 to 1917: 3 hours.
(Prerequisites: Completion of any 1000-level history course). Three hours lecture. A survey of political, economic, social, and constitutional developments

HI 6163 U.S. 1917 - 1945: 3 hours.
(Prerequisites: Completion of any 1000-level history course). Three hours lecture. A study of all major aspects of American government and life through World War II

HI 6173 U.S. History Since 1945: 3 hours.
(Prerequisite: Completion of any 1000-level history course). Three hours lecture. A study of all major aspects of American government and life since the end of World War II

HI 6183 U.S. Economic History: 3 hours.
(Prerequisite: Completion of any 1000-level history course). Three hours lecture. An intensive study of economic change in the United States and its impact on political and social development. (Same as EC 4183/6183)

HI 6193 U.S. Environmental History: 3 hours.
(Prerequisite:Any 1000 level history course) Three hours lecture.
A survey of the impact of the environment in shaping the American culture,literature,politics, and economy from European colonization to the present

HI 6203 Diplomatic History of the U.S.: 3 hours.
(Prerequisites: Completion of any 1000-level history course). Three hours lecture. A study of American foreign policy from the founding of the Republic to the present time

HI 6213 History of Grand Strategy & International Security: 3 hours.
(Prerequisiste: Completion of any 1000 level history course) Three hours seminar. A discussion of the historic literature of grand strategy and key events in the history of international relations

HI 6223 Intelligence Gathering in the 20th Century: 3 hours.
(Prerequisite:Completion of any 1000-level history course or consent of instructor). Three hour lecture. A discussion of myth/reality of intelligence gathering and its use as a military or diplomatic tool

HI 6233 American Military History: 3 hours.
(Prerequisites: Completion of any 1000-level history course). Three hours lecture. A survey of the military history of the United States from colonial times to the present

HI 6243 American Life and Thought: 3 hours.
Three hours lecture. A survey of the changing lives and ideas of Americans from colonial to modern times. Family life, religion, recreation, dress, communities, social theories, medicine

HI 6253 History of Religion in America: 3 hours.
(Prerequisite: Completion of any 1000 level history course). Three hours lecture. Surveys history of religion in America, emphasizing interaction with social and political developments

HI 6263 America's Vietnam War: 3 hours.
(Prerequisite: Completion of any 1000-level history course). Three hours lecture. Analysis of the U.S. conduct of Vietnam War, such as: Cold War context, presidential decision-making, military doctrine, domestic opposition, and legacy

HI 6273 Women in American History: 3 hours.
(Prerequisite: Completion of any 1000-level history course). Three hours lecture. A study of the economic, political, and social activities of women in American history. Emphasis on Southern women

HI 6293 History of Gender and Science: 3 hours.
Three hours seminar. Historical survey of scientific research on sex, the role of gender in the culture of science, and the contributions of women to scientific practice

HI 6303 The Old South: 3 hours.
(Prerequisite: Completion of any 1000-level history course). Three hours lecture. Development of the Old South from colonization through the slavery controversy and the Civil War

HI 6313 The New South: 3 hours.
(Prerequisites: Completion of any 1000-level history course). Three hours lecture. Southern life from Reconstruction times to the present

HI 6323 The American West: 3 hours.
(Prerequisites: Completion of any 1000-level history course). Three hours lecture. A survey of the western frontier in American history from colonial times to 1900

HI 6363 African-American History and Culture: 3 hours.
(Prerequisite: Completion of any 1000-level history course) African-Americans from their African origins to the present, emphasizing black-white relations in the making of America.(Same as AAS 4363)

HI 6373 History of Modern Civil Rights Movement: 3 hours.
(Prerequisite: Completion of any 1000-level history course). Three hours lecture. A history of the Black struggle for equality in the United States between 1930 and 1970. (Same as AAS 4373)

HI 6383 Native American History Since 1830: 3 hours.
(Prerequisite: completion of any 1000-level history course) Three hours lecture. Study of American Indian history to the present with emphasis on the loss of Indian autonomy and the struggles to regain it

HI 6393 Rural America: 3 hours.
Examines the transformation and cultural significance of rural America from the colonial era to the early 21st century

HI 6403 The Ancient Near East: 3 hours.
(Prerequisite: Completion of any 1000-level history course). Three hours lecture. A study of the origins and development of civilizations in Mesopotamia, Egypt, and Syria-Palestine from prehistoric times to the end of the Persian period. (Same as MEC 4403/6403 and REL 4403/6403)

HI 6413 Ancient Greece and Rome: 3 hours.
(Prerequisite: Completion of any 1000-level history course). Three hours lecture. A survey of the civilization of ancient Greece and Rome

HI 6493 Terrorism in America: 3 hours.
Three hours lecture. Survey of the impact of domestic and international terrorism on American politics, society, and foreign policy since the Civil War

HI 6553 Science and Technology to Newton: 3 hours.
Three hours lecture. An examination of the history of science and technology from pre-history to Newton

HI 6583 China Since 1800: 3 hours.
(Prerequisite: Completion of any 1000-level history course or consent of instructor). Three hours lecture. China's tumultuous centuries of imperial decline, foreign assault, and nationalist and communist revolutions. Cultural and social transformations and the quest for institutional and economic modernization

HI 6593 Japan Since 1600: 3 hours.
(Prerequisite: Completion of any 1000-level history course or consent of instructor). Three hours lecture. Examines the major political, cultural, economic, military and diplomatic events that have brought Japan from sheltered feudalism to international preeminence

HI 6603 Medieval Civilization: 3 hours.
(Prerequisite: Completion of any 1000-level history course). Three hours lecture. An intensive study of medieval institutions and culture

HI 6613 History of the Soviet Union: 3 hours.
(Prerequisite: Completion of any 1000-level history course). Three hours lecture. The political, social, cultural and economic developement of the Soviet Union from its pre-Revolutionary origins to its collapse in 1991

HI 6643 Renaissance and Reformation: 3 hours.
(Prerequisite: Completion of any 1000-level history course). Three hours lecture. The Renaissance and its relation to religion, politics, and social life; origins of the Reformation movement and its effect on Europe in early modern times

HI 6653 History of Science and Technology: 3 hours.
(Prerequisite: Completion of any 1000-level history course). Three hours lecture. Science and technology from Newton to the present, emphasizing the relationship between scientific innovation and technological application

HI 6683 Europe: The First World War to Hitler: 3 hours.
(Prerequisite: Completion of any 1000-level history course). Three hours lecture. European development from the beginning of the First World War to the beginning of the Second World War

HI 6693 Europe: The Second World War to the Common Market: 3 hours.
(Prerequisite: Completion of any 1000-level history course). Three hours lecture. European development from the beginning of the Second World War to the present time

HI 6713 Tudor and Stuart England: 3 hours.
(Prerequisite: Completion of any 1000-level history course). Three hours lecture. The development of English institutions during the Tudor and Stuart periods

HI 6723 History of Britain Since 1688: 3 hours.
Three hours seminar. Historical survey of Britian since 1688 with particular emphasis on political, economic and cultural change and relations between the component nationalities with the United Kingdom

HI 6743 Evolution of International Politics: 3 hours.
Three hours seminar. Historical survey of international politics since the eighteenth century within its economic, cultural, and military context

HI 6763 History of Modern Germany: 3 hours.
(Prerequisite: Completion of any 1000-level history course). Three hours lecture. The history of German institutions in modern times

HI 6773 History of Modern France: 3 hours.
(Prerequisite: Completion of any 1000-level history course). Three hours lecture. The history of French institutions in modern times

HI 6783 African Civilization to 1880: 3 hours.
(Prerequisite: Completion of any 1000-level history course or consent of instructor). Three hours lecture. This is a survey course which traces the major developments in Africa to 1880. (Same as AAS 4783)

HI 6793 Modern Africa: 3 hours.
(Prerequisite: Completion of any 1000-level history course or consent of instructor). Three hours lecture. This course traces Africa's history from 1880 to the present. It discusses how Africa lost and regained its sovereignty and the dilemma of independence. (Same as AAS 4793)

HI 6853 Modern Mexico: 3 hours.
(Prerequisite: Completion of any 1000-level history course). Three hours lecture. The political, economic, and social development of the Mexican nation from Independence through the age of dictators to the Great Revolution and its aftermath

HI 6883 U.S. History of Medicine: 3 hours.
Three hour lecture. Survey of the development of the medical profession and public health in the United States. Medical education and practice, scientific research, epidemics and illness emphasized

HI 6903 The Far East: 3 hours.
(Prerequisite: Completion of any 1000-level history course). Three hours lecture. A study of the impact of western civilization on China, Japan, and India in the nineteenth and twentieth centuries

HI 6990 Special Topics in History: 1-9 hours.
(Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

HI 7000 Directed Individual Study in History: 1-6 hours.
Hours and credits to be arranged

HI 8000 Thesis Research/ Thesis in History: 1-13 hours.
Hours and credits to be arranged

HI 8233 Readings in American Military History: 3 hours.
(Prerequisite: Graduate standing)

HI 8523 Readings in European History, 1789-1914: 3 hours.
(Prerequisite: Graduate standing)

HI 8543 Diversity and Discrimination Law: 3 hours.
Three hours lecture. Analysis of federal and state laws and regulations on diversity in the workplace, emphasizing race and national origin, sex, physical disability, religion, and age. (This course is available to students enrolled in the Graduate Online Diversity Certificate Program. It is not open to students seeking to complete degree requirements.) (Same as AAS 8543)

HI 8603 Racism and the Color Line: 3 hours.
(Prerequisite:Graduate Standing and enrollment in the Diversity Certificate Program). Three hours lecture. An analysis of race relations and racial inequality in the United States. Designed for online Diversity Certificate program students. (Same as AAS 8603)

HI 8773 Issues in Women's History: 3 hours.
(Prerequisite:Graduate standing and enrollment in the Diversity Certificate program). Three hours lecture. An analysis of major issues in American women's history. Designed for online Diveristy Certificate Program students

HI 8783 Issues in African American History: 3 hours.
(Prerequisiste:Graduate standing and enrollment in the Diversity Certificate Program) Three hours lecture. An analysis of major issues in African American history. Designed for online Diversity Certificate Program students

HI 8793 Race and the Cultural Diversity in the Workplace: 3 hours.
(Prerequisite:Graduate standing and enrollment in the Diversity Certificate Program). Three hours lecture. An analysis of concepts, issues, and laws relating to race and cultural diversity in public and private organizations. Designed for online Diversity Certificate Program students. (Same as AAS 8793)

HI 8803 Graduate Colloquium: 3 hours.
(Prerequisite: Graduate standing). Three hours lecture. Topical focus to be determined by the faculty member con- ducting the colloquium. (May be taken for credit more than once)

HI 8813 Seminar in U.S. History Before 1877: 3 hours.
(Prerequisite: Graduate standing)

HI 8823 Seminar in U.S. History Since 1877: 3 hours.
(Prerequisite: Graduate standing)

HI 8833 Seminar in Southern History: 3 hours.
(Prerequisite: Graduate standing)

HI 8853 Seminar in European History Before 1789: 3 hours.
(Prerequisite: Graduate standing)

HI 8863 Seminar in European History Since 1789: 3 hours.
(Prerequisite: Graduate standing)

HI 8873 Seminar in History of Science and Technology: 3 hours.
Three hours seminar. An intensive study of historical topics relating to the relationships among science, technology, culture, and society from 1700 to the present

HI 8883 U.S. Agricultural History, 1500-2000: 3 hours.
(Prerequisite: Graduate standing). Three hours seminar. An intensive study of agricultural and rural development in the United States and its impact on social, economic, and political changes

HI 8893 Seminar in History of International Security and Internal Safety: 3 hours.
(Prerequisite:Graduate standing) Three hours seminar. An intensive study of historical topics in international security and internal safety from 1700 to present

HI 8923 Historiography and Historical Method: 3 hours.
(Prerequisite: Graduate standing). Three hours lecture. The writings and interpretations of leading European and American historians; bibliographical aids in history; methods of research; preparation of bibliographies; practice in writing a research paper

HI 8933 Colloquium in Colonial and Revolutionary America: 3 hours.
Three hours lecture. A review of the major themes in the history and historiography of North America for the colonial period through the independence of the United States

HI 8943 Colloquium in the U.S. History from 1787-1877: 3 hours.
Three hours lecture. Review of the major themes in the history and historigraphy of the United States from the ratification of the Constitution to the end of Reconstruction

HI 8953 Colloquium in the U.S. History from 1877-1945: 3 hours.
Three hours lecture. A review of the major themes in the history and historiography of the United States from the end of Reconstruction to the end of the Second World War

HI 8963 Colloquium in the U.S. History from 1945-present: 3 hours.
Three hours lecture.A review of the major themes in the history or historiography of the United States from the end of World War II until the present

HI 8973 Colloquium U.S. Environmental and Agricultural History: 3 hours.
Three hours lecture. A review of the major themes in the agricultural history & historiograpahy of the United States

HI 8983 Introduction to Public History: 3 hours.
(Prerequisite: Graduate Standing). Three hours seminar. Introduction to the literature, methods, and applications of public history, which is the practice of making history accessible to the public in various settings outside academia (museums, historical societies, the web, etc.)

HI 8990 Special Topics in History: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

HI 9000 Dissertation Research /Dissertation in History: 1-13 hours.
Hours and credits to be arranged

Honors College Courses

HON 1081 Honors Forum: 1 hour.
One hour lecture. Weekly meeting of honors students. Discussion led by faculty and/or students on various topics

HON 1091 Honors Forum II: 1 hour.
One hour lecture. Weekly meeting of honors students. Discussion led by faculty and/or students on various topics

HON 1163 The Quest Begins: 3 hours.
Seminar, chronological survey of "core texts" from the Western tradition ,from Classical Antiquity to the Enlightment. Texts (including art, music and film) represent the great ideas from art,science, religion ,politics, and culture

HON 1173 The West and the Wider World: 3 hours.
Seminar, chronological survey of "core texts" from the Western tradition, from the eighteenth century to the present. Key non-Western texts will also be taught in order to establish the foundation of thought in modern world

HON 2003 Oxbridge Tutorial: 3 hours.
(Prerequisite:Sophomore standing or above, completion of Composition I and II requirements, instructor's and dean's permission). Tutorial with a faculty member in the tradition of undergraduate education at Oxford and Cambridge. Readings, papers, and/or problem-sets according to a plan devised by the student and their tutor

HON 2081 Honors Forum III: 1 hour.
One hour lecture. Weekly meeting of honors students. Discussion led by faculty and/or students on various topics

HON 2091 Honors Forum IV: 1 hour.
One hour lecture.Weekly meeting of honors students. Discussion led by faculty and/or students on various topics

HON 2990 Special Topics in Honors College: 1-9 hours.

HON 3143 Honors Seminar in Social Science: 3 hours.
(Prerequisite: sophomore standing or above, completion of Composition I and II requirements. Repeatable under different subtitles). Three hour seminar. An interdisciplinary or problem-based study of social groups, institutions, and other phenomena. Topics and instructors will vary

HON 3163 Honors Seminar in Natural Sciences: 3 hours.
(Prerequisite: sophomore standing or above, completion of Composition I and II requirements. Repeatable under different subtitles). Three hour lecture. An interdisciplinary course concerning a topic of importance in the natural sciences and its impact on society as a whole. Topics and instructors will vary

HON 3173 Honors Seminar in Fine Arts: 3 hours.
(Prerequisite: Sophomore standing or above, completion of Composition I and Composition II requirements). Three hours seminar. Repeatable, with no limits, under different subtitles. An investigation of interdisciplinary problems or themes in the visual and performing arts. Readings and discussions, supplemented by lectures and presentations

HON 3183 Honors Seminar in the Humanities: 3 hours.
(Prerequisite: Sophomore standing or above, completion of Composition I and II requirements. Repeatable under different subtitles). Three hour seminar. An investigation of interdisciplinary problems or themes in the human experience. Readings and discussions, supplemented by lectures and presentations

HON 3193 Internship: 3 hours.

HON 4000 Directed Individual Study in Honors College: 1-6 hours.

HON 4003 Oxbridge Tutorial: 3 hours.
(Prerequisite:Sophomore standing or above, completion of Composition I and II requirements, instructor's and dean's permission). Tutorial with a faculty member in the tradition of undergraduate education at Oxford and Cambridge. Readings, papers, and/or problem-sets according to a plan devised by the student and their tutor

HON 4093 Honors Thesis: 3 hours.
(Prerequisite: Junior standing and completion of English Composition requirement). Honors students may elect to conduct advanced research on an approved topic and write an Honors Thesis under the direction of a faculty member in the appropriate discipline. The student will normally register for Thesis credit over 1-2 semesters

HON 4990 Special Topics in Honors College: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

Human Sciences Courses

HS 1701 Survey of Human Sciences: 1 hour.
One hour lecture. Introduction to the field of Human Sciences through a study of its history and the variety of professional careers available

HS 1711 Professional Protocol: 1 hour.
One hour lecture. The essentials of professional protocol and accepted standards of social usage

HS 2203 Science of Food Preparation: 3 hours.
(Prerequisites: Grade of “C” or better in CH 1213/1221 or HS major). One hour lecture. Four hours laboratory. A study of foods and the principles underlying handling and preparation of food product to maintain the highest standards of quality. (Same as FNH 2203)

HS 2283 Child Health and Nutrition: 3 hours.
Three hours lecture. Nutrition requirements during pregnancy and lactation, and of infants and young children; birth defects from metabolic errors; related health of young children. (Same as FNH 2283)

HS 2293 Individual and Family Nutrition: 3 hours.
Three hours lecture. Fundamental principles of human nutrition and the practical application of this knowledge in the selection of adequate diets. (Same as FNH 2293)

HS 2603 Interior Design Fundamentals: 3 hours.
Three hours lecture. Introduce a practical approach to the application of interior design in the built environment. (For non interior design students). (Same as ID 2603)

HS 2664 Textiles for Interiors: 4 hours.
(Prerequisite CH 1043).Three hours lecture. Two hour laboratory. Study of fibers, yarns, fabric structures,dyes, and finishes related to the textile industry. Emphasis on testing and evaluation of interior textiles

HS 3673 Environments for Special Needs: 3 hours.
Three hours lecture. Laws, attitudes, conditions, specifications, and environmental issues affecting private and public spaces. (Same ID 3673)

HS 4323 Consumer Issues and Policy: 3 hours.
(Prerequisite:HS 3303 or consent of instructor). Three hours lecture. An assessment of policies and programs relating to information, product safety, and channels of appeal for the individual

HS 4450 Work Experience in Human Sciences Related Occupations: 3-6 hours.
(3-6) Work experience in two phases of occupational human sciences, development of a program of work, and incorporating the work experience into curricula

HS 4683 Current Housing Problems of Families: 3 hours.
(Prerequisite: Junior standing). Three hours lecture. Analysis of current housing problems confronting families, their historical development, government policies and remedial measures

HS 4701 Internship Placement Seminar: 1 hour.
(Prerequisite: Junior standing and consent of instructor). One hour lecture. Preparation for an internship in a chosen specialization

HS 4702 Research and Application in Human Sciences: 2 hours.
(Prerequisite: Senior standing in FDM or HDFS). Two hours lecture. Focus on conducting original research to integrate fundamental Human Sciences principles. Emphasis on professional development and effectiveness in Human Sciences professions. (Same as FDM 4702 and HDFS 4702)

HS 4710 Study Tour: 1-3 hours.
Experiential learning through travel in the United States or abroad focusing on specialized areas of study in human sciences

HS 4750 Internship: 5-8 hours.
(Prerequisite: Minimum of senior standing in the major and consent of instructor). Individual work experience in an approved setting under supervision of Mississippi State University faculty

HS 6323 Consumer Issues and Policy: 3 hours.
(Prerequisite:HS 3303 or consent of instructor). Three hours lecture. An assessment of policies and programs relating to information, product safety, and channels of appeal for the individual

HS 6683 Current Housing Problems of Families: 3 hours.
(Prerequisite: Junior standing). Three hours lecture. Analysis of current housing problems confronting families, their historical development, government policies and remedial measures

HS 6710 Study Tour: 1-3 hours.
Experiential learning through travel in the United States or abroad focusing on specialized areas of study in human sciences

International Business Courses

IB 1001 Introduction to International Business: 1 hour.
(Prerequisite:International Business major). One hour survey Introduction to International Business to prepare the entering class academically and professionally for successful performance

IB 2990 Special Topics in International Business: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

IB 3900 Internship Work: 1-6 hours.
(Prerequsite: approval of the Internatinal Business Director). Business topics examined by student during work semester. Student evaluations are assigned on satisfactory/unsatisfactory basis

IB 4000 Directed Individual Study in International Business: 1-6 hours.
Hours and credits to be arranged

IB 4103 International Business: 3 hours.
(Prerequisite: Senior or graduate standing in business or consent of instructor.) An overview of the major forms of international business: Exports and imports, overseas investments, production and marketing operations, licensing, financing and other international business services

IB 4903 Internship Academic Report: 3 hours.
(Prerequisite: Satisfactory performacne in IB 3900). Individual work experience under faculty guidance in business. Scholarly paper on approved topic required

IB 4990 Special Topics in International Business: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

IB 6103 International Business: 3 hours.
(Prerequisite: Senior or graduate standing in business or consent of instructor.) An overview of the major forms of international business: Exports and imports, overseas investments, production and marketing operations, licensing, financing and other international business services

IB 6990 Special Topics in International Business: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

IB 7000 Directed Individual Study in International Business: 1-6 hours.
Hours and credits to be arranged

IB 8990 Special Topics in International Business: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

Interior Design Courses

ID 1001 First Year Seminar: 1 hour.
One hour lecture. First-year seminars explore a diverse arrary of topics that provide students with an opportunity to learn about a specific discipline from skilled faculty members

ID 1683 Interior Design Graphics: 3 hours.
One hour lecture. Four hours laboratory. Introduction to basic manual drafting and tools/techniques used by interior designers in executing and reading graphic language in two dimensional form

ID 1694 Interior Design Studio I: 4 hours.
(Prerequisite: ID 1683). Two hours lecture. Four hours laboratory. Introduction to the basic principles and elements of design using practical and abstract applications in creative problem solving analyzing spatial form and function

ID 2103 CAD for Interior Design: 3 hours.
Prerequisite: ID 1683 or consent of instructor. Two hours lecture. Two hours laboratory. Introduction to computer-based design as applied in the interior design field

ID 2203 Rendering: 3 hours.
(Prerequisites: Sophomore Standing) Six hours studio. A studio course dealing with concepts, techniques, and media used in executing interior and exterior renderings

ID 2403 Introduction to Historic Preservation: 3 hours.
Three hour lecture. An introduction to American historic preservation, its history, principles, and practice

ID 2603 Interior Design Fundamentals: 3 hours.
Three hours lecture. Introduce a practical approach to the application of interior design in the built environment. (For non-interior design majors). (Same as HS 2603)

ID 2614 ID Studio II: 4 hours.
(Prerequisite ART 1123 and ID 1694). Two hours lecture. Four hours laboratory. Introduction to design theory and its application in the development of criteria for interior environments

ID 2633 Interior Materials, Treatments, and Resources: 3 hours.
(Prerequisite: HS 2664 or concurrent enrollment). Three hours lecture. Materials, equipment, services and resources available to the interior designer for meeting clients' needs

ID 2664 Textiles for Interiors: 4 hours.
(Prerequisite CH 1043 or CH 1213). Three hours lecture. Two hour laboratory. Study of fibers, yarns, fabric structures, dyes, and finishes related to the textile industry. Emphasis on testing and evaluation of textiles for interior applications

ID 3363 3/D CAD/Modeling: 3 hours.
(Prerequisites: ID 2103 or BCS 1116 or consent of instructor). Two hours lecture. Two hours laboratory. Advanced computer graphic communication in interior design for the development of technical and perspective drawings created in presentation formats using 3D imaging

ID 3603 Digital Design for Interiors: 3 hours.
Three hours lecture. Introduce innovative software applications for interior design students to create graphic presentations, portfolios, and digital illustrations of interior elements

ID 3611 Career and Portfolio Development: 1 hour.
(Prerequisites: ART 1133, ART 1123, ART 1213, ID 1683, ID 1694, and ID 2614). One hour lecture. Development of an understanding of career possibilities in Interior Design and preparation for the sophomore portfolio review process

ID 3614 Interior Design Studio III: 4 hours.
(Prerequisite: ID 2614). Two hours lecture. Four hours laboratory. Integration of the total building environment, through the application of the design elements and technical aspects of the field

ID 3624 Interior Design Studio IV: 4 hours.

ID 3633 Interior Design Detailing and Construction Documents: 3 hours.
(Prerequisites: ID 2103 and ID 3614). Two hours lecture. Two hours laboratory. Systematic intergration of building systems, construction, technology, and materials on interior systems. Detailing of these systems is an extension of the design process

ID 3643 History of Interiors I: 3 hours.
Three hours lecture. A survey of furniture styles, ornament, designers, and accessories associated with period interiors from the early Egyptian period through 1850

ID 3653 History of Interiors II: 3 hours.
(Prerequisite: ID 3643 or consent of instructor). Three hours lecture. Defining advancements/evolutions of design philosophies of furniture and interiors in late 19th adn 20th centuries; addressing presentation skills and techniques for interior design professionals

ID 3663 Color and Lighting for Interiors: 3 hours.
(Prerequisite: ID 2615). One hour lecture. Four hours laboratory. Concentrated study of color and light relationships as they apply to the visual, technical and functional aspects of interior spaces

ID 3673 Environments for Special Needs: 3 hours.
Three hours lecture. Laws, attitudes, conditions, specifications, and environmental issues affecting private and public spaces. (Same as HS 3673)

ID 3813 Study Abroad Seminar I: 3 hours.
(Prerequisite: ART 1213 or consent of instructor.) Three hours seminar. Six weeks of on-site instruction in Italy as part of the CAAD Italy study abroad program. Course content will vary to reflect the expertise of the instructor (Same as ART 3813 and ID 3813.)

ID 3823 Study Abroad Seminar II: 3 hours.
(Prerequisite: ART 1213 or consent of instructor.) Three hours seminar. Six weeks of on-site instruction in Italy as part of the CAAD Italy study abroad program. Course content will vary to reflect the expertise of the instructor (Same as ART 3823 and ARC 3823.)

ID 4000 Directed Individual Study in Interior Design: 6 hours.

ID 4611 Principles of LEED: 1 hour.
One hour lecture. A general study of the principles of the Leadership in Energy and Environmental Design(LEED) Program including preparation to take the LEED Green Associate Exam

ID 4644 Interior Design Studio V: 4 hours.
(Prerequisite: ID 3624). Two hours lecture. Four hours laboratory. Integration of the total living environment, through the application of the design elements and technical aspects of the interior design field

ID 4651 Internship Placement: 1 hour.
(Prerequisite: Senior Standing in Interior Design and ID 4663). One hour lecture. Professional opportunities as they relate to internships for interior design students. Preparation of resume and portfolio for procurement of internship

ID 4654 Interior Design Studio VI: 4 hours.
(Prerequisite: ID 4644). Two hours lecture. Four hours laboratory. Advanced study of the commercial interior design field through individual research and the execution of commercial design problems

ID 4661 Senior Portfolio Production: 1 hour.
(Prerequisite: Senior standing in Interior Design). One-hour lecture. Development of printed and digital portfolios and related materials necessary in obtaining an internship and career in interior design

ID 4662 Professional Practice for Interior Design: 2 hours.
(Prerequisite: Senior standing in ID). Two hours lecture. Professional opportunities as they relate to individual competencies. Study of studio procedures, ethics, business and legal aspects

ID 4673 Integrated Lighting Solutions: 3 hours.
(Prerequisite: ID 3673, or ARC 3723, or IE 3123 or permission of instructor). Three hours lecture. Principles of lighting design that addresses lighting analytics and the understanding of lighting as an integrated part of building systems

ID 4683 Lessons from the Theatre: Architectural Lighting Design: 3 hours.
(Three hours lecture). An introduction to the basics of theatre stage lighting and the theoretical approach of applying these principles to architectural lighting design

ID 4693 Furniture Design: 3 hours.
(Prerequisite: ID 2103, ID 3643, ID 3653, and consent of instructor). Two hours lecture. Two hours laboratory. Exploration of the basic methods and processes of furniture design

ID 4753 Interior Design Internship: 3 hours.
(Prerequisites: Senior standing, 2.50 GPA and consent of instructor). Individual work experience in an approved setting under supervision of Mississippii State Univ faculty

ID 4990 Special Topics in Interior Design: 1-9 hours.
(Credit and title to be arrange. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses.(Courses limited to two offerings under one title within two academic years)

ID 6990 Special Topics in Interior Design: 1-9 hours.
(Credit and title to be arrange. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses.(Courses limited to two offerings under one title within two academic years)

ID 7000 Directed Individual Study in Interior Design: 6 hours.
Hours and credits to be arranged

Interdisciplinary Studies Courses

IDS 4111 Professional Seminar: 1 hour.
(Restricted to BSIS majors or consent of instructor). One hour lecture. Introduction to professional opportunities and skills for students earning a BSIS degree

Industrial Engineering Courses

IE 1313 Lean Works Systems: 3 hours.
Three hours lecture. Provides an introduction to fundamental industrial engineering concepts and tools, including career exploration. Introduces theories and concepts related to lean work systems, along with techniques for system evaluation and improvement

IE 1911 Introduction to Industrial Engineering: 1 hour.
Three hours laboratory. Concepts of industrial engineering, emphasizing the total systems approach. Introduction to analysis and design of general and industrial systems

IE 2990 Special Topics in Industrial Engineering: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

IE 3121 Industrial Ergonomics Laboratory: 1 hour.
(Undergraduate Students co-requisites: IE 4613 and IE 3123; Graduate Students co-requisite: IE 4613/6613). Three hours laboratory. Application of human factors/ergonomics concepts in structured assignments involving data collection, analysis, and report generation. Hands-on experience with sophisticated testing equipment

IE 3123 Industrial Ergonomics: 3 hours.
(Undergraduate Students co-requisites: IE 4613 and IE 3121; Graduate Student co-requisite: IE 4613/6613). Three hours lecture. Analysis of work tasks; ergonomic design principles for manual work design, workplace design, and work environment design; work measurements; and design of wage payment plans

IE 3323 Manufacturing Processes: 3 hours.
(Co-requisites: IE 3913 and CHE 3413 or ME 3403). Two hours lecture. Three hours laboratory. Manufacturing processes and materials; interrelationship of product design, material properties, and processing methods; robotics and CAM systems; economic factors in material, process, and equipment selection

IE 3913 Engineering Economy I: 3 hours.
(Prerequisite: MA 1713). Three hours lecture. Principles of evaluating alternative engineering proposals. Economic measures of effectiveness, costs and cost estimates, basic comparative models, break even and replacement analysis

IE 4000 Directed Individual Study in Industrial and Systems Engineering: 1-6 hours.
Hours and credits to be arranged

IE 4113 Human Factors Engineering: 3 hours.
(Prerequisite: Junior standing in engineering). Two hours lecture. Three hours laboratory. Human capabilities and limitations affecting communications and responses in man-machine systems. Emphasis on physiological and psychological fundamentals

IE 4123 Psychology of Human-Computer Interaction: 3 hours.
(Prerequisite: PSY 3713 or CS 4663/6663 or IE 4113/6113 or consent of instructor). Two hours lecture. Two hours laboratory. Exploration of psychological factors that interact with computer interface usability. Interface design techniques and usability evaluation methods are emphasized. (Same as CS 4673/6673 and PSY 4743/6743)

IE 4173 Occupational Safety Engineering: 3 hours.
(Prerequisite: Junior standing). Three hours lecture. Causes and prevention of industrial accidents. Analysis of hazardous processes and materials. Design of occupational safety systems and programs

IE 4193 Automotive Engineering: 3 hours.
Three hours lecture. Fundamentals of automotive engineering including power units, mechanical systems, electrical systems and industrial and systems engineering aspects. (Same as CHE/ECE/ME 4193/6193)

IE 4333 Production Control Systems I: 3 hours.
(Prerequisite: Grade of C or better in IE 4613). Three hours lecture. Principles, analysis, and design of production and inventory planning and control. Demand for forecasting, aggregated planning, inventory management , production scheduling and control systems

IE 4353 Materials Handling: 3 hours.
(Prerequisite: Junior or Senior Standing). Three hour lecture. Analysis and design of materials handling systems and components. Introduction to facilities design

IE 4373 Automation: 3 hours.
Two hours lecture. Three hours laboratory. Introduction to the various technologies used in both design and manufacturing automation

IE 4513 Engineering Administration: 3 hours.
(Prerequisite: Junior or graduate standing in engineering). Three hours lecture. Study of problems confronting the engineering manager. Includes: Organization and communication theory, internal and external relationships and responsibilities, and designing and implementing managerial systems

IE 4533 Project Management: 3 hours.
(Prerequisites: Grade of C or better in IE 4613). Three hours lecture. Use of CPM, PERT, and GERT for planning, managing and controlling projects. Computer procedures for complex networks

IE 4543 Logistics Engineering: 3 hours.
(Prerequisite: IE 4613 and senior or graduate standing, Co-requisites: IE 4733 or MA 4733). Three hours lecture. Analysis of complex logistics networks. Integration of supply, production, inventory, transportation, and distribution. Strategies for reducing logistics costs and lead times. Customer-supplier partnerships

IE 4553 Engineering Law and Ethics: 3 hours.
(Prerequisite: Senior standing in engineering). Three hours lecture. The engineer and his relations to the law, to the public, and the ethics of his profession. Includes contracts, patents, copyrights, sales agreements, engineering specifications

IE 4573 Process Improvement Engineering: 3 hours.
Three hours lecture. Introduction to quality and productivity improvement methodologies and tools. The design and implementation of continuous improvement systems in organizations

IE 4613 Engineering Statistics I: 3 hours.
(Prerequisite: MA 1723). Three hours lecture. Introduction to statistical analysis. Topics include: probability, probability distributions, data analysis, parameter estimation, statistical intervals, and statistical inferences

IE 4623 Engineering Statistics II: 3 hours.
(Prerequisite: Grade of C or better in IE 4613). Three hours lecture. Continuation of IE 4613/6613. Introduction to engineering applications of regression, experimental design and analysis, and nonparametric methods

IE 4653 Industrial Quality Control: 3 hours.
(Prerequisite: IE 4613). Three hours lecture. The theory and application of statistical quality control; statistical process control; and statistical acceptance sampling

IE 4673 Reliability Engineering: 3 hours.
(Prerequisites: IE 4613). Three hours lecture. Probability functions and statistical methods for component life testing and system reliability prediction. System availability and maintainability. Redundancy in time-dependent and time-independent situations

IE 4713 Operations Research I: 3 hours.
(Prerequisites: IE 4613). Mathematical techniques of decision making, queuing, networks, simulation and dynamic programming

IE 4733 Linear Programming: 3 hours.
(Prerequisites: MA 3113).Three hours lecture.Theory and application of linear programming;simplex algorithm, revised simplex algorithm,duality and sensitivity analysis,transportation and assignment problems algorithms, integer and goal programming. (Same as MA 4733/6733)

IE 4743 Engineering Design Optimization: 3 hours.
(Prerequisite: Consent of instructor). Three hours lecture. Introduction to optimality criteria and optimization techniques for solving constrained or unconstrained optimization problems. Sensitivity analysis and approximation. Computer application in optimization. Introduction to MDO. (Same as ASE 4553/6553 and EM 4143/6143)

IE 4753 Systems Engineering and Analysis: 3 hours.
(Prerequisite: Grade of C or better in IE 3913 and IE 4613). Three hours lecture. Systems concepts, methodologies, models and tools for analyzing, designing, and improving new and existing human-made systems

IE 4773 Systems Simulation I: 3 hours.
(Prerequisite: Grade of C or better in IE 4934 or equivalent programming course, Co-requisite: IE 4623). Three hours lecture. The principles of simulating stochastic systems with an emphasis on the statistics of simulation and the use of discrete-event simulation languages

IE 4914 Industrial Systems Design: 4 hours.
(Prerequisite: Grade of C or better in IE 3123, IE 3323, and IE 4333 and consent of instructor). Two hours lecture. Six hours laboratory. The fundamental procedures and techniques in design of operational systems. Emphasis on both sub-systems and total systems

IE 4915 Design of Industrial Systems: 5 hours.
(Prerequisites: Grade of C or better in the following courses: IE 3123, IE 3121, IE 3323, and IE 4333, and consent of instructor). Two hours lecture. Eight hours laboratory. The fundamental procedures and techniques in design operational systems

IE 4923 Six Sigma Methods and Project: 3 hours.
(Prerequisites: IE 4623/6623, IE 4653/6653) One hour lecture Four hours laboratory. Introduction of six sigma and problem solving methodologies. Application of learned methodologies in selecting, performing, and completing a process involvement project

IE 4933 Information System in Industrial Engineering: 3 hours.
(Prerequisite: Grade of C or better in CSE 1233, CSE 1284 or equivalent). Three hours lecture. An introduction to the design and development of information systems for use in industrial engineering applications

IE 4934 Information Systems for Industrial Engineering: 4 hours.
Three hours lecture. Three hours laboratory. An introduction to the design and development of information systems for use in industrial engineering applications

IE 4990 Special Topics in Industrial and Systems Engineering: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

IE 6113 Human Factors Engineering: 3 hours.
(Prerequisite: Junior standing in engineering). Two hours lecture. Three hours laboratory. Human capabilities and limitations affecting communications and responses in man-machine systems. Emphasis on physiological and psychological fundamentals

IE 6123 Psychology of Human-Computer Interaction: 3 hours.
(Prerequisite: PSY 3713 or CS 4663/6663 or IE 4113/6113 or consent of instructor). Two hours lecture. Two hours laboratory. Exploration of psychological factors that interact with computer interface usability. Interface design techniques and usability evaluation methods are emphasized. (Same as CS 4673/6673 and PSY 4743/6743)

IE 6173 Occupational Safety Engineering: 3 hours.
(Prerequisite: Junior standing). Three hours lecture. Causes and prevention of industrial accidents. Analysis of hazardous processes and materials. Design of occupational safety systems and programs

IE 6193 Automotive Engineering: 3 hours.
Three hours lecture. Fundamentals of automotive engineering including power units, mechanical systems, electrical systems and industrial and systems engineering aspects. (Same as CHE/ECE/ME 4193/6193)

IE 6333 Production Control Systems I: 3 hours.
(Prerequisite: Grade of C or better in IE 4613). Three hours lecture. Principles, analysis, and design of production and inventory planning and control. Demand for forecasting, aggregated planning, inventory management , production scheduling and control systems

IE 6353 Materials Handling: 3 hours.
(Prerequisite: Junior or Senior Standing). Three hour lecture. Analysis and design of materials handling systems and components. Introduction to facilities design

IE 6373 Automation: 3 hours.
Two hours lecture. Three hours laboratory. Introduction to the various technologies used in both design and manufacturing automation

IE 6513 Engineering Administration: 3 hours.
(Prerequisite: Junior or graduate standing in engineering). Three hours lecture. Study of problems confronting the engineering manager. Includes: Organization and communication theory, internal and external relationships and responsibilities, and designing and implementing managerial systems

IE 6533 Project Management: 3 hours.
(Prerequisites: Grade of C or better in IE 4613). Three hours lecture. Use of CPM, PERT, and GERT for planning, managing and controlling projects. Computer procedures for complex networks

IE 6543 Logistics Engineering: 3 hours.
(Prerequisite: IE 4613 and senior or graduate standing, Co-requisites: IE 4733 or MA 4733). Three hours lecture. Analysis of complex logistics networks. Integration of supply, production, inventory, transportation, and distribution. Strategies for reducing logistics costs and lead times. Customer-supplier partnerships

IE 6553 Engineering Law and Ethics: 3 hours.
(Prerequisite: Senior standing in engineering). Three hours lecture. The engineer and his relations to the law, to the public, and the ethics of his profession. Includes contracts, patents, copyrights, sales agreements, engineering specifications

IE 6573 Process Improvement Engineering: 3 hours.
Three hours lecture. Introduction to quality and productivity improvement methodologies and tools. The design and implementation of continuous improvement systems in organizations

IE 6613 Engineering Statistics I: 3 hours.
(Prerequisite: MA 1723). Three hours lecture. Introduction to statistical analysis. Topics include: probability, probability distributions, data analysis, parameter estimation, statistical intervals, and statistical inferences

IE 6623 Engineering Statistics II: 3 hours.
(Prerequisite: Grade of C or better in IE 4613). Three hours lecture. Continuation of IE 4613/6613. Introduction to engineering applications of regression, experimental design and analysis, and nonparametric methods

IE 6653 Industrial Quality Control: 3 hours.
(Prerequisite: IE 4613). Three hours lecture. The theory and application of statistical quality control; statistical process control; and statistical acceptance sampling

IE 6673 Reliability Engineering: 3 hours.
(Prerequisites: IE 4613). Three hours lecture. Probability functions and statistical methods for component life testing and system reliability prediction. System availability and maintainability. Redundancy in time-dependent and time-independent situations

IE 6713 Operations Research I: 3 hours.
(Prerequisites: IE 4613). Mathematical techniques of decision making, queuing, networks, simulation and dynamic programming

IE 6733 Linear Programming: 3 hours.
(Prerequisites: MA 3113).Three hours lecture.Theory and application of linear programming;simplex algorithm, revised simplex algorithm,duality and sensitivity analysis,transportation and assignment problems algorithms, integer and goal programming. (Same as MA 4733/6733)

IE 6743 Engineering Design Optimization: 3 hours.
(Prerequisite: Consent of instructor). Three hours lecture. Introduction to optimality criteria and optimization techniques for solving constrained or unconstrained optimization problems. Sensitivity analysis and approximation. Computer application in optimization. Introduction to MDO. (Same as ASE 4553/6553 and EM 4143/6143)

IE 6753 Systems Engineering and Analysis: 3 hours.
(Prerequisite: Grade of C or better in IE 3913 and IE 4613). Three hours lecture. Systems concepts, methodologies, models and tools for analyzing, designing, and improving new and existing human-made systems

IE 6773 Systems Simulation I: 3 hours.
(Prerequisite: Grade of C or better in IE 4934 or equivalent programming course, Co-requisite: IE 4623). Three hours lecture. The principles of simulating stochastic systems with an emphasis on the statistics of simulation and the use of discrete-event simulation languages

IE 6923 Six Sigma Methods and Project: 3 hours.
(Prerequisites: IE 4623/6623, IE 4653/6653) One hour lecture Four hours laboratory. Introduction of six sigma and problem solving methodologies. Application of learned methodologies in selecting, performing, and completing a process involvement project

IE 6933 Information System in Industrial Engineering: 3 hours.
(Prerequisite: Grade of C or better in CSE 1233, CSE 1284 or equivalent). Three hours lecture. An introduction to the design and development of information systems for use in industrial engineering applications

IE 6934 Information Systems for Industrial Engineering: 4 hours.
Three hours lecture. Three hours laboratory. An introduction to the design and development of information systems for use in industrial engineering applications

IE 6990 Special Topics in Industrial and Systems Engineering: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

IE 7000 Directed Individual Study in Industrial and Systems Engineering: 1-6 hours.
Hours and credits to be arranged

IE 8000 Thesis Research/ Thesis in Industrial Engineering: 1-13 hours.
Hours and credits to be arranged

IE 8143 Applied Ergonomics Methods: 3 hours.
Three hours lecture. Provide practical usage and theoretical background of select tools for ergonomic evaluation of workers and work places, tasks, and environments using real world scenarios

IE 8153 Cognitive Engineering: 3 hours.
Three hours lecture. Implications of human perceputal, cognitive, and psycho-motor capabilities on the design of systems for effective, efficient and safe human-machine performance

IE 8163 Macroergonomics: 3 hours.
Three hours lecture. Provides a foundational review of Macrergonomics, examining the personnel, technolgical, and environmental factors influencing organizations. Addresses the relationship between macro- and micro- ergonomics

IE 8333 Production Control Systems II: 3 hours.
(Prerequisites: IE 4333). Three hours lecture. Inventory systems, static and dynamic production planning, operations scheduling and forecasting systems

IE 8353 Manufacturing Systems Modeling: 3 hours.
(Prerequisites: IE 4733 and IE 4773). Three hours lecture. A study of models used to describe and analyze manufacturing systems. Development of models using queuing networks, mathematical programming, simulation, and other techniques

IE 8583 Enterprise Systems Engineering: 3 hours.
(Prerequisite: Consent of instructor). Three hours lecture. Focuses on the design and improvement of an enterprise through the use of engineering tools and methods, based on the systems perspective of industrial engineering

IE 8723 Operations Research II: 3 hours.
(Prerequisite: IE 4713). Problem formulation, general inventory theory, restricted inventory models. Markovian and queuing processes, sequencing and coordination, game theory, search problems

IE 8733 Decision Theory: 3 hours.
(Prerequisite: IE 4613). Three hours lecture. A quantitative development of the decision making process. Criteria for decision making. Treatment of risk under uncertainty and in conflict situations

IE 8743 Nonlinear Programming I: 3 hours.
(Prerequisite: IE 4733 or MA 4733). Three hours lecture. Optimization of nonlinear functions; quadratic programming, gradient methods, integer programming; Lagrange multipliers and Kuhn-Tucker theory

IE 8753 Network Flows and Dynamic Programming: 3 hours.
(Prerequisites:MA 2733 and IE 4613).Three hours lecture. Applications of network optimization problems and simplex algorithm;and dynamic programming to industrial/ management problems. Study of serial/non-serial multistage deterministic and stochastic systems. Principles of optimality

IE 8763 Stochastic Programming: 3 hours.
Three hours lecture. An introduction to stochastic optimization, focusing on stochastic programming. Covers applications of stochastic modeling and formulation, important properties of stochastic programs, and solution methods such as decomposition, Monte Carlo methods, and approximation methods

IE 8773 Systems Simulation II: 3 hours.
(Prerequisite: IE 4773/6773). Three hours lecture. Continuation of IE 4773. Includes: Advanced theory and practice of simulation, the statistics of simulation, simulation languages, and continuous simulations

IE 8793 Heuristics in Optimization: 3 hours.
Three hours lecture. A study of heuristic methods and their applications to optimization problems

IE 8913 Engineering Economy II: 3 hours.
(Prerequisites: IE 3913 and IE 4613). Three hours lecture. Advanced principles and methods for engineering analysis of industrial problems. Topics include criteria for decisions, project investment and analysis, and elements of risk and uncertainty

IE 8990 Special Topics in Industrial and Systems Engineering: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

IE 9000 Dissertation Research /Dissertation in Industrial Engineering: 1-13 hours.
Hours and credits to be arranged

Industrial Technology Courses

INDT 1203 Industrial Drafting & Print Reading: 3 hours.
Three hours lecture. The use of drawings to communicate ideas of manufacturing and maintenance in machining, electricity/electronics, welding, and hydraulics/pneumatics

INDT 1814 Basic Industrial Electricity and Electronics: 4 hours.
(Prerequisites: MA 1323). Three hour lecture. Two hours laboratory. Study of fundamental industrial electrical and electronic principles with experimentation and project construction

INDT 2113 Introduction to PLC Programming: 3 hours.
Three hours lecture. Study of fundamental methods in the programming of industrial PLC with regard to language and logic

INDT 2123 Introduction to CNC Programming: 3 hours.
(Prerequisite: INDT 1203). Two hours lecture. Two hours laboratory. Study of fundamental concepts and techniques in the construction and programming of computer numerical controlled machines

INDT 2323 Welding Technology: 3 hours.
Two hours lecture. Two hours laboratory. The use of welding and cutting technology in industry including gas, electric, and wire feed welding and plasma arc cutting

INDT 2613 Industrial Fluid Power: 3 hours.
(Prerequisites: PH 1023 or higher). Two hours lecture. Two hours laboratory. A practical study of fluid power concepts, components, and systems as it relates to modern industrial applications and to appropriate scientific principles. Hands-on laboratory activities are included in this study

INDT 3044 Industrial Safety: 4 hours.
Four hours lecture. Principles and procedures relating to appraisal, organization and administration of safety programs in industrial plants including implementation of occupational safety and health legislation

INDT 3063 Industrial Human Relations: 3 hours.
Three hours lecture. The application of psychological principles to teacher-pupil relationships, employer-employee relationships, and other human relationships in business and industry

INDT 3104 Advanced Industrial Electricity and Electronics: 4 hours.
(Prerequisite: INDT 1814). Three hour lecture. Two hours laboratory. Continuation of TKI 1814.Study of and experimentation with industrial electronic, transistor, and integrated circuitry

INDT 3223 Industrial Materials: 3 hours.
(Prerequisite: CH 1043 or higher). Three hours lecture. An investigation of the mechanical/characteristic properties of industrial materials including wood, polymers and composites. The influence of these properties on manufacturing and product service requirements

INDT 3243 Industrial Metrology: 3 hours.
(Prerequisite: INDT 2123 & BQA 2113). Three hours lecture. Study of fundamental and advanced methods employed for measurement in industry

INDT 3343 3D Modeling for Manufacture: 3 hours.
(Prerequisite: INDT 1203). Three hours lecture. Basic to intermediate drafting and design techniques using CAD and CAM software, with special emphasis on 3-D modeling and additive manufacturing

INDT 3363 Motion and Time Study: 3 hours.
(Prerequisite: Junior Standing). Two hours lecture. Two hours laboratory. A study of the techniques for analysis of production systems, the design of work stations, and the development of time standards

INDT 3373 Forecasting and Cost Modeling: 3 hours.
(Prerequisite: BQA 2113 & INDT 3363). Three hours lecture. Use of the higher functions of spreadsheet software to undertake costing of manufacturing process routes and to forecast changes in manufacturing scenarios

INDT 3683 CNC Machining Processes: 3 hours.
(Prerequisite: INDT 3343). Two hours lecture, two hours laboratory. The programming and operation of industrial CNC machine tools, their associated tooling and work

INDT 3813 Writing for Industry: 3 hours.
(Prerequisites: Junior Standing). Three Hours Lecture. The creation of work instructions, manuals, requests for proposals, presentations, justification for equipment, and professional and personal written communications, using different communication media

INDT 4103 Industrial Control Systems: 3 hours.
(Prerequisite: INDT 3104). Two hours lecture. Two hours laboratory. Application of basic and advanced industrial electronic principles to industrial control systems and processes

INDT 4203 Automated Systems: 3 hours.
(Prerequisite: INDT 2113, INDT 2613 and Junior standing). Two hours lecture. Two hours laboratory. An advanced study of automated systems and applications for the Industrial Technologist

INDT 4213 Survey of Energy Sources and Power Technology: 3 hours.
(Prerequisite: PH 1023 or higher and Junior Standing). Three hours lecture. Scientific and applied approaches to energy conversion, transmission, utilization, and conservation. Internal-external combustion, nuclear, fluid, hydroelectric, solar, etc. Current energy problems; lab demonstrations; activities

INDT 4224 Quality Assurance: 4 hours.
(Prerequisites: INDT 3373 & Junior Standing). Four hours lecture. Concepts and procedures to design, plan, assure and audit quality and quality systems, with an introduction to Six Sigma and experimental design

INDT 4233 Maintenance Management: 3 hours.
(Prerequisite: Junior Standing). Three hours lecture. Understanding of the concepts and practices of Total Productive Maintenance Management, to give a proactive production maintenance strategy for the future

INDT 4263 Manufacturing Technology and Processing: 3 hours.
(Prerequisite: Junior standing). Three hours lecture. Discussion and appreciation of manufacturing processes with regard to material processing

INDT 4303 Industrial Robotics: 3 hours.
(Prerequisite: INDT 4103) Two hours lecture. Two hours laboratory. A study of industrial robotics and applications for production supervisors

INDT 4343 Computer Aided Drafting and Design: 3 hours.
(Prerequisite: INDT 1203). Three hours lecture. Basic to advanced drafting and design techniques using CAD and CAM software, with special emphasis placed on 2D design for manufacturing

INDT 4373 Lean Six Sigma: 3 hours.
(Prerequisites: INDT 4224). Three hours lecture. Discussion and applications of Six Sigma within the lean manufacturing environment, to increase quality and reduce costs, to make manufacturers more competitive

INDT 4403 Automated Systems II: 3 hours.
(Prerequisite: INDT 4203). Two hours lecture. Two hours laboratory. An advanced study of automated systems and applications for the Industrial Technologist

INDT 4463 Manufacturing Technology & Processes II: 3 hours.
(Prerequisite: INDT 4263). Three hours lecture. Discussion and appreciation of manufacturing processes with regard to material processing, including machining and automated and computer-aided manufacturing

INDT 4801 Senior Seminar: 1 hour.
(Prerequisites: Senior and Graduating Semester). One hour seminar. The issues that face the new technologist entering the workforce, and how to overcome them

INDT 6203 Automated Systems: 3 hours.
(Prerequisite: INDT 2113, INDT 2613 and Junior standing). Two hours lecture. Two hours laboratory. An advanced study of automated systems and applications for the Industrial Technologist

INDT 6224 Quality Assurance: 4 hours.
(Prerequisites: INDT 3373 & Junior Standing). Four hours lecture. Concepts and procedures to design, plan, assure and audit quality and quality systems, with an introduction to Six Sigma and experimental design

INDT 6233 Maintenance Management: 3 hours.
(Prerequisite: Junior Standing). Three hours lecture. Understanding of the concepts and practices of Total Productive Maintenance Management, to give a proactive production maintenance strategy for the future

INDT 6263 Manufacturing Technology and Processing: 3 hours.
(Prerequisite: Junior standing). Three hours lecture. Discussion and appreciation of manufacturing processes with regard to material processing

INDT 6303 Industrial Robotics: 3 hours.
(Prerequisite: INDT 4103) Two hours lecture. Two hours laboratory. A study of industrial robotics and applications for production supervisors

Insurance Risk Management Courses

INS 2003 Personal Money Management: 3 hours.
Three hours lecture. The individual's acquisition and management of an optimal personal income and expenditure pattern over a lifetime to best meet his/her financial objectives. (Same as FIN 2003. Not open to finanace majors or as part of a GBA Finance Concentration.)

