

College of Agriculture and 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 Life Sciences and Biotechnology Institute, the College will continue to enhance the study of the life sciences, including biotechnological applications that will have a tremendous impact on education, agriculture production, food, fibers, human and animal health, the environment and bio-based industrial products.

Students may choose from 14 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 University Core Curriculum as published in this Bulletin. (See Listing of Approved Core 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 & 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. The CALS will identify the minimum computer specifications, which is vital to the overall university computing system, the university's Information Technology Services, and classroom and laboratory computer accommodations. This

information will be posted on the College of Agriculture and Life Sciences Web site (<http://www.cals.msstate.edu>) by July 1 of each year. Additional information on computer specifications, software, and purchasing and/or lease information (if available), and additional departmental requirements, will also be included on the CALS web site.

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-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:

Agricultural Engineering Technology and Business

Aquacultural Systems

Enterprise Management

Gin Management and Technology

Land Surveying

Natural Resource and Environmental Management

Precision Agriculture/Ag Systems

Agribusiness

Agricultural, Food and Resource Economics

Food and Fiber Production Management

Food Marketing

Agricultural Policy and Law

Environmental and Resource Economics

Agricultural Information Science

Agricultural Science

Biochemistry

Bioinformatics

Forensic Science

Pre-Medicine

Pre-MBA

Pre-Pharmacy

Food Science, Nutrition and Health Promotion

Food/Nutrition

Food Safety/Pre-Veterinary Medicine

Food Processing/Business

Food Science

Human Sciences

Apparel, Textiles and Merchandising

Human Development and Family Studies

Gerontology Certificate

Integrated Pest Management

Agricultural Resources

Agricultural Business

Applied Precision Agriculture

Environmental Resources

Urban Resources

Landscape Architecture

Landscape Contracting and Management

Agronomy

Golf and Sports Turf Management
 Integrated Crop Management
 Agricultural and Environmental Soil Science

Horticulture

Floriculture and Ornamental Horticulture
 Floral Management

Poultry Science

Business
 Management
 Manufacturing
 Pre-Veterinary Medicine

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

Emphasis in INTERNATIONAL AGRICULTURE

An emphasis in International Agriculture is available to students majoring in any curriculum in the College of Agriculture and Life Sciences. This emphasis is intended to prepare students for possible careers in agricultural production or marketing on an international scale.

Students interested in this emphasis will take the following in addition to requirements for their majors. The specific courses included will be determined by the department involved and the student's interest, but will include the following minimums.

SUBJECT MATTER	REQUIRED SEMESTER HOURS
Production Agriculture (outside student's major)	6-9
Agricultural Economics	6-9
World Geography/Political Science and/or Sociology	3-6
Foreign Language	6-9

**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.

**SHORT COURSES in
 AGRICULTURE and LIFE SCIENCES**

Short courses ranging from three days to two weeks in duration are given when the need arises. The nature of the educational program and its length are determined by the needs of the particular groups served. Information regarding short-course programs may be secured from the dean or the head of the department offering the course.

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 require-

ments 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 28-32 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
 Carolyn Buff, Pre-Veterinary Advisor
 4017 Wise Center
 Box 9815
 Mississippi State, MS 39762
 Phone: (662) 325-2802

**Biochemistry and Molecular Biology
 Pre-Veterinary Medicine Program**

Department of Biochemistry and Molecular Biology
 Dr. Scott Willard, Pre-Veterinary Advisor
 402 Dorman Hall
 Box 9540
 Mississippi State, MS 39762
 Phone: (662) 325-2640

Food Science Pre-Veterinary Medicine Program

Department of Food Science and Technology
 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
 Dr. Tim Chamblee, Pre-Veterinary Advisor
 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 hrs)
 Public Speaking or Technical Writing (3 hrs)
 CO 1003 Fundamentals of Public Speaking
 GE 3513 Technical Writing
 Mathematics (6 hrs)
 Microbiology with lab (4 hrs)
 Biological Science with lab (8 hrs)
 BIO 1134 Biology I
 BIO 1144 Biology II
 General/Inorganic Chemistry with lab (8 hrs)
 Organic Chemistry with lab (8 hrs)
 CH 4521 Organic Chemistry Lab
 CH 4523 Organic Chemistry II
 Biochemistry (3 hrs)
 Physics with lab (6 hrs) (can be trig-based)
 PH 1123 General Physics
 Advanced Science Electives (12 hrs)
 Fine Arts (3 hrs)
 Humanities (6 hrs)
 Social/Behavioral Science (6 hrs)