INS 2990 Special Topics in Insurance, Risk Management, and Financial Planning: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

INS 3103 Principles of Insurance: 3 hours.
(Prerequisite: Junior standing). Three hours lecture. A study of the principles and concepts of insurance plus a survey of personal coverages such as Homeowners, Automobile, Life and Health insurance

INS 3203 Property and Casualty Insurance: 3 hours.
Three hours lecture. A study of the major issues in property and casualty insurance including property and liability coverages, company operations, rate making, and international concepts

INS 3303 Life and Health Insurance: 3 hours.
Three hours lecture. The nature and function of life insurance; policy forms and provisions; reserves; company organization; legal aspects; taxation and practical application

INS 3403 Financial Planning: 3 hours.
(Prerequisites: FIN 3123). Three hours lecture. A study dealing with the problems of the individual in the creating, conserving, and disposing of an estate through the use of property, securities, and insurance

INS 3503 Employee Benefits: 3 hours.
Three hours lecture. A comprehensive study of employee benefit plans available to employers, including the principles and concepts necessary to design and implement successful employee benefit programs

INS 4000 Directed Individual Study in Risk Management and Insurance: 1-6 hours.
Hours and credits to be arranged

INS 4503 Enterprise Risk Management: 3 hours.
(Prerequisites: INS 3103). Three hours lecture. A study of the principles, concepts and techniques to manage pure risk exposures which organizations face while pursuing their objectives

INS 4990 Special Topics in Risk Management and Insurance: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

INS 6503 Enterprise Risk Management: 3 hours.
(Prerequisites: INS 3103). Three hours lecture. A study of the principles, concepts and techniques to manage pure risk exposures which organizations face while pursuing their objectives

INS 6990 Special Topics in Risk Management and Insurance: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

INS 7000 Directed Individual Study in Insurance, Risk Management, and Financial Planning: 1-6 hours.
Hours and credits to be arranged

INS 8113 Insurance Education: 3 hours.
(Prerequisite: Consent of Instructor). Three hours lecture. Examination of insurance principles for high school teachers. Coverage will include a broad array of related topics to help prepare teachers for the classroom

INS 8990 Special Topics in Risk Management and Insurance: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

International Student Exchange Courses

ISE 1001 First Year Seminar: 1 hour.
One hour lecture. First-year seminars explore a diverse arrary of topics that provide students with an opportunity to learn about a specific discipline from skilled faculty members

ISE 1103 Introduction to Global Studies: 3 hours.
(Prerequisite: Admission into the International Studies Certificate Program.) Three hours lecture. This course provides an overview of global studies to broaden students' cultural perspectives so that they are more prepared to develop a well-rounded world-view

ISE 4100 International Student Exchange: 19 hours.
(Prerequisite: Acceptance into the International Student Exchange program. Grades from the host institution will be transferred and recorded at MSU after each semester the student participates in the Program.)

ISE 4103 Cross-Cultural Leadership: 3 hours.
(Prerequisite: ISE 1103 and completion of an approved study abroad.) Three hours lecture. Students will examine cross-cultural leadership styles while culminating their international experiences, demonstrating how these experiences are pertinent to their futures and overall global awareness

ISE 4200 International Student Exchange: 3-19 hours.

ISE 4990 Special Topics in International Student Exchange: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

ISE 6990 Special Topics in International Student Exchange: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

Kinesiology Courses

KI 1001 First Year Seminar: 1 hour.
One hour lecture. First-year seminars explore a diverse array of topics that provide students with an opportunity to learn about a specific discipline from skilled faculty members

KI 1803 Health Trends and Topics: 3 hours.
Three hours lecture. An introductory survey of the multiple dimensions of health. Focus is upon healthy behaviors across the lifespan as well as environmental and social influences

KI 2023 Foundations of Health Education: 3 hours.
Three hours lecture. Introduction to the discipline of Health Education. Examination of fundamental concepts and required competencies of the health educator in a variety of settings

KI 2213 Emergency Health Care: 3 hours.
Three hours lecture. Provide students with knowledge and practical experience necessary to prevent, recognize, and provide basic care for injuries and sudden illnesses until advanced medical care arrives

KI 2603 Medical Terminology: 3 hours.
Three hours lecture. A working knowledge of terminology related to the human body through descriptive definitions, practical applications, and medical abbreviations will be developed

KI 2990 Special Topics in Kinesiology: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

KI 3273 Athletic Training: 3 hours.
(Prerequisite: BIO 1004 or BIO 2004). Three hours lecture. Designed for those beginning careers in coaching, physical education, and the fitness profession, the course prepares students to prevent, recognize, and treat of injuries prevalent and manage emergency situations in athletics, physical education, and adult fitness programs

KI 4000 Directed Individual Study in Kinesiology: 1-9 hours.

KI 4990 Special Topics in Kinesiology: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

KI 6990 Special Topics in Kinesiology: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

KI 7000 Directed Individual Study in Kinesiology: 1-9 hours.
Hours and credits to be arranged

KI 8000 Thesis Research/ Thesis in Kinesiology: 1-13 hours.
Hours and credits to be arranged

KI 8303 Research in Kinesiology: 3 hours.
Three hours lecture. Study of the methods and techniques used in kinesiology research. During the course of the semester students prepare a research proposal

KI 8313 Interpretation of Data in Kinesiology: 3 hours.
Three hours lecture. Statistical interpretation of qualitative and quantitative data in the various disciplines of kinesiology

KI 8543 Postural and Locomotor Rehabilitation: 3 hours.
Three hours lecture. Principles of Neuromechanics in the analysis of posture and locomotion, with special emphasis on rehabilitation of balance and gait disorders

KI 8553 Exercise Management for Persons with Disabilities: 3 hours.
Three hours lecture. Focuses on theory, research, and practice in exercise management in special populations

KI 8563 Motor Behavior in Special Populations: 3 hours.
Three hours lecture. This course focuses on theory, research, and practice in movement control and learning in special populations

KI 8603 Disability, Physical Activity and Health: 3 hours.
Three hours lecture. An examination of health disparities experienced by persons with disabilities with special emphasis on how these disparities can be alleviated with physical activity and exercise

KI 8710 Internship: 3-6 hours.
Opportunity for practical experience in the sport industry, fitness/wellness programs, or clinical rehabilitation settings

KI 8913 Doctoral Seminar in Exercise Science: 3 hours.
Three hours seminar. Discussions using current research literature in exercise science with in-depth analyses of selected research from exercise physiology, integrative kinesiology, and biobehavioral kinesiology

KI 8923 Doctoral Seminar in Sports Studies: 3 hours.
Three hours seminar. Discussions on current research literature in sport studies with in-depth analyses of selected research from the sport industry and cultural, social and historical studies

KI 8990 Special Topics in Kinesiology: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

KI 9000 Dissertation Research /Dissertation in Kinesiology: 1-13 hours.
Hours and credits to be arranged

Landscape Architecture Courses

LA 1001 First Year Seminar: 1 hour.
One hour lecture. First-year seminars explore a diverse array of topics that provide students with an opportunity to learn about a specific discipline from skilled faculty members

LA 1153 Introduction to Landscape Architecture: 3 hours.
Six hours studio/lab. Acquaints students with the profession's design vocabulary, application, types of work, and initial experiences dealing with the creation of and evaluation of three dimensional space

LA 1223 Use of Computers in Landscape Architecture: 3 hours.
One hour lecture. Four hours studio/lab. A review of computer technology and its application to be the practice of Landscape Architecture

LA 1333 Landscape Systems and Plant Communities: 3 hours.
One hour lecture. Four hours laboratory. The nature, scope and relevancy of landscape systems and their respective plant communities as they relate to land planning and landscape architectural design

LA 1423 History of Landscape Architecture: 3 hours.
Three hours lecture. Historic development of Landscape Architecture Profession

LA 1433 Landscape Architecture Creativity: 3 hours.
One hour lecture. Four hours studio/lab. An exploration of the creative process and methods of expanding conceptual thinking in designed and built projects

LA 1533 Presentation Methods and Media: 3 hours.
Six hours studio. A review of the various types of architectural drawings used in landscape architecture. Emphasis on basic hand graphic tools and drawing techniques and their use in design

LA 1701 Landscape Professional Career Paths Seminar: 1 hour.
One hour lecture. First-year seminar that explores the diverse career paths for landscape architects and landscape contracting and management professionals

LA 1711 Landscape Contracting Internship I: 1 hour.
(Prerequisites: LA 1701, completion of 12 hours and 2.0 GPA) Internship of planned, progressive and supervised learning with a landscape contracting firm

LA 1803 Landscape Architecture Appreciation: 3 hours.
Three hours lecture. A survey of landscape architecture encompassing design, construction, management, maintenance and practice. Emphasis on development and improvement of home, neighborhood and community environment. (For non-majors.)

LA 2453 Site Inventory and Analysis: 3 hours.
One hour lecture. Four hours studio/lab. The collection, presentation, and use of pertinent site related data. Conventional non-technical methods of presentation of data and computer generated formats are considered and analyzed

LA 2544 Landscape Architecture Construction I: Materials: 4 hours.
(Prerequisites:Grade of C or better in LA 1223 and LA 1533). Two hours lecture. Four hours studio. The nature of materials and their physical attributes. Calculations, drawings, and specifications for construction design and details

LA 2554 Landscape Architecture Design Studio I: 4 hours.
(Prerequisites: (Grade of C or better in the following courses: LA 1153, LA 1223, LA 1333, and LA 1533). Eight hour studio/lab. A landscape architecture design process applied to sustainable site planning. Emphasis on green infrastructure and application of design principles to site design elements

LA 2644 Construction II: Grading: 4 hours.
(Prerequisites: Grade of C or better in the following course: LA 2544). Two hours lecture. Four hours studio. Land surveying, landscape architecture grading, roadway design and alignment, basic staking and layout , and earth volume estimation

LA 2652 Landscape Architecture Precedent Studies: 2 hours.
(Prerequisites: LA 2654). On-site travel study to experience and document notable landscape architecture projects, methods of construction, and professional office visits

LA 2654 Landscape Architecture Design II: Neighborhood Context: 4 hours.
(Prerequisite: Grade of C or better in LA 2554 and passing of Mid-Performance Portfolio Review). Eight hours studio. Emphasis on design at the neighborhood scale, including block and street network design

LA 2701 Landscape Contracting Seminar I: 1 hour.
(Prerequisite: LA 1712). One hour lecture. Weekly seminar to investigate topics related to modern landscape practices experienced in LA 1712 LC Internship I. Formal presentations of internship case studies

LA 2711 Landscape Contracting Internship II: 1 hour.
(Prerequisites: LA 1711, LA 2701 and 2.0 GPA). Internship of planned, progressive and supervised learning with a landscape contracting firm

LA 2990 Special Topics in Landscape Architecture: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

LA 3534 Landscape Architecture Construction III - Hydrology: 4 hours.
(Prerequisites:Grade of C or better in the following course: LA 2644). Two hours lecture. Four hours studio. Calculations for storm- water management, best management practices, surface and subsurface drainage systems, basic hydrology and erosion and sediment control design and practices

LA 3554 Landscape Architecture Design III - Small Town/Rural Context: 4 hours.
(Prerequisites:Grade of C or better in the following courses: LA 2644 and LA 2654). Eight hours studio. Emphasis on design at the Community/ Town scale, including place theory and aesthetics

LA 3603 Design of the Golf Environment: 3 hours.
(Prerequisite: LA 1803). Three hours lecture. Defining site development concerns of a golf complex, addressing areas of history, design, construction and maintenance

LA 3623 Urban Planning Theory: 3 hours.
Three hours lecture. Open to non-majors. Survey of principles and practice of urban planning. Emphasis on the planning process and use of a city's police power to regulate use of land

LA 3652 Case Studies of Executed Works in Landscape Architecture: 2 hours.
(Prerequisite:Grade of C or better in the following courses: LA 3655). Special five to ten day on-site observation visit for the study of notable LA projects and construction methods with lectures

LA 3653 Planting Design Fundamentals in Landscape Architecture: 3 hours.
(Prerequisites:Grade of C or better in the following courses: LA 1533,LA 2554,and PSS 2423) One hour lecture,four hours studio. Using plants as landscape architectural functional elements in a holistic design context.Applying the design elements and principles to design with emphasis on planting design

LA 3654 Landscape Architecture Design IV: Urban Design: 4 hours.
(Prerequisites:Grade of C or better in the following course: LA 3554). Eight hours studio/lab. Emphasis on urban planning and design, including consideration of urban fabric, building typologies, transit, streetscapes, pedestrian circulation, open space, hydrology, and natural systems

LA 3701 Landscape Contracting Seminar II: 1 hour.
(Prerequisite: LA 2712). One hour lecture. Weekly seminar to investigate topics related to modern landscape practices experienced in LA 2712 LC Internship II. Formal presentations of internship case studies

LA 3711 Landscape Contracting Internship III: 1 hour.
(Prerequisites: LA 2711, LA 3701 and 2.0 GPA). Internship of planned, progressive and supervised experiential learning with a landscape contracting firm

LA 3713 Landscape Contracting I: 3 hours.
(Prerequisites: ABE 1073 and EG 1513). Two hours lecture. Two hours laboratory. Study of the nature, scope, and application of the varied construction materials used in landscape projects; and, the construction processes related to landscape development

LA 3721 Landscape Contracting Field Trip I: 1 hour.
(Prerequisite: LA 1701). Five to ten day trip to visit landscape contracting firms and observe completed works

LA 3742 Landscape Architecture Internship: 2 hours.
(Prerequisite: Satisfactory completion of semester six of B.L.A. program with an overall G.P.A. of 3.0 in the Junior Year). Supervised experimental learning with a professional office or public agency

LA 4000 Directed Individual Study in Landscape Architecture: 1-6 hours.
Hours and credits to be arranged

LA 4113 Design Theory and Criticism.: 3 hours.
(Prerequisite: Undergraduates: Consent of Instructor, Graduates: None). Three hours lecture. An examination of the major theories and criticisms of modern landscape design with emphasis upon developing a critical approach to the profession

LA 4124 Landscape Architecture Construction V: Construction Documents: 4 hours.
(Prerequisites: LA 2544 and LA 2644). Two hours lecture. Four hours studio. The course integrates design principles with construction practices, culminating in the preparation of a site design and set of construction documents

LA 4344 Landscape Architecture Construction IV: 4 hours.
(Prerequisites:Grade of C or better in the following course: LA 3534 or consent of instructor). Two hours lecture. Four hours laboratory. Preparation of landscape architectural construction plans, details, and specifications for outdoor lighting, for irrigation, and for septic systems

LA 4443 Exterior Design-Build Studio: 3 hours.
(Prerequisite:Consent of instructor).Six hours studio/lab. An interdisciplinary exploration of an exterior project focused on sustainable site practices from design concept to implementation

LA 4463 Community Food Systems: 3 hours.
Two hours lecture. Two hours laboratory. Exploration of aspects in community food systems including planning and design, sustainable growing practices, and human nutrition and health. (Same as FNH 4463/6463 and PSS 4463/6463)

LA 4514 Ecological Planting Design: 4 hours.
(Prerequisites: Undergraduates: ART 1123, LA 1153, LA 1333, LA 1533, PSS 2423; Graduates: LA 8513 or Consent of Instructor). Two hours lecture. Four hours studio. Examine and apply adaptation theory and strategies that emphasize resilient approaches to urban and suburban green infrastructure projects

LA 4523 Applications for GIS for Landscape Architects: 3 hours.
(Prerequisite:LA 1223 or consent of instructor). One hour lecture,four hour studio/lab. Applying geographical information systems technology to the practice of Landscape Architecture

LA 4653 Study Abroad: Gardens and Urban Spaces: 3 hours.
(Prerequisite: Junior or graduate standing of consent of instructor). Special on-site travel study to experience and document notable landscape architecture projects, methods of construction, and professional offices overseas

LA 4701 Landscape Contracting Seminar III: 1 hour.
(Prerequisite: LA 3712). One hour lecture. Weekly seminar to investigate topics related to modern landscape practices experienced in LA 3712 LC Internship III. Formal presentations of internship case studies

LA 4721 Landscape Contracting Field Trip II: 1 hour.
(Prerequisite: LA 3721). Five to ten day trip to visit with landscape contracting firms and observe completed works

LA 4723 Professional Practice of Landscape Architecture: 3 hours.
Three hours lecture. Office management, contracting, budgeting, design proposals, supervision of construction contracts, professional liability, and professional ethics

LA 4724 Landscape Contracting II: 4 hours.
(Prerequisites: LA 3713 or LA 4334). Two hours lecture. Four hours laboratory. Analysis of legal, financial, and management aspects of landscape contracts; and quantity surveying, cost estimation, and critical path management of landscape construction projects

LA 4733 Landscape Contracting III: 3 hours.
(Prerequisites: LA 4724, ACC 2013, and MGT 3113). Two hours lecture. Two hours laboratory. Theory and practice of managing a Landscape Construction Firm. Case studies of contemporary issues

LA 4744 Landscape Contracting IV: 4 hours.
(Prerequisite: LA 4724 and PSS 4414). Two hours lecture. Two hours laboratory. Application levels studies of post-construction management practices of landscape projects

LA 4753 Sustainable Landscape Management: 3 hours.
(Prerequisite:LA 2433). Online course. An examination of methods for sustainable land management. Ecological systems, services, and processes providing the foundation for decision-making in land management

LA 4754 Design V-Regional: 4 hours.
(Prerequisite:Grade of C or better in the following course LA 3654). Eight hours studio. Application of spatial analytical techniques, Geographic Information Systems (GIS), and Low Impact Design (LID) strategies architecture at the regional scale

LA 4843 Sustainable Communities: 3 hours.
Three hours lecture. Theory and practices that minimize resource use and pollutant production in the human landscape (same as ABE 4843/6843)

LA 4854 Landscape Architecture Capstone Studio: 4 hours.
(Prerequisite:Grade of C or better in the following courses: LA 3544, LA 4723, and LA 4754). Eight hours studio. Emphasis on development of an approved terminal project used to demonstrate competency in proposal development, design process, site planning, detail design and construction detailing

LA 4990 Special Topics in Landscape Architecture: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

LA 6113 Design Theory and Criticism: 3 hours.
(Prerequisite: Undergraduates: Consent of Instructor, Graduates: None). Three hours lecture. An examination of the major theories and criticisms of modern landscape design with emphasis upon developing a critical approach to the profession

LA 6124 Landscape Architecture Construction V: Construction Documents: 4 hours.
(Prerequisites: LA 2544 and LA 2644). Two hours lecture. Four hours studio. The course integrates design principles with construction practices, culminating in the preparation of a site design and set of construction documents

LA 6443 Exterior Design-Build Studio: 3 hours.
(Prerequisite:Consent of instructor).Six hours studio/lab. An interdisciplinary exploration of an exterior project focused on sustainable site practices from design concept to implementation

LA 6463 Community Food Systems: 3 hours.
Two hours lecture. Two hours laboratory. Exploration of aspects in community food systems including planning and design, sustainable growing practices, and human nutrition and health. (Same as FNH 4463/6463 and PSS 4463/6463)

LA 6514 Ecological Planting Design: 4 hours.
(Prerequisites: Undergraduates: ART 1123, LA 1153, LA 1333, LA 1533, PSS 2423; Graduates: LA 8513 or Consent of Instructor). Two hours lecture. Four hours studio. Examine and apply adaptation theory and strategies that emphasize resilient approaches to urban and suburban green infrastructure projects

LA 6523 Applications for GIS for Landscape Architects: 3 hours.
(Prerequisite:LA 1223 or consent of instructor). One hour lecture,four hour studio/lab. Applying geographical information systems technology to the practice of Landscape Architecture

LA 6653 Study Abroad: Gardens and Urban Spaces: 3 hours.
(Prerequisite: Junior or graduate standing of consent of instructor). Special on-site travel study to experience and document notable landscape architecture projects, methods of construction, and professional offices overseas

LA 6753 Sustainable Landscape Management: 3 hours.
(Prerequisite:LA 2433). Online course. An examination of methods for sustainable land management. Ecological systems, services, and processes providing the foundation for decision-making in land management

LA 6843 Sustainable Communities: 3 hours.
Three hours lecture. Theory and practices that minimize resource use and pollutant production in the human landscape (same as ABE 4843/6843)

LA 6990 Special Topics in Landscape Architecture: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

LA 7000 Directed Individual Study in Landscape Architecture: 1-6 hours.
Hours and credit to be arranged

LA 8000 Thesis Research/ Thesis in Landscape Architecture: 1-13 hours.
Hours and credit to be arranged

LA 8512 Landscape Architecture Graduate Studio I: 2 hours.
(Prerequisite: admission to the Master of Landscape Arch- itecture). Four hours studio. Emphasis on holistic approaches to sustainable watershed planning and management. Course deals specifically with prevention of destruction of habitat, biological stress, and hydrologic changes

LA 8513 Landscape Architecture Graduate Studio I: 3 hours.
(Prerequisites: Admission to the Master of Landscape Architecture program). Six hours studio. Emphasis on the use and management of water in the landscape. Course deals with both the planning and design of water systems at various scales and contexts

LA 8522 Landscape Architecture Graduate Studio II: 2 hours.
(Prerequisite: admission to the Master of Landscape Architecture). Four hours studio. Application of spatial anal- ytical techniques and Geographic Information Systems to the execution of landscape planning problems in the Mississippi region

LA 8523 Landscape Architecture Graduate Studio II: 3 hours.
(Prerequisite: LA 8513). Six hours studio. Application of research and theories of the built environment and human health to the execution of landscape planning problems in the Mississippi region

LA 8532 Landscape Architecture Graduate Studio III: 2 hours.
(Prerequisite: second year standing in the Master of Landscape Architecture). Four hours studio. Emphasis on community based planning and design, including consideration of natural resource planning, main street revitalization, open space planning, community design, and small town planning

LA 8533 Landscape Architecture Graduate Studio III: 3 hours.
(Prerequisite: LA 8523). Six hours studio. Emphasis on the design and planning of communities that integrate human and environmental systems. Broadly considers human and wildlife habitats at various scales and context

LA 8545 LA Studio IV-Case Study: 5 hours.
(Prerequisite: LA 8533, LA 8741 and a signed proposal). Ten hours studio. A culminating course in which students complete a case study, an in-depth project critique and a design of a project of similar size and scope

LA 8613 Research Methods in Landscape Architecture: 3 hours.
Three hours lecture. Application of research methods specific to problems in Landscape Architecture

LA 8711 Seminar in Watershed Planning and Management: 1 hour.
(Prerequisite: admission to the Master of Landscape Architecture program or consent of the instructor). One hour seminar. Examination of major elements of watershed planning and management pertinent to landscape architecture, with particular emphasis on emerging trends in the field

LA 8721 Seminar in Landscape Management: 1 hour.
(Prerequisite: admission to the Master of Landscape Arch- itecture program or consent of the instructor). One hour seminar. Examination of major elements of landscape manage- ment pertinent to landscape architecture, with particular emphasis on emerging trends in the field

LA 8731 Seminar in Community Based Planning: 1 hour.
(Prerequisite: second year standing in the Master of Land- scape Architecture program or consent of the instructor). One hour seminar. Examination of major elements of community based planning pertinent to landscape architecture, with particular emphasis on emerging trends in the field

LA 8741 Proposal Writing Seminar: 1 hour.
(Prerequisite: second year standing in the Master of Landscape Architecture program or consent of instructor). One hour seminar. Preparation of detailed written proposals of a variety of types including the proposal for the student's thesis or case study (non-thesis) project

LA 8751 Seminar in Contemporary Design Issues: 1 hour.
(Prerequisite: second year standing in the Master of Landscape Architecture program or consent of instructor). One hour seminar. Exploration and debate of current design, research and planning issues in landscape architecture

LA 8990 Special Topics in Landscape Architecture: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

Library Courses

LIB 9010 Electronic Thesis/Dissertation Format and Submission: 0 hours.
(Prerequisite: Co-registration required in appropriate 8000 or 9000 course). Designed to assist students with the format and submission process for turning in Theses and Dissertations before graduation. Must be taken during student's final semester. Repeatable up to three times

Learning Skills Courses

LSK 0003 Developmental Reading: 3 hours.

LSK 0023 Developmental Studies Laboratory: 3 hours.
Six hours laboratory. Computer tutorials and study skills for intermediate algebra, basic English and effective reading. Designed especially for students who have attended the Summer Developmental Program

LSK 0103 Intermediate Reading: 3 hours.
(Prerequisite: A score of 16 or below on the Reading section of the ACT.) Emphasizes and develops reading skills, including comprehension, vocabulary development, and reading rate. Credit for this course will not be applicable toward any degree or grade point average

LSK 1001 Freshman Seminar: 1 hour.
Multi-disciplined, campus-wide approach to orientation to the university, and strategies for employing personal and university resources

LSK 1011 Study Skills for College: 1 hour.
Development of study principles and skills needed for college

LSK 1013 Effective Reading: 3 hours.
(Is designed to prepare a student to comprehend college level reading materials) Three hours lecture. Comprehension and vocabulary improvement through the use of computer-aided-instruction and directed group activities

LSK 1021 Seminar for the Transfer Student: 1 hour.
(Restrictions: Transfer students only). One hour seminar. Acquaints transfer students with various academic and support units and connects core success strategies for use of personal and university resources for higher-level cognitive skills

LSK 1023 College Reading and Study Skills: 3 hours.
Three hours lecture. Development of reading and study skills needed for college

LSK 1033 Fundamentals of Achievement: 3 hours.
(Restrictions: Specifically for students on Academic Suspension or students failing to maintain satisfactory academic progress). Three hours lecture. Fundamentals focus is on student behaviors and attitude that are most consistently identifies with achieving success in college including time management, testing, memory, and communication

LSK 1041 College Success I: 1 hour.
One hour lecture. College Success I focuses on study skills that enable one to better learn, understand, and retain what is being taught in the new college environment

LSK 1043 Life Skills for the Student Athlete: 3 hours.
Three hours lecture. Focuses on issues student athletes face in transitioning to college and in successfully meeting challenges in the classroom, on the field and in the workforce

LSK 1102 Academic Learning Strategies for Math: 2 hours.
(Restrictions: Students who have not enrolled in and have not received credit for MA 1313). Two hours lecture. Mathematical study skills and basic math concepts with which students struggle in preparation to take or taken in conjunction with MA 0103 (Intermediate Algebra),

LSK 1112 Academic Learning Strategies for English: 2 hours.
Two hours lecture. (Restrictions: Students who have not enrolled in or received credit for EN 1103). Academic Learning Strategies for English is designed for students who would benefit from strengthening basic writing skills to take in conjunction with EN 0103 (Basic English)

LSK 1131 Fundamentals of Success: 1 hour.
(Prerequisite: LSK 1033). One hour lecture. The student behaviors and attitudes that were developed in Fundamentals of Achievement are built upon to strengthen the positive academic and life habits created

LSK 1141 College Success II: 1 hour.
(Restrictions: Specifically designed for MSU Promise Students after their first semester at MSU). (Prerequisite: LSK 1041 College Success I). One hour lecture. College Success II focuses on the study skills and student habits presented in College Success I and builds on their foundation for continual college success

LSK 2010 Praxis: Academic Core Enrichment -PACE: 3 hours.
(Restrictions: Education Majors). One to three variable credit hours lecture. PACE is designed to provide education majors with a thorough review of the basic skills necessary to pass the PRAXIS I Pre-Professional Skills Test in reading, writing, and mathematics

LSK 2013 Speed Reading: 3 hours.
Three hours lecture per week. Development of techniques for increasing rate of comprehension for all types of reading material

LSK 2990 Special Topics in Learning Skills: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

LSK 4000 Directed Indiv Study: 1-6 hours.
Hours and credits to be arranged

LSK 4990 Special Topics in Learning Skills: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

LSK 6013 Academic Writing for Graduate Students: 3 hours.
Three hour lecture. Development of writing skills commersurate with the demands of graduate level courses and the work placements of those with advanced degrees. (Credit received for this course will not be applicable toward any degree)

LSK 6990 Special Topics in Learning Skills: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

LSK 8990 Special Topics in Learning Skills: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

Mathematics Courses

MA 0003 Developmental Mathematics: 3 hours.
(MA 0003 is a developmental course designed to prepare a student for university mathematics courses at the level of MA 1313 College Algebra: credit received for this course will not be applicable toward a degree). Three hours lecture. Real numbers fractions, decimal fractions, percent, algebraic expressions, factoring, algebraic fractions, linear equations/ inequalities, integral exponents, quadratic equations

MA 0103 Intermediate Algebra: 3 hours.
(MA 0103 is designed to prepare a student for MA 1313 College Algebra) Two hours lecture. Two hours laboratory. Real numbers, algebraic expressions, factoring, algebraic fractions,linear equations/inequalities, quadratic equations, Pythagorean Theorem. Does not count toward any degree. Students with a math subscore of 17 or 18 must take this course in the summer or spring terms at MSU, transfer credit from another institution, or test out of the course by taking a departmental test

MA 1001 First Year Seminar: 1 hour.
One hour lecture. First-year seminars explore a diverse arrary of topics that provide students with an opportunity to learn about a specific discipline from skilled faculty members

MA 1313 College Algebra: 3 hours.
(Students with credit in MA 1713 will not receive credit for this course; Prerequisite: ACT math subscore 19, or grade of C or better in MA 0103). Two hour lecture. Two hours laboratory. Review of fundamentals; linear and quadratic equations; inequalities; functions; simultaneous equations; topics in the theory of equations

MA 1323 Trigonometry: 3 hours.
(Students with credit in MA 1713 will not receive credit for this course; Prerequisite: ACT Math subscore 24 (or higher for some sections), or grade of C or better in MA 1313). Three hours lecture. The trigonometric functions: identities; trigonometric equations; applications

MA 1413 Structure of the Real Number System: 3 hours.
(Prerequisite: C or better in MA 1313 or an ACT Math sub-score or 24). Three hours lecture. The nature of mathematics; introductory logic; structure and development of the real number system. (For Elementary and Special Education majors only)

MA 1423 Problem Solving with Real Numbers: 3 hours.
(Prerequisite: C or better in MA 1413). Three hours lecture. Proportions, percent problems, probability, counting principles,statistics. (For Elementary of Special Education majors only)

MA 1433 Informal Geometry and Measurement: 3 hours.
(Prerequisites: C or better in both MA 1413 and MA 1423). Three hours lecture. Measurements and informal geometry. (For Elementary and Special Education majors only)

MA 1453 Precalculus with Graphing Calculators: 3 hours.
(Prerequisites:Math ACT 24 or C or better in MA 1323 or a score of at least 70 on the Precalculus Qualifying Exam). Three hours lecture. Properties, applications, and graphs of linear, quadratic, polynomial, exponential, logarithmic, and trigonometric functions;trigonometric identities, equations and inverses; inequalities. (Degree credit will not be granted for MA 1453 and either MA 1313 or MA 1323. This course is intended to prepare students to take MA 1713 Calculus I)

MA 1613 Calculus for Business and Life Sciences I: 3 hours.
(Prerequisite: ACT Math subscore 24, or grade of C or better in MA 1313). Three hours lecture. Algebraic and some transcendental functions, solutions of systems of linear equations, limits, continuity, derivatives, applications

MA 1713 Calculus I: 3 hours.
(Prerequisite: ACT Math subscore 26, or grade of C or better in 1323 or 1453). Three hours lecture. Analytic geometry; functions; limits; continuity; derivatives of algebraic functions; applications of the derivative. Honors section available

MA 1723 Calculus II: 3 hours.
(Prerequisite: Grade of C or better in MA 1713). Three hours lecture. Antidifferentiation; the definite integral; applications of the definite integral; differentiation and integration of transcendental functions. Honors section available

MA 2113 Introduction to Statistics: 3 hours.
(Prerequisite:ACT Math subscore 24 (or higher for some sections) or a grade of C or better in MA 1313). Two hours lecture.Two hours laboratory. Introduction to statistical techniques: descriptive statistics, random variables, probability distributions, estimation, confidence intervals, hypothesis testing, and measurement of association. Computer instruction for statistical analysis. (Same as ST 2113)

MA 2733 Calculus III: 3 hours.
(Prerequisite: Grade of C or better in MA 1723). Three hours lecture. Further methods of integration; polar coordinates; vectors; infinite series. Honors section available

MA 2743 Calculus IV: 3 hours.
(Prerequisite: Grade of C or better in MA 2733). Three hours lecture. Differential calculus of functions of several variables; multiple integration; vector calculus. Honors section available

MA 2990 Special Topics in Mathematics: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

MA 3053 Foundations of Mathematics: 3 hours.
(Prerequisite: MA 1723). Three hours lecture. The logical structure of mathematics; the nature of a mathematical proof; applications to the basic principles of algebra and calculus

MA 3113 Introduction to Linear Algebra: 3 hours.
(Prerequisite: MA 1723). Three hours lecture. Vector spaces; matrices; linear transformations; systems of linear equations; characteristic values and characteristic vectors

MA 3123 Introduction to Statistical Inference: 3 hours.
(Prerequisite:ACT math subscore 24, or grade of C or better in MA 1313). Two hours lecture. Two hours laboratory. Basic concepts and methods of statistics, including descriptive statistics, probability, random variables, sampling distribution,estimation,hypothesis testing, introduction to analysis of variance, simple linear regression. (Same as ST 3123)

MA 3163 Introduction to Modern Algebra: 3 hours.
(Prerequisite: MA 3113 and MA 3053). Three hours lecture. Rings,integral domains, and fields with special emphasis on the integers, rational numbers, real numbers and complex numbers; theory of polynomials

MA 3253 Differential Equations I: 3 hours.
(Prerequisite: MA 2743 or coregistration in MA 2743). Origin and solution of differential equations; series solutions; Laplace Transform methods; applications

MA 3353 Differential Equations II: 3 hours.
(Prerequisite: MA 3253). Three hours lecture. Systems of differential equations; matrix representations; infinite series solution of ordinary differential equations; selected special functions; boundary-value problems; orthogonal functions: Fourier series

MA 3463 Foundations of Geometry: 3 hours.
(Prerequisite: MA 1723 and MA 3053) Three hours lecture. The structural nature of geometry; modern methods in geometry: finite geometrics

MA 3513 History of Mathematics: 3 hours.
(Prerequisite: MA 2733 or coregistration in MA 2733). Three hours lecture. A historical development of mathematicians and their most important contributions will be emphasized

MA 4000 Directed Individual Study in Mathematics: 1-6 hours.
Hours and credits to be arranged

MA 4133 Discrete Mathematics: 3 hours.
(Prerequisites: MA 3163 or consent of instructor). Three hours lecture. Sets, relations, functions, combinatorics, review of group and ring theory, Burnside's theorem, Polya's counting theory, group codes, finite fields, cyclic codes, and error-correcting codes

MA 4143 Graph Theory: 3 hours.
(Prerequisites: MA 3113 or consent of instructor). Three hours lecture. Basic concepts, graphs, and matrices, algebraic graph theory, planarity and nonplanarity, Hamiltonian graphs, digraphs, network flows, and applications

MA 4153 Matrices and Linear Algebra: 3 hours.
(Prerequisites: MA 3113 and MA 3253). Three hours lecture. Linear transformations and matrices; eigen values and similarity transformations; linear functionals, bilinear and quadratic forms; orthogonal and unitary transformations; normal matrices; applications of linear algebra

MA 4163 Group Theory: 3 hours.
(Prerequisite: MA 3163 or consent of the instructor). Three hours lecture. Elementary properties: normal subgroups; factor groups; homomorphisms and isomorphisms; Abelian groups; Sylow theorems; composition series; solvable groups

MA 4173 Number Theory: 3 hours.
(Prerequisite: MA 3113). Three hours lecture. Divisibility: congruences; quadratic reciprocity; Diophantine equations; continued fractions

MA 4213 Senior Seminar in Mathematics: 3 hours.
(Prerequisites:MA 3163 and MA 3253 and MA 4633) Three hours lecture. Students explore topics in current mathematical research, write expository articles, and give oral presentations. Refinement of specialized writing skills needed for effective mathematical communication

MA 4243 Data Analysis I: 3 hours.
(Prerequisite:MA 2743. Corequisite:MA 3113). Three hours lecture. Data description and descriptive statistics, probability and probability distributions, parametric one-sample and two-sample inference procedures, simple linear regression, one-way ANOVA. Use of SAS. (Same as ST 4243/6243)

MA 4253 Data Analysis II: 3 hours.
(Prerequisite:MA 4243/6243 and MA 3113). Three hours lecture. Multiple linear regression; fixed, mixed, and random effect models;block designs; two-factor analysis of variance;three-factor analysis of variance;analysis of covariance. Use of SAS. (Same as ST 4253/6253)

MA 4313 Numerical Analysis I: 3 hours.
(Prerequisites: CSE 1233 or equivalent, MA 3113, and MA 2743). Three hours lecture. Matrix operations; error analysis; norms of vectors and matrices; transformations; matrix functions; numerical solutions of systems of linear equations; stability; matrix inversion; eigen value problems; approximations

MA 4323 Numerical Analysis II: 3 hours.
(Prerequisites: CSE 1233 or equivalent. MA 3113 and MA 3253). Three hours lecture. Numerical solution of equations; error analysis; finite difference methods; numerical differentiation and integration; series expansions; difference equations; numerical solution of differential equations

MA 4373 Introduction to Partial Differential Equations: 3 hours.
(Prerequisite: MA 3253). Three hours lecture. Linear operators: linear first order equations; the wave equation; Green's function and Sturm-Liouville problems; Fourier series; the heat equation; Laplace's equation

MA 4523 Introduction to Probability: 3 hours.
(Prerequisite: MA 2733). Three hours lecture. Basic concepts of probability, conditional probability, independence, random variables, discrete and continuous probability distributions, moment generating function, moments, special distributions, central limit theorem. (Same as ST 4523/6523)

MA 4533 Introduction to Probability and Random Processes: 3 hours.
(Prerequisites: MA 3113 and MA 2743). Three hours lecture. Probability, law of large numbers, central limit theorem, sampling distributions, confidence intervals, hypothesis testing, linear regression, random processes, correlation functions, frequency and time domain analysis. (Credit can not be earned for this course and MA/ST 4523/6523)

MA 4543 Introduction to Mathematical Statistics I: 3 hours.
(Prerequisite: MA 2743.) Three hours lecture. Combinatorics; probability, random variables, discrete and continuous distributions, generating functions, moments, special distributions, multivariate distributions, independence, distributions of functions of random variables. (Same as ST 4543/6543.)

MA 4573 Introduction to Mathematical Statistics II: 3 hours.
(Prerequisite: MA 4543/6543.) Three hours lecture. Continuation of MA-ST 4543/6543. Transformations, sampling distributions, limiting distributions, point estimation, interval estimation, hypothesis testing, likelihood ratio tests, analysis of variance, regression, chi-square tests. (Same as ST 4573/6573.)

MA 4633 Advanced Calculus I: 3 hours.
(Prerequisite: MA 2743 and MA 3053). Three hours lecture. Theoretical investigation of functions; limits; differentiability and related topics in calculus

MA 4643 Advanced Calculus II: 3 hours.
(Prerequisite: MA 4633/6633). Three hours lecture. Rigorous development of the definite integral; sequences and series of functions; convergence criteria; improper integrals

MA 4733 Linear Programming: 3 hours.
(Prerequisites:MA 3113).Three hours lecture. Theory and application of linear programming; simplex algorithm,revised simplex algorithm, duality and sensitivity analysis, transportation and assignment problem algorithms,interger and goal programming. (Same as IE 4733/6733)

MA 4753 Applied Complex Variables: 3 hours.
(Prerequisite: MA 2743). Three hours lecture. Analytic functions: Taylor and Laurent expansions; Cauchy theorems and integrals; residues; contour integration; introduction to conformal mapping

MA 4933 Mathematical Analysis I: 3 hours.
(Prerequisite: MA 4633/6633 or equivalent). Three hours lecture. Metric and topological spaces; functions of bounded variation and differentiability in normed spaces

MA 4943 Mathematical Analysis II: 3 hours.
(Prerequisite: MA 4933/6933). Three hours lecture. Riemann-Stieltjes integration, sequences and series of functions; implicit function theorem; multiple integration

MA 4953 Elementary Topology: 3 hours.
(Prerequisite: MA 4633/6633). Three hours lecture. Definition of a topological space, metric space, continuity in metric spaces and topological spaces; sequences; accumulation points; compactness, separability

MA 4990 Special Topics in Mathematics: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

MA 6133 Discrete Mathematics: 3 hours.
(Prerequisites: MA 3163 or consent of instructor). Three hours lecture. Sets, relations, functions, combinatorics, review of group and ring theory, Burnside's theorem, Polya's counting theory, group codes, finite fields, cyclic codes, and error-correcting codes

MA 6143 Graph Theory: 3 hours.
(Prerequisites: MA 3113 or consent of instructor). Three hours lecture. Basic concepts, graphs, and matrices, algebraic graph theory, planarity and nonplanarity, Hamiltonian graphs, digraphs, network flows, and applications

MA 6153 Matrices and Linear Algebra: 3 hours.
(Prerequisites: MA 3113 and MA 3253). Three hours lecture. Linear transformations and matrices; eigen values and similarity transformations; linear functionals, bilinear and quadratic forms; orthogonal and unitary transformations; normal matrices; applications of linear algebra

MA 6163 Group Theory: 3 hours.
(Prerequisite: MA 3163 or consent of the instructor). Three hours lecture. Elementary properties: normal subgroups; factor groups; homomorphisms and isomorphisms; Abelian groups; Sylow theorems; composition series; solvable groups

MA 6173 Number Theory: 3 hours.
(Prerequisite: MA 3113). Three hours lecture. Divisibility: congruences; quadratic reciprocity; Diophantine equations; continued fractions

MA 6243 Data Analysis I: 3 hours.
(Prerequisite:MA 2743. Corequisite:MA 3113). Three hours lecture. Data description and descriptive statistics, probability and probability distributions, parametric one-sample and two-sample inference procedures, simple linear regression, one-way ANOVA. Use of SAS. (Same as ST 4243/6243)

MA 6253 Data Analysis II: 3 hours.
(Prerequisite:MA 4243/6243 and MA 3113). Three hours lecture. Multiple linear regression; fixed, mixed, and random effect models;block designs; two-factor analysis of variance;three-factor analysis of variance;analysis of covariance. Use of SAS. (Same as ST 4253/6253)

MA 6313 Numerical Analysis I: 3 hours.
(Prerequisites: CSE 1233 or equivalent, MA 3113, and MA 2743). Three hours lecture. Matrix operations; error analysis; norms of vectors and matrices; transformations; matrix functions; numerical solutions of systems of linear equations; stability; matrix inversion; eigen value problems; approximations

MA 6323 Numerical Analysis II: 3 hours.
(Prerequisites: CSE 1233 or equivalent. MA 3113 and MA 3253). Three hours lecture. Numerical solution of equations; error analysis; finite difference methods; numerical differentiation and integration; series expansions; difference equations; numerical solution of differential equations

MA 6373 Introduction to Partial Differential Equations: 3 hours.
(Prerequisite: MA 3253). Three hours lecture. Linear operators: linear first order equations; the wave equation; Green's function and Sturm-Liouville problems; Fourier series; the heat equation; Laplace's equation

MA 6523 Introduction to Probability: 3 hours.
(Prerequisite: MA 2733). Three hours lecture. Basic concepts of probability, conditional probability, independence, random variables, discrete and continuous probability distributions, moment generating function, moments, special distributions, central limit theorem. (Same as ST 4523/6523)

MA 6533 Introduction to Probability and Random Processes: 3 hours.
(Prerequisites: MA 3113 and MA 2743). Three hours lecture. Probability, law of large numbers, central limit theorem, sampling distributions, confidence intervals, hypothesis testing, linear regression, random processes, correlation functions, frequency and time domain analysis. (Credit can not be earned for this course and MA/ST 4523/6523)

MA 6543 Introduction to Mathematical Statistics I: 3 hours.
(Prerequisite: MA 2743.) Three hours lecture. Combinatorics; probability, random variables, discrete and continuous distributions, generating functions, moments, special distributions, multivariate distributions, independence, distributions of functions of random variables. (Same as ST 4543/6543.)

MA 6573 Introduction to Mathematical Statistics II: 3 hours.
(Prerequisite: MA 4543/6543.) Three hours lecture. Continuation of MA-ST 4543/6543. Transformations, sampling distributions, limiting distributions, point estimation, interval estimation, hypothesis testing, likelihood ratio tests, analysis of variance, regression, chi-square tests. (Same as ST 4573/6573.)

MA 6633 Advanced Calculus I: 3 hours.
(Prerequisite: MA 2743 and MA 3053). Three hours lecture. Theoretical investigation of functions; limits; differentiability and related topics in calculus

MA 6643 Advanced Calculus II: 3 hours.
(Prerequisite: MA 4633/6633). Three hours lecture. Rigorous development of the definite integral; sequences and series of functions; convergence criteria; improper integrals

MA 6733 Linear Programming: 3 hours.
(Prerequisites:MA 3113).Three hours lecture. Theory and application of linear programming; simplex algorithm,revised simplex algorithm, duality and sensitivity analysis, transportation and assignment problem algorithms,interger and goal programming. (Same as IE 4733/6733)

MA 6753 Applied Complex Variables: 3 hours.
(Prerequisite: MA 2743). Three hours lecture. Analytic functions: Taylor and Laurent expansions; Cauchy theorems and integrals; residues; contour integration; introduction to conformal mapping

MA 6933 Mathematical Analysis I: 3 hours.
(Prerequisite: MA 4633/6633 or equivalent). Three hours lecture. Metric and topological spaces; functions of bounded variation and differentiability in normed spaces

MA 6943 Mathematical Analysis II: 3 hours.
(Prerequisite: MA 4933/6933). Three hours lecture. Riemann-Stieltjes integration, sequences and series of functions; implicit function theorem; multiple integration

MA 6953 Elementary Topology: 3 hours.
(Prerequisite: MA 4633/6633). Three hours lecture. Definition of a topological space, metric space, continuity in metric spaces and topological spaces; sequences; accumulation points; compactness, separability

MA 6990 Special Topics in Mathematics: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

MA 7000 Directed Individual Study in Mathematics: 1-6 hours.
Hours and credits to be arranged

MA 8000 Thesis Research/ Thesis in Mathematics: 1-13 hours.
Hours and credits to be arranged

MA 8113 Modern Higher Algebra I: 3 hours.
(Prerequisite: MA 4163/6163). Three hours lecture. A study of the basic mathematical systems with emphasis on rings, fields, and vector spaces

MA 8123 Modern Higher Algebra II: 3 hours.
(Prerequisite: MA 8113). Three hours lecture. A continuation of the topics introduced in MA 8113

MA 8203 Foundations of Applied Mathematics I: 3 hours.
(Prerequisites: MA 3113, MA 3253 or consent of instructor.) Three hours lecture. Principles of applied mathematics including topics from perturbation theory, calculus of variations, and partial differential equations. Emphasis of applications from heat transfer, mechanics, fluids

MA 8213 Foundations of Applied Mathematics II: 3 hours.
(Prerequisite: MA 8203). Three hours lecture. A continuation of MA 8203 including topics from wave propagation, stability, and similarity methods

MA 8253 Operational Mathematics: 3 hours.
(Prerequisite: MA 4753/6753). Three hours lecture. Theory and applications of Laplace, Fourier, and other integral transformations: introduction to the theory of generalized functions

MA 8273 Special Functions: 3 hours.
Three hours lecture. Infinite products: asymptotic series; origin and properties of the special functions of mathematical physics

MA 8283 Calculus of Variations: 3 hours.
Three hours lecture. Functionals: weak and strong extrema; necessary conditions for extrema; sufficient conditions for extrema; constrained extrema; direct methods; applications

MA 8293 Integral Equations: 3 hours.
Three hours lecture. Equations of Fredholm type: symmetric kernels; Hilbert-Schmidt theory; singular integral equations; applications; selected topics

MA 8313 Ordinary Differential Equations I: 3 hours.
Three hours lecture. Linear systems of differential equations; existence and uniqueness; second order systems; systems with constant coefficients; periodic systems; matrix comparison theorems; applications and selected topics

MA 8323 Ordinary Differential Equations II: 3 hours.
(Prerequisite: MA 8313). Three hours lecture. Existence, uniqueness, continuation of solutions of nonlinear systems; properties of solutions of linear and nonlinear equations including boundedness, oscillation, asymptotic behavior, stability, and periodicity; application

MA 8333 Partial Differential Equations I: 3 hours.
(Prerequisite: MA 4373/6373 or consent of instructor). Three hours lecture. Solution techniques; existence and uniqueness of solutions to elliptic, parabolic, and hyperbolic equations; Green's functions

MA 8343 Partial Differential Equations II: 3 hours.
(Prerequisite: MA 8333). Three hours lecture. A continuation of the topics introduced in MA 8333

MA 8363 Numerical Solution of Systems of Nonlinear Equations: 3 hours.
(Prerequisites: MA 4313/6313 and MA 4323/6323). Three hours lecture. Basic concepts in the numerical solution of systems of nonlinear equations with applications to unconstrained optimization

MA 8383 Numerical Solution of Ordinary Differential Equations I: 3 hours.
(Prerequisites: MA 4313/6313 and MA 4323/6323). Three hours lecture. General single-step, multistep, multivalue, and extrapolation methods for systems of nonlinear equations; convergence; error bounds; error estimates; stability; methods for stiff systems; current literature

MA 8443 Numerical Solution of Partial Differential Equations I: 3 hours.
(Prerequisites: MA 4313/6313, MA 4323/6323, and MA 4373/6373 or consent of instructor). Three hours lecture. Basic concepts in the finite difference and finite element methods; methods for parabolic equations; analysis of stability and convergence

MA 8453 Numerical Solution of Partial Differential Equations II: 3 hours.
(Prerequisite: MA 8443). Three hours lecture. Methods for elliptic equations; iterative procedures; integral equation methods; methods for hyperbolic equations; stability; dissipation and dispersion

MA 8463 Numerical Linear Algebra: 3 hours.
(Prerequisite: MA 4323/6323). Three hours lecture. Basic concepts of numerical linear algebra

MA 8633 Real Analysis I: 3 hours.
(Prerequisite: MA 4943/6943). Three hours lecture. Lebesgue measure and Lebesgue integrals; convergence theorems, differentiation and L spaces

MA 8643 Real Analysis II: 3 hours.
(Prerequisite: MA 8633). Three hours lecture. General measures; the Radon-Nikodym theorem and other topics

MA 8663 Functional Analysis I: 3 hours.
(Prerequisite: MA 8643). Three hours lecture. Hilbert spaces; Banach spaces; locally convex spaces; Hahn-Banach and closed graph theorems; principle of uniform boundedness; weak topologies

MA 8673 Functional Analysis II: 3 hours.
(Prerequisite: MA 8663). Three hours lecture. Continuation of topics introduced in MA 8663

MA 8713 Complex Analysis I: 3 hours.
(Prerequisite MA 4943/6943 or consent of instructor). Three hours lecture. Complex numbers: functions of a complex variable; continuity; differentiation and integration of complex functions; transformations in the complex plane

MA 8723 Complex Analysis II: 3 hours.
(Prerequisite: MA 8713). Three hours lecture. Series; analytic continuation; Riemann surfaces; theory of residues

MA 8913 Introduction to Topology I: 3 hours.
(Prerequisite: MA 4643/6643 or MA 4953/6953). Three hours lecture. Basic general topology; introduction of homotopy and homology groups

MA 8923 Introduction to Topology II: 3 hours.
(Prerequisite: MA 8913). Three hours lecture. Continuation of topics introduced in MA 8913

MA 8981 Teaching Seminar: 1 hour.
One hour lecture. Preparation for service as instructors in mathematics and statistics courses; includes practice lectures and exam preparation. (May be taken for credit more than once.)