Total Credit Hours: 79

Electives will be needed from requirements toward the student's alternate major to complete the minimum 124 hour degree. Those students with an alternate major in agriculture will choose electives from the following courses:

ADS 1114	Animal Science
AEC 2713	Intro to Food and Resource Econ
PSS 3303	Soils
PSS 3301	Soils Lab
PSS 1313	Plant Science
BIO 1203	Plant Biology
GA 1111	Survey of Agriculture
BIO 4103	Experimental Genetics
ADS 4613	Physiology of Reproduction
PO 4824	Poultry Physiology
VS 2014	Anatomy & Physiology of Farm Animals*
VS 1012	Intro to Veterinary Medical Careers

* Strongly recommended.

Department of AGRICULTURAL ECONOMICS (AEC)

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. To formulate successful business policies, farm managers and agribusiness firm managers must fully comprehend the nature and influence of economic forces on prices, costs, product demand and production plans. The entire business complex surrounding the food and fiber sector must be managed in a manner consistent with reasonable returns to the factors of production and respond to consumer demands. Two majors, Agricultural, Food and Resource Economics and Agribusiness, are offered to provide an understanding of economic forces and business management principles as well as general knowledge of technical agriculture and related sciences. Students completing either curriculum would also 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.

AGRICULTURAL, FOOD AND RESOURCE ECONOMICS

The Agricultural, Food and Resource Economics (AFRE) major is designed to provide students flexibility in preparing for a wide variety of careers in the agricultural and natural resource-based industries. The major provides all students excellent functional training in applied economics and business while offering the flexibility for a student to specialize in specific areas. Potential career fields include, but are not limited to, agricultural and environmental law; natural resource and environmental policy analysis; economic consulting; agricultural production management; commodity and equities marketing; and food chain supply management to include processing, sales, and distribution. Also, students desiring postgraduate training will have a solid academic foundation for pursuing graduate degrees.

University Core

English Composition (6 hours)

EN 1103	English Comp I OR
EN 1163	Accelerated Comp I
EN 1113	English Comp II OR
EN 1173	Accelerated Comp II

Mathematics (9 hours)

MA 1313	College Algebra or higher level Mathematics
MA 1613	Calculus for Business and Life Sciences I OR an equivalent or higher level calculus
ST 2113	Introduction to Statistics or an equivalent statistics course taught as a mathematics or statistics course

Science (7 hours)

CH 1043	Survey of Chemistry I with CH 1051 lab OR a higher level chemistry course with lab
BIO 1123	Animal Biology OR
BIO 1203	Plant Biology

Humanities (6 hours)

PHI 3013	Business Ethics OR another introductory Philosophy (PHI) course OR Foreign Language Course
3 hours	Select from University Core

Fine Arts (3 hours)

Select from University Core

Social/Behavioral Sciences (6 hours)

AEC 2713	Intro to Food & Resource Econ or
EC 2123	Principles of Microeconomics
EC 2113	Principles of Macroeconomics

Major Core*

ACC 2013	Principles of Financial Accounting
ACC 2023	Principles of Managerial Accounting
AEC 2611	Seminar I
AEC 3113	Introduction to Quantitative Economics
AEC 3133	Introduction to Agribusiness Management
AEC 3213	International Trade in Agriculture
AEC 3233	Intro to Environmental Econ & Policy
AEC 3413	Intro to Food Marketing
AEC 3513	Economics of Food and Fiber Production
AEC 4133	Analysis of Food Markets & Prices
AEC 4413	Public Problems of Agriculture
AEC 4523	Farm Financial Management
EC 3113	Intermediate Macroeconomics
EC 3123	Intermediate Microeconomics
3 hours	Restricted CALS Elective**
6 hours	Free Electives

Oral Communication Requirement

CO 1003	Fundamentals of Public Speaking
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Writing Requirement

AIS 3203	Introduction to Technical Writing
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* 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.

** Restricted CALS electives include: ABE 1863, Eng Tech in Ag; ADS 1114 Animal Science; AIS 3803 Leadership Development in Ag; PSS 1313 Plant Science; PSS 3303 Soils; EPP 3113 Intro to Plant Pathology; EPP 4154 Gen. Entomology; FNH 1103 Intro to Food Science; HS 4193 Social & Cultural Aspects of Food; PO 3313 Comm. Poultry Prod; PSS 3313 Intro Weed Science; and WF 1213 Wildlife and Fish Conservation

Choose one of the following concentrations:

Food and Fiber Production Management Concentration

AEC 4123	Financial & Commodity Futures Marketing
AEC 4343	Advanced Farm Management
26 hours	Restricted Electives*

* Students must select, with advisor approval, appropriate electives from departments within the Division of Agriculture, Forestry, and Veterinary Medicine. At least 21 hours must be 3000-level or above.

Total hours needed for major: 124

Food Marketing Concentration

AEC 4123	Financial & Commodity Futures Marketing
AEC 4113	Agribusiness Firm Management
MKT 3013	Principles of Marketing
23 hours	Restricted Electives*

Total hours needed for major: 124

* Choose from: AEC 4333 Econ of Aquaculture, AEC 4530 Agribusiness Mgt Intern, AEC 4713 Quant. Econ, AEC 4723 Model for Ag Econ, AEC 4733 Econometric Analysis in Ag Econ, CO 1223 Intro to Comm Theory, CO 1403 Intro to Mass Media, CO 3803 Prin of PR, EC 4223 Labor Law & Employ Policy, FNH 4164 Quality Assurance of Food Products, FNH 4173 Food Packaging, FNH 4593 New Food Devel., HS 3303 Consumer Econ, HS 4193 Social & Cultural Aspects of Food, MKT 3213 Retailing, MKT 4123 Advertising

Agricultural Policy and Law Concentration

AEC 4233	Adv Topics in Environmental Economics
EC 4423	Intro to Public Finance
PS 1113	American Government
PS 2703	Intro to Public Policy
20 hours	Restricted Electives*

Total hours needed for major: 124

* Choose from: AEC 4123 Fin. & Commodity Futures Mktg, AEC 4333 Econ of Aquaculture, AEC 4530 Agribusiness Mgt Intern, AEC 4713 Quant. Econ, AEC 4723 Model for Ag Econ, AEC 4733 Econometric Analysis in Ag Econ, AIS 3803 L'ship Devel in Ag & Life Sci, BL 2413 Legal Envir., BL 3223 Law of Comm. Transactions, BL 4233 Legal Theories of Risk Dist & Loss Alloc., BL 4243 Legal Aspects of Entrepreneurship, BL 4253 Real Estate Law, BL 4263 Envir. Law, BL 4273 Internat'l Bus Law, EC 3223 Intro to Indust. Org., EC 3513 Econ Systems of World, EC 4183 US Econ History, EC 4223 Labor Law & Employ Policy, EC 4323 Internat'l Econ Rel., EC 4433 Problems in State and Local Finance, EN 4223 Prin of Legal Writing, PS 4283 Public Opinion, PS 4703 Prin of Public Adm, PS 4743 Envir. Policy

Environmental and Resource Economics Concentration

AEC 4233	Advanced Topics in Environmental Econ
AEC 4343	Advanced Farm Management
BL 4263	Environmental Law
EC 4423	Intro to Public Finance
20 hours	Restricted Electives

Total hours needed for major: 124

* Choose from: ABE 2263 Ag Survey & Drainage, ABE 2873 Land Surveying, ABE 3513 GPS & GIS in Ag and Eng., AEC 4333 Econ of Aquaculture, AEC 4530 Agribusiness Mgt Intern, AEC 4713 Quant. Econ, AEC 4723 Model for Ag Econ, AEC 4733 Econometric Analysis in Ag Econ, BIO 2503 Envir. Quality, EC 3423 Gov't & Business, FO 3123 Forest Ecology and Global Envir., FO 4113 Forest Resource Econ, FO 4413 Nat. Resource Policy, PS 4743 Envir. Policy, SO 4173 Envir and Society, WF 1213 Intro to Wildlife & Fish Conserv., WF 4383 Wetlands Ecology & Mgt., WF 4463 Human Dimension of Fish & WL Mgt, WF 4473 Wildlife & Fisheries Practices

AGRIBUSINESS

The Agribusiness (AGB) major provides training in business including accounting, management, marketing, finance and economics, along with training in the agricultural sciences. A student who plans to work in an off-farm agricultural profession can greatly enhance his/her training for a particular specialty by carefully choosing the courses in his/her area of interest. The program of study is designed to give the student considerable flexibility in his/her chosen field of study and to prepare him or her for career positions with all types of firms involved in getting food and fiber to the consumer.