MA 8990 Special Topics in Mathematics: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

MA 9000 Dissertation Research /Dissertation in Mathematics: 1-13 hours.
Hours and credits to be arranged

MA 9313 Selected Topics in Ordinary Differential Equations: 3 hours.
(Prerequisite: MA 8313 and consent of instructor). (May be taken for credit more than once). Three hours lecture. Topics to be chosen from such areas as Bifurcation Theory, Biological Modeling, Control Theory, Dynamical Systems, Functional Differential Equations, Nonlinear Oscillations, and Quantitative Behavior

MA 9333 Selected Topics in Partial Differential Equations: 3 hours.
(Prerequisite: MA 8333 and consent of instructor). (May be taken for credit more than once). Three hours lecture. Topics to be chosen from such areas as Bifurcation Theory, Boundary Integral Methods, Evolution Equations, Maximum and Variational Principles, and Spectral Methods

MA 9413 Selected Topics in Numerical Analysis: 3 hours.
(Prerequisite: Consent of instructor). (May be taken for credit more than once). Three hours lecture. Current topics in Numerical Analysis. The subject matter may vary from year to year

MA 9633 Selected Topics in Analysis: 3 hours.
(Prerequisite: MA 8643 and consent of instructor). (May be taken for credit more than once). Three hours lecture. Topics will be chosen from areas of analysis of current interest

Mechanical Engineering Courses

ME 1111 Introduction to Mechanical Engineering: 1 hour.
(Prerequisite: ACT Math subscore 26, or grade of C or better in MA 1323). One hour lecture. Introduction to the mechanical engineering curriculum, the profession, and career opportunities. The role of the department, college, university; student roles and responsibilities. Introductory concepts

ME 2133 Modeling and Manufacturing: 3 hours.
(Prerequisite: ME 1111 and Sophomore standing). Two hours lecture. Three hours laboratory. Elementary drafting and design techniques using solid modeling software: introduction to manufacturing options

ME 2990 Special Topics in Mechanical Engineering: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

ME 3103 Experimental Measurements and Techniques: 3 hours.
(Co-requisites: ME 3523 and GE 3513). Two hours lecture. Two hours laboratory. Measurements: accuracy/usefulness; reporting; uncertainly analysis and design of experiments; data acquisition; measurement of length, area, volume, temperature, pressure, flow, strain, and force

ME 3113 Engineering Analysis: 3 hours.
(Prerequisites: CSE 1233,Grade of C or better in MA 3113, MA 3253 and PH 2213) Three hours lecture. Analysis of engineering problems requiring the use of engineering fundamentals and mathematical techniques of analysis with computer applications

ME 3163 Introduction to Mechanical Design with Finite Element Analysis: 3 hours.
Three hours lecture. Instruction in stresses, strains, displacements, static failure with finite element analysis of major strength of materials problems

ME 3313 Heat Transfer: 3 hours.
(Prerequisites:Grade of C or better in EM 3313, MA 3253,and ME 3533 or ME 3513). Three hours lecture. A study of the fundamental principles of heat transfer; processes; steady and transient conduction in solids; thermal radiation; and convective processes

ME 3403 Materials for Mechanical Engineering Design: 3 hours.
(Prerequisites: Grade of C or better in CH 1223 and EM 2413, corequisite EM 3213). Three hours lecture. Behavior, testing and processing of engineering materials. Emphasis is placed on the inter- relation of design with processing and material selection

ME 3423 Mechanics of Machinery: 3 hours.
(Prerequisites:Grade of C or better in EM 2433 and ME 3113). Three hours lecture. Analysis of mechanisms for motions, velocities, accelerations and forces

ME 3513 Thermodynamics I: 3 hours.
(Prerequisites: Grade of C or better in CH 1213, CH 1211, MA 2733, and PH 2213). Three hours lecture. Definitions; properties of a pure substance; work and heat; First and Second Laws; entropy; ideal gases

ME 3523 Thermodynamics II: 3 hours.
(Prerequisite: Grade of C or better in ME 3513 and CH 1223). Three hours lecture. Mixtures of ideal gases; irreversibility and availability; vapor power cycles; gas power cycles; refrigeration cycles; flow through nozzles and turbine blades; combustion; chemical equilibrium

ME 3613 System Dynamics: 3 hours.
(Prerequisites: EM 2433, ME 3113, and EM 3313). Three hours lecture. Mathematical description of mechanical, electrical, hydraulic and pneumatic systems. Transient and frequency response of linear systems

ME 4000 Directed Individual Study in Mechanical Engineering: 1-6 hours.
Hours and credits to be arranged

ME 4111 Professional Development Seminar: 1 hour.
(Prerequisite: Senior standing or consent of instructor). One hour lecture. Preparation for career readiness including professional communication, career outcomes, professional/ethical responsibility, and the impact of engineering solutions in global, economic, environmental, and societal contexts

ME 4113 Material Selection in Design: 3 hours.
(Prerequisite: ME 3403 or equivalent). Three hours lecture. Principles of materials selection related to mechanical design requirements

ME 4123 Failure of Engineering Materials: 3 hours.
(Prerequisite:EM 3213) Three hours lecture. The failure of constituent materials using real -world case studies is the focus. Experimental and analytical techniques for failure analysis and prevention are covered. (Same as CE 4323/6323)

ME 4133 Mechanical Metallurgy: 3 hours.
(Prerequisite:ME 3403 or equivalent). Three hours lecture. The mechanical and metallurgical fundamentals of metals are discussed. Mechanical fundamentals cover the stress and strain relationships and metallurgical fundamentals cover the microstructure

ME 4193 Automotive Engineering: 3 hours.
Three hours lecture. Fundamentals of automotive engineering, including power units, mechanical systems, electrical system and industrial and systems engineering aspects. (Same as CHE/ECE/IE 4193/6193)

ME 4223 Mechanical Systems Analysis: 3 hours.
(Prerequisites: EM 3413 or ME 3613 and senior standing). Three hours lecture. Fourier methods, shock spectra, signature analysis, relation to specific phenomena and malfunctions; acoustical aids; field measurement analysis; random functions, correlations; mobility and impedance methods

ME 4301 Thermo-Fluids Laboratory: 1 hour.
(Prerequisites: ME 3103, EM 3313, ME 3313, ME 3523, and a technical junior-level writing course). Two hours laboratory. Selection, use of pressure, temperatures, fluid flow, heat transfer instrumentation. Experiments with fluid flow, thermodynamic systems, heat transfer. Statistical design of experiments

ME 4333 Energy Systems Design: 3 hours.
(Prerequisites: ME 3313 and ME 3113). Three hours lecture. Comprehensive design problems requiring engineering decisions, data acquisition, codes/standards compliance. Emphasis upon energy systems components: heat exchangers, piping networks, pumps. Fluid transients, system modeling

ME 4343 Intermediate Heat Transfer: 3 hours.
(Prerequisite: ME 3313). Three hours lecture. Condensation and boiling, analytical and numerical techniques for conduction and convection, gray-body and spectral-dependent radiation, transient and steady-state thermal modeling

ME 4353 Alternate Energy Sources: 3 hours.
(Prerequisite: ME 3313). Three hours lecture. Analysis and design of systems using energy derived from solar, hydro, geothermal, wind, ocean, waste, and biomass sources

ME 4373 Air Conditioning: 3 hours.
(Prerequisites: ME 3523 and ME 3313). Three hours lecture. Psychometrics; comfort conditions; determination of heat losses and gains; determination of sizes of elements; energy usage estimating; residential and commercial systems

ME 4393 Power Generation Systems: 3 hours.
(Prerequisites: ME 3313 and ME 3523). Three hours lecture. Evaluation and optimization of power generation systems with emphasis on optimization methods, system simulation, and economics. Energetic, economic, and environmental issues as well as exergy analysis may be incorporated in this course

ME 4401 Solid Mechanics Laboratory: 1 hour.
(Prerequisites: EM 3313, ME 3103, ME 3403, EM 2433, and a technical junior-level writing course). Two hours laboratory. Selection and use of strain gages, dimensional measurements, load cells, accelerometers; hands-on experiments with quasi-static and dynamic-impact testing, spring constants and vibrations

ME 4403 Machine Design: 3 hours.
(Prerequisite: ME 2133, a grade of C or better in EM 3213, and Co-requisite: ME 3403). Three hours lecture. Applied stress analysis and material strength theories for sizing and selecting materials of machine elements. Selection of gears, cams, belts, springs. Design projects

ME 4413 Casting and Joining: 3 hours.
(Prerequisite: ME 3403 or consent of instructor). Three hours lecture. Fundamentals of solidification in casting and joining processes, including design applications

ME 4423 Machining and Forming: 3 hours.
(Prerequisite: ME 3403 or consent of instructor). Three hours lecture. Fundamentals of mechanical processing of joining processes, including design applications. metals, including bulk and sheet forming techniques

ME 4443 Mechanical Systems Design: 3 hours.
(Prerequisites: ME 3423 and ME 4403). Three hours lecture. Mechanical design projects involving analysis; industrial standards and considerations for safety and manufacturability; the use of computers in design and manufacturing automation (CAD/CAM)

ME 4453 Lubrication: 3 hours.
(Prerequisite: Senior standing). Three hours lecture. Friction of solids and fluids. Lubricants. Theory of sliding bearings. Multi-dimensional bearings with constant forces and velocities. Film, hydrodynamic, and gas lubrication. Design of bearings

ME 4463 Engineering Design: 3 hours.
(Prerequisites: ME 3613 and Senior standing). Three hours lecture. In-depth topics in mechanical design. Design of friction devices, hydrodynamic drives, and shells of revolution. Design for thermal creep, thermal stresses, surface contact, and impact

ME 4543 Combustion Engines: 3 hours.
(Prerequisites: ME 3523 and ME 3313). Three hours lecture. Application of thermodynamics, heat transfer, and combustion in the determination of performance characteristics of various engines, e.g., internal combustion, jet, and rocket engines

ME 4623 Control Systems: 3 hours.
(Prerequisites: ME 3613 and ECE 3283). Three hours lecture. Principles of closed loop mechanical, electrical, hydraulic, pneumatic, and thermodynamic systems. Design of control systems

ME 4624 Experimental Methods in Materials Research: 4 hours.
(Prerequisites:CHE 3413 or ABE 3813 or ME 3403 or permission of instructors). Three hours lecture. Three hours laboratory . An introduction to research methodologies commonly used in the evaluation of treatments , and mechanical testing. (Same as ABE 4624/6624 and CHE 4624/6624)

ME 4643 Introduction to Vibrations and Controls: 3 hours.
(Prerequisite: ME 3613). Three hours lecture. Review of Laplace Transforms. Introduction to vibrations, Fourier analysis, linearization, system modeling and feedback controls

ME 4743 Labview: 3 hours.
(Prerequisite:ME 3701 or equivalent Labview enperience). Two hours lecture. Three hours laboratory. Labview programming for applications in laboratory data acquisition (DQA). Basic and intermediate graphical programming theory with emphasis on transducer measurements and triggering

ME 4823 Compressible Flow and Turbomachinery: 3 hours.
(Prerequisites: EM 3313 and ME 3523). Three hours lecture. Fundamental principles, shock and expansion waves, generalized one-dimensional flows, simple processes, energy transfer in turbomachines, turbomachine efficiencies, multi-dimensional effects

ME 4833 Intermediate Fluid Mechanics: 3 hours.
(Prerequisite: EM 3313). Three hours lecture. Differential equations of fluid mechanics, Newtonian and non-Newtonian fluids, boundary-layer theory, laminar and turbulent solutions, compressible flow with applications

ME 4990 Special Topics in Mechanical Engineering: 1-9 hours.
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ME 6823 Compressible Flow and Turbomachinery: 3 hours.
(Prerequisites: EM 3313 and ME 3523). Three hours lecture. Fundamental principles, shock and expansion waves, generalized one-dimensional flows, simple processes, energy transfer in turbomachines, turbomachine efficiencies, multi-dimensional effects

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Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

ME 7000 Directed Individual Study in Mechanical Engineering: 1-6 hours.
Hours and credits to be arranged

ME 8000 Thesis Research/ Thesis in Mechanical Engineering: 1-13 hours.
Hours and credits to be arranged

ME 8011 Graduate Seminar: 1 hour.
Presentation and discussion of research and current mechanical engineering literature by students, faculty, and visiting lecturers. Attendance required for students in Mechanical Engineering Graduate Program

ME 8144 Transmission Electro Microscopy: 4 hours.
(Prerequisite:Consent of Instructor). One hour lecture. Six hours laboratory. Introduction to TEM including life sciences (tissue) and engineering (crystalline materials) topics. (Same as EPP 8144)

ME 8213 Engineering Analysis: 3 hours.
Three hours lecture. The formulation of mathematical methods of advanced engineering problems and the use of mathematical techniques for their solution: equilibrium, eigenvalue, and propagation problems

ME 8223 Inelasticity: 3 hours.
(Prerequisite:EM 8113 and EM 8203) Three hours lecture. This course covers plasticity, creep, viscoelasticity, and inelastic behavior in relation to microstructure-property relations, constitutive modeling at different length scales, and computational simulations.(Same as CE 8323)

ME 8243 Finite Elements in Mechanical Engineering: 3 hours.
(Prerequisites: ME 4403 and EM 3213). Three hours lecture. Concepts and applications of finite element analysis in mechanical engineering problems

ME 8253 Fatigue in Engineering Design: 3 hours.
Three hours lecture. Prediction and prevention of fatigue failure in metallic materials

ME 8313 Conductive Heat Transfer: 3 hours.
Three hours lecture. Closed form analytical and approximate numerical solutions to one, two, and three dimensional steady-state and transient problems in conduction heat transfer

ME 8333 Convective Heat Transfer: 3 hours.
Three hours lecture. Analytical and empirical methods of solution of problems in laminar and turbulent, natural and forced convective heat transfer. Stability; thermal boundary layer techniques; multiphase systems

ME 8353 Advanced Energy Conversion: 3 hours.
(Prerequisite: Graduate standing in Mechanical Engineering or consent of instructor).Three hours lecture. Physical process in advanced energy conversion technologies, with practical application to devices/energy cycles. Emphasis on fuel cells, photovoltaics, and related materials engineering issues

ME 8373 Integrated Computational Materials Engineering: 3 hours.
(Prerequisites: EM 3213 and ME 3403). Three hours lecture. Survey course of various length scale computational analysis related to materials modeling. Emphasis upon projects and exercises

ME 8513 Classical Thermodynamics: 3 hours.
Three hours lecture. Postulational treatment of the physical laws of equilibrium, thermostatics. Equations of state, processes, equilibrium stability, reactive systems, phase transitions

ME 8613 Dynamical Systems: 3 hours.
Three hours lecture. Mathematical description and simulation of systems with mechanical, electrical, pneumatic, and hydraulic components; state variables; bondgraphs; stability; observability and controllability

ME 8733 Experimental Procedures: 3 hours.
Three hours lecture. Design of experiments; instrumentation; data acquisition; and correlation and evaluation of results

ME 8813 Viscous Flow I: 3 hours.
Three hours lecture. Fundamental laws of motion for a viscous fluid; classical solutions of the Navier-Stokes equations; inviscid flow solutions; laminar boundary layers; stability criteria

ME 8823 Viscous Flow II: 3 hours.
(Prerequisite: ME 8813 or equivalent). Three hours lecture. Numerical solution techniques for viscous flow equations. Turbulence and turbulence modeling. Current literature and topics

ME 8843 Unstructured Grid Technology: 3 hours.
(Prerequisites: ASE 8413, proficiency in computer programming, and consent of instructor). Three hours lecture. Unstructured grid generation based on Delaunay, Advancing-Front, Iterative Point Placement, and Local- Reconnection techniques. Implementation of unstructured Finite-Element/Volume methods for engineering applications

ME 8990 Special Topics in Mechanical Engineering: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

ME 9000 Dissertation Research /Dissertation in Mechanical Engineering: 1-13 hours.
Hours and credits to be arranged

Middle Eastern Culture Courses

MEC 2233 Introduction to Old Testament Archaeology: 3 hours.
Three hours lecture. A survey of the Old Testament in the light of archaeological research. This approach is chronological-historical-archaeological. (Same as REL 2233)

MEC 2990 Special Topics in Middle Eastern Culture: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

MEC 3473 Islam: 3 hours.
Three hours lecture. A survey of Islamic history, beliefs and practices, law, theology, philosophy and mysticism. (Same as REL 3473)

MEC 3540 Archaeological Travel and Participation Program: 1-6 hours.
Participation in excavations in the Near East and related lecture program. (Same as AN 3540 and REL 3540)

MEC 3553 Near Eastern Archaeology: 3 hours.
Three hours lecture. Introduction to the contributions made by archaeological research to ancient Near Eastern history and prehistory, with special emphasis on the Syro-Palestinian area. (Same as AN 3553 and REL 3553)

MEC 4403 The Ancient Near East: 3 hours.
(Prerequisite: Completion of any 1000-level history course). Three hours lecture. A study of the origins and development of civilizations in Mesopotamia, Egypt, and Syria-Palestine from prehistoric times to the end of the Persian period. (Same as HI 4403/6403 and REL 4403/6403)

MEC 6403 The Ancient Near East: 3 hours.
(Prerequisite: Completion of any 1000-level history course). Three hours lecture. A study of the origins and development of civilizations in Mesopotamia, Egypt, and Syria-Palestine from prehistoric times to the end of the Persian period. (Same as HI 4403/6403 and REL 4403/6403)

Management Courses

MGT 1011 Ideation: 1 hour.
(Prerequisite: Admission to MVP). This is a course on discovery. Students will explore a variety of critical challenges surrounding the entrepreneur's ability to recognize and develop new ideas

MGT 1021 Strategic Thinking: 1 hour.
(Prerequisite: Admission to MVP). An introduction to company missions, core values and strategies. Emphasis is placed on the role of strategy in the formation of new business ventures

MGT 2990 Special Topics in Management and Information Systems: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

MGT 3113 Principles of Management: 3 hours.
(Prerequisites: junior standing). Three hours lecture. Management principles for large, small, entrepreneurial, and family businesses including planning, organizing, leading, and controlling

MGT 3114 Principles of Management and Production: 4 hours.
(Prerequisites: EC 2113, BQA 2113, and junior standing). Four hours lecture. Management principles for all organizations including planning, organizing, leading, and controlling as well as the purposes, methods, tools, and procedures of production management

MGT 3213 Organizational Communications: 3 hours.
(Prerequisites: EN 1113 and junior standing). Three hours lecture. Application of communication principles through preparation of effective documents and presentations. Includes study and application of team communication, multicultural communication, technology usage, and ethical considerations

MGT 3323 Entrepreneurship: 3 hours.
(Prerequisite: Junior standing or consent of instructor). Three hours lecture. An introduction to the processes involved in owning and managing a business. Includes the entrepreneurial activities normally associated with starting and operating a business

MGT 3333 Field Studies in Entrepreneurship: 3 hours.
(Prerequisite: MGT 3323 or consent of instructor). Three hours lecture. Students, working in groups (or individually) under the direction of their professor, will assess problems of an embryonic, entrepreneurial organization and recommend appropriate solutions, through the development of an entrepreneurial organization or consulting with an operating entrepreneurial organization

MGT 3413 Production Management: 3 hours.
(Prerequisite: MGT 3113 and BQA 2113). Three hours lecture. Purposes, methods, tools, and procedures of production/operations management: systems used in large and small firms

MGT 3513 Introduction to Human Resource Management: 3 hours.
(Prerequisite: Junior standing or consent of instructor). Three hours lecture. Development of efficient programs for managing human resources in large, small, entrepreneurial, and family businesses. Emphasizes equal employment opportunity, performance evaluation, selection, placement, education, training, safety and health

MGT 3813 Organizational Behavior: 3 hours.
(Prerequisites: MGT 3113). Three hours lecture. Study of behavioral theories used by managers to assist them in better understanding, anticipating, and influencing behavior in large, small, entrepreneurial, and family businesses

MGT 3823 Socially Responsible Leadership: 3 hours.
(Prerequisite: Junior-level academic standing). Three hours lecture. Study of leadership in large, small, entrepreneurial, and family businesses. Emphasizes the ethical challenges facing leaders and the impact of the behavior of leaders on followers, organizations, and organizational stakeholders

MGT 4000 Directed Individual Study in Management and Information Systems: 1-6 hours.
(Prerequisite: Junior standing). Hours and credits to be arranged

MGT 4001 Leadership: Building a C-Suite: 1 hour.
(Prerequisite: Admission to MVP). An introduction to teambuilding. This course examines methods of building a dream-team at the helm of new companies. The course includes personal assessment tools designed to help understand dominant behavioral traits

MGT 4153 Management Seminar: 3 hours.
(Prerequisite: Senior standing). Presents for analysis, discussion, and solution case-problems of actual situations met in day-to-day operation of business enterprise which require managerial action

MGT 4533 Advanced Human Resource Management: 3 hours.
(Prerequisite: MGT 3513 or consent of instructor). Three hours lecture. Study of problems in the field of human resource management emphasizing development of the ability to analyze problems and to apply management fundamentals to human resource

MGT 4543 Compensation Management: 3 hours.
(Prerequisite: MGT 3513). Three hours lecture. Compensation fundamentals, practices, and problems, including wage level determinants, wage & salary structures, merit rating, methods of wage payments, fringe benefits, & controls

MGT 4563 Staffing in Organizations: 3 hours.
(Prerequisite: MGT 3113 and MGT 3513). Three hours lecture. Study of the staffing function in large, small, entrepreneurial, and family businesses, with emphasis on human resource planning, recruitment, and selection

MGT 4613 Cross-Cultural Management: 3 hours.
(Prerequisite: MGT 3113 and MGT 3513). Three hours lecture. Study of the staffing function in large, small, entrepreneurial, and family businesses, with emphasis on human resource planning, recruitment, and selection

MGT 4713 Quality in Organizations: 3 hours.
(Prerequisites: MGT 3113). Three hours lecture. An introduction to theories and tools associated with quality management in organizations. Considers the managerial, employee, organizational, and cultural changes required to enhance quality

MGT 4863 International Strategic Management: 3 hours.
Prerequisite: Graduating senior in International Business academic program). Three hours lecture. Administrative process in international business. Emphasis on integrating knowledge acquired in functional areas of business and current events in formulating international competitive policies

MGT 4990 Special Topics in Management and Information Systems: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

MGT 6990 Special Topics in Management and Information Systems: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

MGT 7000 Directed Individual Study in Management and Information Systems: 1-6 hours.
Hours and credits to be arranged

MGT 8000 Thesis Research/ Thesis in Management and Information Systems: 1-13 hours.
Hours and credits to be arranged

MGT 8063 Survey of Management: 3 hours.
(Prerequisite: Graduate standing). Three hours lecture. Survey of management principles and techniques including: objective, policies, functions, leadership, organization, and production control procedures and systems as applied to all fields of business

MGT 8103 Strategic and Entrepreneurial Management: 3 hours.
This course focuses on how organizations create sustained competitive advantages through environmental scanning, strategic thinking, strategic communication and a commitment to action

MGT 8111 Human Resources Issues: 1 hour.
(Prerequisite: MGT 8063 or equivalent). One hour lecture. Survey of nature and influences of human resource management in organizations. Case studies are used to apply and reinforce theory

MGT 8113 Leadership Skills for Managerial Behavior: 3 hours.
Three hours lecture. Survey of major behavioral skills used by managers to help them build human capital and influence behavior in an organizational setting

MGT 8123 Strategic Business Consulting: 3 hours.
(Prerequisite: BQA 8233, MKT 8153, EC 8103, ACC 8213, FIN 8113, MGT 8113). Three hours lecture. A study of strategic management covering environmental analysis, competition between firms, competitive advantage, and strategy implementation culminating in a consulting project with participating organization

MGT 8613 Managing in the Global Business Environment: 3 hours.
Three hours lecture. Analysis of the global environmental elements which impact and are impacted by organizations: global politics and economics, culture, international competition, natural resources, technology

MGT 8813 Organizational Behavior: 3 hours.
Three hours lecture. A study of the major behavioral theories and technologies as they relate to an organizational setting. Theory and research in the major organizational behavior areas will be emphasized

MGT 8823 Organization Development: 3 hours.
(Prerequisite: MGT 3113). Study of the ways organizations can better adapt to the challenges of a modern society. The focus is on innovation, change, and action-oriented research

MGT 8990 Special Topics in Management and Information Systems: 1-9 hours.
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MGT 9000 Dissertation Research /Dissertation in Management: 1-13 hours.
Hours and credits to be arranged

MGT 9143 Development of Management Theory: 3 hours.
(Prerequisite: approval of Instructor). Three hours lecture. Doctoral Seminar. A survey analysis and synthesis of the classical idea which have influenced the development of management and current management theory

MGT 9533 Seminar in Human Resource Management Literature: 3 hours.
(Prerequisite: Approval of Instructor). Discussions and presentations pertaining to HRM literature. Emphasis on understanding the empirical and theoretical research in this area and developing individual theoretical manuscripts for presentation

MGT 9613 Organizational Theory and Practice: 3 hours.
(Prerequisite: Approval of Instructor). Three hours lecture. Doctoral Seminar. Analysis and design of organization structure and dynamics of organization. Behavioral aspects of the executive factors affecting the administrative process within organizations

MGT 9813 Seminar in Organizational Behavior: 3 hours.
(Prerequisite: Approval of Instructor). Discussions and presentations pertaining to OB literature. Emphasis on understanding the empirical and theoretical research in this area, and developing individual theoretical manuscripts for presentation

MGT 9913 Seminar in Strategy Formulation: 3 hours.
(Prerequisite: Approval of Instructor). Doctoral seminar covering the strategic management literature pertaining to strategy formulation in new, small, family, and public firms

MGT 9933 Seminar in Strategy Implementation: 3 hours.
(Prerequisite: Approval of instructor). Doctoral seminar covering the strategic management literature pertaining to strategy implementation in new, small, family, and public firms

Marketing Courses

MKT 2001 Tactical and Strategic Customer Analysis: 1 hour.
(Prerequisite: Admission to MVP). An introduction to the methodologies utilized in researching and building a strong understanding of customer development. Emphasis will be placed on the value proposition

MKT 2211 PGM Level I Seminar: 1 hour.
(Prerequisite: enrollment in the PGM program or consent of instructor). One hour lecture. This course introduces the PGM program and helps students work through Level I checkpoint material as designated by the PGA of America

MKT 2213 PGA Golf Facility Management I: 3 hours.
Three hours lecture. Introduction to golf facility management. Areas of focus include business planning, customer relations, tournament operations, golf car fleet management, and merchandise and inventory controls

MKT 2221 Golf Professional Development I: 1 hour.
(Prerequisite: MKT 2211 and enrollment in the PGA Golf Management program or permission of instructor). Two hours lab. Introduction to PGA PGM program course materials. Practical applications of golf tournament operations and customer relations material

MKT 2223 Introduction to Golf Swing Instruction: 3 hours.
(Prerequisite: MKT 2211 and enrollment in the PGA Golf Management program or permission of instructor). Three hours lecture. Introduction to PGA PGM program course materials. Theoretical concepts and practical application of golf swing instruction

MKT 2231 Golf Professional Development II: 1 hour.
(Prerequisite: Enrollment in PGA Golf Manangement program or permission of instructor). Two hours laboratory. Introduction to PGA PGM program course materials. Practical applications of golf car fleet management and business planning

MKT 2233 Intermediate Golf Instruction: 3 hours.
Three hours lecture. Introduction of intermediate teaching techniques, concepts, and application as well as importance of and design concepts of player development programs

MKT 2241 Golf Professional Development III: 1 hour.
(Prerequisiste:Enrollment in the PGA Golf Management program or permission of instructor).Two hours lab. Introduction to PGA PGM Program course materials. Practical application of intermediate teaching and golf club alteration. Students will also be introduced to concepts and applications of turfgrass management

MKT 2243 PGA Golf Facility Management II: 3 hours.
Three hours lecture. A more in-depth analysis of MKT 2213 centered on business planning, golf operations, customer relations, merchandise and inventory management, and tournament operations. A managerial role in these areas focused on design and implementation as well as the financial impact of these areas on the facility

MKT 2251 Golf Professional Development V: 1 hour.
(Prerequisite:Enrollment in the PGA Golf Management program or permission of instructor). Two hour lab. Introduction to PGA PGM program course materials. Practical application of advanced teaching and golf club fitting and player development programs and teaching business

MKT 2252 Advanced Golf Instruction: 2 hours.
Two hours lecture. Introduction of advanced teaching techniques, concepts, and application as well as facility and owner benefits of the teaching business and player development programs

MKT 2311 Golf Professional Development IV: 1 hour.
(Prerequisite:Enrollment in PGA Golf Management program or consent of instructor). Two hour lab. Introduction to PGA PGM program course materials. Practical application of golf operations and merchandise and inventory management

MKT 2990 Special Topics in Marketing: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

MKT 3013 Principles of Marketing: 3 hours.
(Prerequisite: Junior standing) Three hours lecture. A general survey of the functions, processes, institutions and costs in distribution of goods and services from producers to users

MKT 3213 Retailing: 3 hours.
(Prerequisite: MKT 3013 and Junior standing). Three hours lecture. Survey of the nature, procedure and results of trade at the retail level

MKT 3323 International Logistics: 3 hours.
Three hours lecture. Understanding and applying logistics concepts in a global context. Includes analysis of logistics tradeoffs and integration with other business functions. Must be of junior standing or higher

MKT 3513 Marketing Internship: 3 hours.
(Prerequisities:Junior standing and MKT 3013).Students will work with an approved business as an intern

MKT 3933 International Marketing: 3 hours.
(Prerequisites: MKT 3013, and senior standing in busniess/ marketing). Three hours lecture. Study of the marketing function in the global marketplace, including the techniques and strategies required when marketing in various cultural, economic, legal and political environments

MKT 4000 Directed Individual Study in Marketing: 1-6 hours.
Hours and credits to be arranged

MKT 4033 International Transportation: 3 hours.
Three hours lecture. Understanding the role of transportation in global logistics and the global economy

MKT 4113 Personal Selling: 3 hours.
(Prerequisite: Junior standing). Three hours lecture. Psychology of personal selling; planning and presentation; the sales approach; the interview; closing the sale

MKT 4123 Advertising: 3 hours.
(Prerequisite: MKT 3013 or consent of instructor). Three hours lecture. A course dealing with the role of advertising in society, the relation of advertising to other business activity, and the use of advertising as communication

MKT 4143 Sales Management: 3 hours.
(Prerequisites: MKT 3013 and MGT 3113). Three hours lecture. Application of scientific management to the selling and distribution of consumer and industrial goods

MKT 4213 Internet Marketing: 3 hours.
(Prerequisite: MKT 3013 or MKT 8072) Three hours lecture. Introduction to practical marketing use of Internet technologies, including basic principles, impact on business and society, and strategic implications

MKT 4223 Social Media Marketing: 3 hours.
(Prerequisite: MKT 3013 Principles of Marketing). Survey of the nature and use of social media in marketing

MKT 4233 Golf Operations Management: 3 hours.
(Prerequisite: PGM Major, MKT 3213 or permission of instructor). Three hours lecture. Development of marketing strategies for the organization, operation, and maintenance of operations in the golf shop and golf course environment

MKT 4234 Golf Operations Management: 4 hours.
Four hours lecture. Development of marketing strategies for the organization, operation, and maintenance of operations in the golf shop and golf course environment. Advanced learning strategies for business planning, merchandise and inventory management, personnel management, and golf operations will combine concepts delivered throughout the PGA Golf Management curriculum

MKT 4313 Physical Distribution Management: 3 hours.
(Prerequisites: BQA 2113 and MKT 3013). Functions of physical distribution in business management; analysis of shippers, distribution problems in relation to carrier types, services and functions; study of rate of structure and rate changes

MKT 4333 International Supply Chain Management: 3 hours.
Three hours lecture. Analysis of supply chains and their importance to the global economy

MKT 4413 Consumer Behavior: 3 hours.
(Prerequisite: MKT 3013). A study of the nature and dynamics of consumer markets, and the significance of these markets to marketing executives

MKT 4423 Strategic Brand Management: 3 hours.
(Prerequisite: MKT 3013). Three hours lecture. This course explores the concepts of brands, brand equity, and strategic brand management, providing practical insights for building brands and enhancing profitability of existing brands

MKT 4513 Resort-Convention Marketing: 3 hours.
(Prerequisite:MKT 3013) Three hours lecture. A study of marketing problems unique to resorts and convention centers. Special emphasis is placed on quantitative techniques for pricing, services, event booking, and positioning. Course available only on MSU-Meridian campus

MKT 4533 Marketing Research: 3 hours.
(Prerequisites: BQA 3123 and MKT 3013). Three hours lecture. Study of modern marketing research techniques and their applications. Scope and purpose of marketing research: planning of surveys; collecting and analysis of data; preparation of reports

MKT 4613 Services Marketing: 3 hours.
(Prerequisite: MKT 3013.) Three hours lecture. A study of the unique problems associated with the marketing of services and of alternative strategies with which to improve service marketing effectiveness

MKT 4813 Marketing Management: 3 hours.
(Prerequisites: MKT 4413 Consumer Behavior, MKT 4533 Marketing Research and Marketing Graduating Senior; or Permission of Instructor). Marketing from managerial viewpoints: critical analysis of functions of marketing opportunity assessment, marketing planning and programming, marketing leadership and organization, evaluating and adjusting marketing effort

MKT 4990 Special Topics in Marketing: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

MKT 6143 Sales Management: 3 hours.
(Prerequisites: MKT 3013 and MGT 3113). Three hours lecture. Application of scientific management to the selling and distribution of consumer and industrial goods

MKT 6213 Internet Marketing: 3 hours.
(Prerequisite: MKT 3013 or MKT 8072) Three hours lecture. Introduction to practical marketing use of Internet technologies, including basic principles, impact on business and society, and strategic implications

MKT 6233 Golf Operations Management: 3 hours.
(Prerequisite: PGM Major, MKT 3213 or permission of instructor). Three hours lecture. Development of marketing strategies for the organization, operation, and maintenance of operations in the golf shop and golf course environment

MKT 6313 Physical Distribution Management: 3 hours.
(Prerequisites: BQA 2113 and MKT 3013). Functions of physical distribution in business management; analysis of shippers, distribution problems in relation to carrier types, services and functions; study of rate of structure and rate changes

MKT 6423 Strategic Brand Management: 3 hours.
(Prerequisite: MKT 3013). Three hours lecture. This course explores the concepts of brands, brand equity, and strategic brand management, providing practical insights for building brands and enhancing profitability of existing brands

MKT 6990 Special Topics in Marketing, Quantitative Analysis and Business Law: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

MKT 7000 Directed Individual Study in Marketing: 1-6 hours.
Hours and credits to be arranged

MKT 8000 Thesis Research/Thesis in Marketing: 1-13 hours.
Hours and credits to be arranged

MKT 8153 Strategic Marketing Management: 3 hours.
Three hours lecture. Market strategic analysis, research and planning necessary to effectively match marketing strategies with changing macro, micro and organizational environments

MKT 8213 Supply Chain and Operations Management: 3 hours.
Study of how operations and logistics, both within and between firms in a supply chain contribute to creating customer value propositions, and achieving competitive advantage

MKT 8323 Problems in Marketing: 3 hours.
(Prerequisite: MKT 8112 or equivalent). Seminar. Identification of current marketing problems and the specification, evaluation and modification of strategies for their resloution, with emphasis on the use of conceptual modeling

MKT 8333 Seminar in Marketing-Promotion and Distribution: 3 hours.
(Prerequisite: MKT 8313). Intensive analysis of promotion and distribution strategies as key functional marketing variables. Emphasis is on obtaining an advanced understanding of strategic and research alternatives

MKT 8343 Seminar in Marketing-Price and Product: 3 hours.
(Prerequisite: MKT 8313). Intensive analysis of pricing and product strategies as key functional marketing variables. Emphasis is on obtaining an advanced understanding of strategic and research alternatives

MKT 8413 Seminar in Consumer Behavior: 3 hours.
(Prerequisite: MKT 8313). An analysis of macro and micro consumer behavior. Particular emphasis is placed on the consumer decision process in the market place

MKT 8533 Research Design and Execution: 3 hours.
(Prerequisite: Consent of instructor). Interdisciplinary; designing and executing valid quantitative research projects, development valid, reliable data collection instruments, correctly analyzing, interpreting data. Wide-range applicability. Master-doctoral-level

MKT 8543 Quantitative Marketing Seminar: 3 hours.
(Prerequisites: MKT 8313 and BQA 8443 or consent of instructor). Development of marketing strategy and the solution of marketing problems using quantitative methods

MKT 8990 Special Topics in Marketing: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

MKT 9000 Dissertation Research /Dissertation in Marketing: 1-13 hours.
Hours and credits to be arranged

MKT 9333 Advanced Marketing Theory: 3 hours.
(Prerequisite: MKT 8313). Seminar. A critical examination of the evolution of marketing concepts, terminology, principles, and theory, through analysis of the literature in the field

Military Science - Army ROTC Courses

MS 1112 Introduction to ROTC: 2 hours.
One hour lecture. Two hours laboratory. Increases self- confidence through team study and activities in basic drill, physical fitness, rappelling, first aid, and basic marksman- ship. Students learn fundamental concepts of leadership

MS 1122 Introduction to Leadership: 2 hours.
One hour lecture. Two hours laboratory. Applies principles of effective communications skills to improve individual performance and group interaction, and relates organ- izational ethical values to the effectiveness of leaders

MS 2113 Advanced Leadership: 3 hours.
Two hours lecture. Two hours laboratory. Applies leadership and problem-solving principles to complex case studies/simulations. Examines principles of subordinate motivation and organizational change. Develops effective communication skills

MS 2123 Tactics and Officership: 3 hours.
Two hours lecture. Two hours laboratory. Introduces basic tactics. Examines national and Army values. Applies principles of ethical decision-making. Examines the legal and historical foundations, duties and functions of officers. (Spring)

MS 2256 Introductory Leadership Courses: 6 hours.
(The equivalent of MS 1112, MS 1122, MS 2122; or MS 1113 and MS 2223). Summer leadership training course designed to introduce students to all facets of the military with a focus on understanding traditional military leadership values. (Pass/Fail). (Summer)

MS 2523 Military Leadership 1: 3 hours.
Three hours lecture. A study of leadership skills and concepts. This course is designed for students who are not pursuing a military commission.(Same as AS 2523)

MS 2990 Special Topics in Military Science: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offferings under on title within two academic years.)

MS 3113 Advanced Military Skills I: 3 hours.
(Prerequisites: MS 1112, MS 1122, MS 2112, and MS 2122 or instructor's consent.) Fall semester. Three hours lecture. Two hours laboratory. Detailed instruction on squad offensive and defensive tactics, to include specialized operations. Additional instruction in combat leadership, and operations orders

MS 3123 Advanced Military Skills II: 3 hours.
(Prerequisite: MS 1112, MS 1122, MS 2112, MS 2122, MS 3113 or instructor's consent.) Spring Semester. Three hours lecture. Two hours laboratory. Advanced instruction on platoon tactical operations and small unit patrolling. Discussion on the operation and employment of weapons in the platoon

MS 3376 Advanced Leadership Course: 6 hours.
(Prerequisite: MS 3113 and MS 3123). Summer leadership training course designed to train and to evaluate cadet's leadership ability and officer potential. (Pass/Fail). (Summer)

MS 4000 Directed Individual Study in Military Science: 1-6 hours.
Hours and credits to be arranged maximum of three hours

MS 4114 Leadership Challenges and Goal-Setting: 4 hours.
(Prerequisite: Military Science Senior Status or consent of instructor). Three hours lecture. Three hours laboratory. Plan, conduct and evaluate activities of the ROTC organization. Develop confidence in skills to lead people and manage resources. Apply Army policies and programs. (Fall)

MS 4124 Transition to Lieutenant: 4 hours.
(Prerequisite: Military Science Senior Status or consent of instructor). Three hours lecture. Three hours laboratory. Theory and practice of the laws of war, leadership, and resolving ethical problems. (Spring)

MS 4990 Special Topics in Military Science: 1-9 hours.
Credit and title to be arranged. This course is to used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years.)

Music Courses

MU 1001 First Year Seminar: 1 hour.
One hour lecture. First-year seminars explore a diverse arrary of topics that provide students with an opportunity to learn about a specific discipline from skilled faculty members

MU 1003 Fundamentals of Music Theory: 3 hours.
Three hours lecture. Development of skills for music reading, writing, listening and analyzing. Topics will include pitch, rhythm, meter, scales and basic harmony

MU 1010 Recital Hour: 1 hour.
Minimum one (1) hour weekly. Performance and critique experiences in applied music. Required for music (BA) and music education (BME) majors. May be repeated for credit

MU 1103 African American Music: 3 hours.
Three hours lecture. A study of African musical and cultural traditions with focus on the impact of these traditions on the development and advancement of African American Music. (Same as AAS 1103)

MU 1111 Piano Class: 1 hour.
Two hours laboratory. Beginning piano for non-music majors

MU 1113 History and Appreciation of Music: 3 hours.
Three hours lecture. Historical development of music and the composers of the different eras; individual investigation of related special topics; individual and directed listening to music examples

MU 1123 History and Appreciation of American Music: 3 hours.
Three hours lecture. Historical development of music and composers of the United States; individual investigation of related American music special topics; individual and directed listening to musical examples

MU 1133 The History of Rock and Roll: 3 hours.
Three-hour lecture. History of the development of Rock and Roll from the early 1950's to the present, including early Rock and Roll, the British invasion, and 21st century current trends; the course examines the symbiotic relationship between music and society

MU 1141 Song Literature: 1 hour.
One hour seminar. Emphasis is placed on the history and compositional characteristics of Western art song in terms of melody, harmony, rhythm, accompaniment, form, and poetry through score study, research presentations, and listening assignments

MU 1143 The History of Jazz: 3 hours.
Three hours lecture. History of Jazz musical genres. Follows the timeline of Jazz from its multi-cultural origins to its emergence as a uniquely American musical form. Describes the development of different periods of Jazz history, representative personalities and the role of Jazz in society and culture

MU 1151 Vocal Pedagogy: 1 hour.
One hour seminar. Course gives a comprehensive overview of the anatomy/physiology of the human voice, the acoustic properties that govern resonance, and vocal health. It also contains a practicum as students teach voice lessons gaining practical experience

MU 1153 Music of Africa: 3 hours.
Three hours lecture. An introduction to the diverse musical traditions of Africa. The course includes the study of the relationship between music and history by addressing issues of geography, colonialism, globalization, gender, politics and religion

MU 1163 Introduction to Music in Film: 3 hours.
Three hours lecture. A survey of music in motion picture media, the roles it has played from the silent to contemporary eras, and the cultures and people that produced it

MU 1213 Music Theory I: 3 hours.
Three hours lecture. Fundamental concepts of notation of key signatures, intervals, scales, chords, and clefs. Principles of Common-Practice Period Functional Harmony. Co-requisite:MU 1321 or consent of instructor

MU 1241 Diction I: 1 hour.
One hour seminar. Course acquaints voice student with the International Phonetic Alphabet (IPA) symbols and their application to English and German languages. Correct singing pronunciation of these languages as applied to art song will be the focus of the course

MU 1251 Diction II: 1 hour.
One hour seminar. Course acquaints voice student with the International Phonetic Alphabet (IPA) symbols and their application to Italian and French languages. Correct singing pronunciation of these languages as applied to art song will be the focus of the course

MU 1321 Ear Training I: 1 hour.
Two hours laboratory. Aural indentification, singing and dictation of major and minor scales, diatonic melodies, isolated harmonies, simple intervals and rhythms. Co-requisite: MU 1213 or consent of instructor

MU 1413 Music Theory II: 3 hours.
(Prerequisite: C or better in MU 1213). Three hours lecture. Further elements of harmony, including seventh-chords, non-chord tones, chromatic vocabulary. Small forms. Co-requisite: MU 1521 or consent of instructor

MU 1521 Ear Training II: 1 hour.
(Prerequisite: C or better in MU 1321) Two hours laboratory. Aural identification, singing and dictation of diatonic melodies, triads, simple intervals and rhythms. Co-requisite: MU 1413 or consent of instructor

MU 2011 Third Year Woodwind Ensembles: 1 hour.
(Audition Required). One to five rehearsals per week. The study and performance of significant woodwind literature. May be repeated for credit

MU 2012 World Music: 2 hours.
Two hours lecture. A survey of the non-Western musics and music cultures of the world. The course will serve as an introduction to the discipline of ethnomusicology, the study of music in the context of culture

MU 2023 Music of Latin America: 3 hours.
Three hours lecture. An introduction to the diverse musical traditions of Latin America. The course includes the study of the relationship between music and history by addressing issues of geography, colonialism, globalization, gender, politics and religion

MU 2111 Piano Class: 1 hour.
Two hours laboratory. Beginning piano for instrumental and vocal music majors

MU 2121 Piano Class: 1 hour.
Two hours laboratory. Beginning piano for instrumental and vocal music majors

MU 2411 Guitar Ensemble: 1 hour.
(Audition required) One to five rehearsals per week. The study and performance of guitar ensemble literature. May be repeated for credit

MU 2511 Marching Band: 1 hour.
(Audition Required). One to five rehearsals per week. The study and performance of significant marching band literature. May be repeated for credit. (Fall semester only)

MU 2521 Steel Drum Ensemble: 1 hour.
One hour lecture. Exploration of performance techniques, repertoire, and cultural history of Trinidadian steel drums. No audition required. May be repeated for credit

MU 2531 Concert Band: 1 hour.
(Audition required). One to five rehearsals per week. The study and performance of significant concert band literature. May be repeated for credit more. (Spring semester only)

MU 2551 Percussion Ensemble: 1 hour.
(Audition required). One to five rehearsals per week. The study and performance of significant percussion literature. May be repeated for credit

MU 2561 Symphonic Band: 1 hour.
(Audition required). One to five rehearsals per week. The study and performance of significant symphonic band literature. May be repeated for credit. (Spring semester only)

MU 2571 Wind Ensemble: 1 hour.
(Audition required). One to five rehearsals per week. Study, rehearsal and performance of select literature from the wind band repertory. May be repeated for credit

MU 2611 Concert Choir: 1 hour.
(Audition required). One to five rehearsals per week. The study and performance of significant choral literature. May be repeated for credit

MU 2613 Music Theory III: 3 hours.
(Prerequisite: C or better in MU 1413).Three hours lecture. Chromatic vocabulary, including augmented sixth chords, Neapolitans and modulation, Late Romantic and early 20th Century innovations such as extended tertian chords and substitution chords. Co-requisite: MU 2721 or consent of instructor

MU 2631 Starkville Community Choir: 1 hour.
(Audution required). One to five rehearsals per week. The study and performance of significant choral literature. May be repeated for credit

MU 2681 Opera Workshop: 1 hour.
One hour lecture. Course acquaints the voice student with the basics of stagecraft, movement, and acting skills. Course provides the student with the opportunity to study, develop, and improve their dramatic skills outside of the voice studio. May be repeated for credit

MU 2721 Ear Training III: 1 hour.
(Prerequisite: C or better in MU 1521) Two hours laboratory. Aural identification, singing and dictation of diatonic melodies with chromatic inflection, seventh chords and rhythms. Co-requisite: MU 2613 or consent of instructor

MU 2731 Chamber Singers: 1 hour.
(Audition required). One to five rehearsals per week. The study and performance of significant choral literature. May be repeated for credit

MU 2813 Music Theory IV: 3 hours.
(Prerequisite: C or higher in MU 2613 and MU 2721, or equivalents; Co-requisite MU 2921 unless already passed with C or better.) Three hours lecture. Advanced harmony and musical structure; mastery developed through readings, exercises, examinations, and creative projects

MU 2851 Brass Ensembles: 1 hour.
(Audition required). One to five rehearsals per week. The study and performance of significant brass literature. May be repeated for credit

MU 2911 Jazz Ensemble: 1 hour.
(Audition required). One to five rehearsals per week. The study and performance of significant jazz ensemble literature. May be repeated for credit

MU 2921 Ear Training IV: 1 hour.
(Prerequisite: C or better in MU 2721; co-requisite: MU 2831 or consent of instructor). Two hours laboratory. Aural identification, singing and dictation of modes, artificial scales, non-triadic chords, modulating melodies , compound intervals

MU 2951 Philharmonia: 1 hour.
(Prerequisite: audition required.) Two rehearsals per week. Study, rehearsal and performance of orchestral repertory with a focus on literature for chamber orchestra. May be repeated for credit

MU 2990 Special Topics in Music: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

MU 3013 Survey of Western Music History I: 3 hours.
Three hours lecture. A survey of western music history from Antiquity through the Baroque Period (up to ca. 1750 A.D./C.E.). This course serves as the first in a 2-course music history sequence required for music majors

MU 3023 Survey of Western Music History II: 3 hours.
(Prerequisite: MU 3013 or permission of instructor). Three hours lecture. A survey of western music history from Classical Period through the present (from ca. 1750 A.D./C.E.). This is the second in a 2-course music history sequence

MU 3111 Piano Class: 1 hour.
(Prerequisite: grade of C or better in MU 2121 or equivalent or permission of instructor). Two hours laboratory. Intermediate piano for instrumental and vocal music majors; continuation of MU 2121

MU 3112 Functional Skills of Piano I: 2 hours.
(Prerequisite: Prior credit or concurrent enrollment in MU 1213-1413). Two hours laboratory. Functional keyboard skills for music majors who read and play intermediate to advanced-level piano repertoire

MU 3121 Piano Class: 1 hour.
Two hours laboratory. Continuation of MU 3111

MU 3122 Functional Skills of Piano II: 2 hours.
(Prerequisite: Prior credit or concurrent enrollment in MU 1213-1413). Two hours laboratory. Functional keyboard skills for music majors who read and play intermediate to advanced-level piano repertoire

MU 3123 Creative Arts for Elementary and Middle Levels: 3 hours.
(Prerequisite: Admission to Teacher Education) Three hours lecture. An exploration of musical and artistic elements utilizing a variety of multicultural music, dance, drama and aesthetic visual. (Same as EDE 3443)

MU 3201 Collaborative Piano Ensemble: 1 hour.
(Prerequisite: late intermediate to early advanced piano skills. Audition required). One to five rehearsals per week. The study and performance of vocal/piano and instrumental piano repertoire. May be repeated for credit

MU 3333 Orchestration: 3 hours.
(Prerequisite: C or higher in MU 2813 and MU 2921, or equivalents, plus fully-passed Music Theory Upper Division Proficiency Examination.) Three hours lecture. Study of instruments and orchestration techniques; mastery through readings, exercises, examinations, presentations, and creative projects

MU 3412 Conducting: 2 hours.
Two hours lecture. The elements of conducting, baton technique, and interpretation

MU 3433 Piano Literature: 3 hours.
Three hours lecture. Repertoire, curriculum building, in a chronological and historical organization for teachers. Includes learning repertoire for teaching beginning, intermediate, and advanced piano. Recommended for all students in the keyboard concentration. Requires music reading and some knowledge of history

MU 3442 Advanced Conducting: 2 hours.
(Prerequisite: MU 3412 or consent of instructor). One hour lecture. Two hours laboratory. Continuation of MU 3412 with emphasis on interpretation of significant instrumental and choral literature

MU 3681 Opera Production: 1 hour.
(Audition required, co-requisite MUA 1050, 2050, or 3050 concurrently with Opera Production). One hour studio. Students will practice acting, singing, stagecraft, and movement, as well as learning to collaborate with their peers. Musical and staging rehearsals will culminate in performances of opera production. May be repeated for credit

MU 4000 Directed Individual Study in Music: 1-6 hours.
Hours and credits to be arranged

MU 4313 Form and Analysis: 3 hours.
(Prerequisite: C or higher in MU 2813 and MU 2921, or equivalents, plus fully-passed Music Theory Upper Division Proficiency Examination.) Three hours lecture. A survey of forms in music literature, with emphasis on harmonic structure and analytical techniques

MU 4322 Band Arranging: 2 hours.
(Prerequisite: Passing scores on both written and aural portions of the Music Theory Upper Division exam.) Two hours lecture. Study of idiomatic writing for instrumental ensembles, including marching, concert, and jazz bands

MU 4990 Special Topics in Music: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

MU 6990 Special Topics in Music: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

MU 7000 Directed Individual Study in Music: 1-6 hours.
Hours and credits to be arranged

MU 8000 Thesis Research/ Thesis in Music: 1-13 hours.
Hours and credits to be arranged

MU 8013 Seminar in Music History Research: 3 hours.
(Prerequisite: Admission to MME Degree Program.) Three hours graduate seminar. Develops knowledge and skills necessary to conduct advanced research in subjects relating to music history

MU 8023 Seminar in Music Theory: 3 hours.
(Prerequisite: Admission to MME Degree Program). Three hours seminar. Directed study and discussion of topics in music theory, emphasizing individual analysis, writing and presentation

MU 8402 Advanced Instrumental Arranging: 2 hours.
(Prerequisites: Admission to MME degree program; or permission of instructor). Two hours lecture. Advanced scoring practice in arranging music for concert, marching, jazz bands, and small instrumental ensembles

MU 8412 World Drumming: 2 hours.
(Prerequisite: Admission to MME Degree Program). Two hours lecture. An introduction to drum techniques, traditional rhythms, performance practices, ensemble organization, and musical concepts of selected world drumming traditions

MU 8422 Keyboard Skills for Music Educators: 2 hours.
(Prerequisite: Admission to MME Degree Program). Two hours lecture. Group piano course designed to help music educators improve keyboard skills for playing parts and accompaniments, singing and playing, playing from lead sheets, improvisation, and sight playing

MU 8482 Wind Band Literature: 2 hours.
(Prerequisite: admission to the MME degree program). Two hours lecture. The study of the literature and history of the concert band (Renaissance to present era)

MU 8990 Special Topics in Music: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

Music, Applied Courses

MUA 1010 Applied Piano-Piano Majors and Minors: 1,2 hour.
(Pre-requisite: placement audition; intermediate to advanced level). Variable credit 1 or 2 hours. Three hours practice per hour of credit. May be repeated for credit. Individual piano instruction for music and music education majors with a keyboard concentration

MUA 1020 Applied Piano/Music Majors in Instrumental, Vocal and Guitar Concentrations: 1-2 hours.
(Pre-requisite: MU 3121 or consent of instructor). Variable credit 1 or 2 credit hours. One hour practice per hour of credit. May be repeated for credit. Individual piano instruction for music and music education majors, instrumental, vocal and guitar concentrations

MUA 1031 Applied Piano: Non-Music Majors: 1 hour.
One credit hour for half hour weekly individual lessons. One hour practice per hour of credit. May be repeated for credit. Individual instruction for beginning to advanced students to develop skills for personal enrichment

MUA 1050 Voice: 1,2 hour.

MUA 1110 Flute: 1,2 hour.

MUA 1150 Clarinet: 1,2 hour.

MUA 1210 Saxophone: 1,2 hour.

MUA 1250 Oboe: 1,2 hour.

MUA 1310 Bassoon: 1,2 hour.

MUA 1350 Trumpet: 1,2 hour.

MUA 1410 Horn: 1,2 hour.

MUA 1450 Trombone: 1,2 hour.

MUA 1510 Euphonium: 1,2 hour.

MUA 1550 Tuba: 1,2 hour.

MUA 1610 Percussion: 1,2 hour.

MUA 1650 Strings: 1,2 hour.

MUA 1710 Guitar: 1,2 hour.
Variable credit 1 or 2 hours credit: Three hours practice per hour of credit. May be repeated for credit. All students of applied music will be given proficieny examinations which will be held at the end of each semester. All Music Majors are required to perform in student recital hour on their major instrument at least once each semester. (Does not apply in the first semester of the freshman year or during the student teaching semester)

MUA 1810 Music Composition: 1,2 hour.
(Prerequisities: MU 1213 for composition or consent of instructor). Variable credit 1 or 2 hours. Three hours practice per week per credit hour. May be repeated for credit. Individual instruction for instruments, voice, or composition. See department guidelines regarding procedure and recital performance

MUA 2010 Applied Piano: 1,2 hour.
(Prerequisite: placement audition for transfer students or students who have taken MUA 1010; intermediate to advanced level). Variable credit, 1 or 2 credit hours, Three hours practice per week per hour of credit. May be repeated for credit. Individual piano instruction for music and music education majors with a keyboard concentration

MUA 2050 Voice: 1,2 hour.