University Core**English Composition (6 hours)**

EN 1103	English Comp I OR
EN 1163	Accelerated Comp I
EN 1113	English Comp II OR
EN 1173	Accelerated Comp II

Mathematics (9 hours)*

MA 1313	College Algebra or higher level Mathematics
MA 1613	Calculus for Business and Life Sciences I OR an equivalent or higher level calculus
ST 2113	Introduction to Statistics or an equivalent statistics course taught as a mathematics or statistics course

Science (7 hours)

CH 1043	Survey of Chemistry I with CH 1051 lab OR a higher level chemistry course w/ lab
BIO 1123	Animal Biology OR
BIO 1203	Plant Biology

Humanities (6 hours)

PHI 3013	Business Ethics OR introductory Philosophy (PHI) course OR Foreign Language course
3 hours	Select from University Core

Fine Arts (3 hours)

Select from University Core

Social/Behavioral Sciences (6 hours)

AEC 2713	Intro to Food & Resource Econ OR
EC 2123	Principles of Macroeconomics
EC 2113	Principles of Macroeconomics

Major Core***

ACC 2013	Principles of Financial Accounting
ACC 2023	Principles of Managerial Accounting
AEC 2611	Seminar I
AEC 3113	Introduction to Quantitative Economics
AEC 3133	Introduction to Agribusiness Management
AEC 3213	International Trade in Agriculture
AEC 3233	Introduction to Environmental Econ & Policy
AEC 3413	Intro to Food Marketing
AEC 4133	Analysis of Food Markets & Prices
AEC 4413	Public Problems of Agriculture
AEC 4113	Agribusiness Firm Management
BL 2413	Legal Environment of Business
EC 3113	Intermediate Macroeconomics
EC 3123	Intermediate Microeconomics
FIN 3123	Financial Management
MGT 3114	Principles of Management and Production
MKT 3013	Principles of Marketing
9 hours	Ag Econ Electives
3 hours	Ag Econ/College of Business Electives***+
6 hours	College of Business Electives***+
6 hours	Restricted CALS Electives**
3 hours	Communication or Computer Elective
4 hours	Free Electives

Oral Communication Requirement

CO 1003	Fundamentals of Public Speaking
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Writing Requirement

AIS 3203	Introduction to Technical Writing
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Total hours needed for major: 124

* Students should contact an advisor to verify the equivalency of a course.

** Restricted CALS electives include: ABE 1863, Eng Tech in Ag; ADS 1114 Animal Science; AIS 3803 Leadership Development in Ag; PSS 1313 Plant Science; PSS 3303 Soils; EPP 3113 Intro to Plant Pathology; EPP 4154 Gen. Entomology; FNH 1103 Intro to Food Science; HS 4193 Social & Cultural Aspects of Food; PO 3313 Comm. Poultry Prod; PSS 3313 Intro Weed Science; and WF 1213 Wildlife and Fish Conservation

*** 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.

***+ Choose any 3000 level or above courses from the College of Business and Industry. Up to two courses in any foreign language can count toward COBI electives. A foreign language course cannot simultaneously satisfy both COBI and humanities elective requirements.

****+ Choose any course from the Dept of Ag Econ. Choose any 3000 level or above courses from the College of Business and Industry. Up to two courses in any foreign language can count toward COBI electives. A foreign language course cannot simultaneously satisfy both COBI and humanities elective requirements.

Department of AGRICULTURAL and BIOLOGICAL ENGINEERING (ABE)**Agricultural Engineering Technology and Business (AETB)**

Department Head: Dr. William Batchelor
Office: 150 Agricultural and Biological Engineering Building

The AETB program provides an educational opportunity for students interested in applying technical, business, and management skills to problems in agricultural production, processing, commodity related business and finance, and natural resources utilization. A Bachelor of Science degree is offered by the Agricultural and Biological Engineering Department through the College of Agriculture and Life Sciences.