MUA 2110 Flute: 1,2 hour.

MUA 2150 Clarinet: 1,2 hour.

MUA 2210 Saxophone: 1,2 hour.

MUA 2250 Oboe: 1,2 hour.

MUA 2310 Bassoon: 1,2 hour.

MUA 2350 Trumpet: 1,2 hour.

MUA 2410 Horn: 1,2 hour.

MUA 2450 Trombone: 1,2 hour.

MUA 2510 Euphonium: 1,2 hour.

MUA 2550 Tuba: 1,2 hour.

MUA 2610 Percussion: 1,2 hour.

MUA 2650 Strings: 1,2 hour.

MUA 2710 Guitar: 1,2 hour.
Variable credit 1 or 2 hours credit: Three hours practice per week per hour of credit. May be repeated for credit. All students of applied music will be given juried examinations which will be held at the end of each semester. All Music Majors are required to perform in Student Recital hour on their major instrument at least once each semester. (Does not apply in the first semester of the freshman year or during the student teaching semester)

MUA 2810 Music Composition: 1,2 hour.
(Prerequisites: MU 1213 for composition or consent of instructor). Variable credit 1 or 2 hours. Three hours practice per week per credit hour. May be repeated for credit. Individual instruction for instruments, voice, or composition. See department guidelines regarding procedure and recital performance

MUA 2990 Special Topics in Applied Music: 1-9 hours.

MUA 3010 Applied Piano: 1,2 hour.
(Prerequisite: have taken MUA 2010 and passed the UDPE; advanced level). Variable credit, 1 or 2 credit hours, Three hours practice per week per hour of credit. May be repeated for credit. Individual piano instruction for music and music education majors with a keyboard concentration

MUA 3050 Voice: 1,2 hour.

MUA 3110 Flute: 1,2 hour.

MUA 3150 Clarinet: 1,2 hour.

MUA 3210 Saxophone: 1,2 hour.

MUA 3250 Oboe: 1,2 hour.

MUA 3310 Bassoon: 1,2 hour.

MUA 3350 Trumpet: 1,2 hour.

MUA 3410 Horn: 1,2 hour.

MUA 3450 Trombone: 1,2 hour.

MUA 3510 Euphonium: 1,2 hour.

MUA 3550 Tuba: 1,2 hour.

MUA 3610 Percussion: 1,2 hour.

MUA 3710 Guitar: 1,2 hour.
Variable credit 1 or 2 hours credit: Three hours practice per week per hour of credit. May be repeated for credit. All students of applied music will be given juried examinations which will be held at the end of each semester. All Music Majors are required to perform in Student Recital hour on their major instrument at least once each semester. (Does not apply in the first semester of the freshman year or during the student teaching semester)

MUA 3810 Music Composition: 1,2 hour.
(Prerequisites: MU 1213 for composition or consent of instructor). Variable credit, 1 or 2 hours. Three hours of practice per week per credit hour. May be repeated for credit. Individual instruction for instruments, voice, or composition. See department guidelines regarding procedure and recital performance

MUA 8440 Individual Studio Instruction: 1-2 hours.
(Prerequisite: Admission to MME Degree Program). Directed individual study of one to two credit hours. Designed to provide students with advanced, professional-level instruction on a primary or secondary instrument/voice area. Pedagogical techniques and practices frequently used in instructing younger musicians may also be covered. Repeatable five times

MUA 8450 Applied Composition: 1-2 hours.
(Prerequisite: Admission to MME Degree Program). Directed individual study of one to two credit hours. Instruction in compositional techniques through the completion of creative projects commensurate with the student's interest and ability as well as acceptable to and appropriate for graduate music study. Repeatable three times

MUA 8460 Applied Conducting: 1-2 hours.
(Prerequisite: Admission to MME Degree Program.) One to two hours studio. Individual study of selected scores and conducting techniques. Instruction will be by private studio study with independent practice required. Repeatable three times

Music Education Courses

MUE 1141 Voice Methods: 1 hour.
One hour lecture. Class study of voice production with emphasis on bel canto vocal technique, classical vocal literature, diction, and performance considerations. Class consists of lecture, discussion, listening, and application of concepts studied in both practice and performance

MUE 1151 Technology for Music Education: 1 hour.
One credit hour. An overview of current technologies to enhance music instruction and performance, student assessment, professional productivity, and communication for the music educator

MUE 2153 Foundations of Music Education: 3 hours.
Three hours lecture. This course is designed to introduce historical and philosophical foundations of music and music pedagogy. Diverse trends are compared with emphasis on materials and personal development in music for the emerging music educator

MUE 2163 Elementary Music Methods: 3 hours.
Three hours lecture. Includes a field based component. Prepares future music educators by exploring various elementary music methods and materials. Students will practice instructional techniques for teaching music through singing, playing instruments, movement, and guided listening experiences

MUE 2990 Special Topics in Music Education: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

MUE 3212 Brass Methods: 2 hours.
Two hours lecture. Includes a field-based component. The study of brass instruments with emphasis on embouchure, techniques, and teaching problems. Limited to music majors

MUE 3222 Woodwind Methods: 2 hours.
Two hours lecture. Includes a field-based component. The study of woodwind instruments with emphasis on pedagogical and performance skills. The goal of this course is to provide the basic competencies necessary for teaching in the public schools

MUE 3231 String Methods: 1 hour.
One hour lecture. Includes a field-based component. Study of approaches to teaching stringed instruments. Topics included are learning to play violin, viola, and cello at the introductory level, including logistics of the instruments and common teaching issues

MUE 3233 Guitar Pedagogy: 3 hours.
Three hours lecture. Includes a field-based component. Study of approaches necessary for effective guitar teaching. Topics include history of guitar education, comparison of methods from the nineteenth century to present day, effective studio management

MUE 3242 Percussion Methods: 2 hours.
Two hours lecture. Includes a field-based component. Provides music education students with resources to teach percussion instruments in a classroom setting. Emphasis is placed on pedagogy, equipment, teaching problems, training materials, and repertoire for a variety of percussion instruments

MUE 3262 Instrumental Methods: 2 hours.
Two hours lecture. This includes a field-based component. Overview of wind and percussion instruments for the non-instrumental music education major. Presents basic teaching techniques and strategies needed in the public schools

MUE 3333 Introduction to Piano Pedagogy: 3 hours.
Two hours lecture. Two hours laboratory. Methods, materials, curriculum building, and philosophical bases for teaching beginning piano. Required of all students in the keyboard concentration

MUE 4000 Directed Individual Study in Music Education: 1-6 hours.
Hours and credits to be arranged

MUE 4152 Secondary Music Methods: 2 hours.
Two hours lecture. Includes a field-based component. (Prerequisite: Music majors admitted to Teacher Education and completion of all Upper Division exams). An investigation of the art and science of teaching and assessing musical performance in the secondary music classroom

MUE 4873 Professional Seminar in Music Education: 3 hours.
(Prerequisites: Admission to Teacher Education and senior standing). Three hours lecture. A seminar dealing with legal, professional, administrative, and curriculum issues as they relate to music education in the schools

MUE 4886 Teaching Internship in Music Education: 6 hours.
(Prerequisite: Admission to Teacher Education, minimum grade point average of 2.5 overall in major, and completion of all professional education courses with a grade of C or better). Supervised observation and directed teaching in respective field of endorsement

MUE 4896 Teaching Internship in Music Education: 6 hours.
(Prerequisites: Admission to Teacher Education, minimum grade point average of 2.5 overall in major, and completion of all professional education courses with a grade of C or better). Supervised observation and directed teaching in respective field of endorsement

MUE 4990 Special Topics in Music Education: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

MUE 6990 Special Topics in Music Education: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

MUE 7000 Directed Individual Study in Music Education: 1-6 hours.
Hours and credits to be arranged

MUE 8033 Current Topics in Music Education: 3 hours.
(Prerequisite: Admission to the MME degree program). Three hours lecture. An investigation of current topics impacting music education classrooms

MUE 8102 Advanced Vocal Pedagogy: 2 hours.
(Pre-requisite: Admission to MME Degree Program). Two hours lecture. Body alignment, respiration, phonation, resonation, articulation, vocal health, and the developmental stages of the voice. Concepts and topics addressed can be applied to both one-on-one teaching (voice lessons, vocal coachings) and group situations (class voice, choral ensembles)

MUE 8112 Seminar in Choral Literature: 2 hours.
(Prerequisite: Admission to MME Degree Program.) Two hours lecture. An intensive study of a specific area of choral literature. The content of this course will vary from semester to semester. Emphasis is placed upon in-depth study of selecting and interpreting choral literature

MUE 8122 Techniques of Choral Conducting: 2 hours.
(Prerequisite: Admission to MME Degree Program.) Two hours lecture. An examination of appropriate choral techniques for the secondary choral music program

MUE 8132 Choral Program Development and Curricular Structure: 2 hours.
(Prerequisite: Admission to MME Degree Program.) Two hours lecture. Design and implementing a program and process for success in the choral music program

MUE 8202 The Child Voice: 2 hours.
(Pre-requisite: Admission to MME Degree Program.) Two hours lecture. Exploration of the unique pedagogical and literature requirements of the young singer (children and adolescents) in both solo and choral settings

MUE 8212 Elementary Music Pedagogy: 2 hours.
(Prerequisite: Admission to the MME degree program) Two hours lecture. Research and experiential-based study of the pedagogies, curricula, media and literature designed for the elementary child

MUE 8222 Media, Materials and Resources for the Elementary Music Specialist: 2 hours.
(Prerequisite: Admission to the MME degree program.) Two hours lecture. A survey of media, materials, resources, equipment, repertoire, facility designs, and technology for the elementary music specialist. Learning to budget, prioritize, and effectively apply findings for teacher effectiveness and student achievement will also be included

MUE 8232 Instructional Design for the Elementary Music Program: 2 hours.
(Prerequisite: Admission to the MME degree program) Two hours lecture. Research and theoretical- based study of instructional design models for the elementary music curriculum. Standards, assessment, repertoire, methodology and technology will provide a framework for designing and evaluating elementary music curricula and learning outcomes

MUE 8302 Advanced Woodwind Pedagogy: 2 hours.
(Pre-requisite: Admission to MME Degree Program). Two hours lecture. Teaching methodology and materials for woodwind instruments in the middle and high school band setting, including performance benchmarks and appropriate repertoire for solo, chamber winds and concert ensembles

MUE 8312 Seminar in Brass and Percussion Pedagogy: 2 hours.
(Prerequisite: Admission to the MME degree program). Two hours seminar. Directed study and discussion of topics of brass and percussion pedagogy and performance

MUE 8322 Wind Band Conducting and Rehearsal Techniques: 2 hours.
(Prerequisite: Admission to MME Degree Program.) Two hours lecture. An investigation of selected scores, advanced conducting and rehearsal techniques for the wind band

MUE 8332 Instructional Design for the Instrumental Music Program: 2 hours.
(Prerequisite: Admission to MME Degree Program). Two hours lecture. Developing and implementing appropriate conceptual frameworks, pedagogical approaches, materials and assessment for the secondary school instrumental program

MUE 8363 Research in Music Education: 3 hours.
(Pre-requisite: Admission to MME Degree Program). Three hours lecture. A survey of the purpose and major types and methods used in music education research, principal sources of music research information, formation of research questions, preparing a research proposal, designing and conducting a music education research project

MUE 8432 Guitar in the Classroom: 2 hours.
(Prerequisite: Admission to MME degree program.) Two hours lecture. The process of creating and implementing a guitar program in a public school, or the inclusion of guitar in a pre-existing music program

MUE 8472 Jazz Techniques for the Music Educator: 2 hours.
(Prerequisite: Admission to MME Degree Program.) Two hours lecture. Materials, methods, and techniques for teaching instrumental jazz to K-12 students, including an overview of jazz history and styles and a pedagogical approach to teaching beginning improvisation

MUE 8990 Special Topics in Music Education: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

MUE 9012 Final Project in Music Education: 2 hours.
(Prerequisite: Admission to MME Degree Program.) Two hours seminar. Directed study, emphasizing intensive research, analysis, and development of a final research product for an approved topic central to the field of music education

National Student Exchange Courses

NSE 4200 National Student Exchange: 3-19 hours.

Physician Assistant Studies Courses

PAS 6012 The Art of Medicine for the Physician Assistant: 2 hours.
Two hours lecture. Introduces students to clinical ethics, health disparities, and cultural competence as they influence the practice of medicine. The course emphasizes the human factors that affect the delivery of culturally appropriate, patient-centered health care for patients across the lifespan

PAS 6013 Introduction to the Physician Assistant Profession: 3 hours.
Three hours lecture. Instructional course designed to introduce the entry-level physician assistant student to the unique origins, development, practice laws, and workforce trends of the profession. This course allows the student to develop a thorough understanding of the role of the physician assistant

PAS 6016 Human Anatomy and Physiology for the Physician Assistant: 6 hours.
Four hours lecture/four hours lab. Instruction in clinical gross anatomy and physiology for the physician assistant student. The course provides essential knowledge of the major anatomical regions, structures of the body and the physiologic functions related to health and disease

PAS 6022 Clinical Genetics for the Physician Assistant: 2 hours.
Two hours lecture. Lecture-based course designed to provide the entry-level physician assistant student with a basic understanding of medical genetics. The course will review basic molecular genetics, molecular terminology, and inheritance patterns. The student will receive instruction in various diagnostic techniques associated with medical genetics

PAS 6023 Clinical Diagnostic Methods for the Physician Assistant: 3 hours.
Three hours lecture. Lecture course with three components: radiologic study ordering and interpretation, ECG interpretation, and laboratory study ordering, performance, and interpretation. This course provides skills in ordering/interpreting lab values from chemistry, hematology, immunology, microbiology, parasitology, virology, genetics, and mycology testing for use in clinical practice

PAS 6026 Patient Assessment for the Physician Assistant: 6 hours.
Four hours lecture/four hours lab. Instructs students in the methods of performing a history and physical examination. Students develop the knowledge and skills essential for performing a comprehensive medical history and physical examination. The course emphasizes patient interviewing, acquiring a medical database, and performing a comprehensive physical examination

PAS 6102 Clinical Skills for the Physician Assistant: 2 hours.
Two hours lecture. Students are introduced to common skills used in the clinical practice of medicine. This course is designed to prepare the student for supervised clinical practice by introducing procedures commonly performed in the clinical setting

PAS 6103 Clinical Decision Making for the Physician Assistant: 3 hours.
Three hours lecture. Designed to build upon the skills developed Patient Assessment. The course will utilize problem-based learning techniques, allowing the participant to apply the developing skills of critical thinking. The course will provide instruction in the development of a thorough, patient appropriate, differential diagnosis

PAS 6104 Pathophysiology for the Physician Assistant: 4 hours.
Four hours lecture. Introduces the student to human disease processes, their origins, mechanisms of action and effects on the human body with emphasis on the clinical manifestations of the disease process. Students will integrate knowledge from Patient Assessment and the basic sciences

PAS 6107 Clinical Medicine I for the Physician Assistant: 7 hours.
Seven hours lecture. Lecture course designed to build upon the skills developed in Patient Assessment, Clinical Diagnostic Methods, and the basic sciences. This course covers the principles of evaluation, diagnosis and management of general medical conditions in a systems based-approach

PAS 6112 Research Methods I for the Physician Assistant: 2 hours.
Two hours lecture. Introduction to basic research techniques needed for clinical practice. Students will develop proficiency in searching, interpreting, and applying evidence-based research in the clinical setting. Students will be instructed in appropriate tenets of intellectual honesty in the academic and professional setting

PAS 6113 Health Promotion and Disease Prevention for the Physician Assistant: 3 hours.
Three hours lecture. Lecture-based, active learning course where the student is given the opportunity to value prevention as a major aspect of healthcare and to develop skills that integrate health promotion/disease prevention into the role of a physician assistant

PAS 6202 Research Methods II for the Physician Assistant: 2 hours.
Two hours lecture. Designed to continue the physician assistant student's proficiency in research. This course will refine skills in literature analysis and the formatting of conclusions for the evidence-based practice of evaluation and management of disease processes

PAS 6203 Clinical Practice Issues for the Physician Assistant: 3 hours.
Three hours lecture. The course instructs students in advanced clinical practice issues affecting the physician assistant profession. Topics include billing and coding, the Medicare/ Medicaid system, credentialing, clinical professionalism, prescriptive rights, interdisciplinary health care practice and state/national licensure and certification

PAS 6204 Principles of Pharmacology for the Physician Assistant: 4 hours.
Four lecture hours. Basic introduction to the principles of pharmacology and to drug classes of particular relevance to the physician assistant. The course provides the student with a fundamental knowledge of basic pharmacodynamics, pharmacokinetic and pharmacogenomics principles, basic properties, mechanisms, uses, adverse effects and interactions of relevant drugs

PAS 6208 Clinical Medicine II for the Physician Assistant: 8 hours.
Eight lecture hours. Continuation of Clinical Medicine I, designed to prepare the student for supervised clinical practice

PAS 6213 Behavioral Medicine for the Physician Assistant: 3 hours.
Three hours lecture. Provides students with the ability to explore the psychological parameters of human behavior and identify the relationship of psychological distress to physical illness. Students study the processes underlying human growth and development across the lifespan and how they apply to healthcare

PAS 6223 Clinical Specialties for the Physician Assistant: 3 hours.
Three hours lecture. Introduces the physician assistant student to the clinical specialties of surgery, pediatrics, and women's health. Students are instructed in the foundations of these specialties to prepare for clinical practice. Students learn basic knowledge and clinical skills unique to these practices

PAS 8301 Seminar I for the Physician Assistant: 1 hour.
One hour credit. (Fifteen contact hours). This discussion-based course meets one day each month (5 hrs.), when students return from clinical rotations for one semester. Students present clinical cases, reflect on clinical experiences, and prepare for the next clinical experience

PAS 8302 Clinical Transitions for the Physician Assistant: 2 hours.
Two hours lecture. Physician assistant students gain knowledge and skills that facilitate the transition from the academic to clinical environment and promote high quality clinical education experiences. Practical learning that simulates the diversity of health care disciplines and services encountered during clinical training

PAS 8303 Pediatric Rotation for the Physician Assistant: 3 hours.
Three hours clinical instruction. Designed to give students exposure to the spectrum of pediatric practice, including care of infants, children and adolescents in routine well-child care, inpatient and outpatient care and care of acute and chronic illnesses

PAS 8305 Internal Medicine Rotation for the Physician Assistant: 5 hours.
Five hours clinical instruction. Designed to introduce the student to healthcare in the Internal Medicine Practice setting. The student will be given the opportunity to understand and manage patient problems in an internal medicine setting

PAS 8308 Family Medicine Rotation for the Physician Assistant: 8 hours.
Eight hours clinical instruction. Designed to give students exposure to the spectrum of family medicine outpatient medical practice. Students will learn the principles of routine (well) care, management of acute illnesses, and management of chronic/multiple diagnoses for patients across the lifespan

PAS 8312 Summative Experience for the Physician Assistant: 2 hours.
Two hours lecture. Course curriculum required by accrediting body. The program must conduct and document a summative evaluation of each student within the final four months of the program to verify that each student is prepared to enter clinical practice

PAS 8313 Women's Health Rotation for the Physician Assistant: 3 hours.
Three hours clinical instruction. Designed to give the student practical experience in the diagnosis, evaluation, and management of problems and issues associated with women’s health care

PAS 8321 Seminar II for the Physician Assistant: 1 hour.
One hour lecture. (Fifteen Contact Hours). This discussion-based course meets one day (5 hours) each month per semester when students return from clinical rotations. Students present clinical cases, reflect on clinical experiences, and prepare for the next clinical experience

PAS 8322 Capstone Project for the Physician Assistant: 2 hours.
Two hours lecture. Course provides opportunity for completion of a Capstone project with tools and strategies addressed in Research Methods I and II

PAS 8323 General Surgery Rotation for the Physician Assistant: 3 hours.
Three hours clinical instruction. Designed to give students experience in the care of patients undergoing elective or acute surgical procedures. The student will perform preoperative history and physicals; assist, when able, in the operating room; be involved in immediate postoperative care and stabilization; and assist with postoperative care

PAS 8325 Preceptorship Rotation for the Physician Assistant: 5 hours.
Five hours clinical instruction. The preceptorship is designed to give the student additional clinical exposure in a medical/surgical area of their choosing. This opportunity is often used by preceptors to assess the student for possible employment. May be completed in any specialty or subspecialty chosen by the student

PAS 8331 Seminar III for the Physician Assistant: 1 hour.
One hour lecture. (Fifteen Contact Hours). This discussion-based course meets one day (5 hours) each month per semester when students return from clinical rotations. Students present clinical cases, reflect on clinical experiences, and prepare for the next clinical experience

PAS 8343 Behavioral Medicine Rotation for the Physician Assistant: 3 hours.
Three hours clinical instruction. Designed to give practical experience in the diagnosis and management of patients needing behavioral therapy in the clinical setting. Students will develop their ability to recognize psychiatric diagnoses in both the outpatient and inpatient settings

PAS 8353 Emergency Medicine for the Physician Assistant: 3 hours.
Three hours clinical instruction. Designed to introduce the student to health care in Emergency Medicine. The student is given the opportunity to understand and manage patient problems across the lifespan in an emergency care setting

Physical Education Courses

PE 1000 Play, Fitness & Physical Activity: 1-3 hours.
One to three hours lecture. The examination and practice of play, fitness and physical activity as an important element of human culture and as means to health and well-being

PE 1001 Racquetball: 1 hour.
Two hours laboratory. Emphasis is on rules, knowledge, skill development, and team tactics necessary to successfully participate in an organized game

PE 1011 Badminton: 1 hour.
Two hours laboratory. Emphasis is on rules, knowledge, skill development, and team tactics necessary to successfully participate in an organized game

PE 1021 Volleyball: 1 hour.
Two hours laboratory. Emphasis is on rules, knowledge, and team tactics necessary to successfully participate in an organized game

PE 1031 Tennis: 1 hour.
Two hours laboratory. Emphasis is on rules, knowledge, skill development, and team tactics necessary to successfully participate in an organized game

PE 1041 Aerobics: 1 hour.
Two hours laboratory. Assessment, development and maintenance of physical fitness through aerobic exercises to music

PE 1051 Beginning Karate: 1 hour.
Two hours laboratory. The essential principles both physical and psychological will be stressed. Emphasis is placed on organization of karate techniques and training methods

PE 1061 Fitness Walking/Jogging: 1 hour.
Two hours laboratory. An exercise and activity class emphasizing walking and/or jogging to develop and maintain fitness, weight control and flexibility

PE 1071 Soccer: 1 hour.
Two hours laboratory. Emphasis is on rules, knowledge, skill development, and team tactics necessary to successfully participate in an organized game

PE 1081 Beginning Golf: 1 hour.
Two hours laboratory. Instruction and laboratory experience in the development of individual skills for participation in golf

PE 1091 Contemporary Dance: 1 hour.
Two hours laboratory. A non-majors course designed to develop skills in contemporary dance routines

PE 1101 Karate for Intermediates: 1 hour.
(Prerequisite: PE 1051 or prior Karate experience having attained the rank of Yellow Belt). Two hours laboratory. Current events of the American Karate world. Advanced free-fighting and self-defense techniques. Interpretation of forms

PE 1151 Strength Training: 1 hour.
Two hours laboratory. Principles and practice of strength training with particular emphasis on specificity of design and management of load, repetitions, rate of exercise and recovery time

PE 1161 Modern Dance: 1 hour.
(Prerequisite: Consent of Department Head). Two hours laboratory. Laboratory experience including a wide range of fundamental exercises and techniques, movement patterns, and dance choreography

PE 1171 Strength and Conditioning: 1 hour.
Two hours laboratory. This course is designed to provide a comprehensive overview of strength and conditioning techniques and principles for the design of a personal fitness program

PE 1191 First Year Seminar: 1 hour.
One hour lecture. First-year seminars explore a diverse array of topics that provide students with an opportunity to learn about a specific discipline from skilled faculty members

PE 1201 Adapted Physical Activity: 1 hour.
(Prerequisite: Permission of the instructor). Two hours laboratory. Designed one-to-one or small group instruction in various fitness programs, lifetime sport activities and a weight room program

PE 1243 Methods of Teaching Games and Sports: 3 hours.
Three hours lecture. Theory of and participation in non-traditional games and sports. Classroom management and methods of teaching games and sports, skill analysis, discussion of developmental appropriateness, basic rules and teaching strategies

PE 1253 Methods of Teaching Lifetime Activities: 3 hours.
Two hours lecture. Two hours laboratory. Methods and theories of teaching physical education. Introduction of concepts, activities, technologies and teaching methods for strength training and aerobic conditioning

PE 1263 Methods of Teaching Rhythms: 3 hours.
Two hours lecture. Two hours laboratory. Instruction, demonstration, skill development, and teaching techniques in the areas of square, folk, and contemporary dance

PE 1323 History and Appreciation of Dance: 3 hours.
Two hours lecture, two hours laboratory. A course designed to acquaint students with the history of dance and to develop a greater sensitivity, appreciation and understanding of this art

PE 1371 Advanced Strength and Conditioning: 1 hour.
Two hours laboratory.This course provides advanced training principles and activities for strength and conditioning programs, including a combination of aerobic fitness and strength/power activities

PE 2990 Special Topics in Physical Education: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

PE 3033 Basketball and Football Officials: 3 hours.
Three hours lecture. A course designed to qualify officials for major sports officiating in Mississippi. Rules, rules interpretation, and mechanics of officiating for the major sports are covered

PE 3111 Advanced Military Physical Fitness: 1 hour.
One hour laboratory. Develops the physical fitness required of an officer in the Army through emphasis of individual fitness programs and examination of the role of exercise/ fitness. (May be taken up to four times for credit)

PE 3123 Principles and Methods of Elementary School Health and Physical Education: 3 hours.
Three hours lecture. Principles and methods of teaching health and physical education to elementary school children

PE 3133 Adapted Physical Education: 3 hours.
(Prerequisite: Consent of the instructor). Two hours lecture. Two hours laboratory. A study of the psychomotor domain with emphasis on identifying handicapping problems and developing instructional strategies for remediating these problems

PE 3153 Methods of Elementary Physical Education: 3 hours.
Three hours lecture. Designed to provide students with knowledge and practical experience that will enhance their effectiveness in teaching physical education to pre-school through fifth grade students

PE 3163 Sport Psychology: 3 hours.
Three hours lecture. This course will provide students with an overview of the theories and research related to sport and exercise behavior. Topics to be covered include the history of sport psychology, behavioral principles, anxiety, motivation, leadership, group dynamics, gender, and personality

PE 3223 Motor Development and Movement: 3 hours.
(Prerequisite: BIO 1004). Three hours lecture. A study of human motor development and movement. Introducing the terminology, principles to motor development and the concept of developmentally appropriate practice as it relates to physical education, exercise science, human development, special education, elementary education and other health-related fields

PE 3313 Sport Physiology: 3 hours.
(Prerequisite: EP 3304). Three hours lecture. Physiological concepts of sports performance including methods, bioenergetics, ergogenics, and nutrition for athletes are examined

PE 3433 General Safety Methods: 3 hours.
(Prerequisite: Junior standing). Three hours lecture. Analysis of accident causes and methods of prevention. Home, school, industry, farm, water, pedestrian problems considered

PE 3533 Coaching Sports: 3 hours.
Three hours lecture. Coaching fundamentals and team play; team organization, offensive and defensive sets, and rules of play in football, basketball and baseball

PE 4000 Directed Individual Study in Physical Education: 1-6 hours.
Hours and credits to be arranged

PE 4163 Principles and Methods of Secondary School Health and Physical Education: 3 hours.
(Prerequisite: Senior or graduate standing). Three hours lecture. This course is designed to emphasize contemporary teaching methods in all areas of health and physical education in the secondary school

PE 4173 Tests and Measurements in Health and Physical Education: 3 hours.
Three hours lecture. Test construction, test administration, and statistical procedures for evaluating test results in health and physical education

PE 4283 Sport Biomechanics: 3 hours.
(Prerequisite:BIO 1004 or BIO 3004).Three hour lecture. Systematic qualitative and quantitative analyses of selected athletic performances and other human movements utilizing observation and other measurement techniques to detect and correct faults that limit performance during sport activity

PE 4413 Basic Drive and Traffic Safety Education I: 3 hours.
(Prerequisite: Valid driver's license, two years driving experience). Three hours lecture. Critical analysis of traffic accidents, attitude factors, essential knowledge of automobile operations and traffic laws and regulations for developing driving skills

PE 4423 Drive and Traffic Education Methods II: 3 hours.
(Prerequisite: PE 4413). Two hours lecture. Two hours laboratory. Professional preparation of college students who plan to teach driver education in secondary schools; methods of teaching and administering program; scheduling, financing, and public relations

PE 4533 Developing Coaching Expertise: 3 hours.
Three hours lecture. This course will provide undergraduate and graduate students with an in depth analysis of the growth and development of coaches from novice to expert

PE 4853 Motor Learning and Skill Analysis: 3 hours.
(Prerequisite: PE 3223). Three hours lecture. Designed to provide students with an understanding of how movement is produced and controlled and the principles that underlie the learning of motor skills

PE 4873 Professional Seminar in Physical Education: 3 hours.
(Prerequisites: Admission to Teacher Education and senior standing). Three hours lecture. A seminar dealing with legal, professional, administrative, and curriculum issues as they relate to physical education and athletics in the schools

PE 4883 School Health Education: 3 hours.
(Prerequisite: Admission to Teacher Education). Three hours lecture. Preparation for prospective teachers in planning, implementing, and evaluating all aspects of comprehensive school health education

PE 4886 Teaching Internship in Physical Education: 6 hours.
(Prerequisite: Admission to Teacher Education, minimum grade point average of 2.5 overall and in major, and completion of all professional education courses with a C or better). Supervised observation and directed teaching in respective field of endorsement

PE 4896 Teaching Internship in Physical Education: 6 hours.
(Prerequisite:Admission to Teacher Education, minimum grade point average of 2.5 overall and in major, and completion of all professional education courses with a C or better). Supervised observation and directed teaching in respective field of endorsement

PE 4990 Special Topics in Physical Education: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

PE 6163 Principles and Methods of Secondary School Health and Physical Education: 3 hours.
(Prerequisite: Senior or graduate standing). Three hours lecture. This course is designed to emphasize contemporary teaching methods in all areas of health and physical education in the secondary school

PE 6353 Developing Coaching Expertise: 3 hours.

PE 6533 Developing Coaching Expertise: 3 hours.
Three hours lecture. This course will provide undergraduate and graduate students with an in depth analysis of the growth and development of coaches from novice to expert

PE 6883 School Health Education: 3 hours.
(Prerequisite: Admission to Teacher Education). Three hours lecture. Preparation for prospective teachers in planning, implementing, and evaluating all aspects of comprehensive school health education

PE 6990 Special Topics in Physical Education: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

PE 7000 Directed Individual Study in Physical Education: 1-6 hours.
Hours and credits to be arranged

PE 8000 Thesis Research/ Thesis in Physical Education: 1-13 hours.
Hours and credits to be arranged

PE 8113 Curriculum Construction in Physical Education: 3 hours.
Three hours lecture. PE 8113 is a course designed to cover Basic considerations and issues of standards-based physical education curricula in the K-12 schools. Emphasis on program development and design; instructional process; program implementation; and evaluation widely used curricula in physical education

PE 8163 Seminar in Physical Education: 3 hours.
Three hours lecture. The course gives a complete review of current literature in Physical Education

PE 8203 Psychological Aspects of Sport: 3 hours.
Three hours lecture. An in-depth analysis of the principles, methods and outcomes of sport psychology

PE 8990 Special Topics in Physical Education: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

Physics Courses

PH 1001 Introduction to Physics: 1 hour.
(Prerequisite: Consent of instructor). One hour lecture. Only open to Freshmen and transfer physics majors or prospective majors. Introduction to the profession. Historical perspectives. Use of microcomputers in physics

PH 1011 Physical Science Laboratory I: 1 hour.
Two hours laboratory. Experiments in mechanics, sound. light, electricity and magnetism. Recommended lab to accompany PH 1013

PH 1013 Physical Science Survey I: 3 hours.
(Prerequisite: C' or better in MA 0103, or MA 1313, or MA 1323, or ACT math subscore of at least 19). Three hours lecture. Topics include mechanics, sound, light, electricity, and magnetism. Recommended laboratory PH 1011

PH 1021 Physical Science Laboratory 2: 1 hour.
Two hours laboratory. Experiments in chemistry,heat, astronomy, and energy. Recommended lab to accompany PH 1023. Could also accompany PH 1063

PH 1023 Physical Science Survey 2: 3 hours.
Three hours lecture. Topics include chemistry, heat, astronomy, and energy. PH 1013 is not a prerequisite. Recommended laboratory PH 1021

PH 1031 First Year Seminar: 1 hour.
One hour lecture. First-year seminars explore a diverse arrary of topics that provide students with an opportunity to learn about a specific discipline from skilled faculty members

PH 1063 Descriptive Astronomy: 3 hours.
Three hours lecture. Night observation. The solar system; description and evolution of stars and the universe; methods of obtaining astronomical information; applications of astronomical knowledge

PH 1113 General Physics I: 3 hours.
(Prerequisite: MA 1323 or an ACT Math subscore of at least 26). Two hours lecture, one hour drill, two hours laboratory). Non-calculus-based study of the fundamental laws of mechanics and fluids

PH 1123 General Physics II: 3 hours.
(Prerequisite: PH 1113 or PH 2213). Two hours lecture, one hour drill, two hours laboratory. Noncalculus-based study of thermal physics, waves, sound, and light

PH 1133 General Physics III: 3 hours.
(Prerequisite: PH 1113 or PH 2213). Two hours lecture, one hour drill, two hours laboratory. Noncalculus-based study of electricity and magnetism and selected topics in modern physics

PH 2213 Physics I: 3 hours.
(Prerequisite:Grade of C or better in MA 1713). Three hours lecture. Calculus-based course emphasizing Newtonian mechanics and conservation laws. Honors section available

PH 2223 Physics II: 3 hours.
(Prerequisites: PH 2213 and MA 1723). Two hours lecture, one hour recitation, two hours laboratory. Calculus-based introduction to gravitation, electricity and magnetism. Laboratory emphasizes concepts of force and motion, conservation laws, and simple electrical circuits. Honors section available

PH 2233 Physics III: 3 hours.
(Prerequisite: PH 2223). Two hours lecture, one hour recitation, two hours laboratory. Calculus-based course in simple harmonic motion, waves, optics and an introduction to modern physics. Laboratory emphasizes optics and electronics

PH 2990 Special Topics in Physics and Astronomy: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

PH 3063 Astrophysics: 3 hours.
(Co-requisite: PH 3613 or consent of instructor). Three hours lecture. Quantitative treatment of astronomical topics. Stellar evolution, black holes, neutron stars, gamma-ray bursts, Newtonian and relativistic cosmologies, Big Bang

PH 3613 Modern Physics: 3 hours.
(Prerequisites: PH 2233 or PH 1133; MA 2733, or registration in MA 2733). Three hours lecture. Special relativity, quantum physics, atomic, nuclear, and solid state physics

PH 4000 Directed Individual Study in Physics: 1-6 hours.

PH 4113 Electronic Circuits for Scientists: 3 hours.
(Prerequisites: PH 1133 or PH 2223 and MA 2733). Two hours lecture and three hours laboratory. DC and AC circuits. Resistors, capacitors, inductors, diodes and transistors in basic analog circuits. Topics include filters, tuned circuits, power supplies, amplifiers and oscillators

PH 4143 Intermediate Laboratory: 3 hours.
(Prerequisite: Junior standing). Six hours laboratory. Data analysis. Experiments in classical and modern physics. Scientific report writing

PH 4152 Modern Physics Laboratory: 2 hours.
(Prerequisite: PH 4143/6143) Six hours Laboratory.Scientific report writing. Experiments in modern physics, optics, and classical physics

PH 4213 Intermediate Mechanics I: 3 hours.
(Prerequisites: PH 1133 or PH 2233 and MA 2733). Three hours lecture. Plane statics and dynamics of particles and systems of particles with emphasis on both derivation and application of principles involved

PH 4223 Intermediate Mechanics II: 3 hours.
(Prerequisite: PH 4213/6213). Three hours lecture. Statics and dynamics of particles in three dimensional space using vector notation; Lagrange's equations; introduction to the special theory of relativity

PH 4323 Electromagnetic Fields I: 3 hours.
(Prerequisites: PH 1133 or PH 2233 and MA 2743). Three hours lecture. Electrostatics, dielectrics, electric current, magnetostatics, electromagnetic induction, magnetic properties of matter

PH 4333 Electromagnetic Fields II: 3 hours.
(Prerequisite: PH 4323/6323). Three hours lecture. Maxwell's equations, propagation of electromagnetic waves in free space and in matter, reflection and refraction, radiation

PH 4413 Thermal Physics: 3 hours.
(Prerequisites: PH 3613 and MA 2743). Three hours lecture. Thermodynamics, kinetic theory, classical and quantum statistical mechanics. Applications to low temperature physics, solid-state physics and plasma physics

PH 4433 Computational Physics: 3 hours.
(Prerequisite: MA 3253, Co-requisite: PH 3613). Three hours lecture. An Introduction to modern methods of computational physics including topics such as solution of differential equations, numerical matrix methods, and Monte Carlo simulation

PH 4513 Intermediate Optics: 3 hours.
(Prerequisites: PH 1123 or PH 2233 and MA 2733). Three hours lecture. Geometrical optics and physical optics

PH 4613 Nuclear and Particle Physics: 3 hours.
(Prerequisite: PH 3613). Three hours lecture. Special theory of relativity; nuclear structure; radioactivity; nuclear reactions; nuclear forces; fission; fusion; high energy particle and astrophysics. Experimental apparatuses and techniques

PH 4713 Introduction to Quantum Mechanics: 3 hours.
(Prerequisites: PH 3613 and MA 3253). Three hours lecture. Principles of quantum mechanics, Heisenberg uncertainty principle, angular momentum; the Schrodinger wave equation in one and three dimensions; the one-electron atom

PH 4723 Applications of Quantum Mechanics: 3 hours.
(Prerequisite: PH 4713/6713). Three hours lecture. Introduction to perturbation theory and quantum statistics. Topics selected from multi-electron atoms, diatomic molecules, solid state and nuclear physics

PH 4813 Introduction to Solid State Physics: 3 hours.
(Prerequisite: PH 3613). Three hours lecture. Crystal structure, crystal diffraction and the reciprocal lattice, crystal binding, free electron gas, energy bands, and semiconductors

PH 4990 Special Topics in Physics and Astronomy: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

PH 6013 Selected Topics in Physics for Teachers: 3 hours.
Two hours classwork, three hours laboratory. For teachers. Basic concepts of physics. Will include discussion and clarification of material from currently adopted public school textbooks

PH 6113 Electronic Circuits for Scientists: 3 hours.
(Prerequisites: PH 1133 or PH 2223 and MA 2733). Two hours lecture and three hours laboratory. DC and AC circuits. Resistors, capacitors, inductors, diodes and transistors in basic analog circuits. Topics include filters, tuned circuits, power supplies, amplifiers and oscillators

PH 6143 Intermediate Laboratory: 3 hours.
(Prerequisite: Junior standing). Six hours laboratory. Data analysis. Experiments in classical and modern physics. Scientific report writing

PH 6213 Intermediate Mechanics I: 3 hours.
(Prerequisites: PH 1133 or PH 2233 and MA 2733). Three hours lecture. Plane statics and dynamics of particles and systems of particles with emphasis on both derivation and application of principles involved

PH 6223 Intermediate Mechanics II: 3 hours.
(Prerequisite: PH 4213/6213). Three hours lecture. Statics and dynamics of particles in three dimensional space using vector notation; Lagrange's equations; introduction to the special theory of relativity

PH 6323 Electromagnetic Fields I: 3 hours.
(Prerequisites: PH 1133 or PH 2233 and MA 2743). Three hours lecture. Electrostatics, dielectrics, electric current, magnetostatics, electromagnetic induction, magnetic properties of matter

PH 6333 Electromagnetic Fields II: 3 hours.
(Prerequisite: PH 4323/6323). Three hours lecture. Maxwell's equations, propagation of electromagnetic waves in free space and in matter, reflection and refraction, radiation

PH 6413 Thermal Physics: 3 hours.
(Prerequisites: PH 3613 and MA 2743). Three hours lecture. Thermodynamics, kinetic theory, classical and quantum statistical mechanics. Applications to low temperature physics, solid-state physics and plasma physics

PH 6433 Computational Physics: 3 hours.
(Prerequisite: MA 3253, Co-requisite: PH 3613). Three hours lecture. An Introduction to modern methods of computational physics including topics such as solution of differential equations, numerical matrix methods, and Monte Carlo simulation

PH 6513 Intermediate Optics: 3 hours.
(Prerequisites: PH 1123 or PH 2233 and MA 2733). Three hours lecture. Geometrical optics and physical optics

PH 6613 Nuclear and Particle Physics: 3 hours.
(Prerequisite: PH 3613). Three hours lecture. Special theory of relativity; nuclear structure; radioactivity; nuclear reactions; nuclear forces; fission; fusion; high energy particle and astrophysics. Experimental apparatuses and techniques

PH 6713 Introduction to Quantum Mechanics: 3 hours.
(Prerequisites: PH 3613 and MA 3253). Three hours lecture. Principles of quantum mechanics, Heisenberg uncertainty principle, angular momentum; the Schrodinger wave equation in one and three dimensions; the one-electron atom

PH 6723 Applications of Quantum Mechanics: 3 hours.
(Prerequisite: PH 4713/6713). Three hours lecture. Introduction to perturbation theory and quantum statistics. Topics selected from multi-electron atoms, diatomic molecules, solid state and nuclear physics

PH 6813 Introduction to Solid State Physics: 3 hours.
(Prerequisite: PH 3613). Three hours lecture. Crystal structure, crystal diffraction and the reciprocal lattice, crystal binding, free electron gas, energy bands, and semiconductors

PH 6990 Special Topics in Physics and Astronomy: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

PH 7000 Directed Individual Study in Physics and Astronomy: 1-6 hours.
Hours and credits to be arranged

PH 8000 Thesis Research/ Thesis in Physics and Astronomy: 1-13 hours.
Hours and credits to be arranged

PH 8213 Mechanics: 3 hours.
(Prerequisite: A good undergraduate training in physics and mathematics consent of instructor). Coordinate systems and transformations, tensors, and matrices. Particle dynamics, variational principles, Lagrange's and Hamilton's equations, rigid body motion, special relativity in mechanics

PH 8233 Methods of Theoretical Physics I: 3 hours.
(Prerequisite: Consent of instructor). Topics will vary, but may include linear vector spaces, tensor analysis, group theory, function space and orthogonal polynomials

PH 8243 Methods of Theoretical Physics II: 3 hours.
(Prerequisite: PH 8233). Topics will vary but may include analytic functions, Fourier analysis, Green's functions, integral transforms, partial differential equations and integral equations

PH 8313 Electromagnetic Theory: 3 hours.
(Prerequisite: PH 4333 or equivalent). Maxwell's theory of electromagnetism. Boundary value problems in electrostatics, static multipole moments, theory of dielectrics, magnetostatics, plane electromagnetic waves, simple radiating systems. (Same as ECE 8313)

PH 8323 Electromagnetic Theory II: 3 hours.
Three hours lecture. Maxwell's theory of electromagnetism: Electromagnetic waves,time-dependent multipole, expansions, radiation, waveguides, scattering diffraction, and specialty relativity . (Same as ECE 8323)

PH 8513 Statistical Mechanics: 3 hours.
(Prerequisites: PH 4713 and PH 4413). Classical and quantum statistical mechanics and statistical interpretation of thermodynamic quantities

PH 8613 Nuclear Physics I: 3 hours.
(Prerequisite: PH 4723). Nuclear two-body problem and nuclear forces. Interpretation of experimental data through a study of nuclear models. Nuclear reactions and spectroscopy

PH 8743 Quantum Mechanics I: 3 hours.
(Prerequisites: PH 4723 and MA 3313). Schrodinger theory, spherically symmetric systems, matrix mechanics, angular momentum and spin, time-independent perturbation theory

PH 8753 Quantum Mechanics II: 3 hours.
(Prerequisite: PH 8743). Time dependent perturbation theory, identical particles, theory of scattering, quantum-statistical mechanics, introduction of relativistic quantum mechanics, quantum electrodynamics

PH 8803 Molecular Structure: 3 hours.
(Prerequisites: PH 8743). Theory of rotational, vibrational and electronic spectra of molecules. Molecular structure and determination of molecular constants

PH 8883 Many Body Theory: 3 hours.
(Prerequisite: PH 8753) Three hours lecture. Boson and Fermion Green functions at zero and finite temperature, electron conductivity, interacting electron gas, magnetism, electron-phonon interaction and superconductivity

PH 8990 Special Topics in Physics and Astronomy: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

PH 9000 Dissertation Research /Dissertation in Physics: 1-13 hours.
Hours and credits to be arranged

Philosophy Courses

PHI 1001 First Year Seminar: 1 hour.
One hour lecture. First-year seminars explore a diverse array of topics that provide students with an opportunity to learn about a specific discipline from skilled faculty members

PHI 1103 Introduction to Philosophy: 3 hours.
Three hours lecture. An introduction to the major ideals and methods of philosophy. At least one philosophic classic is read, usually one suitable for orientation purposes. Honors section available

PHI 1113 Introduction to Logic: 3 hours.
Three hours lecture. A development of practical ability in the major forms of valid argumentation concluding with a consideration of the universal and existential operators

PHI 1123 Introduction to Ethics: 3 hours.
Three hours lecture. A study of the specific considerations, such as facts, feelings, principles, values and conflicts, which influence the making of concrete moral decisions

PHI 2990 Special Topics in Philosophy and Religion: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

PHI 3013 Business Ethics: 3 hours.
Three hours lecture. A philosophical exploration of how to recognize, analyze, and implement ethical decisions within the multivalued contexts of the various fields of business

PHI 3023 History of Western Philosophy I: 3 hours.
Three hours lecture. A survey of major figures and movements from early Greek philosophy to the late Middle Ages

PHI 3033 History of Western Philosophy II: 3 hours.
Three hours lecture. A survey of major figures from the Renaissance through contemporary philosophy

PHI 3043 Philosophy of History: 3 hours.
Three hours lecture. A survey of the central figures and problems in the philosophy of history, with attention to both the ontology and epistemology of the past

PHI 3113 Philosophy of Law: 3 hours.
Three hours lecture. A philosophical analysis of the concepts of law, liberty, justice, responsibility, and punishment from the rival ethical perspectives of deterrence and retribution

PHI 3123 Philosophy of Religion: 3 hours.
(Prerequisite: Three hours of philosophy). Three hours lecture. A critical inquiry into the rational justification of central theistic beliefs, with emphasis on the traditional philosophical arguments for and against the existence of God. (Same as REL 3123)

PHI 3133 Seminar in Philosophy: 3 hours.
Three hours lecture. (Prerequisites: Completion of fifteen hours of PHI courses, including PHI 1113). The study of selected philosophy essays and practice in philosophical composition

PHI 3143 Nineteenth Century Philosophy: 3 hours.
(Prerequisites: Three hours of philosophy or Junior standing or consent of instructor). Three hours lecture. A study of the major philosophical movements and figures of the nineteenth century

PHI 3153 Aesthetics: 3 hours.
Three hours lecture. Theories of art and the nature of beauty, designed to enhance the student's sensitivity and cultural awareness

PHI 3163 Moral Philosophy: 3 hours.
Three hours lecture. An examination of the central issues in morality, including problems with justification, normative prescriptions, and objectivity

PHI 3173 Social and Political Philosophy: 3 hours.
Three hour lecture. An examination of the central issues in social and political philosophy, including justification of the state, and obligations to obey the law

PHI 3183 African American Philosophy: 3 hours.
Three hours lecture. The philosophical analysis of the relation between the African American lived experience of oppression and the desired experience of freedom

PHI 3313 Environmental Ethics: 3 hours.
Three hours lecture. A philosophical examination of the relationship between humanity and the natural world

PHI 3323 Medical Ethics: 3 hours.
Three hours lecture. A philosophical study of situations requiring ethical decision making in the area of medicine. (Sophomore standing or above, or consent of instructor)

PHI 3413 Epistemology: 3 hours.
(Prerequisite: Junior standing or consent of instructor). Three hours lecture. A historical and topical examination of rival traditions and theories of inquiry. Special attention will be paid to the concepts of knowledge, warrant, and truth

PHI 4000 Directed Individual Study in Philosophy and Religion: 1-6 hours.
(Prerequisite: PHI 1103, PHI 1113, or PHI 1123). Hours and credits to be arranged

PHI 4013 Contemporary Philosophy and Architecture: 3 hours.
Prerequisite: Junior standing or consent of instrutor. Three hours lecture. An examination of modernism and postmodernism in philosophy and architecture (Same as ARC 4333/6333)

PHI 4123 Contemporary Continental Philosophy: 3 hours.
(Prerequisite: 3 hours PHI or junior standing). Three hours lecture. A survey of the most important trends in 20th and 21st century continental philosophy and their influence on culture, politics, art, architecture, and literature

PHI 4143 Philosophy of Science: 3 hours.
Three hours lecture. An analytical examination of the essential ingredients of science concluding with the effect of scientific values on contemporary culture

PHI 4163 Research Ethics: 3 hours.
Three hours lecture. This course examines ethical issues that are generated by the tensional balancing of personal consideration against public good in the practice of scientific research

PHI 4173 Philosophy of Biology: 3 hours.
An examination of the central philosophical issues in the life sciences, particularly biological laws, classifications, selection, and reductionism

PHI 4223 Philosophy of Cognitive Science: 3 hours.
Three hours lecture. Exploration of the philosophical issues arising in cognitive science

PHI 4990 Special Topics in Philosophy and Religion: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

PHI 6013 Contemporary Philosophy and Architecture: 3 hours.
Prerequisite: Junior standing or consent of instrutor. Three hours lecture. An examination of modernism and postmodernism in philosophy and architecture (Same as ARC 4333/6333)

PHI 6123 Contemporary Continental Philosophy: 3 hours.
(Prerequisite: 3 hours PHI or junior standing). Three hours lecture. A survey of the most important trends in 20th and 21st century continental philosophy and their influence on culture, politics, art, architecture, and literature

PHI 6143 Philosophy of Science: 3 hours.
Three hours lecture. An analytical examination of the essential ingredients of science concluding with the effect of scientific values on contemporary culture

PHI 6163 Research Ethics: 3 hours.
Three hours lecture. This course examines ethical issues that are generated by the tensional balancing of personal consideration against public good in the practice of scientific research

PHI 6173 Philosophy of Biology: 3 hours.
An examination of the central philosophical issues in the life sciences, particularly biological laws, classifications, selection, and reductionism

PHI 6223 Philosophy of Cognitive Science: 3 hours.
Three hours lecture. Exploration of the philosophical issues arising in cognitive science

PHI 6990 Special Topics in Philosophy and Religion: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

PHI 7000 Directed Individual Study in Philosophy and Religion: 1-6 hours.
Hours and credits to be arranged

PHI 8101 Case Studies in Scientific Research Ethics: 1 hour.
One hour seminar. Practical application of research ethics using case scenarios to direct discussions on data ownership, plagiarism, authorship, conflict of interest, and other regulatory compliance related issues. (Same as CVM 8101)

PHI 8990 Special Topics in Philosophy and Religion: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

Physiology Courses

PHY 4335 Anat Physiol Insects: 5 hours.

PHY 6112 Equine Reproduction: 2 hours.
One hour lecture. Two hour laboratory. A study of equine reproductive activities and the principles for managing the mare,stallion and foal. (Same as ADS 4112/6112)

PHY 6114 Cellular Physiology: 4 hours.
(Same as BIO 4114/6114)

PHY 6335 Anatomy & Physiology of Insects: 5 hours.
(Prerequisite: EPP 4154/6154). (Same as EPP 6335.)

PHY 6514 Animal Physiology: 4 hours.
(Same as BIO 4514/6514)

PHY 6611 Practice in Physiology of Reproduction: 1 hour.
(Prerequisite: BIO 1134 or BIO 1144). Three hours laboratory. Artificial insemination and rectal palpation of reproductive organs of cattle; semen collection, evaluation, processing and handling. (Same as ADS 4611/6611)

PHY 6613 Physiology of Reproduction: 3 hours.
(Prerequisite: BIO 1134 or BIO 1144). (Same as ADS 4613/6613)

PHY 6623 Physiology of Lactation: 3 hours.
(Prerequisite: BIO 1134 or BIO 1144). Two hours lecture. Two hours laboratory. Anatomy, physiology, and pathology of the mammary gland; nervous and hormonal control of lactation, theories of milk secretion, modern methods of milking, factors affecting lactation. (Same as ADS 4623/6623)

PHY 6844 Avian Anatomy and Physiology: 4 hours.
Three hours lecture. Two hours laboratory. Anatomy and physiology of the fowl with emphasis on morphology, structure, and function of the avian body. (Same as PO 6844)

PHY 6990 Special Topics in Animal Physiology: 1-9 hours.
Credit and title to be arranged. This course if to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one tltle within two academic years)

PHY 7000 Directed Individual Study in Animal Physiology: 1-6 hours.
Hours and credits to be arranged

PHY 8000 Thesis Research/ Thesis in Animal Physiology: 1-13 hours.
Hours and credits to be arranged

PHY 8133 Endocrinology: 3 hours.
Three hours lecture. Study of factors by which cells communicate: the traditional endocrine system, autocrine, paracrine and neurocrine secretion. Physiological and genetic control of synthesis and secretion

PHY 8243 Advanced Physiology of Reproduction: 3 hours.
(Prerequisite: ADS 4613/6613). (Same as ADS 8243)

PHY 8333 Advanced Toxicology: 3 hours.
(Prerequisite: EPP 4543/6543 or elementary biochemistry). (Same as EPP 8333)

PHY 8811 Animal Physiology Seminar: 1 hour.
Four one-hour seminars

PHY 8841 Animal Physiology Seminar: 1 hour.
Four one-hour seminars

PHY 8990 Special Topics in Animal Physiology: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

PHY 9000 Dissertation Research /Dissertation in Physiology: 1-13 hours.
Hours and credits to be arranged

Poultry Science Courses

PO 1013 Animal Agriculture & Society: Food for Thought: 3 hours.
Three hours lecture. Exploration of connections between animal agriculture and society including animal production systems, food and fiber production, consumer perceptions and addressing concerns regarding the growing world population. (Same as ADS 1013)

PO 2990 Special Topics in Poultry Science: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

PO 3011 Seminar: 1 hour.
One hour lecture. Preparation and presentation of specially assigned current problems in poultry science

PO 3021 Seminar: 1 hour.
One hour seminar. Preparation and presentation of specially assigned current problems in poultry science

PO 3103 Genetics I: 3 hours.
Two hours lecture. Two hours laboratory. (Prerequisites: MA 1313 or higher, BIO 1134 or higher or BIO 2113 or higher). Principles of heredity, genetic material, and gene expressions. (Same as BIO 3103, GNS 3103)

PO 3313 Commercial Poultry Production: 3 hours.
Three hours lecture. An introduction to practical management problems encountered in the production of commercial eggs, broiler production, and breeding flocks

PO 3353 Poultry Production Internship: 3 hours.
(Prerequisite: Consent of instructor). Structured, progressive experiential learning with the live production division of a poultry integrator

PO 3363 Poultry Processing Internship: 3 hours.
(Prerequisite: Consent of instructor). Structured, progressive experiential learning with the processing of a poultry integrator

PO 3423 Poultry Evaluation I: 3 hours.
Two Hour Lecture. Two Hour Laboratory. Grading/evaluation of live poultry and market products using different methods and grading scales based on USDA standards and the American Standard of Perfection

PO 3433 Poultry Evaluation II.: 3 hours.
Two Hour Lecture. Two Hour Laboratory. (Prerequisites: PO 3423 or consent of instructor). Grading/evaluation of live poultry including turkeys and market products using different methods and grading scales based on USDA standards and cull factors

PO 4000 Directed Individual Study in Poultry Science: 1-6 hours.
Hours and credits to be arranged

PO 4031 Seminar: 1 hour.
One hour seminar. Preparation and presentation of specially assigned current problems in poultry science

PO 4033 Diseases of Poultry: 3 hours.
Two hours lecture. Two hours laboratory. Survey of cause, effects, diagnosis, prevention, and control of common poultry diseases

PO 4041 Seminar: 1 hour.
One hour seminar. Preparation and presentation of specially assigned current problems in poultry science

PO 4313 Management of Commercial Layers: 3 hours.
Three hours lecture. Management of laying flocks as related to production of edible eggs; including housing, cage design, equipment, feeding techniques, lighting, molting and other factors involved with efficient production

PO 4324 Avian Reproduction: 4 hours.
Three hours lecture. Two hours laboratory. Principles of avian reproductive physiology and applications in poultry management to maximize reproductive performance. Reproductive characteristics of several bird species are included

PO 4334 Broiler Production: 4 hours.
Three hours lecture. Two hours laboratory. Practical management problems encountered in the production of broilers including breeding, housing, brooding, diseases, and feeding; field trips to intensified broiler areas

PO 4413 Poultry Nutrition: 3 hours.
Three hours lecture. Study of the digestion, absorption, and metabolism of nutrients in avian species. Special emphasis is given to practical nutritional needs of commercial poultry flocks

PO 4423 Feed Manufacturing: 3 hours.
Two hours lecture. Two hours laboratory. Mill design and equipment; procurement, storage and quality control for ingredients and complete feeds; formulation of practical type poultry rations

PO 4512 Poultry Products Safety and Sanitation: 2 hours.
(Prerequisite: Junior standing or greater.) Two hours lecture. Poultry product safety hazards, food safety systems (HACCP), principles and practices of food sanitation related to poultry products and poultry safety regulations (same as FNH 4512/6512)

PO 4514 Poultry Processing: 4 hours.
Three hours lecture. Two hours laboratory. Study of commercial poultry processing including poultry inspection, regulations, processed poultry products, egg processing, and food safety. (Same as FNH 4514/6514)

PO 4844 Avian Anatomy and Physiology: 4 hours.
Three hours lecture. Two hours laboratory. Anatomy and physiology of the fowl with emphasis on morphology, structure, and function of the avian body. (Same as PHY 6844)

PO 4990 Special Topics in Poultry Science: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

PO 6313 Management of Commercial Layers: 3 hours.
Three hours lecture. Management of laying flocks as related to production of edible eggs; including housing, cage design, equipment, feeding techniques, lighting, molting and other factors involved with efficient production

PO 6324 Avian Reproduction: 4 hours.
Three hours lecture. Two hours laboratory. Principles of avian reproductive physiology and applications in poultry management to maximize reproductive performance. Reproductive characteristics of several bird species are included

PO 6334 Broiler Production: 4 hours.
Three hours lecture. Two hours laboratory. Practical management problems encountered in the production of broilers including breeding, housing, brooding, diseases, and feeding; field trips to intensified broiler areas

PO 6413 Poultry Nutrition: 3 hours.
Three hours lecture. Study of the digestion, absorption, and metabolism of nutrients in avian species. Special emphasis is given to practical nutritional needs of commercial poultry flocks

PO 6423 Feed Manufacturing: 3 hours.
Two hours lecture. Two hours laboratory. Mill design and equipment; procurement, storage and quality control for ingredients and complete feeds; formulation of practical type poultry rations

PO 6512 Poultry Products Safety and Sanitation: 2 hours.
(Prerequisite: Junior standing or greater.) Two hours lecture. Poultry product safety hazards, food safety systems (HACCP), principles and practices of food sanitation related to poultry products and poultry safety regulations (same as FNH 4512/6512)

PO 6514 Poultry Processing: 4 hours.
Three hours lecture. Two hours laboratory. Study of commercial poultry processing including poultry inspection, regulations, processed poultry products, egg processing, and food safety. (Same as FNH 4514/6514)

PO 6523 Advanced Poultry Processing: 3 hours.
(Prerequisite:PO 4513/6513). Three hours lecture. Study of preparation of poultry for consumption including all pertinent technology, product flow, equipment and applicable regulations

PO 6833 Avian Anatomy: 3 hours.
Two hours lecture. Two hours laboratory. Anatomy of the fowl with emphasis on morphology and organization of the avian body structures

PO 6844 Avian Anatomy and Physiology: 4 hours.
Three hours lecture. Two hours laboratory. Anatomy and physiology of the fowl with emphasis on morphology, structure, and function of the avian body. (Same as PHY 6844)

PO 6990 Special Topics in Poultry Science: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

PO 7000 Directed Individual Study in Poultry Science: 1-6 hours.
Hours and credits to be arranged

PO 8000 Thesis Research/ Thesis in Poultry Sciences: 1-13 hours.
Hours and credits to be arranged

PO 8011 Graduate Seminar in Poultry Science: 1 hour.
One-credit course for Master's graduate students. Focus will include, but will not be limited to, exploration of current and historical literature; in-depth analysis of selected research topics/journal articles; discussion of relevant analytical techniques in research; preparation and presentation of original research. May be taken 4 times for credit

PO 8111 Advanced Graduate Seminar in Poultry Science: 1 hour.
One-credit course for Poultry Science doctoral students. Focus will include, but will not be limited to, exploration of current/historical literature; in-depth analysis of research topics/journal articles; discussion of relevant analytical techniques in research; preparation and presentation of original research. May be taken 6 times for credit

PO 8123 Methods in Nutrition Research: 3 hours.
Two hours lecture. Three hours laboratory. Application of analytical methods used in research techniques;practice in writing research proposals, conducting a research project, and preparing research finds suitabale for scientific publication

PO 8443 Avian Nutrition: 3 hours.
Three hours lecture. Study of the nutrient functions, dietary relationships deficiency symptons,distribution in feedstuffs and quantitative requirements of nutrients

PO 8990 Special Topics in Poultry Sciences: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

PO 9000 Dissertation Research /Dissertation in Poultry: 1-13 hours.
Hours and credits to be arranged

Public Policy Administration Courses

PPA 7000 Directed Individual Study in Political Science and Public Administration: 1-6 hours.
Hours and credits to be arranged

PPA 8103 Seminar in Public Administration: 3 hours.
(Prerequisite: consent of instructor). Detailed examination of the major elements of the field of public administration, with particular emphasis on emerging trends in the field

PPA 8123 State Government Administration: 3 hours.
Seminar in the practice and principles of state government administration, including judicial and legislative administration

PPA 8133 City and County Management: 3 hours.
Seminar focus on small town and county management in quasi-bureaucratic settings. Detailed consideration of problem solving capabilities as they relate to different forms of local government structure

PPA 8143 Civil Rights and Affirmative Action: 3 hours.
(Prerequisite: consent of the instructor). A seminar which examines the various civil rights laws and acts and court decisions related to affirmative action in the workplace and public policy

PPA 8153 Seminar in Privatization: 3 hours.
(Prerequisite: Consent of instructor). Three hours lecture. Examination of the theoretical and practical issues of public-private partnerships

PPA 8183 Local Government Finance: 3 hours.
Three hours lecture. Local government finance principles including revenue policy and administration, budgeting, and financial management at the subnational level

PPA 8193 Seminar in Intergovernmental Relations: 3 hours.
(Prerequisite: 9 hours of graduate work). Three hours lecture. Examines the current day functioning of the American federal system. Focuses upon national-state, national-local, interstate, state-local and interlocal relationships as well as fiscal federalism

PPA 8400 Public Administration Internship: 1-6 hours.
Hours and credits to be arranged. (Prerequisite: Consent of instructor). Individual work experience under faculty guidance in a governmental or public agency. Scholarly paper on approved topic required. Student evaluations are assigned on satisfactory/unsatisfactory basis

PPA 8653 Health Policy and the Health Policy Process: 3 hours.
Comprehensive review of health policy and the policy process in the U.S., illustrating how public policies affect the health care sector

PPA 8703 Government Organization and Administrative Theory: 3 hours.
Detailed survey of organization theories and managerial techniques as they relate to the public sector

PPA 8713 Public Personnel Management: 3 hours.
Course considers major developments in the issues and management practices affecting personnel such as affirmative action, unions, and civil service reforms

PPA 8723 Public Budgeting and Financial Management: 3 hours.
Analysis of current financial and budgetary techniques as they apply to the public sector. Capital budgeting, debt administration, and financial management

PPA 8733 Public Program Evaluation: 3 hours.
Techniques and analytical methods of assessing governmental program success. Special emphasis will be given to program designs, data collection and quantitative applications

PPA 8743 Administrative Law: 3 hours.
(Prerequisite: PS 4703/6703). Three hours lecture. An environmental study of the legal nature and effect of policies and attitudes of government toward business, especially the power and limitations of regulatory agencies

PPA 8763 Local Government Planning: 3 hours.
Three hours lecture. Introduction to the public management practice of planning with an emphasis on local government processes, politics and techniques for planning

PPA 8803 Research Methods for Public Affairs: 3 hours.
Stress on research designs and methods, survey research and other techniques and measuring data. Focus on applied approaches for mathematically analyzing governmental data. (Same as PS 8803)

PPA 8833 Systems in Public Administration: 3 hours.
(Prerquisite: BIS 1013, CS 1013, TKT 4273/6273, or equivalent). Three hours lecture. Role of automated, computer-based systems in govenment; their impact on the workplace, government institutions, and the governmental systems; selected topical applications

PPA 8903 Public Policy: 3 hours.
Nature, determinants, and effects of public goods and services; policy formulation and implementation; seminar emphasizes contemporary issues such as strategic planning, leadership, and managerial control. (Same as PS 8903)

PPA 8983 Integrative Capstone: 3 hours.
(Prerequisites:Consent of Instructor).Three hours lecture. A groups-based consulting project on an issue currently facing a governmental or nonprofit organization. (should be taken in terminal semester of degree program)

PPA 8990 Special Topics in Political Science and Public Administration: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

PPA 9000 Dissertation Research /Dissertation in Public Policy and Administration: 1-13 hours.
Hours and credits to be arranged

PPA 9103 American Political Institutions: 3 hours.
(Prerequisite: consent of instructor). Three hours lecture. Seminar addressing theoretical and empirical issues pertaining to the dynamics of American political institutions. (Same as PS 9103)

PPA 9203 Constitutional and Political Framework of Public Administration.: 3 hours.
Three hours lecture. Examination of public administration from a constitutional perspective; social, political, historical, and institutional impact of governments in democratic societies

PPA 9303 Foundations of Public Administration: 3 hours.
Three hours lecture. Examination of the theory of public administration with emphasis on over-arching metaphors of public administration that often guide both theory and practice

PPA 9403 Comparative Public Administration: 3 hours.
Examination of the different ways public administration is practiced around the world

PPA 9413 Normative Analysis of American Public Policy: 3 hours.
Three hours lecture. Seminar exploring issues in American politics and public policy from a normative perspective. (Same as PS 9413)

PPA 9503 Qualitative Research for Public Affairs: 3 hours.
Three hours lecture. Examination of qualitative research, and the application of qualitative social research in public administration and public policy

PPA 9603 Scope of American Public Administration: 3 hours.
(Prerequisite: Consent of the Instructor). Seminar dealing with historical background and development of American Public Administration as a discipline, and a review and analysis of current topics in the field

PPA 9613 Rural Government Administration I: Theoretical and Environmental Aspects: 3 hours.
(Prerequisite: Consent of the Instructor). A seminar dealing with the principles of democratic theory as they affect the role of government and citizens' participation in government in rural settings

PPA 9623 Rural Government Administration II: Implementation Aspects: 3 hours.
(Prerequisite: Consent of the Instructor). A seminar dealing with program implementation by rural and small town governments, including adoption and diffusion of management innovation by public administrators as change agents

PPA 9703 Organization Behavior in the Public Sector: 3 hours.
(Prerequisite: Consent of the Instructor). Seminar dealing with major topics, issues, concerns of individual and group behavior in public organizations

PPA 9713 Administration of Human Resources in a Public Sector Environment: 3 hours.
(Prerequisite: Consent of the Instructor). A seminar dealing with current basic research concerning management in the public sector environment

PPA 9723 Public Budgeting Processes and Their Policy Implications: 3 hours.
(Prerequisite: Consent of Instructor). A seminar dealing with norms and behaviors of budget process participants, their impact on budget policy and implications of budget actions for democratic government

PPA 9803 Multivariate Analysis and Design for Public Affairs: 3 hours.
(Prerequisite: Consent of the Instructor). A seminar dealing with public policy formulation, implementation and evaluation which stresses the theoretical aspects of policy processes

PPA 9813 Advanced Quantitative Analysis for Public Affairs: 3 hours.
(Prerequisite: PPA 9803 or consent of instructor).Three hours lecture. Examination and application of advanced statistical techniques for quantitative research in public affairs

PPA 9893 American Political Behavior: 3 hours.
(Prerequsite: PPA 9803 and consent of instructor). Three hours lecture. Seminar in American political behavior including public opinion, socialization, participation, and voting behavior. (Same as PS 9893)

PPA 9903 Public Policy Formulation and Implementation: 3 hours.
(Prerequisite: Consent of the Instructor). A seminar dealing with public policy formulation implementation and evaluation which stresses the theoretical aspects of policy processes

PPA 9993 Research Design and Philosophy of Science: 3 hours.
Three hours lecturs. A hands on examination of applied and theoretical approaches to research design in public policy research

Political Science Courses

PS 1001 First Year Seminar: 1 hour.
One hour lecture. First-year seminars explore a diverse array of topics that provide students with an opportunity to learn about a specific discipline from skilled faculty members

PS 1113 American Government: 3 hours.
Three hours lecture. The evolution of American governmental institutions and the organization and operation of the U.S. government today

PS 1182 Introduction to Law I: 2 hours.
Two hours lecture. A broad overview of the American legal system as encountered in one year of law school: legal history, deductive thinking, and critical analysis

PS 1192 Introduction to Law II: 2 hours.
Two hours lecture. This course examines the modern practice of law in a variety of practice areas via lectures by attorneys who regularly practice in those areas

PS 1311 Mississippi Model Security Council Research I: 1 hour.
Hours arranged. Development of "delegate preparation materials" and Model Security Council booklet for use in Mississippi Model Security Council

PS 1313 Introduction to International Relations: 3 hours.
Three hours lecture. This course examines through case studies the basic concepts of international politics such as nation, state, power, influence, bipolarity, deterrence, non-alignment, alliances and diplomacy

PS 1321 Mississippi Model Security Council Internship I: 1 hour.
Hours arranged. Internship experience as participant in Mississippi Model Security Council as delegate, county advisor, council president, or United Nations Secretary General

PS 1331 Mississippi Model Security Council Research II: 1 hour.
(Prerequisite: PS 1311 or PS 1321.) Hours arranged. Development of "delegate preparation materials" and Model Security Council booklet for use in Mississippi Model Security Council

PS 1341 Mississippi Model Security Council Internship II: 1 hour.
(Prerequisite: PS 1321.) Hours arranged. Internship experience as participant in Mississippi Model Security Council as delegate, country adviser, council president, or United Nations Secretary General

PS 1351 Mississippi Model Security Council Research III: 1 hour.
(Prerequisite: PS 1331 or PS 1341.) Hours arranged. Development of "delegate preparation materials" and Model Security Council booklet for use in Mississippi Model Security Council

PS 1361 Mississippi Model Security Council Internship III: 1 hour.
(Prerequisite: PS 1341) Hours arranged. Internship experience as participant in Mississippi Model Security Council as delegate, country adviser, council president, or United Nations Secretary General

PS 1371 Mississippi Model Security Council Research IV: 1 hour.
(Prerequisite: PS 1351 or PS 1361.) Hours arranged. Development of "delegate preparation materials" and Model Security Council booklet for use in Mississippi Model Security Council

PS 1381 Mississippi Model Security Council Internship IV: 1 hour.
(Prerequisite: PS 1361). Hours arranged. Internship experience as participant in Mississippi Model Security Council as delegate, country adviser, council president, or United Nations Secretary General

PS 1513 Comparative Government: 3 hours.
Three hours lecture. Survey of various governmental systems

PS 2403 Introduction to Political Theory: 3 hours.
Three hours lecture. An examination of selected thinkers, text, ideas, and periods in the history of political thought

PS 2703 Introduction to Public Policy: 3 hours.
(Prerequisite: PS 1113 or consent of instructor). Three hours lecture. An examination of the formulation and implementation of public policy and the roles of government institutions and actors in policy making

PS 2713 Introduction to Engineering and Public Policy: 3 hours.
(Prerequisite:EN 1113 or equivalent). Three hours lecture. A multidisciplinary analysis of public policy issues involving engineering and technolgy and use of policy science to explore complex policy issues. (Same as GE 2713)

PS 2990 Special Topics in Political Science: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

PS 3013 Political Leadership: 3 hours.
Analysis of political leadership, emphasizing characteristics of successful leadership and opportunities available to students for leadership in the political arena

PS 3033 Gender and Politics: 3 hours.
Three hours lecture. Examines gender differences in law, the courts, voting, political involvement, approaches to political power, and violence. (Same as GS 3033)

PS 3043 Modern Civil Rights Law: 3 hours.
Prerequisite: Sophomore standing or higher. Three hours lecture. An analysis of American law as a tool for social change in education, employment, public accommodations, and voting rights. (Same as AAS 3043)

PS 3063 Constitutional Powers: 3 hours.
(Prerequisite: Junior standing or consent of instructor). Three hours lecture. A study of the constitutional system; constitutional modification, federal courts and judicial review, separation of powers, federalism, congressional and presidential powers, and contract clause

PS 3073 Civil Liberties: 3 hours.
(Prerequisite: Junior standing or consent of instructor). Three hours lecture. Political and civil rights; individual rights, national security and individual freedom; war and the Constitution; equal protection, criminal procedure; administrative process

PS 3183 Law and Politics: 3 hours.
(Prerequisite: Sophomore standing or consent of instructor). Three hours lecture. Study of the politics of selected features of the legal system and the political usages of law as a tool for social control

PS 3193 Intergovernmental Relations: 3 hours.
(Prerequisites: PS 1113 or PS 1193). Three hours lecture. Historical, prescriptive, and empirical studies of federalism with emphasis upon recent development in federal-state-local relationships

PS 4000 Directed Individual Study in Political Science: 1-6 hours.
(Prerequisite: Junior standing). Hours and credits to be arranged

PS 4093 Senior Honors Thesis in Political Science: 3 hours.
(Prerequisites: PS 4083, and consent of department head). Thesis writing on the topic researched in PS 4083

PS 4113 State Government: 3 hours.
(Prerequisites: PS 1113 and junior standing). Three hours lecture. Comparative study of the structures, functions, and policies of the various American states

PS 4163 The Chief Executive: 3 hours.
(Prerequisites: PS 1113 and junior standing). Three hours lecture. Historical and comparative study of chief executives, including governors and mayors, with special emphasis on the Presidency

PS 4173 Legislative Process: 3 hours.
(Prerequisites: PS 1113 and junior standing). Three hours lecture. Organization, work, and procedure of legislative bodies and other law-making authorities

PS 4183 Judicial Process: 3 hours.
(Prerequisites: PS 1113 and junior standing). Three hours lecture. Process and structure of the American legal system and the role of the judiciary

PS 4193 Mississippi Judicial System: 3 hours.
(Prerequisite: PS 1113). Three hours lecture. A study of the interrelationship of the actors within Mississippi's judicial system. Emphasis is placed on judicial decision-making, selection process, and resource allocation

PS 4203 Political Parties and Electoral Problems: 3 hours.
(Prerequisites: PS 1113 and junior standing). Three hours lecture. The development and operation of American political parties, with special attention to electoral problems

PS 4213 Campaign Politics: 3 hours.
(Prerequisites: PS 1113 and junior standing). Three hours lecture. Survey of the theory of political campaigns, the resources and techniques they employ, and their effects on voters

PS 4223 The Dynamics of American Democracy: 3 hours.
(Prerequisites: PS 1113 and junior standing). Three hours lecture. Analysis of factors affecting the translation of public opinion into public policy within a national institutional context

PS 4233 Interest Groups: 3 hours.
(Prerequisite: PS 1113 or consent of instructor). Three hours lecture. The study of the politics and practices of interest groups within the American political process

PS 4253 Southern Politics: 3 hours.
(Prerequisites: PS 1113 and junior standing). Three hours lecture. Survey of the politics of the Confederate and border states, examination of party development, leadership, and impact of the South in national politics

PS 4263 Mississippi Government and Politics: 3 hours.
(Prerequisites: PS 1113 and junior standing). Three hours lecture. A study of the organization, powers, processes and politics of state government in Mississippi

PS 4273 African American Politics: 3 hours.
(Prerequisite: PS 1113). Three hours lecture. The nature, processes, structures, and functions of African American politics in the domestic arena and international arena. (Same as AAS 4273)

PS 4283 Public Opinion: 3 hours.
(Prerequisites: PS 1113 and junior standing). Three hours lecture. The nature of public opinion; the influence of the press; pressure groups and propaganda techniques; the means of political communication

PS 4293 Political Behavior: 3 hours.
(Prerequisites: PS 1113 and junior standing). Three hours lecture. Examination of the foundations and types of individual political activity; emphasis on psychological, social and cultural factors influencing personal political behavior

PS 4303 U.S. Foreign Policy: 3 hours.
(Prerequisite: PS 1313 or consent of instructor). Three hours lecture. An examination of the decision-making processes, institutions and structures that influence the formulation and execution of past and current U.S. foreign policy

PS 4313 Principles of International Law: 3 hours.
(Prerequisites: PS 1313 and junior standing). Three hours lecture. The nature, sources and scope of international law as found in custom, international convention, the teachings of authoritative writers, and judicial decisions

PS 4323 International Organization: 3 hours.
(Prerequisites: PS 1313 and junior standing). Three hours lecture. A study of the development of international organization and a concentration on the structure, processes and functions of the United Nations and its specialized agencies

PS 4333 Theories of International Relations: 3 hours.
(Prerequisites: PS 1313 and junior standing). Three hours lecture. This course critically examines traditional and contemporary, normative and behavioral, qualitative and quantitative theories of international relations

PS 4343 International Conflict and Security: 3 hours.
(Prerequisite: PS 1313 and junior standing). Three hours lecture. Study of the patterns, causes, and consequences of armed conflict between nations

PS 4353 International Political Economy: 3 hours.
Prerequisite: PS 1313 or consent of instructor). Three hours lecture. This course will systematically address the relationship between politics and economics in an international context

PS 4363 International Peacekeeping and Post-Conflict Nation: 3 hours.
(Prerequisite:PS 1313 or PS 1513). An examination of peacekeeping operations with an emphasis on identifying reason for success or failure and on the role of international actors in rebuilding war-torn societies

PS 4383 National Security Policy: 3 hours.
(Prerequisites: PS 1313 and junior standing). Three hours lecture. An examination of those policies and issues affecting American national security with attention to the institutions, organizations and processes which shape them

PS 4393 The Global Context: 3 hours.
(Prerequisite: Junior standing or consent of instructor). Three hours lecture. Examination of selected issues of current importance to international relations

PS 4403 Ancient & Medieval Political Theory: 3 hours.
(Prerequisites: PS 1113 and junior standing). Three hours lecture. Political philosophy from Plato and Aristotle through the Middle Ages

PS 4423 20th Century Political thought: 3 hours.
(Prerequisites: PS 2403 or consent of instructor). Three hours lecture. An examination of selected thinkers, text, and ideas in the history of political thought from the late 19th Century to the present

PS 4433 American Political Theory: 3 hours.
(Prerequisites: PS 1113 and junior standing). Three hours lecture. Major schools of political thought in America from the colonial to the contemporary period

PS 4453 Western Political Theory: Plato to Marx: 3 hours.
(Prerequisites: PS 1113 or PS 2403). Three hours lecture. Chronological survey of central thinkers, texts, ideas, and movements in Western political thought from Plato to Marx

PS 4464 Political Analysis: 4 hours.
(Prerequisite: 6 hours in political science). Three hours lecture. Two hours laboratory. Philosophical and historical foundations of political analysis; constructing and executing research designs; measuring political phenomena; elementary methods of data analysis; games, models, and simulations

PS 4543 African Politics: 3 hours.
(Prerequisites: PS 1513 and junior standing). Three hours lecture. contemporary sub-Saharan Black Africa; prospects for political development or decay. Role of parties, bureaucracy and military and their relation to elite formation and political integration. (Same as AAS 4543)

PS 4553 Western European Politics: 3 hours.
(Prerequisites: PS 1513 and junior standing). Three hours lecture. Governments of countries of Western Europe with emphasis upon England, France, Germany, Italy, and Spain

PS 4593 Latin American Politics: 3 hours.
(Prerequisites: PS 1513 and junior standing). Three hours lecture. Background, organization, and structure of the governments of the various Latin American countries

PS 4613 Civil Wars and Intra-State Conflicts: 3 hours.
(Prerequisite: Junior standing or greater, PS 1513, and/or Instructor Consent). Three hours lecture. This course examines the causes of intra-state conflicts in the modern world as well as possible solutions

PS 4623 Politics of the Third World: 3 hours.
(Prerequisites: PS 1513 and junior standing). Three hours lecture. Political processes of developing nations. Prospects for development and decline considered. Relationship between political, economic and cultural dimension during the process of social change

PS 4633 Democracy and Democratization: 3 hours.
(Prerequisite: PS 1513). Three hours lecture. This course examines aspects of the evolution of democracy from its historical and conceptual origins to the present,explores democracy's classical definition and its understanding within modern political science, and considers efforts to measure democracy

PS 4643 Ethnic Conflict: 3 hours.
(Prerequisite: Junior standing, PS 1513, or Instructor Consent). This course will examine theories of ethno-genesis, the political significance of identity, and the ways that ethnicity impacts conflict processes

PS 4653 Nationalism: 3 hours.
(Prerequisite: Junior standing, PS 1513, or instructor consent). The course examines the theories underlying contemporary notions of nationalism and the ways that nationalist ideologies manifest in comparative politics

PS 4703 Principles of Public Administration: 3 hours.
(Prerequisites: PS 1113 and junior standing). Three hours lecture. Bureaucratic politics and power; administrative responsibility in a pluralist democracy; public administrative organization; public personnel administration; and public budgeting

PS 4743 Environmental Policy: 3 hours.
(Prerequisite: PS 1113, PS 2703, or consent of instructor). Three hours lecture. History, development, and practice of environmental policy in the United States

PS 4990 Special Topics in Political Science: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

PS 6163 The Chief Executive: 3 hours.
(Prerequisites: PS 1113 and junior standing). Three hours lecture. Historical and comparative study of chief executives, including governors and mayors, with special emphasis on the Presidency

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(Prerequisites: PS 1113 and junior standing). Three hours lecture. Organization, work, and procedure of legislative bodies and other law-making authorities

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(Prerequisites: PS 1113 and junior standing). Three hours lecture. Process and structure of the American legal system and the role of the judiciary

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(Prerequisites: PS 1113 and junior standing). Three hours lecture. The development and operation of American political parties, with special attention to electoral problems

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(Prerequisites: PS 1113 and junior standing). Three hours lecture. Survey of the theory of political campaigns, the resources and techniques they employ, and their effects on voters

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(Prerequisites: PS 1113 and junior standing). Three hours lecture. Analysis of factors affecting the translation of public opinion into public policy within a national institutional context

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(Prerequisite: PS 1113 or consent of instructor). Three hours lecture. The study of the politics and practices of interest groups within the American political process

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(Prerequisites: PS 1113 and junior standing). Three hours lecture. Survey of the politics of the Confederate and border states, examination of party development, leadership, and impact of the South in national politics

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(Prerequisites: PS 1113 and junior standing). Three hours lecture. The nature of public opinion; the influence of the press; pressure groups and propaganda techniques; the means of political communication

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PS 6303 US Foreign Policy: 3 hours.
(Prerequisite: PS 1313 or consent of instructor). Three hours lecture. An examination of the decision-making processes, institutions and structures that influence the formulation and execution of past and current U.S. foreign policy

PS 6313 Principles of International Law: 3 hours.
(Prerequisites: PS 1313 and junior standing). Three hours lecture. The nature, sources and scope of international law as found in custom, international convention, the teachings of authoritative writers, and judicial decisions

PS 6323 International Organization: 3 hours.
(Prerequisites: PS 1313 and junior standing). Three hours lecture. A study of the development of international organization and a concentration on the structure, processes and functions of the United Nations and its specialized agencies

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(Prerequisites: PS 1313 and junior standing). Three hours lecture. This course critically examines traditional and contemporary, normative and behavioral, qualitative and quantitative theories of international relations

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(Prerequisite: PS 1313 and junior standing). Three hours lecture. Study of the patterns, causes, and consequences of armed conflict between nations

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Prerequisite: PS 1313 or consent of instructor). Three hours lecture. This course will systematically address the relationship between politics and economics in an international context

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(Prerequisite:PS 1313 or PS 1513). An examination of peacekeeping operations with an emphasis on identifying reason for success or failure and on the role of international actors in rebuilding war-torn societies

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(Prerequisites: PS 1313 and junior standing). Three hours lecture. An examination of those policies and issues affecting American national security with attention to the institutions, organizations and processes which shape them

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(Prerequisite: Junior standing or consent of instructor). Three hours lecture. Examination of selected issues of current importance to international relations

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(Prerequisites: PS 1113 and junior standing). Three hours lecture. Political philosophy from Plato and Aristotle through the Middle Ages

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(Prerequisites: PS 2403 or consent of instructor). Three hours lecture. An examination of selected thinkers, text, and ideas in the history of political thought from the late 19th Century to the present

PS 6433 American Political Theory: 3 hours.
(Prerequisites: PS 1113 and junior standing). Three hours lecture. Major schools of political thought in America from the colonial to the contemporary period

PS 6453 Western Political Theory: Plato to Marx: 3 hours.
(Prerequisites: PS 1113 or PS 2403). Three hours lecture. Chronological survey of central thinkers, texts, ideas, and movements in Western political thought from Plato to Marx

PS 6543 African Politics: 3 hours.
(Prerequisites: PS 1513 and junior standing). Three hours lecture. contemporary sub-Saharan Black Africa; prospects for political development or decay. Role of parties, bureaucracy and military and their relation to elite formation and political integration. (Same as AAS 4543)

PS 6553 Western European Politics: 3 hours.
(Prerequisites: PS 1513 and junior standing). Three hours lecture. Governments of countries of Western Europe with emphasis upon England, France, Germany, Italy, and Spain

PS 6593 Latin American Politics: 3 hours.
(Prerequisites: PS 1513 and junior standing). Three hours lecture. Background, organization, and structure of the governments of the various Latin American countries

PS 6613 Civil Wars and Intra-State Conflicts: 3 hours.
(Prerequisite: Junior standing or greater, PS 1513, and/or Instructor Consent). Three hours lecture. This course examines the causes of intra-state conflicts in the modern world as well as possible solutions

PS 6623 Politics of the 3rd World: 3 hours.
(Prerequisites: PS 1513 and junior standing). Three hours lecture. Political processes of developing nations. Prospects for development and decline considered. Relationship between political, economic and cultural dimension during the process of social change

PS 6633 Democracy and Democratization: 3 hours.
(Prerequisite: PS 1513). Three hours lecture. This course examines aspects of the evolution of democracy from its historical and conceptual origins to the present,explores democracy's classical definition and its understanding within modern political science, and considers efforts to measure democracy

PS 6643 Ethnic Conflict: 3 hours.
(Prerequisite: Junior standing, PS 1513, or Instructor Consent). This course will examine theories of ethno-genesis, the political significance of identity, and the ways that ethnicity impacts conflict processes

PS 6653 Nationalism: 3 hours.
(Prerequisite: Junior standing, PS 1513, or instructor consent). The course examines the theories underlying contemporary notions of nationalism and the ways that nationalist ideologies manifest in comparative politics

PS 6703 Principles of Public Administration: 3 hours.
(Prerequisites: PS 1113 and junior standing). Three hours lecture. Bureaucratic politics and power; administrative responsibility in a pluralist democracy; public administrative organization; public personnel administration; and public budgeting

PS 6743 Environmental Policy: 3 hours.
(Prerequisite: PS 1113, PS 2703, or consent of instructor). Three hours lecture. History, development, and practice of environmental policy in the United States

PS 6990 Special Topics in Political Science: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

PS 7000 Directed Individual Study in Political Science: 1-6 hours.
Hours and credits to be arranged

PS 8000 Thesis Research/ Thesis in Political Science: 1-13 hours.
Hours and credits to be arranged

PS 8523 Reading in Local Government and Politics: 3 hours.
(Prerequisite: Consent of instructor). Reading assigned material in state government and politics and making reports thereon under the supervision of a member of the graduate faculty

PS 8533 Readings in National Government and Politics: 3 hours.
(Prerequisite: Consent of instructor). Reading assigned material in an appropriate subfield of national government and making reports thereon under the supervision of a member of the graduate faculty

PS 8543 Readings in Comparative Government and Politics: 3 hours.
(Prerequisite: Consent of instructor). Reading assigned material in an appropriate subfield of comparative government and making reports thereon under the supervision of a member of the graduate faculty

PS 8553 Readings in International Relations: 3 hours.
(Prerequisite: Consent of instructor). Reading assigned material in an appropriate subfield of international relations and making reports thereon under the supervision of a member of the graduate faculty

PS 8803 Research Methods in Public Affairs: 3 hours.
Stress on research designs and methods, survey research and other techniques and measuring data. focus on applied approaches for mathematically analyzing governmental data. (Same as PPA 8803)

PS 8903 Public Policy: 3 hours.
Nature, determinants, and effects of public goods and services; policy formulation and implementation; seminar emphasizes contemporary issues such as strategic planning, leadership, and managerial control. (Same as PPA 8903)

PS 8990 Special Topics in Political Science: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

PS 9103 American Political Institutions: 3 hours.
(Prerequisite: consent of instructor). Three hours lecture. Seminar addressing theoretical and empirical issues per- taining to the dynamics of American political institutions

PS 9893 American Political Behavior: 3 hours.
(Prerequisite: PPA 9803 and consent of instructor). Three hours lecture. Seminar in American political behavior including public opinion, socialization, participation, and voting behavior. (same as PPA 9893)

Plant and Soil Sciences Courses

PSS 1001 First Year Seminar: 1 hour.

PSS 1113 The Gardening Experience: 3 hours.
Two hours lecture. Two hours laboratory. Basic home garden design and practice toward growing your own food as well as creating simple outdoor plant aesthetics, planting and maintenance

PSS 1313 Plant Science: 3 hours.
Two hours lectures. Two hours laboratory. Scientific principles as the basis for practice in producing, handling, processing, marketing, and utilizing agronomic and horticultural plants

PSS 2111 Turf Management Lab: 1 hour.
Two hours laboratory. (Pre or co-requisites PSS 2113). This lab gives the student hands on experience with grass and weed identification and turfgrass management operations. Turfgrass calculations and equipment calibration will be mastered

PSS 2113 Introduction to Turfgrass Science: 3 hours.
Three hours lecture. Introduction to basic principles associated with the art and science of turfgrass management including propagation, establishment, renovation, and basic pest management

PSS 2343 Floral Design: 3 hours.
Two hours lecture. Two hours studio. The history and appreciation of floral art through exploration of design principles, plant materials, and compositional floral forms

PSS 2423 Plant Materials I: 3 hours.
Two hours lecture. Two hours laboratory. Characteristics, identification, and landscape uses of ornamental trees, shrubs, vines, flowers, and grasses adapted to Southern conditions

PSS 2543 Precision Agriculture I: 3 hours.
(Prerequisite: Sophomore standing and MA 1313). Two hours lecture. Two hours lab. This introductory course highlights site-specific crop management techniques. Topics include: Best Management Practices, economic and physical farm production models, and measurement of variability (same as ABE 2543)

PSS 2990 Special Topics in Plant and Soil Sciences: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

PSS 3043 Fruit Science: 3 hours.
Three hours lecture. Principles and practices involved in the production of deciduous trees and small fruits

PSS 3133 Introduction to Weed Science: 3 hours.
(Prerequisites: BIO 2113; CH 1213 or CH 1053). Three hours lecture. Managing weeds; basic weed biology; methods of controlling weeds, introductory herbicide technology, weed control systems, and the fate of herbicides in the environment

PSS 3301 Soils Laboratory: 1 hour.
(Prerequisite: Prior credit for/or current enrollment in PSS 3303.) Two hours laboratory. General treatment of selected phases of the subject matter

PSS 3303 Soils: 3 hours.
(Prerequisite: One semester (preferably two) of inorganic chemistry, CH 1043.) Three hours lecture. General treatment of all phases of the subject including lime and fertilizers

PSS 3313 Interior Planting Design and Maintenance: 3 hours.
Two hours lecture, two hours laboratory. Identification of plant materials for interior planting and principles of design, installation and maintenance, preparation of cost estimates and maintenance contracts for interior plantings

PSS 3323 Horticultural Impacts on Society: 3 hours.
Three hours lecture. An in-depth inquiry into the various areas of sociohorticulture and the impact people-plant interactions have on us and our society environmentally, socially, physically, and economically

PSS 3343 Wedding Floral Design: 3 hours.
(Prerequisite:PSS 2343). One hour lecture. Four hours laboratory. Application of design principles to wedding floral design

PSS 3411 Turf Seminar I: 1 hour.
One hour lecture. Class discussions with invited turf industry representatives. Topics will include Turf industry overview, turf career opportunities, writing a resume, and job interviews. May be repeated for credit more than once

PSS 3413 Floristry Internship: 3 hours.
(Pre-requisites: PSS 2343 and consent of Retail Floristry Management faculty). Individual work experience in a floral industry enterprise with an approved employer under faculty supervision

PSS 3421 Turn Seminar II: 1 hour.
One hour lecture. Review of turfgrass literature and presentations of scientific articles. May be repeated for credit more than once

PSS 3423 Agronomy Internship: 3 hours.
(Prerequisites: Junior standing and consent of Agronomy Faculty). Individual work experience in an agronomic or environmental organization with an approved employer under faculty supervision. This course may be repeated under approved conditions

PSS 3433 Horticulture Internship: 3 hours.
(Prerequisite: Consent of the Horticulture faculty). Individual work experience in a horticulture or allied industry organization with an approved employer under faculty supervision. This course may be repeated under approved conditions

PSS 3443 Permanent Botanical Floral Design: 3 hours.
(Prerequisite: PSS 2343). One hour lecture. Four hours laboratory. Application of design theory and principles to non-perishable, dried, and preserved floral products

PSS 3473 Plant Materials II: 3 hours.
(Prerequisite: PSS 2423). Two hours lecture. Two hours laboratory. Continuation of PSS 2423

PSS 3511 Seminar: 1 hour.
(Prerequisite: Nine credits in horticulture). One hour lecture. Review of horticultural literature, and presentation and discussion of scientific articles

PSS 3633 Sustainable and Organic Horticulture: 3 hours.
Three hours lecture. Online course. A study of the base knowledge of the principles and practices of sustainable, organic, and alternative horticulture management systems

PSS 3923 Plant Propagation: 3 hours.
(Prerequisite: BIO 21133). Two hours lecture. Two hours laboratory. Basic principles in the propagation of horticultural plants

PSS 4000 Directed Individual Study in Plant and Soil Sciences: 1-6 hours.
Hours and credits to be arranged

PSS 4023 Floral Management: 3 hours.
Three hours lecture. Online course. To identify and understand the basic principles necessary to operate wholesale and retail floral businesses

PSS 4043 International Horticulture: 3 hours.
(Prerequisite: PSS 1313). Three hours lecture. Online course. Worldwide overview of horticultural export, marketing, and international trade issues and individual country analyses of specific fruit, vegetable and ornamental crops

PSS 4073 Sympathy Floral Design: 3 hours.
(Prerequisite PSS 2343). Two hours lecture. Two hours laboratory. Application of design theory and principles used in sympathy work

PSS 4083 Floral Design for Special Events: 3 hours.
(Prerequisite: PSS 2343). Two hours lecture. Two hours laboratory. Planning and preparing of floral design compositions for use in special events

PSS 4093 Post-harvest Care of Cut Floral Crops: 3 hours.
Two hours lecture. Two hours laboratory. Identification, postharvest care and handling, sourcing and distribution of cut floriculture plant materials

PSS 4103 Forage and Pasture Crops: 3 hours.
(Prerequisite: Junior standing or permission of instructor). Two hours lecture . Two hours laboratory. Origin, uses, and ecology of forage plants, establishment, nutritive value, use, yield and maintenance of forage plants as related to morphology, physiology and pasture management

PSS 4113 Agricultural Crop Physiology: 3 hours.
Three hours lecture. Online course. Physiology of agricultural plants, including water relations, respiration, photosynthesis and growth and development

PSS 4123 Grain Crops: 3 hours.
(Prerequisite: Junior standing). Two hours lecture . Two hours laboratory. Corn, small grain, practice in commercial grading given in laboratory

PSS 4133 Fiber and Oilseed Crops: 3 hours.
(Prerequisite: Junior standing). Three hours lecture. Production and utilization of fiber and oilseed crops. Emphasis on cotton and soybean production in Mississippi

PSS 4143 Advanced Fruit Science: 3 hours.
(Prerequisite: PSS 3043 or equivalent). Three hours lecture. Three hours laboratory. A study of the latest advances in pomology and interpretation of current research findings and their application to modern fruit growing

PSS 4153 Sustainable Agroecology: 3 hours.
(Prerequisites: PSS 1313, PSS 3303). Online. Three hours lecture. The study of interactions between crops and abiotic and biotic environments. Emphasis is placed on quantitatively examining theory and principles for production, stability and sustainability of agricultural ecosystems

PSS 4223 Seed Production: 3 hours.
(Prerequisite: Junior standing). Two hours lecture . Two hours laboratory. Principles and practices, special emphasis on production of varietally pure seeds; agronomic factors in harvesting, drying, storage, treating and marketing seed

PSS 4313 Soil Fertility and Fertilizers: 3 hours.
(Prerequisites: PSS 3303 and Junior standing). Three hours lecture. Fundamentals and concepts of soil fertility; sources and responses of crops to plant nutrients; soil fertility evaluation and maintenance through fertilization

PSS 4314 Microbiology and Ecology of Soil: 4 hours.
(Prerequisite: PSS 3303). The study of diverse soil microbial communities and how they influence the structure and function of ecosystems (natural and managed) and the global biosphere (same as BIO 4324/6324)

PSS 4323 Soil Classification: 3 hours.
(Prerequisite: PSS 3303). Three hours lecture. Origin, development, and classification of soils including identification and field mapping

PSS 4333 Soil Conservation and Land Use: 3 hours.
(Prerequisite: PSS 3303). Two hours lecture . Three hours laboratory. Soil identification, topographic relationships and soil-water resources; their characteristics, quality, suitability, and management; conservation practices; using soil maps to determine land use

PSS 4341 Controlled Environment Agriculture Laboratory: 1 hour.
(Co-requisite: PSS 4343 for horticulture majors). Two hours laboratory. Online course. An experiential study of the principles and practices of controlled environments operation and management

PSS 4343 Controlled Environment Agriculture: 3 hours.
(Prerequisites: BIO 2113 and PSS 3303; Co-requisite for horticulture majors: PSS 4341). Three hours lecture. Online Course. A detailed review and explanation of principles and practices of controlled environments operation and management

PSS 4353 Arboriculture and Landscape Maintenance: 3 hours.
Two hours lecture. Two hours laboratory. Care of ornamental trees and shrubs, including pruning, bracing, surgery, transplanting, and fertilization

PSS 4363 Sustainable Nursery Production: 3 hours.
Prerequisites: PSS 2423 and PSS 3303). Three hours lecture. Online course. Nursery crop production including site selection and planning, plant nutrition, water relations and irrigation, shipping, and managing people and resources

PSS 4373 Geospatial Agronomic Management: 3 hours.
(Prerequisites PSS 3303, PSS 3133). Three hours lecture. This class will utilize the basic tools of geographical information systems and geographical positioning systems technologies to analyze agronomic case studies

PSS 4383 Agriculture Remote Sensing I: 3 hours.
(Prerequisites: MA 1313 and any GIS course or consent of instructor). Two hours lecture. Two hours lab. Online course. The study of whole-farm systems using data captured by camera, spectroscopic satellites, and telemetric sensors. Emphasis is placed on integrating multiple ag-related geospatial concepts into field-level production inquiries

PSS 4393 Agriculture Remote Sensing II: 3 hours.
(Prerequisite: PSS 4383/6383 or GR 4313/6313). Two hours lecture. Two hours laboratory. The advanced study of whole-farm systems using data captured by camera, spectroscopic satellites, and telemetric sensors. Emphasis is placed on integrating multiple ag-related geospatial concepts into field-level production inquiries

PSS 4411 Remote Sensing Seminar: 1 hour.
One hour lecture. (Prerequisite: Junior Standing). Lectures by remote sensing experts from industry, academia, and governmental agencies on next-generation systems, applications, and economic and societal impact of remote (Same as ECE 4411/6411, FO 4411/6411,GR 4411/6411)

PSS 4413 Turfgrass Management: 3 hours.
(Prerequisite: PSS 2113). Three hours lecture. An advanced comprehensive study of turfgrasses and the varied management strategies employed for golf and sports turf, home lawns, commercial turf, and sod production

PSS 4423 Golf Course Operations: 3 hours.
(Prerequisite: PSS 4413/6413). Two hours lecture . Two hours laboratory. Scheduling maintenance practices, golf course construction and renovation with emphasis on operation and care of specialized turf equipment

PSS 4443 Athletic Field Management: 3 hours.
(Prerequisite: PSS 3303, PSS 4413, or consent of instructor). Two hours lecture. Two hours laboratory. A comprehensive study of athletic fields, including construction, maintenence, renovation and management. Emphasis will be placed on interactions between soil properties and sports turf performance

PSS 4453 Vegetable Production: 3 hours.
(Prerequisite: PSS 3303 and PSS 3301 or BIO 4204). Two hours lecture. Two hours laboratory. Principles and practices of commercial vegetable production

PSS 4463 Community Food Systems: 3 hours.
Two hours lecture. Two hours laboratory. Exploration of aspects in community food systems including planning and design, sustainable growing practices, and human nutrition and health. (Same as LA 4463/6463 and FNH 4463/6463)

PSS 4483 Introduction to Remote Sensing Technologies: 3 hours.
(Prerequisite: Senior or graduate standing, or consent of instructor). Three hours lecture. Electromagnetic interactions, passive sensors, multispectral and hyperspectral optical sensors, active sensors, imaging radar, SAR, Lidar, digital image processing, natural resource applications (Same as ECE 4423/6423 and ABE 4483/6483)

PSS 4503 Plant Breeding: 3 hours.
(Prerequisite: PO 3103). Three hours lecture. Application of genetic principles to the improvement of economic crop plants; history, methods and procedures of plant breeding

PSS 4543 Precision Agriculture II: 3 hours.
(Prerequisite: PSS/ABE 2543 and Junior Standing). Two hours lecture. Two hours lab. Site-specific management techniques are examined. Continuous decision-making processes of farm production are integrated using a whole-system, geospatial approach (same as ABE 4543/6543)

PSS 4553 Plant Growth and Development: 3 hours.
Three hours lecture. Online course. Structure of plant developmental processes and how environmental factors interact to affect and control plant growth and development

PSS 4603 Soil Chemistry: 3 hours.
(Prerequisite: PSS 3303). Two hours lecture . Three hours laboratory. Fall semester, even-numbered years. Introduction to the basic chemistry of soils, including: mineral weathering/formation, ion exchange; adsorption, oxidation/reduction, acidity, salinity/alkalinity, and soil reactions of environmental importance

PSS 4613 Floriculture Crop Programming: 3 hours.
(Prerequisite: PSS 4343/6343). Two hours lecture. Three hours laboratory. A detailed study of the techniques involved in the production of the major commercial flower crops

PSS 4633 Weed Biology and Ecology: 3 hours.
(Prerequisites: BIO 2113. PSS 3133. Junior standing or consent of instructor). Two hours lecture. Two hours laboratory . Weed identification and population responses to agricultural production systems

PSS 4733 Ag. Flight Technologies I: 3 hours.
(Prerequisites: PSS 4383/6383 OR Instructor Approval). One hour lecture, four hours laboratory. The course instructs students in Small Unmanned Aerial Systems (sUAS) manual flight skills and the FAA Remote Pilot certification exam materials, and is a prerequisite course for advanced autonomous flight training (PSS 4743/6743)

PSS 4743 Ag. Flight Technologies II: 3 hours.
(Prerequisites: PSS 4733/6733 Ag. Flight Tech. I AND Instructor Approval). Three hours lecture. Enrolled students attend a week-long advanced autonomous flight workshop at Mississippi State University, Starkville campus. At week's end, students take the FAA Part 107 Remote Pilot Certification

PSS 4813 Herbicide Technology: 3 hours.
(Prerequisites: PSS 3133 and junior standing). Two hours lecture. Three hours laboratory. Classification and use of herbicides. A detailed look at herbicide application-field use and factors influencing herbicide activity. Credit may not be given for this course and PSS 4823/6823

PSS 4823 Turfgrass Weed Management: 3 hours.
(Prerequisite: PSS 3133 and Junior standing). Two hours lecture. Three hours laboratory. Classification and use of herbicides with emphasis on herbicides and emphasis on herbicides used in turfgrasses. Credit may not be given for this course and PSS 4813/6813

PSS 4990 Special Topics in Plant and Soil Sciences: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

PSS 6013 Principles of Floral Design: 3 hours.
Online course. 2hours lectures, 2 hours lab. Focus on design principles, value-added products and longevity

PSS 6023 Floral Management: 3 hours.
Three hours lecture. Online course. To identify and understand the basic principles necessary to operate wholesale and retail floral businesses

PSS 6033 Case Studies in Floral Management: 3 hours.
Three hours lecture. Online course. (Prerequisites: PSS 2343 or PSS 6013 and graduate standing). Identification of current problems in floral management and the development of strategies for their resolution

PSS 6043 International Horticulture: 3 hours.
(Prerequisite: PSS 1313). Three hours lecture. Online course. Worldwide overview of horticultural export, marketing, and international trade issues and individual country analyses of specific fruit, vegetable and ornamental crops

PSS 6073 Sympathy Floral Design: 3 hours.
(Prerequisite PSS 2343). Two hours lecture. Two hours laboratory. Application of design theory and principles used in sympathy work

PSS 6083 Floral Design for Special Events: 3 hours.
(Prerequisite: PSS 2343). Two hours lecture. Two hours laboratory. Planning and preparing of floral design compositions for use in special events

PSS 6093 Post-harvest Care of Cut Floral Crops: 3 hours.
Two hours lecture. Two hours laboratory. Identification, postharvest care and handling, sourcing and distribution of cut floriculture plant materials

PSS 6103 Forage and Pasture Crops: 3 hours.
(Prerequisite: Junior standing or permission of instructor). Two hours lecture . Two hours laboratory. Origin, uses, and ecology of forage plants, establishment, nutritive value, use, yield and maintenance of forage plants as related to morphology, physiology and pasture management

PSS 6113 Agricultural Crop Physiology: 3 hours.
Three hours lecture. Online course. Physiology of agricultural plants, including water relations, respiration, photosynthesis and growth and development