The AETB program provides the industry with men and women possessing excellent skills in the engineering technologies, as well as a thorough background in business and management. This combination allows the AETB graduate to excel in virtually any business enterprise. The AETB Base Curriculum prepares the graduate for the many diverse opportunities afforded by the industrial and agricultural industries. In addition to the broad background in agricultural technologies and business, students may concentrate on a particular career-path by completing an AETB concentration. The AETB Base Curriculum provides five concentrations: (1) Aquacultural Systems, (2) Enterprise Management, (3) Precision Agriculture, (4) Gin Management & Technology, and (5) Natural Resources & Environment Management. These concentrations are achieved by completing 18 hours of specified emphasis electives as approved by an AETB advisor. In addition, a Land Surveying concentration is supported through a unique AETB curriculum.

The Aquacultural Systems concentration provides an enhanced background in fishery management, fish disease, and water quality. The Enterprise Management concentration is designed to provide skills for agricultural and business enterprise management. The curriculum provides a broad background including both animal and plant sciences, agricultural technology, economics, business and management. The Gin Management and Technology concentration provides graduates with a thorough education in cotton gin management and fiber processing. Courses emphasize technologies that are specific to the fiber processing industry including: hydraulics, pneumatics, industrial controls, seed technologies, biological materials handling, industrial safety and human relations. The Natural Resources and Environmental Management concentration provides an enhanced background in geology, hydrogeology, resource conservation, and water quality for students pursuing careers that require environmental training. The Precision Agriculture concentration provides courses in remote sensing, GPS, GIS, and surveying to enhance the student's abilities for careers involving spatial technologies. The Gin Management and Land Surveying concentrations include an intern program allowing students to apply educational concepts in real-world settings.

All new students in AETB are required to have a laptop computer. Students should check with the ABE Department for equipment specifications prior to purchasing. Transfer credits with a grade of C or higher will be considered toward fulfillment of the degree requirement in the AETB curriculum. A maximum of seven transfer hours of technical credit can be applied toward degree requirements.

Employment for AETB graduates includes the following agricultural industries/government agencies: food/fiber production (farming), agri-chemical, agricultural lending, aquaculture, banking, cotton ginning, seed & grain processing, crop consulting, agricultural equipment manufacturers and sales, farm management, land surveying and food processing.

Land Surveying. Individuals can become registered as a Land Surveyor in Mississippi by either (a) seven years combined surveying experience and testing or (b) academic training, three years of surveying experience (supervised by a registered land surveyor) and testing. The state board for Professional Engineers and Land Surveyors requires that an individual complete 62 hours of specific course work in order to meet the academic requirements for registration. These 62 hours include nine hours of Surveying, nine hours of Mathematics, six hours of Physics, nine hours of Graphics, Maps and CAD, nine hours of English Composition/Writing and 18 hours of recommended electives. The following courses are needed to become a registered Land Surveyor in Mississippi and obtain a Bachelor of Science degree in Agricultural Engineering Technology and Business. In order to become a registered Land Surveyor in the state of Mississippi through academic training (see "b" above), one must: (1) complete the required course work (62 hrs.), (2) pass the Land Surveyor Intern examination (administered by the National Council of Examiners for Engineers and Surveyors (NCEES)), (3) successfully complete a three year internship, and (4) pass the Land Surveyor examination (administered by the NCEES). Requirements for registration in other states can vary. Employment opportunities for registered land surveyors in Mississippi include self-employment, an extensive number of land surveying or engineering firms, as well as local, state, and federal government agencies. Junior college transfer students are encouraged to call the ABE department and ask for a 2+2 proposal that was written for their junior college.

University Core

English Composition (6 hours)

EN 1103	English Comp I OR
EN 1163	Accelerated Comp I
EN 1113	English Comp II OR
EN 1173	Accelerated Comp II

Mathematics (6 hours)

MA 1313	College Algebra
MA 1323	Trigonometry

Science (9 hours)

PH 1113	General Physics I
PH 1123	General Physics II
CH 1043	Survey of Chemistry I

Humanities (6 hours)

3 hours	Select from University Core
3 hours	Select from University Core (contact advisor)

Fine Arts (3 hrs)

3 hours	Select from University Core
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Social Science (6 hours)