PSS 6123 Grain Crops: 3 hours.
(Prerequisite: Junior standing). Two hours lecture . Two hours laboratory. Corn, small grain, practice in commercial grading given in laboratory

PSS 6133 Fiber and Oilseed Crops: 3 hours.
(Prerequisite: Junior standing). Three hours lecture. Production and utilization of fiber and oilseed crops. Emphasis on cotton and soybean production in Mississippi

PSS 6143 Advanced Fruit Science: 3 hours.
(Prerequisite: PSS 3043 or equivalent). Three hours lecture. Three hours laboratory. A study of the latest advances in pomology and interpretation of current research findings and their application to modern fruit growing

PSS 6153 Sustainable Agroecology: 3 hours.
(Prerequisites: PSS 1313, PSS 3303). Online. Three hours lecture. The study of interactions between crops and abiotic and biotic environments. Emphasis is placed on quantitatively examining theory and principles for production, stability and sustainability of agricultural ecosystems

PSS 6223 Seed Production: 3 hours.
(Prerequisite: Junior standing). Two hours lecture . Two hours laboratory. Principles and practices, special emphasis on production of varietally pure seeds; agronomic factors in harvesting, drying, storage, treating and marketing seed

PSS 6313 Soil Fertility and Fertilizers: 3 hours.
(Prerequisites: PSS 3303 and Junior standing). Three hours lecture. Fundamentals and concepts of soil fertility; sources and responses of crops to plant nutrients; soil fertility evaluation and maintenance through fertilization

PSS 6314 Microbiology and Ecology of Soil: 4 hours.
(Prerequisite: PSS 3303). The study of diverse soil microbial communities and how they influence the structure and function of ecosystems (natural and managed) and the global biosphere (same as BIO 4324/6324)

PSS 6323 Soil Classification: 3 hours.
(Prerequisite: PSS 3303). Three hours lecture. Origin, development, and classification of soils including identification and field mapping

PSS 6333 Soil Conservation and Land Use: 3 hours.
(Prerequisite: PSS 3303). Two hours lecture . Three hours laboratory. Soil identification, topographic relationships and soil-water resources; their characteristics, quality, suitability, and management; conservation practices; using soil maps to determine land use

PSS 6341 Controlled Environment Agriculture Laboratory: 1 hour.
(Co-requisite: PSS 4343 for horticulture majors). Two hours laboratory. Online course. An experiential study of the principles and practices of controlled environments operation and management

PSS 6343 Controlled Environment Agriculture: 3 hours.
(Prerequisites: BIO 2113 and PSS 3303; Co-requisite for horticulture majors: PSS 4341). Three hours lecture. Online Course. A detailed review and explanation of principles and practices of controlled environments operation and management

PSS 6353 Arboriculture and Landscape Maintenance: 3 hours.
Two hours lecture. Two hours laboratory. Care of ornamental trees and shrubs, including pruning, bracing, surgery, transplanting, and fertilization

PSS 6363 Sustainable Nursery Production: 3 hours.
Prerequisites: PSS 2423 and PSS 3303). Three hours lecture. Online course. Nursery crop production including site selection and planning, plant nutrition, water relations and irrigation, shipping, and managing people and resources

PSS 6373 Geospatial Agronomic Management: 3 hours.
(Prerequisites PSS 3303, PSS 3133). Three hours lecture. This class will utilize the basic tools of geographical information systems and geographical positioning systems technologies to analyze agronomic case studies

PSS 6383 Agriculture Remote Sensing I: 3 hours.
(Prerequisites: MA 1313 and any GIS course or consent of instructor). Two hours lecture. Two hours lab. Online course. The study of whole-farm systems using data captured by camera, spectroscopic satellites, and telemetric sensors. Emphasis is placed on integrating multiple ag-related geospatial concepts into field-level production inquiries

PSS 6393 Agriculture Remote Sensing II: 3 hours.
(Prerequisite: PSS 4383/6383 or GR 4313/6313). Two hours lecture. Two hours laboratory. The advanced study of whole-farm systems using data captured by camera, spectroscopic satellites, and telemetric sensors. Emphasis is placed on integrating multiple ag-related geospatial concepts into field-level production inquiries

PSS 6411 Remote Sensing Seminar: 1 hour.
One hour lecture. (Prerequisite: Junior Standing). Lectures by remote sensing experts from industry, academia, and governmental agencies on next-generation systems, applications, and economic and societal impact of remote (Same as ECE 4411/6411, FO 4411/6411,GR 4411/6411)

PSS 6413 Turfgrass Management: 3 hours.
(Prerequisite: PSS 2113). Three hours lecture. An advanced comprehensive study of turfgrasses and the varied management strategies employed for golf and sports turf, home lawns, commercial turf, and sod production

PSS 6423 Golf Course Operations: 3 hours.
(Prerequisite: PSS 4413/6413). Two hours lecture . Two hours laboratory. Scheduling maintenance practices, golf course construction and renovation with emphasis on operation and care of specialized turf equipment

PSS 6443 Athletic Field Management: 3 hours.
(Prerequisite: PSS 3303, PSS 4413, or consent of instructor). Two hours lecture. Two hours laboratory. A comprehensive study of athletic fields, including construction, maintenence, renovation and management. Emphasis will be placed on interactions between soil properties and sports turf performance

PSS 6453 Vegetable Production: 3 hours.
(Prerequisite: PSS 3303 and PSS 3301 or BIO 4204). Two hours lecture. Two hours laboratory. Principles and practices of commercial vegetable production

PSS 6463 Community Food Systems: 3 hours.
Two hours lecture. Two hours laboratory. Exploration of aspects in community food systems including planning and design, sustainable growing practices, and human nutrition and health. (Same as LA 4463/6463 and FNH 4463/6463)

PSS 6483 Introduction to Remote Sensing Technologies: 3 hours.
(Prerequisite: Senior or graduate standing, or consent of instructor). Three hours lecture. Electromagnetic interactions, passive sensors, multispectral and hyperspectral optical sensors, active sensors, imaging radar, SAR, Lidar, digital image processing, natural resource applications (Same as ECE 4423/6423 and ABE 4483/6483)

PSS 6503 Plant Breeding: 3 hours.
(Prerequisite: PO 3103). Three hours lecture. Application of genetic principles to the improvement of economic crop plants; history, methods and procedures of plant breeding

PSS 6543 Precision Agriculture II: 3 hours.
(Prerequisite: PSS/ABE 2543 and Junior Standing). Two hours lecture. Two hours lab. Site-specific management techniques are examined. Continuous decision-making processes of farm production are integrated using a whole-system, geospatial approach (same as ABE 4543/6543)

PSS 6553 Plant Growth and Development: 3 hours.
Three hours lecture. Online course. Structure of plant developmental processes and how environmental factors interact to affect and control plant growth and development

PSS 6603 Soil Chemistry: 3 hours.
(Prerequisite: PSS 3303). Two hours lecture . Three hours laboratory. Fall semester, even-numbered years. Introduction to the basic chemistry of soils, including: mineral weathering/formation, ion exchange; adsorption, oxidation/reduction, acidity, salinity/alkalinity, and soil reactions of environmental importance

PSS 6613 Floriculture Crop Programming: 3 hours.
(Prerequisite: PSS 4343/6343). Two hours lecture. Three hours laboratory. A detailed study of the techniques involved in the production of the major commercial flower crops

PSS 6633 Weed Biology and Ecology: 3 hours.
(Prerequisites: BIO 2113. PSS 3133. Junior standing or consent of instructor). Two hours lecture. Two hours laboratory . Weed identification and population responses to agricultural production systems

PSS 6733 Ag. Flight Technologies I: 3 hours.
(Prerequisites: PSS 4383/6383 OR Instructor Approval). One hour lecture, four hours laboratory. The course instructs students in Small Unmanned Aerial Systems (sUAS) manual flight skills and the FAA Remote Pilot certification exam materials, and is a prerequisite course for advanced autonomous flight training (PSS 4743/6743)

PSS 6743 Ag. Flight Technologies II: 3 hours.
(Prerequisites: PSS 4733/6733 Ag. Flight Tech. I AND Instructor Approval). Three hours lecture. Enrolled students attend a week-long advanced autonomous flight workshop at Mississippi State University, Starkville campus. At week's end, students take the FAA Part 107 Remote Pilot Certification

PSS 6813 Herbicide Technology: 3 hours.
(Prerequisites: PSS 3133 and junior standing). Two hours lecture. Three hours laboratory. Classification and use of herbicides. A detailed look at herbicide application-field use and factors influencing herbicide activity. Credit may not be given for this course and PSS 4823/6823

PSS 6823 Turfgrass Weed Management: 3 hours.
(Prerequisite: PSS 3133 and Junior standing). Two hours lecture. Three hours laboratory. Classification and use of herbicides with emphasis on herbicides and emphasis on herbicides used in turfgrasses. Credit may not be given for this course and PSS 4813/6813

PSS 6833 Temperature Stress Physiology: 3 hours.
(Prerequisite: BIO 4214/6214 or BCH 4013/6013). Three hours lecture. Online course. The course focuses on cellular structures and stress metabolites, thermodynamics, and signal transduction before addressing plan responses to heat, chilling, and freezing stresses

PSS 6990 Special Topics in Plant and Soil Sciences: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

PSS 7000 Directed Individual Study in Plant and Soil Sciences: 1-6 hours.
Hours and credits to be arranged

PSS 8000 Thesis Research/ Thesis in Plant and Soil Sciences: 1-13 hours.
Hours and credits to be arranged

PSS 8012 Thesis Proposal Writing: 2 hours.
Two hours lecture. Students access and apply university thesis standards to their research. Focusing on clear, lucid writing techniques with appropriate style and grammar, in collaboration with the major professor, students complete the first three sections of their research thesis in this course

PSS 8103 Pasture Development: 3 hours.
Three hours lecture. Utilization systems for forage crops in the southeast; adaption, morphology, identification, and physiology of grasses and legumes;analyses of forage quality;interpretation of forage research

PSS 8123 Crop Ecology: 3 hours.
(Prerequisite: BIO 4213/6213 or consent of instructor). Three hours lecture. The geographical distribution, use, and adaptation of field crops as influenced by soil, climate, and other environmental factors

PSS 8163 Environmental Plant Physiology: 3 hours.
Three hours lecture. The influences of physical factors of the environment on growth and development of crop plants

PSS 8203 Seed Physiology: 3 hours.
(Prerequisite: PSS 4243/6243 or approval of instructor). Three hours lecture. Physio- logy of seed maturation, germination, dormancy, and deter- ioration, relation of seed quality to growth and development of plants

PSS 8333 Advanced Soil Fertility: 3 hours.
(Prerequisite: Graduate standing). Two hours lecture . Three hours laboratory. Advanced course in soil fertility; special emphasis on all soil conditions affecting plant growth. Experimental techniques in plant nutrition and in soil fertility will be utilized

PSS 8343 Soil Plant Atmosphere Relationships: 3 hours.
(Prerequisite: PSS 3301 and PSS 3303 or consent of instructor). Three-hour lecture on-line. Relationship of physical factors, water and heat, within the soil-plant-atmosphere continuum. Field-scale regimes including inputs, movement, and storage; emphasis on crop production

PSS 8513 Advanced Plant Breeding: 3 hours.
(Prerequisite: PSS 4503/6503 or equivalent). Three hours lecture. An intensive review of methods of plant improvement and the application of these methods to modern plant breeding. (Same as PSS 8573, GNS 8113.)

PSS 8553 Phytohormones and Growth Regulations: 3 hours.
(Prerequisites: BIO 4214/6214 and CH 2503). Three hours lecture. Plant growth regulating compounds: synthesis, metabolism, and effects on plant growth and development

PSS 8563 Post-Harvest Physiology of Horticultural Plants: 3 hours.
(Prerequisites: Organic Chemistry and BIO 4214/6214 or equivalent). Three hours lecture. The nature, evaluation, and control of chemical and physiological changes that occur after harvest of horticultural products

PSS 8573 Morphology of Horticultural Plants: 3 hours.
(Prerequisite: BIO 4204/6204). Three hours lecture. An intense review of methods of plant One hour lecture. Four hours improvement and the application of these methods to modern laboratory. Development of the floral and vegetative organs of horticultural plants. (Same as PSS 8513 and GNS 8113)

PSS 8631 Topics in Genomics: 1 hour.
(Prerequisites:PSS/BCH 8653 BCH 4713/6713 or BCH 8643 or consent of instructor). Review and discussion of classic and current genomics literature;individual presentation of a seminar highlighting an area of genomics research. (Same as BCH 8631)

PSS 8634 Environmental Fate of Herbicides: 4 hours.
(Prerequisites: CH 4513/6513, PSS 4813/6813). Three hours lecture. Three hours labatory. Fate of herbicides, including of drift, volatility, metabolism, environmental factors that influence these processes

PSS 8643 Principles of Spray Application and Technology: 3 hours.
(Prerequisite: PSS 4813/6813). Two hours lecture. Two hours lab. This course will examine the science and technical principles of spray application technologies and how they work in agriculture. This course will also cover adjuvant, nozzle, pump, physical and chemical properties of sprays and how to design a sprayer

PSS 8645 Field Applications of Weed Sciences Principles I: 5 hours.
(Prerequisite: PSS 6633 and PSS 6813 or consent of instructor). Three hours lecture. Four hours laboratory. Field weed identification; herbicide symptomology; problem solving in cotton soybean, and vegetables; application equipment calibration

PSS 8653 Genomes and Genomics: 3 hours.
(Prerequisites:BCH 4113/6113 or BCH 4713/6713 or BCH 8643 or consent of instructor) Overview of genome structure and evolution with emphasis on genomics, the use of molecular biology, robotics, and advanced computational methods to efficiently study genomes. (Same as BCH 8653)

PSS 8655 Field Applications of Weed Science Principles II: 5 hours.
(Prerequisite: PSS 8645 or consent of instructor). Three hours lecture. Four hours laboratory. Field weed identification; herbidice symptomology; problem solving in turf, field corn, rice, sorghum and pastures; application equipment calibration

PSS 8701 Current Topics in Weed Science: 1 hour.
(Prerequisites: Graduate standing, PSS 4813/6813 or consent of instructor). Lecture, discussion and readings in selected areas of current interest in weed science. Maximum total credits in graduate program allowed, 4 hours-M.S.; 6 hours-Ph.D

PSS 8711 Current Topics in Weed Science: 1 hour.
(Prerequisite: Graduate standing). Review of literature on assigned topics; preparation of formal papers and presentation of them at staff seminars

PSS 8721 Current Topics in Weed Science: 1 hour.
(Prerequisites: Graduate standing, PSS 4813/6813 or consent of instructor). Lecture, discussion and readings in selected areas of current interest in weed science. Maximum total credits in graduate program allowed, 4 hours-M.S.; 6 hours-Ph.D

PSS 8724 Herbicide Physiology and Biochemistry: 4 hours.
(Prerequisites: PSS 4813/6813, BIO 4214/6214 and CH 4513/6513 or consent of instructor). Three hours lecture. Three hours laboratory. Herbicide, plant growth regulator and allelochemic chemistry, mode of action, and effects on plants and plant constituents: fate/ persistence of herbicides in the environment

PSS 8731 Current Topics in Weed Science: 1 hour.
(Prerequisite: Graduate standing). Review of literature on assigned topics; preparation of formal papers and presentation of them at staff seminars

PSS 8741 Current Topics in Weed Science: 1 hour.

PSS 8751 Current Topics in Weed Science: 1 hour.

PSS 8761 Current Topics in Weed Science: 1 hour.

PSS 8771 Current Topics in Weed Science: 1 hour.

PSS 8811 Seminar: 1 hour.
Prerequisites: Graduate Standing). Review of literature on assigned topics; preparation of formal papers and presentation of them at staff seminars

PSS 8821 Seminar: 1 hour.
Prerequisites: Graduate Standing). Review of literature on assigned topics; preparation of formal papers and presentation of them at staff seminars

PSS 8831 Seminar: 1 hour.
Prerequisites: Graduate Standing). Review of literature on assigned topics; preparation of formal papers and presentation of them at staff seminars

PSS 8990 Special Topics in Plant and Soil Sciences: 1-9 hours.
Credit and title to be arranged. This course is to be used Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two not covered in existing courses. (Courses limited to two offerings under one title within two academic years). offerings under one title within two academic years)

PSS 9000 Dissertation Research /Dissertation in Plant and Soil Sciences: 1-13 hours.
Hours and credits to be arranged. Hours and credits to be arranged

Psychology Courses

PSY 1001 First Year Seminar: 1 hour.

PSY 1013 General Psychology: 3 hours.
Three hours lecture. The study of human behavior, heredity and growth; motivation: feeling and emotion; frustration; conflict; learning; language; thinking, attention; sensation; perception; intelligence; aptitudes; social influences

PSY 1021 Careers in Psychology: 1 hour.
(Prerequisite:PSY 1013). One hour lecture. Introduction to professions and career opportunities in the field of psychology by University faculty and practicing professionals

PSY 2990 Special Topics in Psychology: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

PSY 3003 Environmental Psychology: 3 hours.
(Prerequisite: PSY 1013 or consent of instructor). Three hours lecture. Study of the social and physical environmental factors and their effects on behavior. Theory, research, and application will be examined

PSY 3023 Applied Psychology: 3 hours.
(Prerequisite: PSY 1013 or consent of instructor). Three hours lecture. Principles, techniques, and results of psychology applied to a wide range of problems in daily life and work

PSY 3073 Psychology of Interpersonal Relations: 3 hours.
(Prerequisite: PSY 1013 and Junior standing.) Three hours lecture. Examination of psychological principles, theories and research which apply to various types of human interaction

PSY 3104 Introductory Psychological Statistics: 4 hours.
(Prerequisite: PSY 1013, MA 1313). Three hours lecture. Two hours laboratory. An introduction to the techniques and practices in statistical analyses used in psychological experimentation and evaluation along with practical experience in statistical software packages

PSY 3203 Psychology of Gender Differences: 3 hours.
(Prerequisite: PSY 1013 or consent of instructor). Three hours lecture. Survey of the biological, physiological, and sociocultural factors which influence the psychological differentiation of the genders

PSY 3213 Psychology of Abnormal Behavior: 3 hours.
(Prerequisite: PSY 1013). Three hours lecture. Behavioral patterns and causes of deviant behavior from childhood through later maturity. Etiology and symptomatology are emphasized

PSY 3314 Experimental Psychology: 4 hours.
(Prerequisite: PSY 3103). Two hours lecture. Four hours laboratory. Introduction to the methods and techniques of research and design. Practical experience in conducting experiments, analyzing data, and writing scientific reports

PSY 3343 Psychology of Learning: 3 hours.
(Prerequisite: PSY 1013). Three hours lecture. Survey of a variety of learning situations. Consideration of the variables and conditions which influence the learning process

PSY 3353 Motivation: 3 hours.
(Prerequisite: PSY 1013). Three hours lecture. Study of the role of motivation in behavior theory; biological and psychological bases; historical and contemporary views

PSY 3363 Behavioral Modification: 3 hours.
(Prerequisite: PSY 1013). Three hours lecture. Intensive examination of the principles and procedures used to modify the behavior of humans in contemporary situations

PSY 3413 Human Sexual Behavior: 3 hours.
(Prerequisite: PSY 1013 or consent of instructor). Three hours lecture. Varieties of sexual behavior. Research methods and findings; typical behaviors; homosexuality; sexual disorders; sexual assault and sexual victims; treatments; pornography and prostitution; sexual risk perception

PSY 3503 Health Psychology: 3 hours.
(Prerequisites: PSY 1013 or PSY 1093). Three hours lecture. Overview of research on psychophysiological disorders and related interventions. Emphasis is placed on chronic physical disorders and their relationship to psychological functioning

PSY 3623 Social Psychology: 3 hours.
(Prerequisite: PSY 1013 or consent of instructor). Three hours lecture. Human behavior as a product of social inter- action; social perception; social norms and roles; group processes, interrelationship of personality, culture, and group

PSY 3713 Cognitive Psychology: 3 hours.
(Prerequisite:PSY 1013 or consent of instructor). Three hours lecture. Introduction to the basic areas of cognitive psychology, including perception, attention, memory, reasoning, and language

PSY 3723 Cognitive Neuroscience: 3 hours.
(Prerequisite: PSY 1013 or consent of instructor). Three hours lecture. Introduction to cognitive neuroscience including how the function of neural systems inform our understanding of perception, attention, working memory, memory storage, and higher-order thought

PSY 3803 Introduction to Developmental Psychology: 3 hours.
(Prerequisite: PSY 1013). Three hours lecture. A survey and evaluation of current theory and research concerning development from infancy to young adulthood. Cognitive, social, and emotional development is emphasized

PSY 4000 Directed Individual Study in Psychology: 1-6 hours.
Hours and credits to be arranged

PSY 4203 Theories of Personality: 3 hours.
(Prerequisite: PSY 1013). Three hours lecture. Current theories of personality. Structure, development, dynamics, acculturation processes. Methods, techniques, and research in personality assessment

PSY 4223 Drug Use and Abuse: 3 hours.
(Prerequisite: PSY 1013). Three hours lecture. Study of basic principles of drug use and abuse. Includes an introduction to psychopharmacology and basic treatment strategies

PSY 4323 History of Psychology: 3 hours.
(Prerequisite: PSY 1013 and junior standing). Three hours lecture. A discussion of people, events, and theoretical and empirical contributions relevant to development of psychology

PSY 4333 Introduction to Clinical Psychology: 3 hours.
(Prerequisites: PSY 3213 and PSY 3314 or consent of instructor). Three hours lecture. Survey of assessment techniques, intervention procedures, professional issues of contemporary clinical psychology. Emphasis placed on the Boulder (scientist-practitioner) model

PSY 4343 Clinical Child Psychology: 3 hours.
(Prerequisites: PSY 3213; PSY 4313 or PSY 3803). Three hours lecture. Overview of childhood disorders and related inter- ventions

PSY 4353 Psychology and the Law: 3 hours.
(Prerequisite PSY 1013 and Junior Standing).Three hours lecture. Examination of the roles of psychologists in the legal system; application of psychological theory and research to issues in the legal system

PSY 4364 Advanced Forensic Psychology Lab: 4 hours.
(Prerequisiste:PSY 3314 and consent of Instructor). Ten hours research laboratory per week(hours to be arranged). Course provides students with direct experience planning, conducting, analyzing, and presenting research in the forensic psychology area. May be repeat ed for credit

PSY 4373 Forensic Psychology: 3 hours.
(Prerequisite:PSY 1013 and junior standing) Three hours lecture. Examines topics related to the application of clinical psychology to legal matters

PSY 4403 Biological Psychology: 3 hours.
(Prerequisite: PSY 1013). Three hours lecture. Nervous, endocrine, and immune systems of the body as they affect behavior and adjustment. Emphasis upon the role of the central and peripheral nervous systems

PSY 4423 Sensation and Perception: 3 hours.
(Prerequisite: PSY 1013). Three hours lecture. Survey of basic sensory mechanisms and perceptual phenomena. Sensory mechanisms reviewed will include vision, audition, olfaction, gustation, and touch with emphasis on vision and audition

PSY 4473 Phonetics: 3 hours.
(Prerequisites: Either EN 4403/6403, AN 4403/6403, or Instructor Consent). Three hours lecture. This course focuses on the physical and linguistic aspects of speech sounds, including how they are produced, transcribed, measured, and perceived. (Same as EN 4473/6473)

PSY 4523 Industrial Psychology: 3 hours.
(Prerequisite: PSY 1013). Three hours lecture. Applications of psychological principles and methods to industry emphasizing employee selection, placement, merit rating, training, human relations, and measurement and improvement of employee morale

PSY 4624 Advanced Social Psychology Research Lab: 4 hours.
(Prerequisiste:PSY 3314 and PSY 3623 and consent of instructor) Research hours to be arranged. Course provides students with direct experience planning , conducting, analyzing and presenting research in the social psychology area

PSY 4643 Social Cognition: 3 hours.
(Prerequisite: PSY 3623 or consent of instructor). Three hours lecture. Examination of how people perceive, categorize and reason about other people and themselves

PSY 4653 Cognitive Science: 3 hours.
(Prerequisite: PSY 3713 or CSE 4633 or PHI 4142 or AN 4623). Three hour lecture. The nature of human cognition from an interdisciplinary perspective, primarily utilizing a computational model, including insights from philosophy, psychology, linguistics, artificial intelligence, anthropology, and neuroscience. (Same as CSE 4653/6653)

PSY 4713 Language and Thought: 3 hours.
(Prerequisite: PSY 1013 and PSY 3713, or consent of instructor). Three hours lecture. Review of current research and theories. Symbolic process, concept formation, problem solving and language development

PSY 4726 Internship in Psychology I: 6 hours.
(Prerequisite: Consent of instructor). A minimum of twenty hours per week of professional experience in a human service or other field setting. One hour of seminar and group supervision

PSY 4733 Memory: 3 hours.
(Prerequisite: PSY 1013 and PSY 3713). Introduction to theoretical and practical aspects of memory. Discussion of laboratory memory, computer models of memory, memory self-concepts, everyday memory, and clinical memory problems

PSY 4743 Psychology of Human-Computer Interaction: 3 hours.
(Prerequisites: PSY 3713 or CS 4663/6663 or IE 4113/6113 or consent of the instructor). Two hours lecture. Two hours laboratory. Exploration of psychological factors that interact with computer interface usablilty. Interface design techniques and usability evaluation methods are emphasized. (Same as CS 4673/6673 and IE 4123/6123)

PSY 4753 Applied Cognitive Psychology: 3 hours.
(Prerequisite: PSY 3713 or IE 4113 or consent of instructor).Three hours lecture. Human perceptual, cognitive, and motor capabilities and limitations are described with particular emphasis on the implications of developing effective, user-friendly man-machine systems

PSY 4813 Positive Psychology: 3 hours.
(Prerequisite: PSY 1013). Three hours lecture. The scientific study of how human beings prosper in the face of adversity;become statisfied and content with their past; find happiness in the present; and become optimistsic about the future

PSY 4903 Seminar in Psychology: 3 hours.
(Prerequisite: PSY 1013). In-depth examination of particular topics of current interest to faculty and students. Critical evaluation of current research

PSY 4983 Psychology of Aging: 3 hours.
(Prerequisite: PSY 1013). Three hours lecture. A description and analysis of the development and changes occurring in individuals from early adulthood through late life

PSY 4990 Special Topics in Psychology: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

PSY 6223 Drug Use and Abuse: 3 hours.
(Prerequisite: PSY 1013). Three hours lecture. Study of basic principles of drug use and abuse. Includes an introduction to psychopharmacology and basic treatment strategies

PSY 6353 Psychology and the Law: 3 hours.
(Prerequisite PSY 1013 and Junior Standing).Three hours lecture. Examination of the roles of psychologists in the legal system; application of psychological theory and research to issues in the legal system

PSY 6373 Forensic Psychology: 3 hours.
(Prerequisite:PSY 1013 and junior standing) Three hours lecture. Examines topics related to the application of clinical psychology to legal matters

PSY 6403 Biological Psychology: 3 hours.
(Prerequisite: PSY 1013). Three hours lecture. Nervous, endocrine, and immune systems of the body as they affect behavior and adjustment. Emphasis upon the role of the central and peripheral nervous systems

PSY 6423 Sensation and Perception: 3 hours.
(Prerequisite: PSY 1013). Three hours lecture. Survey of basic sensory mechanisms and perceptual phenomena. Sensory mechanisms reviewed will include vision, audition, olfaction, gustation, and touch with emphasis on vision and audition

PSY 6473 Phonetics: 3 hours.
(Prerequisites: Either EN 4403/6403, AN 4403/6403, or Instructor Consent). Three hours lecture. This course focuses on the physical and linguistic aspects of speech sounds, including how they are produced, transcribed, measured, and perceived. (Same as EN 4473/6473)

PSY 6523 Industrial Psychology: 3 hours.
(Prerequisite: PSY 1013). Three hours lecture. Applications of psychological principles and methods to industry emphasizing employee selection, placement, merit rating, training, human relations, and measurement and improvement of employee morale

PSY 6643 Social Cognition: 3 hours.
(Prerequisite: PSY 3623 or consent of instructor). Three hours lecture. Examination of how people perceive, categorize and reason about other people and themselves

PSY 6653 Cognitive Science: 3 hours.
(Prerequisite: PSY 3713 or CSE 4633 or PHI 4142 or AN 4623). Three hour lecture. The nature of human cognition from an interdisciplinary perspective, primarily utilizing a computational model, including insights from philosophy, psychology, linguistics, artificial intelligence, anthropology, and neuroscience. (Same as CSE 4653/6653)

PSY 6713 Language and Thought: 3 hours.
(Prerequisite: PSY 1013 and PSY 3713, or consent of instructor). Three hours lecture. Review of current research and theories. Symbolic process, concept formation, problem solving and language development

PSY 6733 Memory: 3 hours.
(Prerequisite: PSY 1013 and PSY 3713). Introduction to theoretical and practical aspects of memory. Discussion of laboratory memory, computer models of memory, memory self-concepts, everyday memory, and clinical memory problems

PSY 6743 Psychology of Human-Computer Interaction: 3 hours.
(Prerequisites: PSY 3713 or CS 4663/6663 or IE 4113/6113 or consent of the instructor). Two hours lecture. Two hours laboratory. Exploration of psychological factors that interact with computer interface usablilty. Interface design techniques and usability evaluation methods are emphasized. (Same as CS 4673/6673 and IE 4123/6123)

PSY 6753 Applied Cognitive Psychology: 3 hours.
(Prerequisite: PSY 3713 or IE 4113 or consent of instructor).Three hours lecture. Human perceptual, cognitive, and motor capabilities and limitations are described with particular emphasis on the implications of developing effective, user-friendly man-machine systems

PSY 6983 Psychology of Aging: 3 hours.
(Prerequisite: PSY 1013). Three hours lecture. A description and analysis of the development and changes occurring in individuals from early adulthood through late life

PSY 6990 Special Topics in Psychology: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

PSY 7000 Directed Individual Study in Psychology: 1-6 hours.
Hours and credits to be arranged

PSY 8000 Thesis Research/ Thesis in Psychology: 1-13 hours.
Hours and credits to be arranged

PSY 8111 Scientist-Practitioner Applications: 1 hour.
(Prerequisite: Consent of instructor). Two hours laboratory. A minimum of two hours per week in supervised service delivery and research activities of clinical psychologists

PSY 8121 Scientist-Practitioner Applications: 1 hour.
(Prerequisite:Consent of instructor). Two hours laboratory. A minimum of two hours per week in supervised service delivery and research activities of clinical psychologists

PSY 8131 Scientist-Practitioner Applications: 1 hour.
(Prerequisite:Consent of instructor). Two hours laboratory. A minimum of two hours per week in supervised service delivery and research activities of clinical psychologists

PSY 8141 Scientist-Practitioner Applications: 1 hour.
(Prerequisite:Consent of instructor). Two hours laboratory. A minimum of two hours per week in supervised service delivery and research activities of clinical psychologists

PSY 8151 Scientist-Practitioner Applications: 1 hour.
(Prerequisite: Consent of instructor).Two hours laboratory. A minimum of two hours per week in supervised service delivery and research activities of clinical psychologists

PSY 8214 Quantitative Methods in Psychology II: 4 hours.
(Prerequisite: PSY 3103). Three hours lecture. Three hours laboratory. Advanced experimental design and methods with emphasis on analysis of variance

PSY 8233 Ethical and Professional Issues in Clinical Psychology: 3 hours.
(Prerequisite: Consent of instructor). Theory and application of current ethical, legal, and professional standards in clinical psychology across settings

PSY 8313 Developmental Psychology: 3 hours.
(Prerequisite: PSY 3803). Three hours lecture. Human growth processes and related developmental tasks in areas such as creative ability, language, social competency, and bodily fitness

PSY 8323 Psychopathology: 3 hours.
(Prerequisites: PSY 3213). In-depth coverage of contemporary systems of psychiatric diagnosis, and biological, psychological, and social theories of the etiology of psychological disorders

PSY 8333 Systems of Psychotherapy: 3 hours.
(Prerequisite: Consent of instructor). Three hours lecture. A comparative introduction to the theories, techniques, and outcomes of major approaches to psychotherapy

PSY 8354 Intelligence Testing: 4 hours.
(Prerequisite: Consent of Instructor). Three hours lecture. Two hours laboratory. Administration, scoring, and interpretation of the standard psychometric instruments in evaluating individual intellectual functioning

PSY 8364 Personality Appraisal: 4 hours.
(Prerequisite: PSY 8323). Three hours lecture. Two hours laboratory. Administration, scoring and interpretations using standard self-report and projective methods of individual personality assessment. Current research is also explored

PSY 8373 Child Psychopathology and Treatment of Childhood Disorders: 3 hours.
(Prerequisite: PSY 3213). Three hours lecture. Research on the nature, assessment and treatment of disorders of childhood/adolescence

PSY 8383 Behavior Therapy: 3 hours.
(Prerequisite: Consent of instructor). Three hours lecture. A survey of contemporary literature relating to the theory, techniques, and outcomes of behavior therapy. Emphases placed on systematic desensitization and operant conditioning techniques

PSY 8450 Applied Clinical Practicum: 1-4 hours.
(Prerequisite: Director of Clinical Training consent). A minimum of fifty hours per semester (per credit hour registered) in supervised service delivery and research activities of clinical psychologists. May be repeated for credit

PSY 8460 Applied External Clinical Practicum: 1-4 hours.
(Prerequisite: Director of Clinical Training consent). A minimum of fifty hours per semester (per credit hour registered) in supervised service delivery and research activities at an external site under the supervision of a licensed psychologist. May be repeated for credit

PSY 8513 Psychological Research: 3 hours.
(Prerequisite: PSY 3313). Three hours lecture. Practicum in the techniques of planning and execution of various areas of psychological research

PSY 8533 Introduction to Clinical Practicum in Psychology: 3 hours.
(Prerequisite: Consent of instructor). One hour lecture. Two hours practicum. Intensive introduction to clinical interviewing, as well as the research literature in clinical psychology

PSY 8573 Psychopharmacology: 3 hours.
(Prerequisites: PSY 4403 and PSY 8323).Three hours lecture. Overview of research on pharmacological and combined treatments for psychological disorders. Emphasis is placed on psychological disorders in adulthood

PSY 8613 Advanced Social Psychology: 3 hours.
(Prerequisite: PSY 3623). Three hours lecture. Examination of research and theories of attraction and liking. Emphasis upon reinforcement theory, gain-loss theory, and dissonance theory

PSY 8653 Applied Cognitive Reading Seminar: 3 hours.
(Prerequisite: consent of instructor for all non-psychology or non-cognitive science graduate students). Seminar exploring current topics in Applied Psychology and Cognitive Science

PSY 8683 Cognitive Science Research Skills: 3 hours.
(Prerequisite: consent of instructor for all students not in the applied cognitive science concentration). Three hours lecture. An introduction to computational and writing research skills necessary for a research career in cognitive science

PSY 8693 Advanced Cognitive Science Research Skills: 3 hours.
(Prerequisite: PSY 8683 or consent of instructor). Three hours lecture. A survey of advanced computational and writing research skills necessary for a research career in cognitive science

PSY 8703 Advanced Cognitive Science: 3 hours.
(Prerequisite: PSY 8683 or consent of instructor). Three hours lecture. The science of intelligent systems as understood through the contributions of psychology, linguistics, artificial intelligence, anthropology, neuroscience, and philosophy

PSY 8713 Issues and Methods in Cognitive Psychology: 3 hours.
(Prerequisite: Graduate Standing). Three hours lecture. Exploration of theoretical issures and research methods in current Cognitive Psychology

PSY 8723 Cognitive Models of Skills: 3 hours.
(Prerequisite: Graduate Standing). Three hours lecture. Introduction to cognitive modeling, with a focus on computational models of skill acquisition and expert skill (Same as CS 8613)

PSY 8731 Applied Cognitive Science Research Seminar: 1 hour.
One hour seminar.Presentations of research in applied cognitive science

PSY 8743 Perception and Attention: 3 hours.
(Prerequisite: PSY 8513 or consent of instructor). Three hours lecture. An advanced survey of classic and current research on human perception and attention including the underlying neural and psychological mechanisms

PSY 8753 Advanced Human Memory: 3 hours.
(Prerequisite: PSY 8513 or consent of instructor). Three hours lecture. An advanced survey of classic and current research on human memory from the biology of memory to the neuroscience of memory

PSY 8763 Expertise and Cognitive Skill Acquisition: 3 hours.
(Prerequisite: PSY 8513 or consent of instructor). Three hours lecture. An advanced survey of the scientific literature on human acquisition of cognitive skills and expertise with a focus on theories that address human performance

PSY 8773 Distributed Representations in Cognition: 3 hours.
(Prerequisite: PSY 8513 or consent of instructor). Three hours lecture. An introduction to computational modeling of cognition with a focus on computational models that use distributed representations

PSY 8783 Cognitive Science Professional Skills: 3 hours.
(Prerequisite: consent of instructor for all students not in the applied cognitive science concentration). Three hours lecture. An introduction to the professional skills necessary for a successful research career in cognitive science

PSY 8793 Advanced Cognitive Science Professional Skills: 3 hours.
(Prerequisite: PSY 8783 or consent of instructor). Three hours lecture. Advanced professional skills necessary for a research career in cognitive science including initiating a lab, establishing collaborations, and securing a research position

PSY 8803 Advanced Quantitative Methods for Industrial Organizational and General Psychology: 3 hours.
(Prerequisites: PSY 8214). Three hours lecture. Study of advanced analytic and multivariate quantitative methods applied to contemporary problems and research in industrial/organizational and general psychology

PSY 8813 Psychological Sciences Teaching Practicum: 3 hours.
Three hours lecture. This course will cover general teaching theory and course management, though the primary focus will be specific to teaching psychology. This includes psychological demonstrations and labs, specialized readings from the journal Teaching of Psychology, and the development of a teaching portfolio

PSY 8823 Diversity in Applied Psychology: 3 hours.
(Prerequisites: PSY 8533 & PSY 8513, or permission of instructor). Three hours lecture. A theoretical and skill development course for clinicians and researchers to strengthen multicultural/cross cultural/diversity awareness, knowledge, and skills in the competencies necessary for working with ethnically and culturally diverse clients and research participants

PSY 8990 Special Topics in Psychology: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

PSY 9000 Dissertation Research /Dissertation in Psychology: 1-13 hours.
Hours and credits to be arranged

PSY 9730 Doctoral Internship in Clinical Psychology: 1-3 hours.
(Prerequisite: Consent of the instructor). Supervised predoctoral internship for psychologists involving the theory and practice of evaluations, consultation, interventions, research, and related activities within a professional setting. May be repeated for credit 2 times

Petroleum Engineering Courses

PTE 1101 Introduction to Petroleum Engineering: 1 hour.
Overview and history of the petroleum industry and petroleum engineering; nature of oil and gas reservoirs, exploration and drilling, formation evaluation, well completions and production, surface facilities, reservoir mechanics, improved oil recovery; impact of ethical, societal, environmental considerations; career development resources including professional society participation

PTE 2990 Special Topics in Petroleum Engineering: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

PTE 3902 Petroleum Engineering Lab 1: 2 hours.
(Prerequisite: Credit or registration in PTE 3953). Four hours laboratory. Laboratory experiments, statistical analysis, and report writing in rock properties and drilling and completion

PTE 3903 Petroleum Reservoir Fluid Properties: 3 hours.
(Prerequisite: PH 2213, and credit or registration in MA 2733 and CHE 3113). Three hours lecture. A study of the physical and chemical properties of petroleum reservoir fluids for use in the study, evaluation, and management of oil and gas reservoirs

PTE 3912 Petroleum Engineering Lab 2: 2 hours.
(Prerequisite: Credit or registration in PTE 3903). Four hours laboratory. Laboratory measurement of the properties of reservoir fluids at different pressures and temperatures

PTE 3953 Petroleum Reservoir Rock Properties and Fluid Flow: 3 hours.
(Prerequisites: PH 2213 and MA 2733). Three hours lecture. Study of the physical properties of petroleum reservoir rocks as they relate to the flow of oil, water, and gas through porous and permeable rocks

PTE 3963 Drilling: 3 hours.
(Prerequisite: CHE 3203, EM 3213 and C or better in PTE 3953 and credit or registration in MA 2743). Three hours lecture. A study of the equipment used and method of drilling and completion of oil and gas wells

PTE 3973 Petroleum Production Operations: 3 hours.
(Prerequisites: MA 2743 and CHE 3203 and C or better in PTE 3953 and PTE 3903). Three hours lecture. A study of tools and equipment used in oil and gas production, surveillance of well performance, and prediction of future performance

PTE 4000 Directed Individual Study in Petroleum Engineering: 1-6 hours.
Hours and credit to be arranged

PTE 4903 Petroleum Reservoir Engineering 1: 3 hours.
(Prerequisite: CHE 2114 and CHE 3113 and C or better in PTE 3903 and PTE 3953 and credit or registration in MA 3253). Three hours lecture. Estimating oil and gas originally in place, volumes to be recovered, data requirements, and scheduling of recoverable volumes for economic analysis

PTE 4913 Petroleum Reservoir Engineering 2: 3 hours.
(Prerequisite: MA 3253 and C or better in PTE 4903). Three hours lecture. Compressible, incompressible, and multiphase fluid flow; natural gas petroleum reservoirs; wellbore performance

PTE 4923 Completion Design: 3 hours.
(Prerequisite: PTE 3963 and PTE 3973). Three hours lecture. A study of the use of acids and the fracturing technology for recovery of petroleum products from petroleum reservoirs

PTE 4953 Formation Evaluation: 3 hours.
(Prerequisite: C or better in PTE 3953). Three hours lecture. Study of electrical porosity and radiation logs and wireline formation tests that are used to compute fluid saturation, fluid type, and rock properties

PTE 4963 Oil Recovery Methods: 3 hours.
(Prerequisite: PTE 4903). Three hours lecture. Study of the use of water flooding, carbon dioxide, and other methods used to enhance oil recovery

PTE 4983 Petroleum Engineering Capstone Design: 3 hours.
(Prerequisites: PTE 3963, PTE 3973, PTE 4913, PTE 4953; Co-requisites: PTE 4923, PTE 4963, PTE 4993). Three hours lecture. Design projects characteristic of petroleum engineering including consideration of cost, design optimization, codes and standards, and professional ethics. Course includes reporting through oral and written communications

PTE 4990 Special Topics in Petroleum Engineering: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

PTE 4993 Petroleum Economic Analysis: 3 hours.
(Prerequisites: IE 3913, IE 4613 and credit or registration in PTE 4903). Three hours lecture. Study of unconventional oil and gas production, production forecasting, operating and capital costs associated with oil, discounted cash flows, risk analysis, and reserve classification

Readings in Education Courses

RDG 2990 Special Topics in Reading Education: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

RDG 3113 Early Literacy Instruction I: 3 hours.
(Prerequisite: Admission to Teacher Education. Co-requisite: RDG 3123 and EDE 3123). Three hours lecture. Field experience. Foundational knowledge of the English linguistic system. Methods/materials for teaching systematically the oral/ written language connection, concepts about print, phonological/orthographic awareness, phonics principles

RDG 3123 Early Literacy Instruction II: 3 hours.
(Prerequisite: Admission to Teacher Education. Co-requisite: RDG 3113 and EDE 3123). Three hours lecture. Field experience. Concepts, materials, and teaching strategies for oral language development and early systematic reading and writing instruction specific to vocabulary, fluency and comprehension

RDG 3413 Middle Level Literacy I: 3 hours.
(Prerequisite:RDG 3113 and RDG 3123; Corequisite:RDG 3423, EDE 3223) Three hours lecture. Field experience. Literacy teaching and learning for upper elementary and middle school. Emphasis on reading instruction, strategy instruction, and assessment

RDG 3423 Middle Level Literacy II: 3 hours.
(Prerequisite:RDG 3113 and RDG 3123:Corequisite: RDG 3413 and EDE 3223). Three hours lecture. Field experience. Instructional strategies and materials for teaching literacy in the elementary and middle school. Focus on writing, comprehension and teaching diverse students

RDG 3513 Developing Reading Strategies in the Secondary School Content Areas: 3 hours.
(Pre-requisite: Admission to Teacher Education) Basic theories and techniques needed by content area teachers for teaching reading to secondary school students

RDG 4000 Directed Individual Study in Reading Education: 1-6 hours.
Hours and credits to be arranged

RDG 4133 Integrating Literacy Instruction in the Content Areas: 3 hours.
(Prerequisites: All Professional Education courses, except EDE 3443; Co-Requisites: EDE 4113, EDE 4123, & EDE 4143). Two hours lecture. Two hours lab. Field based. Selection, organization, teaching, and assessment for integrating literacy across content areas - K-8; general effectiveness of and reflection about instructional practices

RDG 4990 Special Topics in Reading Education: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

RDG 6113 Middle Level Literacy Development and Instruction: 3 hours.

RDG 6990 Special Topics in Reading Education: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

RDG 7000 Directed Individual Study in Reading Education: 1-6 hours.
Hours and credits to be arranged

RDG 8000 Thesis Research/ Thesis in Elementary Education: 1-13 hours.

RDG 8113 Middle Level Literacy Instruction: 3 hours.
Three hours lecture. Application of theories, methods and strategies in teaching literacy for the adolescent learner in the middle level classroom

RDG 8123 Supporting the Middle Level Literacy Learner: 3 hours.
Three hours lecture. Planning and adapting instruction for middle level students who struggle with literacy achievement

RDG 8133 Middle Level Content Area Literacy Instruction: 3 hours.
Three hours lecture. Theory, research, and methods for teaching middle level students to use literacy as a tool for learning in the content areas

RDG 8153 Psychology of Reading: 3 hours.
Three hours lecture. Analysis of reading patterns; conditions favorable and unfavorable to progress in reading skill; the readiness concept; problems of levels. Prevention and correction of reading handicaps

RDG 8453 Research in Reading: 3 hours.
Three hours lecture. The function of research in the development of reading programs; contribution of research to reading

RDG 8593 Issues and Innovations in Reading: 3 hours.
Issues and innovations related to trends, methodology, and materials in the teaching of reading

RDG 8653 Teaching Reading in the Secondary Schools: 3 hours.
Three hours lecture. A study of reading problems of middle and upper level students. A study of technology, materials, and methods used in developmental reading for secondary students

RDG 8713 Teaching Struggling Readers and Writers: 3 hours.
Two hours lecture. Two hours laboratory. Practicum experience teaching struggling elementary school literacy learners;identifying literacy learning strengths and difficulties;teaching to improve achievement

RDG 8990 Special Topics in Reading Education: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

RDG 9000 Thesis Research/ Thesis in Elementary Education: 1-13 hours.

Real Estate Finance Courses

REF 2990 Special Topics in Real Estate Finance: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

REF 3333 Principles of Real Estate: 3 hours.
(Prerequisite: Junior standing). Three hours lecture. A survey of the activities involved in the acquisition, transfer, operation, and management of real estate

REF 3433 Real Property Evaluation: 3 hours.
(Prerequisite: REF 3333). Three hours lecture. Methods, evaluation procedures, and techniques of appraising commercial and residential real property under various value-influencing conditions; case problems for appraisal

REF 4000 Directed Individual Study in Real Estate Finance: 1-6 hours.
Hours and credits to be arranged with Instructor

REF 4153 Real Estate Investments: 3 hours.
(Prerequisite: FIN 3123). Three hours lecture. Direct investment in real estate. Sources of funds; risk analysis; typical policies and procedures of investing and financing investment real estate

REF 4253 Mortgage Financing: 3 hours.
(Prerequisites: FIN 3123). Three hours lecture. Indirect investment in real estate. Institutional sources of funds, mortgage market mechanisms, mortgage derivatives, and mortgage underwriting

REF 4333 Real Estate Law: 3 hours.
(Prerequisite: BL 2413 or consent of instructor). Three hours lecture. The legal principles applicable to real estate, including types of ownership and interests, mortgages, restrictions, and regulations. (Same as BL 4333/6333)

REF 4990 Special Topics in Real Estate Finance: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

REF 6333 Real Estate Law: 3 hours.
(Prerequisite: BL 2413 or consent of instructor). Three hours lecture. The legal principles applicable to real estate, including types of ownership and interests, mortgages, restrictions, and regulations. (Same as BL 4333/6333)

REF 6990 Special Topics in Real Estate Finance: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

REF 7000 Directed Individual Study in Real Estate Finance: 1-6 hours.
Hours and credits to be arranged with Instructor

Religion Courses

REL 1003 Introductory Hebrew: 3 hours.
Three hours lecture. An introduction to the Biblical Hebrew language, covering basic grammatical structures and building vocabulary

REL 1103 Introduction to Religion: 3 hours.
Three hours lecture. Religion seen as a human research for meaning in life or response to the holy. Studied through basic structures and modes of expression

REL 1213 Introduction to the Old Testament: 3 hours.
Three hours lecture. A survey of Old Testament literature with attention to theology and the cultural setting

REL 1223 Introduction to the New Testament: 3 hours.
Three hours lecture. A survey of New Testament literature with attention to theology and the cultural setting

REL 2233 Introduction to Old Testament Archaeology: 3 hours.
Three hours lecture. A survey of the Old Testament in the light of archaeological research. The approach is chronological-historical-archaeological. (Same as MEC 2233)

REL 2990 Special Topics in Religion: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

REL 3033 Theory and Method in the Study of Religion: 3 hours.
(Prerequisite: Junior standing or consent of instructor). Three hours lecture. An introduction to the central theories and methods in the study of religion, with an emphasis on critical analysis

REL 3103 Religion & U.S. Culture: 3 hours.
Three hours lecture. An exploration of multiple religious traditions and their effect on American culture

REL 3113 Religions and Environment: 3 hours.
Three hours lecture. A creative exploration of the intersection of religious and environmental values across cultures and places

REL 3123 Philosophy of Religion: 3 hours.
(Prerequisite: Three hours of philosophy). Three hours lecture. A critical inquiry into the rational justification of central theistic beliefs, with emphasis on the traditional philosophical arguments for and against the existence of God. (Same as PHI 3123)

REL 3133 Seminar in Religion: 3 hours.
(Prerequisite: Junior standing or consent of instructor). Three hours seminar. The study of selected religious texts and essays, and practice in religious composition

REL 3143 African American Religious Experience: 3 hours.
Three hours lecture. The theology and oral tradition of Black Religion with specific emphasis on the Black Church in southeastern USA

REL 3203 The Prophets of Ancient Israel: 3 hours.
Three hours lecture, seminar. A study of the message and function of prophetic traditions within ancient Israel and in contemporary ancient Near Eastern societies

REL 3213 World Religions I: 3 hours.
Three hours lecture. A history and comparative study of beliefs and the cultural impact of the great religions of the East

REL 3223 World Religions II: 3 hours.
Three hours lecture. A history and comparative study of beliefs and the cultural impact of the great religions of the West

REL 3323 Hindu Mythology: 3 hours.
A survey of Hindu literature portraying the activities of gods, goddesses and sages, and their relevance to Hindu theology and religious practice

REL 3453 Hinduism & Buddhism: 3 hours.
Three hours lecture. Introduction to and critical-historical survey of significant texts, doctrines, themes, and thinkers in the main indigenous Indian religion traditions

REL 3463 Systematic Theology: 3 hours.
Three hour lecture. A systematic study of the theology of the Biblical Old and New Testament

REL 3473 Islam: 3 hours.
A survey of Islamic history, beliefs and practices, law, theology, philosophy and mysticism. (Same as MEC 3473)

REL 3483 Judeo-Christian Ethics: 3 hours.
A study of the foundation and contemporary application of Judeo-Christian ethics

REL 3493 Pauline Theology: 3 hours.
Three hours lecture. A study of the Apostle Paul's New Testament writings with the view to elucidating his theological perspective on a range of doctrinal and practical subjects

REL 3540 Archaeological Travel and Participation Program: 1-6 hours.
Participation in excavations in the Near East and related lecture program. (Same as AN 3540)

REL 3553 Near Eastern Archaeology: 3 hours.
Three hours lecture. Introduction to the contributions made by archaeological research to ancient Near Eastern history and prehistory, with special emphasis on the Syro-Palestinian area. (Same as AN 3553 and MEC 3553)

REL 3593 Johannine Theology: 3 hours.
Three hours lecture. A study of the Apostle John's New Testament writings with the view to elucidating his theological perspective on a range of doctrinal and practical subjects

REL 3703 The Western Church: Beginning to Reformation: 3 hours.
(Prerequisites: Completion of any 1000-level course in history or philosophy and religion). Three hours lecture. An examination of the institutions, doctrines, and spirituality of the Western Church and their impact on Western European politics, society, and culture. (Same as HI 3703)

REL 4000 Directed Individual Study in Religion: 1-6 hours.
Hours and credits to be arranged

REL 4143 Classical Mythology: 3 hours.
Three hours lecture. Myths and legends of Greece and Rome and their use in literature and the arts through the ages. (Same as FL 4143/6143)

REL 4403 The Ancient Near East: 3 hours.
(Prerequisite: Completion of any 1000-level history course). Three hours lecture. A study of the origins and development of civilizations in Mesopotamia, Egypt, and Syria-Palestine from prehistoric times to the end of the Persian period. (Same as HI 4403/6403 and MEC 4403/6403.)

REL 4990 Special Topics in Religion: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

REL 6403 The Ancient Near East: 3 hours.
(Prerequisite: Completion of any 1000-level history course). Three hours lecture. A study of the origins and development of civilizations in Mesopotamia, Egypt, and Syria-Palestine from prehistoric times to the end of the Persian period. (Same as HI 4403/6403 and MEC 4403/6403.)

REL 6990 Special Topics in Religion: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

REL 7000 Directed Individual Study in Religion: 1-6 hours.
Hours and credits to be arranged

REL 8990 Special Topics in Religion: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

Sustainable Bioproducts Courses

SBP 1001 First Year Seminar: 1 hour.
One hour lecture. First-year seminars explore a diverse array of topics and provides students with an opportunity to learn about a specific discipline from skilled faculty members

SBP 1103 Introduction to Sustainable Bioproducts: 3 hours.
Three hours lecture. A survey of biomass structure, anatomy, properties and chemistry, and the processes used to manufacture sustainable biomass-based products

SBP 2012 Introduction to Bioproduct Industries: 2 hours.
One hour lecture and one hour Laboratory/Field Trip. This course will be taught as a site tour of bioproduct industries focusing on conversion and use of biomass resources in the Southeastern United States. (During the two weeks of intersession term, class will meet six hours per day.)

SBP 2123 Materials and Processing of Structural Bioproducts: 3 hours.
(Prerequisite: SBP 2012 or consent of instructor). Three hours lecture. Introduction to the processing of sustainable biomaterials including generation of by-products; operations management involved in bioproducts manufacturing specifically structural composites; product evaluation methods with internationally acknowledged standards

SBP 2990 Special Topic in Sustainable Bioproducts: 1-9 hours.
(1-9). Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

SBP 3113 Biomaterial Phys Mech: 3 hours.
(Prerequisite: MA 1323 or equivalent). Two hours lecture and two hours laboratory. This course focuses on understanding important physical and mechanical properties of biomaterials and the relationship of these properties to manufacturing processes and product uses

SBP 3123 Biomass to Bioproducts: 3 hours.
(Prerequisite: CH 1043 or equivalent). Three hours lecture. Introduction to chemical/physical properties of forestry and agro crops with overview of products derived from plant materials. Innovative and emerging bioproducts industries are described

SBP 3143 Biomass Characteristics and Production: 3 hours.
(Prerequisite CH 1043, BIO 1134, and MA 1313). Three hours lecture. Methods of field production and characteristics of biomass utilized for fuels and biochemicals

SBP 4000 Directed Individual Study: 6 hours.
(1-6). Hours and credits to be arranged

SBP 4013 Wood Anatomy: 3 hours.
(Prerequisite: SBP 1103 or consent of instructor). Two hours lecture. Three hours laboratory. Anatomy of commercial timber species; elements of botanical microtechnique, fundamentals of microscopy, and fundamental properties: gross and minute structural characteristics of wood leading to identification

SBP 4023 Lignocellulosic Biomass Chemistry: 3 hours.
Three hour lecture. (Prerequisites: CH 1043 and CH 1053 or equivalent.) Chemical composition of lignocellulosic biomass (wood, agricultural residues, and bioenergy crops) including cellulose, hemicelluloses, lignin, and extractives, their structures, isolation, processes and applications

SBP 4113 Adhesives and Biocomposites: 3 hours.
Two hours lecture. Three hours laboratory. (Prerequisites: SBP 2123, SBP 3113, SBP 3123, and CH 1053.) Theories and practices of adhesives and finishing materials used in the manufacture of biocomposite products and furniture

SBP 4123 Lumber Manufacturing: 3 hours.
Two hours lecture. Three hours laboratory. Raw materials, production methods and product specifications for sawn wood products. Machinery and plant layout. Operation, control, and analysis of lumber manufacturing systems; markets. The laboratory is used for problems, discussion, demonstration, tests, field trips, and writing assignments

SBP 4133 Biorefinery Processes: 3 hours.
(Prerequisites: SBP 4023 or consent of instructor). Three hours lecture. An overview of the different chemical and thermochemical biorefinery processes used to convert biomass into chemicals and fuels

SBP 4144 Biocomposite Application and Manufacturing: 4 hours.
Three hours lecture. Three hours laboratory. (Prerequisite: SBP 2123, SBP 3113, SBP 3123, and SBP 4113/6113 or Consent of Instructor). This course evaluates the application of raw bio-materials (wood, non-wood biomaterial and resins) that are used to manufacture reconstituted and laminated bio-composite products and to classify these products by type, properties, and applications

SBP 4153 Biological Conversion of Biomass: 3 hours.
(Prerequisite: BIO 1134 and BIO 1144 or consent of instructor). Three hours lecture. Introduction to concepts of conversion of biomass by organisms or isolated enzymes to chemicals focusing on breakdown of cellulose, lignin and hemicelluloses and enzyme kinetics

SBP 4213 Deterioration and Preservation of Biomaterials: 3 hours.
Two hours lecture. Three hours laboratory. (Prerequisite: SBP 1103 or Consent of Instructor). Thermal, biological, and mechanical agents of bioproducts deterioration; biological control; design considerations; preservatives, preservation systems; treatability; preservative effectiveness; standards, pollution control

SBP 4243 Sustainable Bioproducts: 3 hours.
(Prerequisite: SBP 3123 or consent of instructor). Three hours lecture. Expanding students' knowledge of bioproducts, manufacturing principles and processes according to various industrial fields and insights into new approaches and methods in bioproducts industries

SBP 4253 Quantitative Methods in Sustainable Bioproducts: 3 hours.
Three hours lectures. (Prerequisite: MA 1313 and MA 1323 or equivalent and SBP 2123). The study and practical application of quantitative techniques commonly used in industry to evaluate the net worth of raw materials, and the cause and effect on process variables

SBP 4263 Furniture Design and Fabrication: 3 hours.
(Prerequisite: SBP 3113 or consent of instructor). Two hours lecture. Three hours laboratory. Basic theories and principles of furniture strength design and manufacturing; mechanical properties of environmentally preferable materials; green and sustainable design of certifications; testing standards. Machines used, function and operation. Advanced manufacturing and quality control methods

SBP 4313 Bioproducts and the Environment: 3 hours.
(Prerequisites: SBP 2012, 2123, and 3123 or consent of instructor). Three hours lecture. An introduction to environmental topics and laws, environmental impact, and control technologies associated with emissions from diverse sustainable bioproducts industries, including global and national issues

SBP 4333 Bioproducts and Environmental Biotechnology: 3 hours.
(Prerequisites: SBP 4313/6313 or consent of instructor). Three hours lecture. Introduction to biotechnological applications which remediate, minimize or eliminate environmental emissions from bioproduct industries, including wood preservatives, high organic process water, adhesives, resins and solvents

SBP 4353 Forest Products Marketing: 3 hours.
Three hour lecture. Marketing and business practices used by forest products companies trading in lumber, engineered wood products and furniture

SBP 4443 Capstone Sustainable Bioproducts: 3 hours.
(Prerequisite: consent of instructor). Integration of knowledge from courses and current issues involving team projects that explore manufacturing problems or product design, emphasizing LCA, social / global perspectives, and problem solving

SBP 4450 Undergraduate Research in Sustainable Bioproducts: 1-6 hours.
(Prerequisite: Senior Standing and consent of instructor). 1-6 Variable hour laboratory. This course is introduced to introduce senior level students to the concepts of independent and original research. (Course limited to two offerings)

SBP 4990 Special Topic in Sustainable Bioproducts: 1-9 hours.
(1-9). Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

SBP 6013 Wood Anatomy: 3 hours.
(Prerequisite: SBP 1103 or consent of instructor). Two hours lecture. Three hours laboratory. Anatomy of commercial timber species; elements of botanical microtechnique, fundamentals of microscopy, and fundamental properties: gross and minute structural characteristics of wood leading to identification

SBP 6023 Lignocellulosic Biomass Chemistry: 3 hours.
Three hour lecture. (Prerequisites: CH 1043 and CH 1053 or equivalent.) Chemical composition of lignocellulosic biomass (wood, agricultural residues, and bioenergy crops) including cellulose, hemicelluloses, lignin, and extractives, their structures, isolation, processes and applications

SBP 6113 Adhesives and Biocomposites: 3 hours.
Two hours lecture. Three hours laboratory. (Prerequisites: SBP 2123, SBP 3113, SBP 3123, and CH 1053.) Theories and practices of adhesives and finishing materials used in the manufacture of biocomposite products and furniture

SBP 6123 Lumber Manufacturing: 3 hours.
Two hours lecture. Three hours laboratory. Raw materials, production methods and product specifications for sawn wood products. Machinery and plant layout. Operation, control, and analysis of lumber manufacturing systems; markets. The laboratory is used for problems, discussion, demonstration, tests, field trips, and writing assignments

SBP 6133 Biorefinery Processes: 3 hours.
(Prerequisites: SBP 4023 or consent of instructor). Three hours lecture. An overview of the different chemical and thermochemical biorefinery processes used to convert biomass into chemicals and fuels

SBP 6144 Biocomposite Application and Manufacturing: 4 hours.
Three hours lecture. Three hours laboratory. (Prerequisite: SBP 2123, SBP 3113, SBP 3123, and SBP 4113/6113 or Consent of Instructor). This course evaluates the application of raw bio-materials (wood, non-wood biomaterial and resins) that are used to manufacture reconstituted and laminated bio-composite products and to classify these products by type, properties, and applications

SBP 6153 Biological Conversion of Biomass: 3 hours.
(Prerequisite: BIO 1134 and BIO 1144 or consent of instructor). Three hours lecture. Introduction to concepts of conversion of biomass by organisms or isolated enzymes to chemicals focusing on breakdown of cellulose, lignin and hemicelluloses and enzyme kinetics

SBP 6213 Deterioration and Preservation of Biomaterials: 3 hours.
Two hours lecture. Three hours laboratory. (Prerequisite: SBP 1103 or Consent of Instructor). Thermal, biological, and mechanical agents of bioproducts deterioration; biological control; design considerations; preservatives, preservation systems; treatability; preservative effectiveness; standards, pollution control

SBP 6243 Sustainable Bioproducts: 3 hours.
(Prerequisite: SBP 3123 or consent of instructor). Three hours lecture. Expanding students' knowledge of bioproducts, manufacturing principles and processes according to various industrial fields and insights into new approaches and methods in bioproducts industries

SBP 6253 Quantitative Methods in Sustainable Bioproducts: 3 hours.
Three hours lectures. (Prerequisite: MA 1313 and MA 1323 or equivalent and SBP 2123). The study and practical application of quantitative techniques commonly used in industry to evaluate the net worth of raw materials, and the cause and effect on process variables

SBP 6263 Furniture Design and Fabrication: 3 hours.
(Prerequisite: SBP 3113 or consent of instructor). Two hours lecture. Three hours laboratory. Basic theories and principles of furniture strength design and manufacturing; mechanical properties of environmentally preferable materials; green and sustainable design of certifications; testing standards. Machines used, function and operation. Advanced manufacturing and quality control methods

SBP 6313 Bioproducts and the Environment: 3 hours.
(Prerequisites: SBP 2012, 2123, and 3123 or consent of instructor). Three hours lecture. An introduction to environmental topics and laws, environmental impact, and control technologies associated with emissions from diverse sustainable bioproducts industries, including global and national issues

SBP 6333 Bioproducts and Environmental Biotechnology: 3 hours.
(Prerequisites: SBP 4313/6313 or consent of instructor). Three hours lecture. Introduction to biotechnological applications which remediate, minimize or eliminate environmental emissions from bioproduct industries, including wood preservatives, high organic process water, adhesives, resins and solvents

SBP 6353 Forest Products Marketing: 3 hours.
Three hour lecture. Marketing and business practices used by forest products companies trading in lumber, engineered wood products and furniture

SBP 6990 Special Topics in Sustainable Bioproducts: 1-9 hours.
(1-9). Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

SBP 7000 Directed Individual Study in Sustainable Bioproducts: 1-6 hours.
Hours and credits to be arranged

SBP 8000 Thesis Research/ Thesis in Sustainable Bioproducts: 1-13 hours.
Hours and credits to be arranged

SBP 8111 Research Seminar I: 1 hour.
One hour seminar. Review of current research work in wood science and technology; the scientific method; philosophy of research

SBP 8121 Research Seminar II: 1 hour.
One hour seminar. Review of current research work in wood science and technology; the scientific method; philosophy of research. This course focuses on oral communication skills

SBP 8123 Advanced Lignocellulosic Biomass Chemistry: 3 hours.
(Prerequisite: SBP 4023/6023 or consent of the instructor). Three hours lecture. Chemistry of major lignocellulosic biomass components. Chemical modification and swelling of cellulose, chemical and enzymatic degradation of polysaccharides and lignin, wood preservation, wood plasticization and wood conversion to value added chemicals

SBP 8133 Environmental Issues in Sustainable Bioproducts: 3 hours.
(Consent of instructor). Three hours lecture. Environmental impact, regulations, management of wood treatment by-products and chemical wastes; biodegradation microorganisms; bioremediation; biomass residues; soil, sediment, water, air contaminations; current clean-up technologies

SBP 8213 Advanced Wood Mechanics: 3 hours.
(Prerequisite: Consent of Instructor). Two hours lecture. Three hours laboratory. Study of elastic and viscoelastic behavior of wood composites; fracture in wood; stress analysis; current topics in wood mechanics. Mechanics. SBP 8213 Advanced Wood Mechanics

SBP 8990 Special Topic In Sustainable Bioproducts: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

SBP 9000 Dissertation Research /Dissertation in Sustainable Bioproducts: 1-13 hours.
Hours and credits to be arranged

Student Ldshp Comm Engagement Courses

SLCE 1001 First Year Seminar: 1 hour.
One hour lecture. First-year seminars explore a diverse array of topics that provide students with an opportunity to learn about a specific discipline from skilled faculty members

SLCE 1002 Day One Leadership Community: 2 hours.
One hour lecture,two hours leadership laboratory. Introduction to and engagement of core principles of leadership through instruction, mentor discussion, and community service-learning projects

SLCE 3412 Montgomery Leadership Program, Semester I: 2 hours.
Montgomery Leadership Program, Semester One (2). (Prerequisite: Admission into Montgomery Leadership Program). Two hours seminar. One hour field experience. Engagement of core principles of leadership through instruction, mentor component, and community service-learning projects for MSU students selected to participate in Montgomery Leadership Program

SLCE 3812 Montgomery Leadership Program, Semester II: 2 hours.
Montgomery Leadership Program, Semester Two (2). (Prerequisite: Admission in the Montgomery Leadership Program and completion of SLCE 3412). Two hours lecture. One hour field experience. Advanced principles of leadership through instruction, mentor component, community service-learning projects, and peer class facilitation through Day One Leadership Community

SLCE 4000 Directed Individual Study in Student Leadership: 1-6 hours.
Hours and credits to be arranged

SLCE 4153 Mentoring for At-Risk Youths: 3 hours.
(Prerequisite: JR/SR Standing and Permission of Instructor). One hour lecture, four hours practical experience. This course trains students to mentor at-risk juveniles to facilitate their successful transition to productive community roles. (Same as CRM 4153 and SO 4153)

SLCE 4812 Montgomery Leadership Program, Semester III: 2 hours.

SLCE 4990 Special Topics in Student Leadership and Community Engagement Program: 1-9 hours.
Special Topic in Leadership (1-6). Credit and title to be arranged. This course is used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to offerings under one title within two academic years.)

Sociology Courses

SO 1001 First Year Seminar: 1 hour.
One hour lecture. First-year seminars explore a diverse arrary of topics that provide students with an opportunity to learn about a specific discipline from skilled faculty members

SO 1003 Introduction to Sociology: 3 hours.
Three hours lecture. The nature and development of culture; social aspects of personality; analysis of community life, population trends, social classes, institutions, processes, and organization; culture change

SO 1103 Contemporary Social Problems: 3 hours.
Three hours lecture. Analysis of problems related to: life cycle, sexuality, family disruptions, health, illness, death and dying, addictions, crime, minorities, population, environment, resources and poverty. Suggested solutions

SO 1173 Introduction to Gender Studies: 3 hours.
Three hours lecture. An introduction to theoretical concepts in Gender Studies. This course will examine the influence of the women's movement on the academic development of Gender Studies. (Same as AN 1173 and GS 1173)

SO 1203 Sociology of Families: 3 hours.
Three hours lecture. A study of how social inequality, diversity, and social change shape families and family life, with emphasis on contemporary American families

SO 2203 Cultural and Racial Minorities: 3 hours.
(Prerequisite: Three hours in an introductory social science). Three hours lecture. Origins of minority groups and racial attitudes. Biological and cultural concepts of race and minority groups; problems of adjustment in interracial and multiethnic societies. (Same as AAS 2203 and AN 2203)

SO 2990 Special Topics in Sociology: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

SO 3003 Social Inequality: 3 hours.
(Prerequisite: SO 1003). Three hours lecture. Investigates the nature, causes, and consequences of social inequality and stratification, the relationships among class, race, and gender inequalities in cross-cultural perspective

SO 3013 Society and the Individual: 3 hours.
(Prerequisite: SO 1003). Three hours lecture. A study of interrelationship between society and the individual. Emphasis is placed on the structural aspects of socialization and the social construction of reality

SO 3053 Organizations in Modern Society: 3 hours.
(Prerequisite: SO 1003). Three hours lecture. Examines the nature and types of formal organizations, their impact on, and outcomes for, individuals and society; organizational structures, processes, environments and effectiveness

SO 3103 Social Theory I: 3 hours.
(Prerequisite: Nine hours of sociology, CS 1013 or equivalent and junior standing). Lecture course. Study of European and American sociological theory intellectual antecedents as well as social-cultural context

SO 3123 Policing and Society: 3 hours.
(Prerequisites: CRM 1003 and SO 1003). Three hours lecture. An overview of police functions and responsibilities at all levels from a sociological perspective. Focuses on symbiotic roles of policing and other societal organizations

SO 3213 Introduction to Social Research: 3 hours.
(Prerequisite: Nine hours of sociology and/or criminology courses). Three hour lecture. A survey of the general field of research and methodology, including an examination of the various types of research designs, techniques, and procedures

SO 3303 Rural Sociology: 3 hours.
(Prerequisite: Six hours of social science or consent of instructor). Three hours lecture. A study of rural society, its organizations, agencies, institutions, population trends and composition, patterns of settlement, social processes, and changing character

SO 3313 Deviant Behavior: 3 hours.
(Prerequisite: CRM 1003 and SO 1003 or consent of instructor). Three hours lecture. Introduction to the social and cultural factors related to human deviance. Special attention is given to the study of various theories of deviance

SO 3323 Contemporary Woman: 3 hours.
Three hours lecture. Introductory course for the Concentration in Women's Studies. Major topics are women's heritage, identity, culture, and vulnerabilities

SO 3333 Society and Religion: 3 hours.
Three hours lecture. Religion as an institution. Examines the social origins of religion and its functions, both positive and negative, in social movements, social control and politics.(Same as Rel 3333)

SO 3343 Gender, Crime, and Justice: 3 hours.
(Prerequisite: CRM 1003 and SO 1003 or consent of instructor). Three hours lecture. Gender differences in criminal behavior, victimization, and criminal justice processing, emphasizing the unique experiences of women in all of these areas. (Same as CRM 3343)

SO 3353 Race, Crime, & Justice: 3 hours.
(Prerequisite: CRM 1003 and SO 1003 or consent of instructor). Three hours lecture. Racial differences in criminal behavior, victimization, and criminal processing, emphasizing the unique experiences of racial minorities in these areas (Same as CRM 3353)

SO 3503 Violence in the United States: 3 hours.
(Prerequisite: CRM 1003 and SO 1003 or consent of instructor). Three hours lecture. Indepth study of violence, including types of violence, categories of offenders and victims, its social consequences, and potential solutions. (Same as CRM 3503)

SO 3603 Criminological Theory: 3 hours.
(Prerequisites: CRM 1003 and SO 1003 or consent of instructor). Three hours lecture. Survey of the major sociological and criminological explanations of crime. (Same as CRM 3603)

SO 4000 Directed Individual Study in Sociology: 1-6 hours.
Hours and credits to be arranged

SO 4113 Social Organization and Change: 3 hours.
(Prerequisites: SO 1003 and junior standing). Three hours lecture. An intensive examination of recent research focusing on the prediction, explanation and control of social change with attention to trends in developing countries

SO 4123 Poverty, Analysis: People, Organization and Program: 3 hours.
(Prerequisites: SO 1003 and junior standing). Three hours lecture. Historical perspectives; problems of definition and measurement; socio-cultural situations contributing to deprivation; delineation of poverty groups; social consequences of poverty; poverty programs and organizations

SO 4153 Mentoring for At-Risk Youths: 3 hours.
(Prerequisite: JR/SR Standing and Permission of Instructor). One hour lecture, four hours practical experience. This course trains students to mentor at-risk juveniles to facilitate their successful transition to productive community roles. (Same as CRM 4153 and SLCE 4153)

SO 4173 Environment and Society: 3 hours.
(Prerequisite: AN 1103 or SO 1003 or consent of instructor). Three hours lecture. A study of the interaction between human society and the environment including the social aspects of environmental problems. (Same as AN 4173/6173)

SO 4203 The Family in the United States: 3 hours.
(Prerequisite: SO 1203). Three hours lecture. A study of the American family as an institution, with emphasis on change and interrelationships with other institutions

SO 4223 Comparative Family Systems: 3 hours.
(Prerequisite: SO 1203). Three hours lecture. A systematic study of family patterns in selected cultures of the world

SO 4233 Juvenile Delinquency: 3 hours.
(Prerequisites: CRM 1003 and SO 1003 or consent of instructor). Three hours lecture. Critical study of problems, causes, ways of handling; attitudes, roles and relationships of persons involved, including youthful offenders, social workers, court and law enforcement officials. (Same as CRM 4233/6233)

SO 4243 Drugs, Crime and Control: 3 hours.
(Prerequisites: SO 1003 and CRM 1003 or consent of instructor). Three hours lecture. Focus on the social factors which give rise to illicit drug use, patterns and trends in drug crime and strategies to control drug crime. (Same as CRM 4243/6243)

SO 4253 White Collar Crime and Elite Deviance: 3 hours.
(Prerequisites: SO 1003 and CRM 1003 or consent of instructor). Three hours lecture. An overview of the sociological and criminological literature in the area defined as 'White Collar Crime' (Same as CRM 4253/6253)

SO 4273 Sociology of Education: 3 hours.
(Prerequisites: SO 1003 and junior standing). Three hours lecture. A sociological analysis of education as a social institution, its role in the larger society, the organization of schooling, and the social dynamics of classrooms

SO 4303 Urban Sociology: 3 hours.
(Prerequisites: SO 1003 and junior standing). Three hours lecture. A sociological and ecological study of urban areas emphasizing the processes of population, environment, technology and social organization

SO 4323 Victimology: 3 hours.
(Prerequisite: CRM 1003 and SO 1003 or consent of instructor). Three hours lecture. A critical study of victims, examining theories of victimization, the social construction of victimization, the relationship between victims and offenders, and victim prevention efforts. (Same as CRM 4323/6323)

SO 4333 Sociology of Sport: 3 hours.
(Prerequisites: SO 1003 and junior standing). Three hours lecture. Examination of sport as a social institution in American society, its contributions to society and to participants

SO 4343 Media, Crime and Justice: 3 hours.
(Prerequisites: CRM 1003 and SO 1003)). An overview of the role media plays in shaping criminal justice policy, as well as public knowledge about crime and the criminal justice system

SO 4403 Sociology of Gender and Sexuality: 3 hours.
(Prerequisites: SO 1003, or approval of instructor). Three hours lecture. Changing character of gender and sexuality and significance in various social institutions. Intersection between gender, sexuality and other forms of inequality

SO 4413 Aging and Retirement in American Society: 3 hours.
(Prerequisites: Nine hours of sociology or related disciplines). Three hours lecture. A study of the social and economic aspects of aging and of the social problems in American society related to the aged and retired groups

SO 4423 Health and Society: 3 hours.
(Prerequisite:3 hours in sociology). Three hours lecture. Examines health and the health care structure of the United States as it relates to our culture,norms and social institutions

SO 4433 Sociology of Death and Dying: 3 hours.
(Prerequisite:3 hours in Sociology). Three hours lecture. Examines death as a social event,the social nature of death, relationships at the end of life, and social structural impacts on death and dying

SO 4453 Power, War, and Peace: 3 hours.
Three hours lecture. Introduction to three major topics in sociology/ criminology: power, war and peace. Minor topics include: power and organizations, the relationship between power and war, terrorism, torture, ethnic conflict, reconstruction and reconciliation, and social movements (same as CRM 4453)

SO 4503 Gender and Work: 3 hours.
Three hours lectures. This course presents research and theories on the role of gender in shaping labor market opportunities, experiences, and rewards; remedies for enduring problems, including those applied in the United States' workplace and abroad; and new research directions

SO 4513 Correctional Systems: 3 hours.
(Prerequisites: CRM 1003 and CRM 3603 or consent of instructor). Three hours lecture. Survey of contemporary correctional systems and practices. Emphasis placed on the formal organization and functioning of penal systems (same as CRM 4513/6513)

SO 4523 Law and Society: 3 hours.
(Prerequisites: SO 1003 and CRM 1003 or consent of instructor). Three hours lecture. Explores the social origins of law and how law can both maintain social order and bring about social change (Same as CRM 4523/6523)

SO 4623 Social Work with the Aged: 3 hours.
Three hours lecture. Examination of language as a part of culture, a source of knowledge about other aspects of culture, and a social behavior. (Same as AN 4623/6623 and EN 4623/6623)

SO 4633 Language and Society: 3 hours.
Three hours lecture. Examination of relationship between language and society. How language varies regionally and socially; people's use of and attitudes toward different ways of speaking. (Same as AN 4633/6633 and EN 4633/6633)

SO 4643 Race and the Media: 3 hours.
(Prerequisites: SO/AAS 2203, or CO 1403, or AAS 1063 or equivalent). Three hours lecture. Examines the relationship between society, race, and the media. An examination of the social influence of how racial representations are produced, distributed, and consumed. (Same as AAS 4643 and CO 4643)

SO 4703 Population Problems and Processes: 3 hours.
(Prerequisite: SO 1003 or consent of the instructor). Three hours lecture. World population growth and its consequences, population change and national policies, family planning, recent U.S. population trends, basic demographic measurement, the demographic report

SO 4713 Social Work Senior Seminar: 3 hours.
Review and evaluation of censuses, vital statistics, and demographic surveys and their uses, with emphasis on measurement, methods, and analytical techniques

SO 4733 Community: Organization and Relationships: 3 hours.
(Prerequisites: SO 1003 and junior standing). Three hours lecture. Rural-urban approach to community; types of local societies and community organizations; perspectives in community study

SO 4804 Social Research Practice: 4 hours.
(Prerequisite: SO 3213 or equivalent). Three hours lecture, two hours lab. Practical application of sociological analysis and methods conducting social research projects. Includes selection of methods and analytical techniques, data management, computer-based analysis, and report writing

SO 4990 Special Topics in Sociology: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

SO 6113 Social Organization and Change: 3 hours.
(Prerequisites: SO 1003 and junior standing). Three hours lecture. An intensive examination of recent research focusing on the prediction, explanation and control of social change with attention to trends in developing countries

SO 6123 Poverty Analysis: People, Organization and Programs: 3 hours.
(Prerequisites: SO 1003 and junior standing). Three hours lecture. Historical perspectives; problems of definition and measurement; socio-cultural situations contributing to deprivation; delineation of poverty groups; social consequences of poverty; poverty programs and organizations

SO 6173 Environment and Society: 3 hours.
(Prerequisite: AN 1103 or SO 1003 or consent of instructor). Three hours lecture. A study of the interaction between human society and the environment including the social aspects of environmental problems. (Same as AN 4173/6173)

SO 6223 Comparative Family Systems: 3 hours.
(Prerequisite: SO 1203). Three hours lecture. A systematic study of family patterns in selected cultures of the world

SO 6233 Juvenile Delinquency: 3 hours.
(Prerequisites: CRM 1003 and SO 1003 or consent of instructor). Three hours lecture. Critical study of problems, causes, ways of handling; attitudes, roles and relationships of persons involved, including youthful offenders, social workers, court and law enforcement officials. (Same as CRM 4233/6233)

SO 6243 Drugs, Crime and Control: 3 hours.
(Prerequisites: SO 1003 and CRM 1003 or consent of instructor). Three hours lecture. Focus on the social factors which give rise to illicit drug use, patterns and trends in drug crime and strategies to control drug crime. (Same as CRM 4243/6243)

SO 6253 White Collar Crime and Elite Deviance: 3 hours.
(Prerequisites: SO 1003 and CRM 1003 or consent of instructor). Three hours lecture. An overview of the sociological and criminological literature in the area defined as 'White Collar Crime' (Same as CRM 4253/6253)

SO 6273 Sociology of Education: 3 hours.
(Prerequisites: SO 1003 and junior standing). Three hours lecture. A sociological analysis of education as a social institution, its role in the larger society, the organization of schooling, and the social dynamics of classrooms

SO 6303 Urban Sociology: 3 hours.
(Prerequisites: SO 1003 and junior standing). Three hours lecture. A sociological and ecological study of urban areas emphasizing the processes of population, environment, technology and social organization

SO 6323 Victimology: 3 hours.
(Prerequisite: CRM 1003 and SO 1003 or consent of instructor). Three hours lecture. A critical study of victims, examining theories of victimization, the social construction of victimization, the relationship between victims and offenders, and victim prevention efforts. (Same as CRM 4323/6323)

SO 6333 Sociology of Sport: 3 hours.
(Prerequisites: SO 1003 and junior standing). Three hours lecture. Examination of sport as a social institution in American society, its contributions to society and to participants

SO 6403 Sociology of Gender and Sexuality: 3 hours.
(Prerequisites: SO 1003, or approval of instructor). Three hours lecture. Changing character of gender and sexuality and significance in various social institutions. Intersection between gender, sexuality and other forms of inequality

SO 6413 Aging and Retirement in American Society: 3 hours.
(Prerequisites: Nine hours of sociology or related disciplines). Three hours lecture. A study of the social and economic aspects of aging and of the social problems in American society related to the aged and retired groups

SO 6423 Health and Society: 3 hours.
(Prerequisite:3 hours in sociology). Three hours lecture. Examines health and the health care structure of the United States as it relates to our culture,norms and social institutions

SO 6433 Sociology of Death and Dying: 3 hours.
(Prerequisite:3 hours in Sociology). Three hours lecture. Examines death as a social event,the social nature of death, relationships at the end of life, and social structural impacts on death and dying

SO 6503 Gender and Work: 3 hours.
Three hours lectures. This course presents research and theories on the role of gender in shaping labor market opportunities, experiences, and rewards; remedies for enduring problems, including those applied in the United States' workplace and abroad; and new research directions

SO 6513 Correctional Systems: 3 hours.
(Prerequisites: CRM 1003 and CRM 3603 or consent of instructor). Three hours lecture. Survey of contemporary correctional systems and practices. Emphasis placed on the formal organization and functioning of penal systems (same as CRM 4513/6513)

SO 6523 Law and Society: 3 hours.
(Prerequisites: SO 1003 and CRM 1003 or consent of instructor). Three hours lecture. Explores the social origins of law and how law can both maintain social order and bring about social change (Same as CRM 4523/6523)

SO 6623 Language and Culture: 3 hours.
Three hours lecture. Examination of language as a part of culture, a source of knowledge about other aspects of culture, and a social behavior. (Same as AN 4623/6623 and EN 4623/6623)

SO 6633 Language and Society: 3 hours.
Three hours lecture. Examination of relationship between language and society. How language varies regionally and socially; people's use of and attitudes toward different ways of speaking. (Same as AN 4633/6633 and EN 4633/6633)

SO 6703 Population Problems and Processes: 3 hours.
(Prerequisite: SO 1003 or consent of the instructor). Three hours lecture. World population growth and its consequences, population change and national policies, family planning, recent U.S. population trends, basic demographic measurement, the demographic report

SO 6713 Methods in Population Research: 3 hours.
Review and evaluation of censuses, vital statistics, and demographic surveys and their uses, with emphasis on measurement, methods, and analytical techniques

SO 6733 Community: Organization and Relationships: 3 hours.
(Prerequisites: SO 1003 and junior standing). Three hours lecture. Rural-urban approach to community; types of local societies and community organizations; perspectives in community study

SO 6990 Special Topics in Sociology: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

SO 7000 Directed Individual Study in Sociology: 1-6 hours.
Hours and credits to be arranged

SO 8000 Thesis Research/ Thesis in Sociology: 1-13 hours.
Hours and credits to be arranged

SO 8103 Graduate Theory I: 3 hours.
Social theories and intellectual antecedents: European and American origins and development. Includes entire range of socio-cultural complex associated with 19th- and early 20th-century sociology

SO 8113 Graduate Theory II: 3 hours.
Focus on post-19th century theory and antecedents. Delineation of the basic postures in the discipline and relative relationships of these postures to theory development

SO 8213 Research Design: 3 hours.
(Prerequisite: SO 8274). Three hours lecture. Emphasis on overall design, plan, structure, and strategy. Also limitations of theory, measurement, sampling and statistical testing in research

SO 8223 Quantitative Analysis: 3 hours.
(Prerequisite: SO 8213 and SO 8274). Three hours lecture. Questionnaire and question construction, sampling, field procedures, overview of advanced techniques of analysis, presentation of statistical materials

SO 8233 Qualitative Analysis: 3 hours.
(Prerequisite: SO 8213). Three hours lecture. Qualitative approaches to understanding social behavior. Exposure to all phases of qualitative research: epistemology, design, field work, ethics, and writing research results

SO 8243 Spatial Analysis of Social Data: 3 hours.
(Prerequisite:SO 8284 or equivalent, or consent of instructor). Three hours lecture. Spatial theorires of society;relevant digital databases; procedures for visualizing data;exploratory spatial data; local and global spatial regression models

SO 8274 Graduate Social Statistics I: 4 hours.
(Prerequisite: ST 2113 or equivalent). Three hours lecture. Two hours laboratory. Probability, hypothesis testing, tests of means and proportions, contingency table analysis, analysis of variance, bivariate linear regressions correlation; data analysis and interpretation using current statistical software

SO 8284 Graduate Social Statistics II: 4 hours.
(Prerequisite: SO 8274). Three hours lecture. Two hours laboratory. Hypothesis testing, analysis of variance, multiple linear regression and correlation, causal models, exploratory factor analysis; data analysis and interpretation using current statistical software

SO 8293 Structural Equations Modeling with Latent Variables in Sociology: 3 hours.
(Prerequisite: SO 8284 or equivalent). Three hours lecture. The application of structural equation modeling techniques to sociological problems containing unobserved variables, focusing on estimation and interpretation of model parameters with errors of measurement

SO 8313 Political Sociology: 3 hours.
Three hours seminar. Study of power relations within and across societies and the relationships between social groups and politics. Special attention given to the links between stratification, power, and contentious politics

SO 8343 Complex Organizations: 3 hours.
Theory and research in organizations. Nature and types of organizations; determinants and consequences of organizational growth; organizational effectiveness; production, authority, and control systems in organizations

SO 8403 Seminar in Race Relations: 3 hours.
Three hours lecture. Contributions of anthropology, sociology and psychology to the field of race relations. Critical analysis of recent studies, current racial theories and programs

SO 8413 Seminar in Social Stratification: 3 hours.
Three hours lecture. Critical analyses of theories and research on social class and related social structures. Explores race/gender/class stratification and policies to alter income.wealth inequality

SO 8423 Seminar in Deviant Behavior: 3 hours.
Examination of relation between social conditions, social problems, deviance, and deviant careers. The organization of social control activities, and the social differentiation of deviant populations

SO 8433 Seminar in Criminology: 3 hours.
Exploration of conceptual, methodological, and substantive problems of research in the field of criminology. The classification of criminals and criminal careers receives special emphasis

SO 8443 Seminar in Rural Sociology: 3 hours.
Three hours seminar. An exploration of rural sociology, with an emphasis on critical approaches to rural places, people, and communities. Overview of historic and contemporary approaches to rural sociology

SO 8453 Masculinities: 3 hours.
Three hours lecture. An exploration of masculinities studies, with an emphasis on contextualizing masculinities within patterns of stratification. Overview of historic and contemporary approaches to masculinities

SO 8503 Seminar in the Family: 3 hours.
An advanced seminar on the family institution, emphasizing theoretical and conceptual frameworks, topics of current concern to family sociology, and major literature in the area

SO 8523 Symbolic Interaction and Social Structure: 3 hours.
Review of classic and current sociological literature in symbolic interaction and development of self as process and product of social structure

SO 8703 Seminar in Population: 3 hours.
(Prerequisite: SO 4703/6703 or equivalent). Study of population dynamics; theories of optimum population; population policies and programs; zero population growth; interrelationship of population phenomena with socioeconomic developments

SO 8900 Fields of Sociology: 1-3 hours.
(Hours and credits to be arranged up to 3 hours.) A seminar in selected areas of sociological research and practice

SO 8963 Exploring Issues in Gender: 3 hours.
(Prerequisite:Graduate standing and enrollment in the Diveristy Certificate Program).Three hours lecture. An intensive introduction to theories of gender structures social, economic and cultural inequalities. Designed for online Diversity Certificate Program students. (Same as GS 8963)

SO 8973 Gender and Work: 3 hours.
(Prerequisite: Graduate standing and enrollment in the Diversity Certificate Program).Three hours lecture. An intensive examination of how gender impacts experiences of work from the home to the corporation. Designed for online Diversity Certificate Program Students. (Same as GS 8973)

SO 8983 Seminar in Race Relations: 3 hours.
(Prerequisite:Graduate standing and enrollment in the Diversity Certificate Program). Three hours lecture. Contributions of anthropology, scoiology , and psychology to race relations. Critical analysis of recent studies, curretn racial theories and programs. Designed for online Diversity Certificate Program students

SO 8990 Special Topics in Sociology: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

SO 9000 Dissertation Research /Dissertation in Sociology: 1-13 hours.
Hours and credits to be arranged

Sport Studies Courses

SS 1001 First Year Seminar: 1 hour.
One hour lecture. First-year seminars explore a diverse array of topics that provide students with an opportunity to learn about a specific discipline from skilled faculty members

SS 2003 Foundations of Sport Industry: 3 hours.
Three hours lecture. Overview and analysis of the knowledge in sport management, including an examination of sport and sport-related organizations Acquaints student with job opportunities in the profession and discusses future trends

SS 2103 Sport Careers and Practicum: 3 hours.
(Prerequisite: SS 2003). One hour lecture. Two hours practicum. In-depth investigation of skills and competencies necessary for careers in the sport industry. Requires supervised work experience of 100 hours in a sport management setting

SS 3103 Sport Sponsorship: 3 hours.
Three hours lecture. The sponsorship process as it relates to athletics and commercial sport operations; creation and application of sponsorships to specific sport scenarios

SS 3203 Sport Law: 3 hours.
Three hours lecture. This course addresses the influence of torts, contracts, employment-related issues, and intellectual property on the sport industry

SS 3303 Communication Management in Sport: 3 hours.
Three hours lecture. Functions and tasks of communication professionals in the sport business, including such fields as public relations, media relations, community relations, and promotions

SS 3403 Facility and Event Management in Sport: 3 hours.
Three hours lecture. This course covers the requisite responsibilities and tasks involved in facility and event management in sport industry

SS 3503 Sport and Recreational Leadership: 3 hours.
(Prerequisite: SS 2003). Three hours lecture. Examine the process of leadership as it relates to leadership needs in the delivery of recreation, leisure, and sport professions

SS 3603 Program Planning in Sport and Recreation: 3 hours.
(Prerequisite: SS 2003). Three hours lecture. Explore and examine the theoretical foundations and community programming skills, methods, and techniques that are necessary to deliver recreational activities within a variety of agencies and organizations

SS 3703 Contemporary Issues in Intercollegiate Athletics: 3 hours.
(Prerequisite: SS 2003). Three hours lecture. A comprehensive foundation concerning contemporary issues surrounding intercollegiate athletics. Specifically, social, ethical, financial, economic, management, and governance matters in college level sport will be examined

SS 3903 Ancient and Medieval Sport History: 3 hours.
Three hours lecture. The course will explore the history of sports, the history of physical education, and the history of ideas and beliefs about physical activity and human nature. The course will focus on the history of sport in ancient Greece, Rome, and medieval Europe

SS 4000 Directed Individual Study in Sport Studies: 1-9 hours.
Hours and credit to be arranged

SS 4003 Philosophy of Sport & Physical Activity: 3 hours.
Three hours lecture. An examination and development of philosophic reasoning skills to better understand the role that philosophy plays in our understanding and conception of physical activity and sport

SS 4103 Ethics in Sport Management: 3 hours.
Three hours lecture. Ethical issues relevant to administration in the sport business industry across a range of areas, including professional sport, collegiate sport, and youth/ high school sport

SS 4203 Funding of Sport: 3 hours.
Three hours lecture. Foundation of fiscal management concepts in the sport industry, including finance, economics, accounting, and general business practices

SS 4303 Globalization and Sport: 3 hours.
Three hours lecture. The impact of globalization trends on the sports industry. The course explores various theories of globalization as they relate to the business of sport

SS 4393 Sport Studies Internship: 3 hours.
(Prerequisite: Consent of instructor). Hours and credits to be arranged. A supervised observation and practicum experience in a sports communication setting

SS 4396 Sports Studies Internship: 6 hours.
(Prerequisite: Consent of instructor). Hours and credits to be arranged. A supervised observation and practicum experience in a sports communication setting

SS 4403 Gender and Sport: 3 hours.
Three hours lecture. An exploration of how ideologies and inequalities related to gender may be constructed, perpetuated, and/or challenged in and through sport. (Same as GS 4403/6403)

SS 4503 Sport Promotion and Sales Management: 3 hours.
(Prerequisite: SS 3103). Three hours lecture. The focus of this course is to examine the sport sales process in sponsorship and ticketing. Role-play exercises will be used extensively to simulate the sales environment, leading to a live attempt at sales

SS 4803 Seminar in Sports Studies: 3 hours.
(Prerequisite: Senior standing). Three hours lecture. In-depth investigation of current topics in sport studies with a focus on applying research to address issues in the sport industry

SS 4990 Special Topics in Sport Studies: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

SS 6003 Philosophy of Sport & Physical Activity: 3 hours.
Three hours lecture. An examination and development of philosophic reasoning skills to better understand the role that philosophy plays in our understanding and conception of physical activity and sport

SS 6403 Gender and Sport: 3 hours.
Three hours lecture. An exploration of how ideologies and inequalities related to gender may be constructed, perpetuated, and/or challenged in and through sport. (Same as GS 4403/6403)

SS 6503 Sport Promotion and Sales Management: 3 hours.
(Prerequisite: SS 3103). Three hours lecture. The focus of this course is to examine the sport sales process in sponsorship and ticketing. Role-play exercises will be used extensively to simulate the sales environment, leading to a live attempt at sales

SS 6990 Special Topics in Sport Studies: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

SS 7000 Directed Individual Study in Sport Studies: 1-9 hours.
Hours and credit to be arranged

SS 8123 Sport Management: 3 hours.
Three hours lecture. Study of principles, problems, human relationships, and procedures in supervision in sports administration. Involves theories of leadership, programs, and philosophies in the sport industry

SS 8203 Funding of Sport: 3 hours.
Three hours lecture. Overview of fiscal management concepts in the sport and recreation industries, including finance, economics, accounting, and general business practices

SS 8803 Sport Law: 3 hours.
Three hours lecture. The analysis and application of the legal foundations, concepts and issues impacting the sports industry

SS 8823 Sport Sponsorships: 3 hours.
Three hours lecture. An examination of the uniqueness of the sport sponsorships and importance of the effective advancement and visibility of the sport brand and positioning

SS 8833 Event and Facility Management: 3 hours.
Three hours lecture. The principles and applications of management, design, and maintenance concepts as they apply to indoor and outdoor events and facilities

SS 8883 Ethical Issues in Sport: 3 hours.
Three hours lecture. Philosophical exploration in the recognition, analysis, and implementation of ethical thought and the ethical decision making process within the multivalued contexts of the sports industry

SS 8893 History and Philosophy of Sport Seminar: 3 hours.
Three hours seminar. An investigation of historical events, political and social climates, and personalities, as well as philosophies which have influenced sport from early civilization to the present

SS 8990 Special Topics in Sport Studies: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

Statistics Courses

ST 2113 Introduction to Statistics: 3 hours.
(Prerequisite:ACT Math subscore 24 (or higher for some sections) or a grade of C or better in MA 1313).Two hours lecture. Two hours laboratory. Introduction to statistical techniques; descriptive statistics, random variables, probability distributions, estimation, confidence intervals, hypothesis testing, and measurement of association. Computer instruction for statistical analysis. (Same as MA 2113)

ST 2990 Special Topics in Statistics: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

ST 3123 Introduction to Statistical Inference: 3 hours.
(Prerequisite: ACT math subscore 24, or grade of C or better in MA 1313). Two hours lecture, Two hours laboratory. Basic concepts and methods of statistics, including descriptive statistics, probability random variables, sampling distribution, estimation, hypothesis testing, introduction to analysis of variance, simple linear regression. (Same as MA 3123),

ST 4000 Directed Individual Study in Statistics: 1-6 hours.
Hours and credits to be arranged

ST 4111 Seminar in Statistical Packages: 1 hour.
One hour lecture. Introduction to the statistical computer packages available at MSU

ST 4211 Statistical Consulting: 1 hour.
(Prerequisite: Consent of the department). Provides students with the opportunity to participate as statistical consultants on real projects; consultants are required to attend a weekly staff meeting. (May be repeated for credit.)

ST 4213 Nonparametric Methods: 3 hours.
(Prerequisite: An introductory course in statistical methods). Three hours lecture. Nonparametric and distribution-free methods, including inferences for proportions, contingency table analysis, goodness of fit tests, statistical methods based on rank order, and measures of association

ST 4243 Data Analysis I: 3 hours.
(Prerequisite:MA 2743, Corequisite MA 3113). Three hours lecture. Data description and descriptive statistics, probability and probability descriptions, parametric one-sample and two-sample inference procedures, simple linear regression, one-way ANOVA. Use of SAS. (Same as MA 4243/6243)

ST 4253 Data Analysis II: 3 hours.
(Prerequisite:MA/ST 4243/6243 and MA 3113). Three hours lecture. Multiple linear regression fixed, mixed, and random effect models;block design;two-factor analysis of variance;three-factor analysis of variance; analysis of covariance. Use of SAS. (Same as MA 4253/6253)

ST 4313 Introduction to Spatial Statistics: 3 hours.
(Prerequisite: Grade of C or better in ST 3123, or equivalent). Two hours lecture. Two hours laboratory. Spatial data analysis; kriging, block kriging, cokriging, variogram models;median polish and universal kriging for mean-nonstationary data;spatial autoregressive models; estimation and testing; spatial sampling

ST 4523 Introduction to Probability: 3 hours.
(Prerequisite: MA 2733). Three hours lecture. Basic concepts of probability, conditional probability, independence, random variables, discrete and continuous probability distributions, moment generating function, moments, special distributions, central limit theorem. (Same as MA 4523/6523)

ST 4543 Introduction to Mathematical Statistics I: 3 hours.
(Prerequisite: MA 2743). Three hours lecture. Combinatorics; probability, random variables, discrete and continuous distributions, generating functions, moments, special distributions, multivariate distributions, independence, distributions of functions of random variables. (Same as MA 4543/6543)

ST 4573 Introduction to Mathematical Statistics II: 3 hours.
(Prerequisite: ST 4543/6543). Three hours lecture. Continuation of ST 4543/6543. Transformations, sampling distributions, limiting distributions, point estimation, interval estimation, hypothesis testing, likelihood ratio tests, analysis of variance, regression, chi-square tests. (Same as MA 4573/6573)

ST 4990 Special Topics in Statistics: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

ST 6111 Seminar in Statistical Packages: 1 hour.
One hour lecture. Introduction to the statistical computer packages available at MSU

ST 6211 Statistical Consulting: 1 hour.
(Prerequisite: Consent of the department). Provides students with the opportunity to participate as statistical consultants on real projects; consultants are required to attend a weekly staff meeting. (May be repeated for credit.)