AEC 2713	Intro to Food and Resource Econ
3 hours	Select from University Core

Major Core

ABE 1073	Agricultural Mechanics
ABE 2063	Intro to Ag Engineering Tech
ABE 2873	Land Surveying
ABE 3513	GPS and GIS
ABE 4263	Soil and Water Management
ABE 4383	Building Construction
ABE 4473	Elec Applications
ABE 4961	Seminar
EG 1143	Graphic Communications

AETB Elective - choose one of the following:

ABE 2173	Internal Combustion Engines
ABE 4163	Machinery Mgt for Agro-Ecosystems

Science Courses

CH 1053	Survey of Chemistry II
CH 1051	Experimental Chemistry

Business Courses

ACC 2013	Principles of Financial Accounting
ACC 2023	Principles of Managerial Accounting
BL 2413	Legal Environment of Business
MGT 3513	Intro Human Resources Mgt

Financial Elective - choose one of the following:

INS 3413	Intro to Personal Finance Planning
FIN 2003	Personal Money Management
FIN 3113	Financial Systems

Oral Communication Requirement

CO 1003	Fundamentals of Public Speaking
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Writing Requirement

AIS 3203	Intro to Tech Writing
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Computer Literacy Requirement

Satisfied by successful completion of EG 1143, ABE 3513 and ABE 4473.

Choose one of the following concentrations:

Aquaculture Systems - choose 18 hours*

ABE 1863	Engineering Tech in Ag
PSS 3303	Soils
PSS 3301	Soils Lab
ADS 1114	Animal Science OR
BIO 1504	Principles of Zoology
PSS 1313	Plant Science OR
BIO 1203	Plant Biology
AEC 3133	Ag Business Management
Electives: choose 18 hours*	
BIO 3524	Biology of Vertebrates
CVM4134	Aquatic Animal Health Mgt
WF 4183	Principles and Practices of Aquaculture
WF 4372	Water Quality Management
WF 4371	Water Quality Mgt Lab
FNH 2664	Food Processing OR
FNH 4613	Seafood Processing
3 hours	Aquatic Science Elective - consult advisor

Total hours needed for major: 124

Enterprise Management

ABE 1863	Engineering Tech in Ag
PSS 3303	Soils
PSS 3301	Soils Lab
ADS 1114	Animal Science OR
BIO 1504	Principles of Zoology
PSS 1313	Plant Science OR
BIO 1203	Plant Biology
AEC 3133	Ag Business Management
Electives: choose 18 hours*	
MA 1613	Calculus for Business and Life Sciences
ST 2113	Intro to Statistics
AEC 3213	International Trade in Ag

AEC 3233 Intro to Environmental Economics
3 hours Enterprise Mgt Elective - consult advisor
3 hours Enterprise Mgt Elective - consult advisor

Total hours needed for major: 124

Precision Agriculture

ABE 1863 Engineering Tech in Ag
PSS 3303 Soils
PSS 3301 Soils Lab
ADS 1114 Animal Science OR
BIO 1504 Principles of Zoology
PSS 1313 Plant Science OR
BIO 1203 Plant Biology
AEC 3133 Ag Business Management
Electives: choose 18 hours*
FO 4312 Forest Photogrammetry
FO 4311 Forest Photogrammetry Lab
FO 4452 Remote Sensing Applications
FO 4451 Remote Sensing Applications Lab
FO 4472 GIS for Natural Resource Mgt
FO 4471 GIS for Natural Resource Mgt Lab
GR 2313 Maps & Remote Sensing
PSS 4373 Geospatial Agronomic Management
3 hours Precision Ag Elective - consult advisor

Total hours needed for major: 124

Gin Management and Technology - choose 18 hours*

ABE 1863 Engineering Tech in Ag
PSS 3303 Soils
PSS 3301 Soils Lab
ADS 1114 Animal Science OR
BIO 1504 Principles of Zoology
PSS 1313 Plant Science OR
BIO 1203 Plant Biology
AEC 3133 Ag Business Management
Electives: choose 18 hours*
ABE 4453 Cotton Ginning Systems & Mgt
PSS 4133 Fiber and Oil Seed Crops
PSS 4253 Seed and Grain Conditioning and Storage
TKI 3043 Industrial Safety
TKI 4113 Industrial Fluid Power
TKI 4103 Industrial Control Systems
ABE 3700 Internship in Gin Management & Tech