ST 6213 Nonparametric Methods: 3 hours.
(Prerequisite: An introductory course in statistical methods). Three hours lecture. Nonparametric and distribution-free methods, including inferences for proportions, contingency table analysis, goodness of fit tests, statistical methods based on rank order, and measures of association

ST 6243 Data Analysis I: 3 hours.
(Prerequisite:MA 2743, Corequisite MA 3113). Three hours lecture. Data description and descriptive statistics, probability and probability descriptions, parametric one-sample and two-sample inference procedures, simple linear regression, one-way ANOVA. Use of SAS. (Same as MA 4243/6243)

ST 6253 Data Analysis II: 3 hours.
(Prerequisite:MA/ST 4243/6243 and MA 3113). Three hours lecture. Multiple linear regression fixed, mixed, and random effect models;block design;two-factor analysis of variance;three-factor analysis of variance; analysis of covariance. Use of SAS. (Same as MA 4253/6253)

ST 6313 Introduction to Spatial Statistics: 3 hours.
(Prerequisite: Grade of C or better in ST 3123, or equivalent). Two hours lecture. Two hours laboratory. Spatial data analysis; kriging, block kriging, cokriging, variogram models;median polish and universal kriging for mean-nonstationary data;spatial autoregressive models; estimation and testing; spatial sampling

ST 6523 Introduction to Probability: 3 hours.
(Prerequisite: MA 2733). Three hours lecture. Basic concepts of probability, conditional probability, independence, random variables, discrete and continuous probability distributions, moment generating function, moments, special distributions, central limit theorem. (Same as MA 4523/6523)

ST 6543 Introduction to Mathematical Statistics I: 3 hours.
(Prerequisite: MA 2743). Three hours lecture. Combinatorics; probability, random variables, discrete and continuous distributions, generating functions, moments, special distributions, multivariate distributions, independence, distributions of functions of random variables. (Same as MA 4543/6543)

ST 6573 Introduction to Mathematical Statistics II: 3 hours.
(Prerequisite: ST 4543/6543). Three hours lecture. Continuation of ST 4543/6543. Transformations, sampling distributions, limiting distributions, point estimation, interval estimation, hypothesis testing, likelihood ratio tests, analysis of variance, regression, chi-square tests. (Same as MA 4573/6573)

ST 6990 Special Topics in Statistics: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

ST 7000 Directed Individual Study in Statistics: 1-6 hours.
Hours and credits to be arranged

ST 8000 Thesis Research/ Thesis in Statistics: 1-13 hours.
Hours and credits to be arranged

ST 8114 Statistical Methods: 4 hours.
(Prerequisite: MA 1313). Three hours lecture. Two hours laboratory. Fall and Spring semesters. Descriptive statistics; sampling distributions; inferences for one and two populations; completely random, block, Latin square, split-plot designs; factorials; simple linear regression; chi-square tests

ST 8214 Design and Analysis of Experiments: 4 hours.
(Prerequisite: ST 8114) Three hours lecture. Three hours laboratory. Offered spring semester. Procedures in planning and analyzing experiments; simple, multiple, and curvilinear regression; factorial arrangement of treatments; confounding; fractional replication; block designs; lattices; split-plots

ST 8253 Regression Analysis: 3 hours.
(Prerequisite: ST 8114 or equivalent). Three hours lecture. Fall and Spring semesters. Simple linear regression analysis and related inferences, remedial measures, multiple and polynomial regression, use of indicator variables, variable selection methods, and use of computer

ST 8263 Advanced Regression Analysis: 3 hours.
(Prerequisite: ST 8253). Three hours lecture. Continuation of ST 8253, including variable selection methods, optimization techniques, biased estimation methods such as ridge regression, non-linear regression, model validation methodology, indicator variables, design models

ST 8313 Introduction to Survey Sampling: 3 hours.
(Prerequisite: ST 8114). Three hours lecture. Topics include: design, planning, execution, and analysis of sample surveys; simple random, stratified random, cluster, and systematic sampling; ratio and regression estimation

ST 8353 Statistical Computations: 3 hours.
(Prerequisite: ST 8114). Three hours lecture. Applications of computer packages, including data screening, t-tests and Hotelling's T", analysis of designed experiments, regression analysis, contingency table analysis, projects, and report writing

ST 8413 Multivariate Statistical Methods: 3 hours.
(Prerequisite: ST 8253). Three hours lecture. Multivariate normal; multiple and partial correlation; principal components; factor analysis; rotation; canonical correlation; discriminant analysis; Hotelling's T"; cluster analysis; multidimensional scaling; multivariate analysis of variance

ST 8433 Multivariate Statistical Analysis: 3 hours.
(Prerequisites: ST 8413 and ST 8613 or consent of instructor). Three hours lecture. Theory of multivariate statistical methodology, including multivariate normal and Wishart distributions, Hotelling's T2, classification, multivariate analysis of variance and covariance, canonical correlation, principal components analysis

ST 8533 Applied Probability: 3 hours.
(Prerequisite: ST 4543/6543). Three hours lecture. An introduction to the applications of probability theory. Topics include Markov Chains, Poisson Processes, and Renewal, Queueing, and Reliability theories. Other topics as time permits

ST 8553 Advanced Probability Theory: 3 hours.
(Prerequisites: ST 6543 and MA 8633 or consent of instructor). Three hours lecture. A measure-theoretic presentation of the theory of probability including independence and conditioning, convergence theorems, characteristics functions, and limit theorems

ST 8563 Advanced Stochastic Processes: 3 hours.
(Prerequisite: ST 8553 or consent of instructor). Three hours lecture. Continuation of ST 8553, including Markov processes, second-order processes, stationary processes, Ergodic theory, martingales, stopping lines, and Brownian motion

ST 8603 Applied Statistics: 3 hours.
(Prerequisite: ST 4253/6253 or equivalent). Three hours lecture. Advanced analysis of experimental data. Topics include mixed and random models, incomplete block design, changeover trials, experiments, analysis of covariance, and repeated measures design

ST 8613 Linear Models I: 3 hours.
(Prerequisites: ST 4253/6253 and ST 4573/6573) . Three hours lecture. Random vectors, multivariate normal, distribution of quadratic forms, estimation and statistical inferences relative to the general linear model of full rank, theory of hypothesis testing

ST 8633 Linear Models II: 3 hours.
(Prerequisite: ST 8613). Three hours lecture. Continuation of ST 8613, including generalized inverses; general linear model not of full rank, related inferences, applications; computing techniques; design models, analyses, hypothesis testing; variance-component models

ST 8733 Advanced Statistical Inference I.: 3 hours.
Prerequisites: MA/ST 4573/6573 or consent of instructor). Three hours lecture. Theoretical statistics, including sufficiency and completeness, UMVU estimators, likelihood estimation, Bayesian estimation, UMP tests, likelihood-based tests, sequential tests, optimality, and asymptotic properties

ST 8743 8743 Advanced Statistical Inference II: 3 hours.
(Prerequisites: ST 8733 or consent of instructor). Three hours lecture. Theoretical statistics, including order statistics, power functions, efficiency, asymptotic theory, nonparametric rank- based hypothesis testing, permutation testing, M estimation, jackknife procedure, and bootstrap procedure

ST 8853 Advanced Design of Experiments I: 3 hours.
(Prerequisite: ST 8603 or ST 8214). Three hours lecture. Noise reducing designs; incomplete block designs; factorial experiments, Yates' algorithms, confounding systems; fractional replication; pooling of experiments; nested designs; repeated measurement designs; messy data analyses

ST 8863 Advanced Design of Experiments II: 3 hours.
(Prerequisites: ST 8853 and ST 8613). Three hours lecture. Continuation of ST 8853, including analysis of covariance, split-plot designs and variants, applications of the general linear model, response surface methodology, randomization models, pseudo-factors, and cross-over design

ST 8913 Recent Developments in Statistics: 3 hours.
(Prerequisite: Consent of instructor). New results in statistical theory and/or statistical methodology; advanced work organized around topics not usually considered in the other courses

ST 8951 Seminar in Statistics: 1 hour.
(Prerequisite: Consent of Instructor). (May be repeated for credit). Review of literature on assigned topics; discussions and presentations of papers

ST 8990 Special Topics in Statistics: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

ST 9000 Dissertation Research /Dissertation in Statistics: 1-13 hours.
Hours and credits to be arranged

Social Work Courses

SW 1001 First Year Seminar: 1 hour.
One hour lecture. First-year seminars explore a diverse array of topices that provide students with an opportunity to learn about a specific discipline from skilled faculty members

SW 2303 Social Welfare Policy I: 3 hours.
Three hours lecture. In-depth study of the historical and contemporary effects of social welfare policy on client systems

SW 2313 Introduction to Social Work/Social Welfare: 3 hours.
Three hours lecture. A study of professional social work and the historical and philosophical development of social work and social welfare

SW 2323 Social Welfare Policy II: 3 hours.
Three hours lecture. The course provides an analysis and evaluation of social welfare policies as institutional responses to social problems, social justice, and human needs

SW 2990 Special Topics in Social Work: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

SW 3003 Social Work with At-Risk Populations: 3 hours.
Three hours lecture. Examines the role and interaction of social workers with vulnerable groups. Includes concepts of racism, sexism, homophobia, oppression, affirmation action, and xenophobia

SW 3013 Human Behavior and the Social Environment I: 3 hours.
Three hours lecture. Examines biological, psychological, social-structural, and cultural aspects of human development from conception through young adulthood from a social systems perspective, emphasizing diversity and oppression

SW 3023 Human Behavior and the social Environment II: 3 hours.
Three hours lecture. Examines biological, psychological, social-structural, and cultural aspects of human development from middle adulthood to death from a social systems perspective, emphasizing diversity and oppression

SW 3033 Seminar in Resilience: 3 hours.
Examines current research, theoretical perspectives, and a bio-psycho-social approach to resilience. Focuses on planning & applying resilience practices to promote well-being

SW 3043 Military Social Work: 3 hours.
Three hours lecture. Explores history and roles of social workers with veterans and military families, including practice settings, ethical concerns, and effects of culture, advocacy, interventions, and policy

SW 3213 Research Methods in Social Work: 3 hours.
(Prerequisite:ST 2113)Three hours lecture. A survey of research methodology in social work practice, including an examination of the various types of research design, techniques, and procedures

SW 3513 Social Work Practice I: 3 hours.
(Prerequisite: Admission to the Social Work Program). Three hours lecture. The course emphasizes problem-solving methods utilizing communication theories and skills working with individuals, families, groups, and communities in preparation for generalist social work practice

SW 3523 Social Work Practice II: 3 hours.
(Prerequisite: Admission to the Social Work Program). Three hours lecture. The course focuses on processes involved in engaging client systems in data collection, assessment, intervention, evaluation, and termination in preparation for generalist social work practice

SW 3533 Social Work with Communities and Organizations: 3 hours.
(Prerequisite: Admission to the Social Work Program). Three hours lecture. The course focuses on processes involved in engaging client systems in problem solving with emphasis upon groups and larger systems in generalist social work practice

SW 4000 Directed Individual Study in Social Work: 1-6 hours.
(Prerequisites: Six hours of social work, junior standing, and consent of instructor). Hours and credits to be arranged. Independent research of problems related to social work

SW 4533 Substance Abuse and Addictions in Social Work Services: 3 hours.
Examines the role/interaction of social workers with people who use alcohol.drugs, (AOD). Concepts of use abuse, and dependence. Emphasis on the impact of AOD use on families/children

SW 4613 Child Welfare Services: 3 hours.
Three hours lecture. Assessment of parental and society's responsibilities in meeting physical, social, psychological, and legal needs of children and examining the delivery, policies, systems, and services

SW 4623 Social Work with the Aged: 3 hours.
Three hours lecture. Assessment of social, psychological, physical, and economic needs of aging persons; their utilization of services, conjoint planning and creation of new community based resources

SW 4633 Social Work in Health Care: 3 hours.
Three hours lecture. Assessment of social work knowledge, values, and skills in understanding psychosocial aspects of illness, medical terminology, recording, discharge planning, ethics, team disciplines, and community resources

SW 4643 Social Work Services in Schools: 3 hours.
Three hours lecture. Assessment of the development, concepts, policies, planning, implementation, and evaluation of social work services in primary and secondary schools

SW 4653 Social Work with Family Violence: 3 hours.
Three hours lecture. A study of social workers' roles in responding to family violence, including societal context, family dynamics, extent, precursors, consequences, treatment, and prevention of family violence

SW 4663 Administration in Social Work: 3 hours.
Assessment of functions of human service managment, planning and program, organizational theroy and design, resourses,supervision, funding, information systems, and evaluation of service delivery

SW 4713 Social Work Senior Seminar: 3 hours.
(Prerequisite: Admission to the Social Work Program; Co-requisite: Scheduled completion of all curriculum requirements excluding SW 4916 and SW 4926). Critical evaluation of current issues in social work practice; examination of career opportunities; and assessment of personal educational preparation for practice

SW 4916 Social Work Field Practicum/Seminar I: 6 hours.
(Prerequisites: Admission to the Social Work Program and SW 4713). The course provides students opportunities to apply generalist social work practice methods by completing a minimum of 450 supervised hours in a social work agency

SW 4926 Social Work Practicum/Seminar II: 6 hours.
(Prerequisites: Admission to the Social Work Program and SW 4713). The course provides students opportunities to apply generalist social work practice methods by completing a minimum of 450 supervised hours in a social work agency

SW 4990 Special Topics in Social Work: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

SW 6990 Special Topics in Social Work: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

SW 8990 Special Topics in Social Work: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years.)

Business Technology Courses

TKB 1012 Keyboarding: 2 hours.
One hour lecture: Two hours laboratory. Keyboard mastery; letter writing; vertical and horizontal centering; manuscript writing; tabulation. No credit allowed if student has earned high-school credit. Students with no high-school credit will be allowed to remove this deficiency during the freshman year

TKB 2123 Database Management: 3 hours.
(Prerequisite: TKT 1273 or BIS 1012 or CS 1013 and keyboarding proficiency).Two hours lecture. Two hours lab. An exploration of database management technology as it applies to business applications in today's contemporary business environment. Provides hands-on technology experience

TKB 2133 Spreadsheet Design and Analysis: 3 hours.
(Prerequisite: TKT 1273 , BIS 1012, or CSE 1013). Two hours lecture, two hours lab. An exploration of the design and analysis of electronic spreadsheet technology, with hands-on practices

TKB 2990 Special Topics in Business Technology: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

TKB 3133 Administrative Management and Procedures: 3 hours.
(Prerequisites: TKT 1273 or equivalent and Junior class standing) Three hours lecture. Principles and practices of effective administrative management and procedures. Planning and directing workplace activities, systems and technology; selecting and training employees; developing professional leadership and communication skills

TKB 4000 Directed Individual Study in Business Technology: 1-6 hours.
Hours and credits to be arranged

TKB 4283 Advanced Office Systems: 3 hours.
(Prerequisites: TKT 1273 or BIS 1012 or CSE 1013 and TKB 2132 and TKB 2122; and keyboarding proficiency or upon consent of instructor). Two hours lecture. Two hours laboratory. Advanced database management and spreadsheet theory and practice as it applies to contemporary business applications. Provides hands-on experience with spreadsheet and database management software

TKB 4543 Information Processing: 3 hours.
(Prerequisites: TKT 1273 or instructor's permission). Three hours lecture. Mastery and application of formatting and advanced information processing skills

TKB 4563 Introduction to Data Networks: 3 hours.
(Prerequisite: TKT 1273) Three hours lecture. Strategies in supporting the users of data networking systems and exploration of the associated network hardware and software that are appropriate for the office environment

TKB 4573 Data Networks II: 3 hours.
(Prerequisites: TKB 4563 or consent of the instructor). Three hours lecture. Designed to provide students with advanced level knowledge and skills to identify major tasks in managing server systems, employing basic security and performance tuning techniques, and troubleshooting common system problems

TKB 4583 Graphics and Web Design: 3 hours.
(Prerequisites:TKT 1273 or BIS 1012 and key boarding proficiency). Two hours lecture. Two hours laboratory. Principles and development of graphics and web design

TKB 4990 Special Topics in Business Technology: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

TKB 6283 Advanced Office Systems: 3 hours.
(Prerequisites: TKT 1273 or BIS 1012 or CSE 1013 and TKB 2132 and TKB 2122; and keyboarding proficiency or upon consent of instructor). Two hours lecture. Two hours laboratory. Advanced database management and spreadsheet theory and practice as it applies to contemporary business applications. Provides hands-on experience with spreadsheet and database management software

TKB 6543 Information Processing: 3 hours.
(Prerequisites: TKT 1273 or instructor's permission). Three hours lecture. Mastery and application of formatting and advanced information processing skills

TKB 6573 Data Networks II: 3 hours.
(Prerequisites: TKB 4563 or consent of the instructor). Three hours lecture. Designed to provide students with advanced level knowledge and skills to identify major tasks in managing server systems, employing basic security and performance tuning techniques, and troubleshooting common system problems

TKB 6583 Graphics and Web Design: 3 hours.
(Prerequisites:TKT 1273 or BIS 1012 and key boarding proficiency). Two hours lecture. Two hours laboratory. Principles and development of graphics and web design

TKB 6990 Special Topics in Business Technology: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

TKB 8990 Special Topics in Business Technology: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer deveoping subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years.)

Industrial Technology Courses

TKI 2413 History and Appreciation of the Artcrafts: 3 hours.
Three hours lecture. Growth and development of the artcrafts through the ages; instructional applications; practical designs; demonstrations and projects in artmetal, leather, ceramics, and other handicraft areas

TKI 2990 Special Topics in Industrial Technology: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

TKI 4000 Directed Individual Study in Industrial Technology: 1-6 hours.
Hours and credits to be arranged

TKI 4990 Special Topics in Industrial Technology: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

TKI 6213 Survey of Energy Sources and Power Technology: 3 hours.
(Prerequisite: PH 1023 or higher and Junior Standing). Three hours lecture. Scientific and applied approaches to energy conversion, transmission, utilization, and conservation. Internal-external combustion, nuclear, fluid, hydroelectric, solar, etc. Current energy problems; lab demonstrations; activities

TKI 6990 Special Topics in Industrial Technology: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

TKI 8990 Special Topics in Industrial Technology: 1-9 hours.

Technology Teacher Education Courses

TKT 1273 Computer Applications: 3 hours.
Three hours lecture. The process of incorporating computer applications

TKT 2990 Special Topics in Technology Teacher Education: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

TKT 3213 Call Center Management: 3 hours.
(Prerequisite:TKT 1273 or equivalent and Junior standing) Three hours lecture. Presents the strategic, financial and tactical knowledge and skill needed to manage an effective and efficient call center

TKT 3463 Computer Repair and Maintenance: 3 hours.
(Prerequisite:TKT 1273 or BIS 1012 and keyboarding proficiency). Two hours lecture. Two hours laboratory. An exploration into hardware functions, operating system and software installation, diagnostic and troubleshooting techniques, and safety

TKT 3623 Designing Technology Training: 3 hours.
(Prerequisite: TKT 1273 or BIS 1012 and keyboarding proficiency, TKB 2133, TKB 2123). Three hours lecture. Learning strategies, design, and development of technology training programs for organizations

TKT 4000 Directed Individual Study in Technology Teacher Education: 1-6 hours.
Hours and credits to be arranged

TKT 4073 Instructional Materials Development and Use in Vocational Education: 3 hours.
Three hours lecture. Development and use of lesson plans and supporting written and audio-visual materials

TKT 4103 Deliver of the Vocational-Technical Instructional Program: 3 hours.
Three hours lecture. Methods and techniques of instructing vocational-technical students in the classroom and laboratory setting

TKT 4143 History and Philosophy of Career and Technology Education: 3 hours.
Three hours lecture. History, development, aims, and purposes of career and technical education

TKT 4203 Emerging Technologies: 3 hours.
(Prerequisites: TKT 1273 or instructor's permission). This course identifies and explores emerging technologies in instructional and information technology

TKT 4223 Management of the Vocational-Technical Leaning Environment: 3 hours.
Three hours lecture. Techniques for organizing and managing vocational-technical education facilities, equipment, supplies, and instructional programs. Methods of managing and controlling student laboratory activities

TKT 4233 Design of the Vocational-Technical Instructional Program: 3 hours.
Three hours lecture. Identifying and sequencing teaching content. Planning and designing vocational-technical programs and courses

TKT 4253 Evaluation and Measurement of Students in Vocational Education and Technology: 3 hours.
Three hours lecture. Construction, selection, interpretation, and uses of cognitive and psychomotor evaluation instruments used in vocational-technical programs

TKT 4263 Diversity in Work and Educational Environments: 3 hours.
Three hours lecture. Exploring the changing dynamics of the workforce and educational environments in examination of cultural and technological facts and assumptions

TKT 4343 Information Technology Project Management: 3 hours.
(Prerequisite:TKT 1273 or BIS 1012 and keyboarding proficiency). Three hours lecture. Concepts, skills, tools, and techniques involved in information technology project management as it applies in today's contemporary business enviroment

TKT 4403 Strategies for Campus Transition and Success for Veterans: 3 hours.
Three hours lecture. This course will examine issues that veterans may experience as it relates to campus transition, academic success, psycho-social adjustment, and the role of various entities

TKT 4413 Veterans' Benefits and Certification-Policies and Procedures: 3 hours.
Three hours lecture. This course will provide an in-depth examination of all veteran educational benefits, certification policies and procedures, and school certifying officials' responsibilities

TKT 4423 History of Administration of Veterans' Benefits: 3 hours.
Three hours lecture. This course is a historical survey of legislative and organizational developments of the Veterans' Benefits Administration (VBA) from 1776 through present day

TKT 4433 The Development of Veterans' Benefits, Laws and Policies: 3 hours.
Three hours lecture. This course will examine the origins and factors that shaped the current Montgomery GI Bill educational assistance program and its implementation

TKT 4443 Design of Instructional Games and Simulations: 3 hours.
(Prerequisites: TKT 4753/6753, or consent of instructor). Three hours lecture. An exploration of games and simulations: the evaluation, design, and infusion of games and simulations in instructional settings

TKT 4473 Methods of Teaching Online: 3 hours.
Three hours lecture. A study of objectives, materials, and methods appropriate for teaching online

TKT 4483 Methods of Teaching STEM in the Middle School: 3 hours.
A study of objectives, materials, and methods appropriate for teaching STEM in the middle school

TKT 4493 Methods of Teaching Career Pathways Experiences: 3 hours.
Three hours lecture. Principles of promotion, organization, and operation of Career Pathway Experience classes in career and technical education; instruction in analyzing needs, developing materials, evaluating the program

TKT 4623 Delivery and Evaluation of Technology Training: 3 hours.
(Prerequisite: TKT 3623) Three hours lecture. Advanced design, live and computer-based strategies, development, delivery , and evaluation of technology training programs for organizations

TKT 4683 Senior Seminar in Information Technology Services: 3 hours.
(Prerequisites: TKT 3213, TKT 3463 and TKT 3623, and senior-level standing) Three hours seminar. Field experience under supervision of university staff for directed experience and report in end-user support, project management, and training

TKT 4713 Authoring for Instruction: 3 hours.
Three hours lecture. An introduction to the application of authoring languages for instructional purposes

TKT 4733 Managing a Multimedia Learning Environment: 3 hours.
Three hours lecture. The course examines the process of designing, managing and maintaining a multimedia learning environment

TKT 4743 Elements of Electronic Desktop Publishing: 3 hours.
(Prerequisites: TKT 1273 or consent of instructor). Two hours laboratory and two hours lecture. Design applications utilizing electronic desktop publishing technologies

TKT 4753 Media for Presentations, Instruction and Gaming: 3 hours.
(Prerequisite: TKT 1273 or consent of the instructor). Three hours lecture. This course explores the process of using multimedia and visual basic applications for developing instructional materials, presentations, and games

TKT 4763 Digital Tools for 21st Century Teaching and Learning: 3 hours.
(Prerequisite: TKT 1273 or consent of instructor).Three hours lecture. Methods of using digital tools for effective learning that is aligned with national standards in the 21st century classroom

TKT 4803 Integrating Technology for Meaningful Learning: 3 hours.
Three hours lecture. Understanding the process of integrating technology into instructional practice. Research-based methods for the integration of technology to enhance learning

TKT 4813 Introduction to Instructional Systems: 3 hours.
Three hours lecture. An introduction to the field of Instructional Systems and the practice of scholarly writing in the field

TKT 4853 Philosophy and Principles of Vocational-Technical Instruction: 3 hours.
Three hours lecture. Philosophy, objectives and methods of vocational-technical instruction. Introduction to teaching-learning principles and concepts

TKT 4990 Special Topics in Technology Teacher Education: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

TKT 6073 Instructional Materials Development and Use in Vocational Education: 3 hours.
Three hours lecture. Development and use of lesson plans and supporting written and audio-visual materials

TKT 6103 Deliver of the Vocational-Technical Instructional Program: 3 hours.
Three hours lecture. Methods and techniques of instructing vocational-technical students in the classroom and laboratory setting

TKT 6143 History and Philosophy of Career and Technology Education: 3 hours.
Three hours lecture. History, development, aims, and purposes of career and technical education

TKT 6223 Management of the Vocational-Technical Leaning Environment: 3 hours.
Three hours lecture. Techniques for organizing and managing vocational-technical education facilities, equipment, supplies, and instructional programs. Methods of managing and controlling student laboratory activities

TKT 6233 Design of the Vocational-Technical Instructional Program: 3 hours.
Three hours lecture. Identifying and sequencing teaching content. Planning and designing vocational-technical programs and courses

TKT 6253 Evaluation and Measurement of Students in Vocational Education and Technology: 3 hours.
Three hours lecture. Construction, selection, interpretation, and uses of cognitive and psychomotor evaluation instruments used in vocational-technical programs

TKT 6263 Diversity in Work and Educational Environments: 3 hours.
Three hours lecture. Exploring the changing dynamics of the workforce and educational environments in examination of cultural and technological facts and assumptions

TKT 6403 Strategies for Campus Transition and Success for Veterans: 3 hours.
Three hours lecture. This course will examine issues that veterans may experience as it relates to campus transition, academic success, psycho-social adjustment, and the role of various entities

TKT 6413 Veterans' Benefits and Certification-Policies and Procedures: 3 hours.
Three hours lecture. This course will provide an in-depth examination of all veteran educational benefits, certification policies and procedures, and school certifying officials' responsibilities

TKT 6423 History of Administration of Veterans' Benefits: 3 hours.
Three hours lecture. This course is a historical survey of legislative and organizational developments of the Veterans' Benefits Administration (VBA) from 1776 through present day

TKT 6433 The Development of Veterans' Benefits, Laws and Policies: 3 hours.
Three hours lecture. This course will examine the origins and factors that shaped the current Montgomery GI Bill educational assistance program and its implementation

TKT 6443 Design of Instructional Games and Simulations: 3 hours.
(Prerequisites: TKT 4753/6753, or consent of instructor). Three hours lecture. An exploration of games and simulations: the evaluation, design, and infusion of games and simulations in instructional settings

TKT 6473 Methods in Teaching Online: 3 hours.
Three hours lecture. A study of objectives, materials, and methods appropriate for teaching online

TKT 6483 Methods of Teaching STEM in the Middle School.: 3 hours.
A study of objectives, materials, and methods appropriate for teaching STEM in the middle school

TKT 6493 Methods of Teaching Career Pathways Experiences: 3 hours.
Three hours lecture. Principles of promotion, organization, and operation of Career Pathway Experience classes in career and technical education; instruction in analyzing needs, developing materials, evaluating the program

TKT 6713 Authoring for Instruction: 3 hours.
Three hours lecture. An introduction to the application of authoring languages for instructional purposes

TKT 6733 Managing a Multimedia Learning Environment: 3 hours.
Three hours lecture. The course examines the process of designing, managing and maintaining a multimedia learning environment

TKT 6743 Elements of Electronic Desktop Publishing: 3 hours.
(Prerequisites: TKT 1273 or consent of instructor). Two hours laboratory and two hours lecture. Design applications utilizing electronic desktop publishing technologies

TKT 6753 Media for Presentations, Instruction and Gaming.: 3 hours.
(Prerequisite: TKT 1273 or consent of the instructor). Three hours lecture. This course explores the process of using multimedia and visual basic applications for developing instructional materials, presentations, and games

TKT 6763 Digital Tool for 21st Century Teaching and Learning: 3 hours.
(Prerequisite: TKT 1273 or consent of instructor).Three hours lecture. Methods of using digital tools for effective learning that is aligned with national standards in the 21st century classroom

TKT 6803 Integrating Technology for Meaningful Learning: 3 hours.
Three hours lecture. Understanding the process of integrating technology into instructional practice. Research-based methods for the integration of technology to enhance learning

TKT 6813 Introduction to Instructional Systems: 3 hours.
Three hours lecture. An introduction to the field of Instructional Systems and the practice of scholarly writing in the field

TKT 6853 Philosophy and Principles of Vocational-Technical Instruction: 3 hours.
Three hours lecture. Philosophy, objectives and methods of vocational-technical instruction. Introduction to teaching-learning principles and concepts

TKT 6990 Special Topics in Technology Teacher Education: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

TKT 7000 Directed Individual Study in Technology Teacher Education: 1-6 hours.
Hours and credits to be arranged

TKT 8000 Thesis Research/ Thesis in Technology Teacher Education: 1-13 hours.
Hours and credits to be arranged

TKT 8193 Improvement of Instruction in Office Procedures and Communications: 3 hours.
Three hours lecture. A study of secretarial skills in the office, office systems technology and techniques, and the communicative process

TKT 8200 Internship in Career and Technology Education: 1-6 hours.
1-6 Hours Internship. Opportunity under supervision of regular university staff for directed experience and reporting in the major area of interest

TKT 8213 Content and Methods of Teaching in Career and Technology Education: 3 hours.
Three hours lecture. The content of various types of courses in career and technical education; instruction in appropriate techniques and methods

TKT 8233 Analysis of Workforce Education Programs and Survey Research in Workforce Development: 3 hours.
Three hours lecture. An examination of workforce development from national and international perspectives and methods and issues in workforce education survey research

TKT 8243 Research Problems in Instructional Systems and Workforce: 3 hours.
Three hours lecture. The course explores issues and problems that impact instructional systems and workforce development and assesses the use of research findings for instructional decision making

TKT 8263 Philosophy and Administration of Career and Technology Education: 3 hours.
Three hours lecture. The development of competencies needed in the leadership, administration, management, and supervision of local programs in technology, and career and technical education

TKT 8273 Contemporary Issues in Curriculum Planning in ISWD: 3 hours.
Three hours lecture. Assessment of the contemporary issues that impact curriculum planning in instructional systems and workforce development

TKT 8443 Theory of Multimedia Learning: 3 hours.
Three hours lecture. This course reviews multimedia design principles that are based on empirical research studies and the cognitive theory of multimedia learning to foster effective multimedia instruction

TKT 8523 Project Management in Instructional Design: 3 hours.
Three hours lecture. This course explores project management principles and methodologies used to analyze, manage, plan, and implement instructional design projects and program systems

TKT 8533 Evaluation and Assessment in Instructional Systems & Technology: 3 hours.
(3). Three hours lecture. Focus on the effective course/program evaluation and assessment methods, theories, and applications in instructional systems and technology

TKT 8543 Multimedia Design I: 3 hours.
Three hours lecture. This course focuses on major principles and guidelines for creating instructional graphics and provides hands-on skills in graphic design

TKT 8623 Instructional Design I: 3 hours.
Three hours lecture. The analysis, design, development, implementation, and evaluation of instruction for organizations

TKT 8643 Multimedia Design II: 3 hours.
(Prerequisite: TKT 8543). Three hours lecture. This course focuses on the concepts, issues, and practices for creating effective instructional videos and provides hands-on skills in digital video production

TKT 8693 Multiple Perspectives on Instructional Systems and Technology: 3 hours.
Three hours lecture. This course surveys major theoretical perspectives of instructional design, and examines related research and applications in a variety of instructional design settings

TKT 8703 Trends and Issues in Instructional Systems: 3 hours.
Three hours lecture. Focuses on the trends, issues, theories, and applications of instructional systems. It introduces the areas of instructional design, multimedia, distance education, and human performance technologies

TKT 8713 Research in Instructional Systems & Workforce Development: 3 hours.
Two hours lecture. Two hours laboratory. This course deals with the research process as related to Instruction Systems and Workforce Development (ISWD) from idea formulation through data analysis and interpretation

TKT 8723 Instructional Design II: 3 hours.
(Prerequisite: TKT 8623). Three hours lecture. Advanced application of instructional design for organizations

TKT 8733 Telecommunications: Applications in Scholarships: 3 hours.
Three hours lecture. The study and application of the telecommunications to professional scholarship and research endeavors; includes data search mechanisms applicable to and in support of graduate program demands

TKT 8743 Interactive Media: 3 hours.
(Prerequisite: TKT 8643). Two hours lecture. Two hours laboratory. This course will provide experiences in investigating, designing, developing and integrating a variety of interactive instructional media

TKT 8753 Technology Issues for School Administrators: 3 hours.
Three hours lecture. Investigates the trends and issues in instructional systems that impact school administrators

TKT 8763 Strategic Technology Planning for Teachers and Administrators: 3 hours.
Three hours lecture. This course will provide teachers and administrators with the theoretical and practical considerations for strategic planning and implementing technology in schools and school districts

TKT 8773 Teaching and Training with Multimedia: 3 hours.
Three hours lecture.The process of developing instructional and training materials including adapting existing materials to fit specific objectivies and methods in a multimedia learning environment

TKT 8793 Directed Project and Portfolio Development: 3 hours.
Three hours lecture. The course focuses on the development and presentation of a project and a portfolio based on the student's program area of concentration. Evaluation by jury

TKT 8803 Design and Evaluation of Instructional Software: 3 hours.
Two hours lecture. Two hours laboratory. (Prerequisite: TKT 1273 and hypermedia authoring experience). Analysis, synthesis, and evaluation of instructional software designed for and applied to varied learning situations

TKT 8813 Foundations of Distance Education: 3 hours.
Three hour lecture. This course investigates foundation of distance education and trends and issues such as administration, design, development, implementation, instructional challenges, and evaluation in distance education

TKT 8823 Design, Delivery, & Management of Distance Education: 3 hours.
Three hour lecture. This course focuses on major theories and practices related to the design, delivery and management of distance education programs

TKT 8833 Design and Implementation of Data Networks: 3 hours.
Three hours lecture. Designed to provide students with applicable knowledge and skills to identify major tasks in building and maintaining networking hardware and system software components, and troubleshooting common system problems

TKT 8843 Foundations of Instructional Systems and Technology: 3 hours.
Three hours lecture. An examination of the foundation and philosophical knowledge for instructional systems and design models including evaluation of instructional design processes

TKT 8853 Learning Technologies in Distance Education: 3 hours.
Three hours lecture. This course investigates theoretical concepts of online learning. With this understanding, students will then experience creating a practical e-learning module using an e-learning authoring system

TKT 8863 Grant Writing Essentials: 3 hours.
Three hours lecture. An introduction to the basic skills, principles, and techniques of successful grant writing

TKT 8873 Communication Tools in Technology for Teachers & Administrators: 3 hours.
Three hours lecture. This course provides a comprehensive view of communication, its scope and importance for educators, with regard to written and oral communication in the digital-age workplace

TKT 8990 Special Topics in Technology Teacher Education: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

TKT 9000 Dissertation Research /Dissertation in Technology Teacher Education: 1-13 hours.
Hours and credits to be arranged

TKT 9213 Foundations, Trends and Issues in Workforce Development, Technology and Leadership Education: 3 hours.
Three hours lecture.This course examines the foundations of education with a focus on workforce education programs, technology education programs and adult learning theories

TKT 9913 Dissertation Seminar: 3 hours.
Three hours seminar. Designed to assist students complete dissertation research successfully. Maybe taken in lieu of TKT 9000 Dissertation Research up to six hours

Veterinary Science Courses

VS 1012 Introduction to Veterinary Medicine Careers: 2 hours.
Two hour online course covering the history and importance of the veterinary profession. Various careers in the profession with primary focus on veterinarians and technicians as well as the concept of veterinary health care teams

VS 2990 Special Topics in Animal Health Sciences: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

VS 3014 Anatomy and Physiology: 4 hours.
Three hours lecture. Two hours laboratory. A survey of structure and function of animal body systems and a study of their relationships. (Same as ADS 3014)

Veterans Transition Program Courses

VTP 1001 Veteran/Service Member Transition: 1 hour.
(Prerequisite: Veteran or Service Member, and currently enrolled in the V-TAC Program). One hour lecture. Introduction of skills that veterans and current military members need to transition to a college academic life style

VTP 2990 Special Topics in Veterans Transition Program: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

Wildlife,Fisheries Aquacultu Courses

WFA 1001 First Year Seminar: 1 hour.
One hour lecture. First-year seminars explore a diverse arrary of topics that provide students with an opportunity to learn about a specific discipline from skilled faculty members

WFA 1102 Wildlife and Fisheries Profession: 2 hours.
(Prerequisite: Freshman or Sophomore standing or consent of instructor). Two hour lecture. Orientation to the interdisciplinary and applied nature of wildlife and fisheries management and related fields, emphasizing the department, college, and university; student roles and responsibilities; and career opportunities

WFA 2990 Special Topics in Wildlife, Fisheries, and Aquaculture: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

WFA 3000 Internship: 1-4 hours.
(Prerequisite: Junior standing and 2.75 GPA or better). Professional work experience with governmental or private agencies. (Hours and credits to be arranged)

WFA 3013 Human-Wildlife Conflicts Internship: 3 hours.
(Prerequisite: Consent of Instructor). Internship. Professional experience in human-wildlife conflict management or research

WFA 3031 Introductory Wildlife/Fisheries Practices: 1 hour.
(Prerequisite: Junior standing). Field exercises and practical exposure to research and management of wildlife and fish species and habitats in Mississippi

WFA 3133 Applied Aquatic and Terrestrial Ecology: 3 hours.
(Prerequisite BIO 1134 and BIO 1144 or consent of instructor). The application of ecological principles which serve as a basis for the management of wildlife and fisheries in terrestrial and aquatic habitats

WFA 4000 Directed Individual Study in Wildlife, Fisheries and Aquaculture: 1-6 hours.
Hours and credits to be arranged

WFA 4113 Animal Behavior: 3 hours.
(Prerequisite: WFA 3133, BIO 3104 or equivalent). Two hours lecture, two hours lab. Emphasizes applied approaches to the study of animal behavior. Covers fundamental principles, early studies in ethology, genetic, physiological and selective mechanisms, behavioral ecology, emerging field of conservation behavior, and integration of behavior into habitat management

WFA 4123 Wildl & Fish Biometrics: 3 hours.
(Prerequisite: ST 3123 and Grade of C or better in MA 1613 or consent of instructor). Two hour lecture. Four hours laboratory, alternate weeks. Application of basic statistical analytical tools to address wildlife and fisheries management/research questions

WFA 4133 Fisheries Science: 3 hours.
(Prerequisite: ST 3113 or equivalent). Two hours lecture. Four hours laboratory, alternate weeks. Study of the biological parameters of fish populations

WFA 4153 Principles of Wildlife Conservation and Management: 3 hours.
(Prerequisite: Sophomore Standing and WFA 3133, FO 4123, or equivalent).Two hours lecture. Four hours laboratory on alternate weeks. Principles of game management; habitat improvement; wildlife techniques; public relations

WFA 4173 Fish Physiology: 3 hours.
(Prerequisite: BIO 1134 and BIO 1144 or consent of instructor).Two hours lecture. Four hours laboratory, alternate weeks. Basic anatomy and physiology of major systems in fish: integration of the physiological systems as they function during development, growth and maturation

WFA 4183 Principles and Practices of Aquaculture: 3 hours.
(Prerequisites: BIO 1134 and BIO 1144, or consent of instructor) Two hours lecture. Four hours laboratory alternate weeks. Principles and practices of aquaculture applied to the farming of marine and freshwater species of fish, crustaceans, and mollusks throughout the world

WFA 4223 Wildlife Plant Identification: 3 hours.
(Prerequisite: BIO 1134 and BIO 1144 and WFA 3133 or equivalent). Two hours lecture, weekly. Four hours laboratory, weekly. Identification, taxonomy, ecology, and management of wildlife food and cover plants

WFA 4233 Limnology: 3 hours.
(Prerequisite:WFA 3133 or consent of instructor). Two hour lecture. Four hours laboratory alternate weeks. The physical, chemical, and biological processes underlying the function and productivity of freshwater ecosystems. Laboratory skills required to evaluate freshwater ecosystems

WFA 4243 Wildlife Techniques: 3 hours.
(Prerequisite: Sophomore or higher standing). Two hours lecture. Four hours laboratory. Contemporary research and management techniques and tools for wildlife populations and habitats

WFA 4253 Application of Spatial Technologies to Wildlife and Fisheries Management: 3 hours.
(Prerequisite: Sr. Standing or consent of instructor). Two hours lecture. Four hours laboratory weekly. Practical application of Global Positioning Systems and Geographic Information Systems to Wildlife and Fisheries Management

WFA 4263 Wildlife Diseases: 3 hours.
(Prerequisite: BIO 1134 and BIO 1144, or consent of instructor). Two hours lecture. Four hours laboratory, alternate weeks. Effects and management of parasites and diseases in wild bird and mammal populations. (Same as CVM 4263/6263)

WFA 4273 Ecology and Management of Human-Wildlife Conflicts: 3 hours.
(Prerequisite: WFA 3133, or consent of instructor). Ecological principles and management approaches to resolve human-wildlife conflicts

WFA 4283 Human-Wildlife Conflict Techniques: 3 hours.
(Prerequisite: WFA 3133, or consent of instructor). Three hours lecture. Discussion, demonstration, and application of techniques used to resolve human-wildlife conflicts

WFA 4313 Fisheries Management: 3 hours.
(Prerequisite: WFA 3133 or consent of instructor). Two hours lecture. Laboratories alternate weeks. Principles of fisheries management and methods for assessment and analysis of fish populations and aquatic habitats

WFA 4323 Wildlife Nutrition and Physiology: 3 hours.
(Prerequisite: BIO1134 and BIO 1144, or consent of instructor). Two hours lecture. Four hours laboratory, alternate weeks. Nutrition and physiology of aquatic and terrestrial wildlife, with emphasis on understanding life history strategies and functional adaptations to habitat and environmental variation

WFA 4353 Fish and Wildlife Policy and Law Enforcement: 3 hours.
Prerequisite: Sr. standing or consent of instructor). Three hours lecture. A survey of the major content areas of fish and wildlife policy and law enforcement. Emphahis is on the fundamentals of conservation policies and laws

WFA 4363 Wildlife and Fisheries Administration and Communication: 3 hours.
(Prerequisite: Junior standing or consent of instructor). Two hours lecture. Three and one half hours lab, alternate weeks. Administrative and communicational techniques and skills in the workplace and political environments of wildlife and fisheries organizations

WFA 4373 Principles and Practice of Conservation in Agriculture Landscapes: 3 hours.
Two hours lecture. Four hours laboratory, alternate weeks. Introduces theoretical background for ecological conservation in agricultural landscapes with focus on the role of USDA Farm Bill programs in achieving conservation goals

WFA 4383 Wetlands Ecology and Management: 3 hours.
(Prerequisite: WFA 3133 and Junior Standing, or consent of instructor). Two hours lecture. Four hours laboratory, alternate weeks. Hydrology, soils and biogeochemistry of wetlands; structure and function of important wetland types; wetland management for wildlife and fisheries; wetland creation and restoration

WFA 4394 Waterfowl Ecology and Management: 4 hours.
(Prerequisite: WFA 3133 and Junior standing, or consent of instructor). Three hours lecture. Four hours laboratory. Annual ecology of North American waterfowl, habitat and population ecology and management, waterfowl identification, field trips, management plan, and current issues

WFA 4423 Herpetology: 3 hours.
(Prerequisites: BIO 1134 and BIO 1144 and WFA 3133, or consent of instructor). Two hours lecture. Four hours laboratory, alternate weeks. Evolution, systematics, biology and ecology of reptiles and amphibians

WFA 4433 Mammalogy: 3 hours.
(Prerequisites: BIO 1134 and BIO 1144 and WFA 3133, or consent of instructor). Two hours lecture. Three hours laboratory. Evolution, systematics, and ecology of mammals, with emphasis on North American groups

WFA 4443 Ornithology: 3 hours.
(Prerequisites: BIO 1134 and BIO 1144 and WFA 3133, or consent of instructor). Two hours lecture. Three hours laboratory. Recent and fossil avifauna of the world; its origin, distribution, classification, and biology

WFA 4453 Ichthyology: 3 hours.
(Prerequisites: BIO 1134 and BIO 1144 and WFA 3133, or consent of instructor). Two hours lecture. Three hours laboratory. Structure, evolution, classification, and life histories of fishes of the world with emphasis on North American freshwater forms

WFA 4463 Human Dimensions of Fish and Wildlife Management: 3 hours.
(Prerequisite: Junior standing or consent of instructor). Three hours lecture. Survey of the major content areas of human dimensions. Emphasis on the considerations and implications associated with measuring, evaluating and influencing people's attitudes and behaviors

WFA 4473 Wildlife and Fisheries Practices: 3 hours.
(Prerequisite: WFA 3133 and WFA 4153 and Senior Standing, or consent of instructor). Two hours lecture. Four hours laboratory. The integration of principles of ecology, wildlife and fisheries techniques and policies for effective planning and implementation of natural resource management

WFA 4483 Seminar in Tropical Biology: 3 hours.
(Prerequisites:WFA 3133 or consent of instructor) One hour lecture. Four hours laboratory. An introduction to the composition and function of tropical ecosystems of the New World

WFA 4484 Upland Avian Ecology and Management: 4 hours.
(Prerequisites: WFA 3133 and WFA 4153 and Junior standing or consent of instructor). Three hours lecture. Four hours laboratory. The application of ecological principles to management of wildlife populations, focusing on avian species and communities inhabiting upland ecosystems

WFA 4494 Large Mammal Ecology and Management: 4 hours.
(Prerequisites: WFA 3133 and WFA 4153 and Junior standing). Three hours lecture. Four hours laboratory, alternate weeks. Ecological principles and applied methods used in the management of large mammals

WFA 4512 Advanced Topics in Human-Wildlife Conflicts: 2 hours.
(Prerequisite: WFA 4273/6273, WFA 4283/6283, or consent of instructor).Two hours lecture. Discussion, synthesis, and presentation of current issues in Human-Wildlife Conflicts. Development of manuscripts and research proposal

WFA 4513 Current Topics in Human-Wildlife Interactions: 3 hours.
(Prerequisites: Junior or higher standing, Grade of C or better in WFA 3133, and/or Instructor Consent). Three hours lecture. Investigations and related discussions regarding current topics and past trends in human-wildlife interactions emphasizing the role of wildlife damage management by wildlife biologists

WFA 4521 Advanced Topics in Human-Wildlife Conflicts II: 1 hour.
(Prerequisite: WFA 4512/6512). One hour lecture. Conduct of data collection, analyses, interpretation, and writing of scientific manuscripts in instructor-approved area of human-wildlife conflicts

WFA 4613 Landscape Ecology: 3 hours.
Prerequisite (WFA 3133 and ST 3123 (or equivalents or consent of instructor). Two hours lecture, two hours lab. Foundational concepts and research methods of landscape ecology and application to ecology and management of natural resources

WFA 4623 Conservation Biology: 3 hours.
Three hours lecture. Theory and applications of conservation biology, measures of biodiversity, ecological geography, measures and treatments of decline

WFA 4633 Problem Solving in Conservation Biology: 3 hours.
(Pre-requisites: WFA-4623 or equivalent with instructor consent). Three hours lecture. Upper-level conservation biology course that builds on foundational concepts in lower-level courses in Conservation Biology. Focus on problem-solving of real-world conservation issues in a discussion, case-study, and in-class exercise format

WFA 4881 Current Topics in Conservation Biology: 1 hour.
(Prerequisites: WFA 3133, Applied Ecology and WFA 4623, Conservation Biology or consent of instructor). One hour lecture. A forum to discuss current literature and theory that advances the study of biodiversity and its application to conservation biology

WFA 4990 Special Topics in Wildlife, Fisheries and Aquaculture: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

WFA 6113 Animal Behavior: 3 hours.
(Prerequisite: WFA 3133, BIO 3104 or equivalent). Two hours lecture, two hours lab. Emphasizes applied approaches to the study of animal behavior. Covers fundamental principles, early studies in ethology, genetic, physiological and selective mechanisms, behavioral ecology, emerging field of conservation behavior, and integration of behavior into habitat management

WFA 6133 Fisheries Science: 3 hours.
(Prerequisite: ST 3113 or equivalent). Two hours lecture. Four hours laboratory, alternate weeks. Study of the biological parameters of fish populations

WFA 6173 Fish Physiology: 3 hours.
(Prerequisite: BIO 1134 and BIO 1144 or consent of instructor).Two hours lecture. Four hours laboratory, alternate weeks. Basic anatomy and physiology of major systems in fish: integration of the physiological systems as they function during development, growth and maturation

WFA 6183 Principles and Practices of Aquaculture: 3 hours.
(Prerequisites: BIO 1134 and BIO 1144, or consent of instructor) Two hours lecture. Four hours laboratory alternate weeks. Principles and practices of aquaculture applied to the farming of marine and freshwater species of fish, crustaceans, and mollusks throughout the world

WFA 6223 Wildlife Plant Identification: 3 hours.
(Prerequisite: BIO 1134 and BIO 1144 and WFA 3133 or equivalent). Two hours lecture, weekly. Four hours laboratory, weekly. Identification, taxonomy, ecology, and management of wildlife food and cover plants

WFA 6233 Limnology: 3 hours.
(Prerequisite:WFA 3133 or consent of instructor). Two hour lecture. Four hours laboratory alternate weeks. The physical, chemical, and biological processes underlying the function and productivity of freshwater ecosystems. Laboratory skills required to evaluate freshwater ecosystems

WFA 6253 Application of Spatial Technologies to Wildlife and Fisheries Management: 3 hours.
(Prerequisite: Sr. Standing or consent of instructor). Two hours lecture. Four hours laboratory weekly. Practical application of Global Positioning Systems and Geographic Information Systems to Wildlife and Fisheries Management

WFA 6263 Wildlife Diseases: 3 hours.
(Prerequisite: BIO 1134 and BIO 1144, or consent of instructor). Two hours lecture. Four hours laboratory, alternate weeks. Effects and management of parasites and diseases in wild bird and mammal populations. (Same as CVM 4263/6263)

WFA 6273 Ecology and Management of Human-Wildlife Conflicts: 3 hours.
(Prerequisite: WFA 3133, or consent of instructor). Ecological principles and management approaches to resolve human-wildlife conflicts

WFA 6313 Fisheries Management: 3 hours.
(Prerequisite: WFA 3133 or consent of instructor). Two hours lecture. Laboratories alternate weeks. Principles of fisheries management and methods for assessment and analysis of fish populations and aquatic habitats

WFA 6323 Wildlife Nutrition and Physiology: 3 hours.
(Prerequisite: BIO1134 and BIO 1144, or consent of instructor). Two hours lecture. Four hours laboratory, alternate weeks. Nutrition and physiology of aquatic and terrestrial wildlife, with emphasis on understanding life history strategies and functional adaptations to habitat and environmental variation

WFA 6343 Pond and Stream Management: 3 hours.
(Prerequisite: Junior or Senior standing or consent of instructor). Two hours lecture. Four hours laboratory alternate weeks. Ecological foundations and management techniques for fisheries in small impoundments and streams

WFA 6353 Fish and Wildlife Policy and Law Enforcement: 3 hours.
Prerequisite: Sr. standing or consent of instructor). Three hours lecture. A survey of the major content areas of fish and wildlife policy and law enforcement. Emphahis is on the fundamentals of conservation policies and laws

WFA 6373 Principles and Practice of Conservation in Agriculture Landscapes: 3 hours.
Two hours lecture. Four hours laboratory, alternate weeks. Introduces theoretical background for ecological conservation in agricultural landscapes with focus on the role of USDA Farm Bill programs in achieving conservation goals

WFA 6383 Wetlands Ecology and Management: 3 hours.
(Prerequisite: WFA 3133 and Junior Standing, or consent of instructor). Two hours lecture. Four hours laboratory, alternate weeks. Hydrology, soils and biogeochemistry of wetlands; structure and function of important wetland types; wetland management for wildlife and fisheries; wetland creation and restoration

WFA 6394 Waterfowl Ecology and Management: 4 hours.
(Prerequisite: WFA 3133 and Junior standing, or consent of instructor). Three hours lecture. Four hours laboratory. Annual ecology of North American waterfowl, habitat and population ecology and management, waterfowl identification, field trips, management plan, and current issues

WFA 6483 Seminar in Tropical Biology: 3 hours.
(Prerequisites:WFA 3133 or consent of instructor) One hour lecture. Four hours laboratory. An introduction to the composition and function of tropical ecosystems of the New World

WFA 6484 Upland Avian Ecology and Management: 4 hours.
(Prerequisites: WFA 3133 and WFA 4153 and Junior standing or consent of instructor). Three hours lecture. Four hours laboratory. The application of ecological principles to management of wildlife populations, focusing on avian species and communities inhabiting upland ecosystems

WFA 6494 Large Mammal Ecology and Management: 4 hours.
(Prerequisites: WFA 3133 and WFA 4153 and Junior standing). Three hours lecture. Four hours laboratory, alternate weeks. Ecological principles and applied methods used in the management of large mammals

WFA 6512 Advanced Topics in Human-Wildlife Conflicts: 2 hours.
(Prerequisite: WFA 4273/6273, WFA 4283/6283, or consent of instructor).Two hours lecture. Discussion, synthesis, and presentation of current issues in Human-Wildlife Conflicts. Development of manuscripts and research proposal

WFA 6513 Current Topics in Human-Wildlife Interactions: 3 hours.
(Prerequisites: Junior or higher standing, Grade of C or better in WFA 3133, and/or Instructor Consent). Three hours lecture. Investigations and related discussions regarding current topics and past trends in human-wildlife interactions emphasizing the role of wildlife damage management by wildlife biologists

WFA 6521 Advanced Topics in Human-Wildlife Conflicts II: 1 hour.
(Prerequisite: WFA 4512/6512). One hour lecture. Conduct of data collection, analyses, interpretation, and writing of scientific manuscripts in instructor-approved area of human-wildlife conflicts

WFA 6613 Landscape Ecology: 3 hours.
Prerequisite (WFA 3133 and ST 3123 (or equivalents or consent of instructor). Two hours lecture, two hours lab. Foundational concepts and research methods of landscape ecology and application to ecology and management of natural resources

WFA 6623 Conservation Biology: 3 hours.
Three hours lecture. Theory and applications of conservation biology, measures of biodiversity, ecological geography, measures and treatments of decline

WFA 6633 Problem Solving in Conservation Biology: 3 hours.
(Pre-requisites: WFA-4623 or equivalent with instructor consent). Three hours lecture. Upper-level conservation biology course that builds on foundational concepts in lower-level courses in Conservation Biology. Focus on problem-solving of real-world conservation issues in a discussion, case-study, and in-class exercise format

WFA 6881 Current Topics in Conservation Biology: 1 hour.
(Prerequisites: WFA 3133, Applied Ecology and WFA 4623, Conservation Biology or consent of instructor). One hour lecture. A forum to discuss current literature and theory that advances the study of biodiversity and its application to conservation biology

WFA 6990 Special Topics in Wildlife, Fisheries and Aquaculture: 1-9 hours.
Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

WFA 7000 Directed Individual Study in Wildlife, Fisheries and Aquaculture: 1-6 hours.
Hours and credits to be arranged

WFA 8000 Thesis Research/ Thesis in Wildlife, Fisheries and Aquaculture: 1-13 hours.
Hours and credits to be arranged

WFA 8134 Research Methods in Wildlife and Fisheries Sciences: 4 hours.
(Prerequisites: Graduate standing, ST 8114). Three hours lecture. Four hours laboratory. Graduate level introduction to application of scientific methods to wildlife and fisheries ecology and management

WFA 8144 Theory of Wildlife Population Ecology: 4 hours.
(Prerequisite: WF 3133, ST 3133, or consent of instructor). Three hours lecture. Two hours laboratory, weekly. Theory of wildlife population ecology including population growth, population regulation, predation, and competition. Basic methods of data collection and population sampling

WFA 8154 Quantitative Applications in Wildlife Population Ecology: 4 hours.
(Prerequisite: WFA 8144, ST 8114, or consent of instructor). Three hours lecture. Four hours laboratory, weekly. Application of basic statistical analytical tools to address natural resource management research questions

WFA 8184 Advanced Population Ecology: 4 hours.
(Prerequisite: ST 8114 Statistical Methods or instructor consent). Three hours lecture. Two hours laboratory, weekly. Theory of vertebrate population ecology including population modeling, population regulation, competition, predation, and life history strategies. Statistical methods of population sampling and population parameter estimation

WFA 8212 Communication Skills in Wildlife and Fisheries: 2 hours.
(Prerequisite:Graduate student status in the Department of Wildlife and Fisheries) Two hours lecture. Effective strategies for professional communication to scientific and lay audiences in the fields of wildlife, fisheries, and othe natural resources sciences and management

WFA 8223 Management of Impounded River Ecosystems: 3 hours.
(Prerequisite: WF 6313/4313 or equivalent). Three hours lecture. A survey of guidance and criteria for managing reservoirs and associated riverine environments to enhance fisheries. Focus is on managing fish and their environment

WFA 8273 Advanced Fisheries Management: 3 hours.
(Prerequisites: WFA 4133/6133 and WFA 4313/6313 or consent of instructor) Three hours lecture. Field exercises during spring break. Advanced treatment of the multidimensional aspects of fisheries management in a global setting with emphasis on setting realistic objectives and establishing appropriate strategy

WFA 8343 Conceptual Ecology and Natural Resource Management: 3 hours.
(Prerequisites: WFA 8012 or equivalent or consent of instructor). Three hours lecture. A forum to discuss current literature and theory that advances the study of community ecology and its application to natural resource management

WFA 8344 Wildlife Habitat Analysis and Management: 4 hours.
(Prerequisite: BIO 4203. Three hours lecture. Four hours laboratory alternate weeks. Identification, ecology, analysis and management of plant communities of value to upland and wetland game species of North America

WFA 8413 Advanced Fishery Science: 3 hours.
(Prerequisites: WFA 4133/6133 and ST 3113, or equivalents). Two hours lecture. Two hours laboratory. Estimation and interpretation of vital statistics of fish populations: analysis of fishery data using computers; models for assessment of fish stocks

WFA 8423 Applied Bayesian Statistics in Ag/Natural Resources: 3 hours.
(Prerequisiste: ST 8114 and ST 8253 or consent of instructor).Two hours lecture. Fours hours labaratory, alternate weeks. Bayesian statistics and Bayesian hierarchical models in wildlife, fishery, agricultural and other natural resource management applications

WFA 8424 Applied Aquatic Biogeochemistry: 4 hours.
(Prerequisite: Instructor discretion). Two hours lecture. Two hours laboratory. Theory and application of aquatic biogeochemistry and water quality principles in aquatic systems through lecture and literature discussions. Laboratory sessions will encompass real-world techniques in water quality sampling and analysis

WFA 8433 Natural Resource and Conservation Decision Making: 3 hours.
Three hours lecture. Natural resource and conservation decision making including rapid prototyping of decision problems, structuring objectives, structured decision making, adaptive management, and relevant case studies of successful natural resource decision making. No prerequisite classes

WFA 8663 Movement Ecology: 3 hours.
[Prerequisite: ST 8114 or equivalent, or permission of instructor] Two hours lecture, two hours laboratory weekly. Principles of movement including displacement, path analysis, random walks and diffusion, home ranging, and habitat selection. Includes application to GPS and biologger data using Geographic Information Systems and Program R

WFA 8990 Special Topics in Wildlife, Fisheries and Aquaculture: 1-9 hours.

WFA 9000 Dissertation Research /Dissertation in Wildlife, Fisheries and Aquaculture: 1-13 hours.
Hours and credits to be arranged

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