Total hours needed for major: 124

Land Surveying Concentration

CE 2213 Surveying
CE 4233 Control Survey
CE 4243 Land Surveys
MA 1713 Calculus I
MGT 3323 Entrepreneurship OR
BL 4243 Legal Aspects of Entrepreneurship
Emphasis Electives - 9 hours**
Restricted Electives - 5 hours***
Computer Applications - choose 6 hours from the following:
AIS 2613 Intro to Decision Science
AIS 4203 Applications of Computer Tech in AIS
AIS 4303 Information Tech in Ag Learning Systems
BIS 1012 Intro to Business Information Systems
TKT 1273 Computer Applications
FO 3102 & 3101 Computer Apps for Forest Resources

Natural Resource & Environmental Management

ABE 1863 Engineering Tech in Ag
PSS 3303 Soils
PSS 3301 Soils Lab

ADS 1114 Animal Science OR
BIO 1504 Principles of Zoology
PSS 1313 Plant Science OR
BIO 1203 Plant Biology
AEC 3133 Ag Business Management

Electives: choose 18 hours*

BIO 2503 Environmental Quality
PSS 4373 Geospatial Agronomic Management
GG 1153 Geology for Scientists and Engineers
GG 3133 Intro to Environmental Geology
GG 3613 Water Resources
GG 4613 Physical Hydrogeology

Total hours needed for major: 124

* The ABE Department will offer ABE 4990 Special Topics courses periodically. Depending on the subject matter of the course, ABE 4990 may be an approved concentration elective.

** For approved Emphasis Electives, consult advisor.

*** Any geology, CAD or statistics course, PSS 3303, TKB 3133, TKI 3043, WF 4253 or any 3000-4000 level course from FO, MGT, MKT or REM; One course must be a 3000-4000 level course.

Department of ANIMAL and DAIRY SCIENCES

Major Advisor: Instructor Carolyn Huntington; Office: 4019 Wise Ctr

The Animal and Dairy Sciences Curriculum is designed to give students essential instruction and practical experience in the science and business of animal agriculture. Courses provide training in the areas of breeding, nutrition, growth, reproductive and lactational physiology, marketing, management, evaluation, product processing as related to farm animals. A student may pursue one of the two general concentrations within the curriculum. Students interested in a career in animal production and/or allied industries would choose the Production/Management concentration. Within the Production/Management concentration, a student may choose to emphasize in one of three species: Meat Animal, Dairy or Equine. Students pursuing admission to the College of Veterinary Medicine or the Graduate School would choose the Science concentration. The Science concentration allows students to take support courses in the sciences that will prepare the veterinary and graduate student for the professional programs in the CVM or Graduate School.

The department's Bearden Dairy Research Center and the animal research units in the Leveck Animal Research Center provide students contact with modern techniques and practical experience to give insight to the technical problems associated with the Animal and Dairy industries.

University Core

English Composition (6 hours)

EN 1103 English Comp I OR
EN 1163 Accelerated Comp I
EN 1113 English Comp II OR
EN 1173 Accelerated Comp II

Mathematics (6 hours)

Select from University Core

Science (9 hours)

See Major Core

Humanities (6 hours)

Select from University Core

Fine Arts (3 hours)

Select from University Core

Social Sciences (6 hours)

Select from University Core

Major Core

7-8 hours Chemistry Sequence
(CH 1043, 1053 & 1051 or CH 1211, 1213, 1221 & 1223)
4 hours Organic Chemistry & Lab
(CH 2503 & 2501 or CH 4513 & 4511)
3 hours Biochemistry - BCH 4013 or BCH 4603
BIO 3304 General Microbiology
BIO 1504 Principles of Zoology
ADS 1114 Animal Science
ADS 4115 Nutrition
ADS 4123 Animal Breeding
ADS 4613 Physiology of Reproduction
ADS 4611 Practices in Phy of Reproduction

- ADS 4423 Animal Science Internship OR
 ADS 3312 Livestock Management Practices
 ADS 4221 Animal and Dairy Sciences Seminar
 3 hours Capstone Elective Course
- Oral Communication Requirement
 CO 1003 Fundamentals of Public Speaking
- Writing Requirement
 AIS 3203 Intro to Tech Writing
- Computer Literacy
 TKT 1273 Computer Applications or equivalent

Choose one of the following concentrations:

**Production/Business Management Concentration
 (select species emphasis below)**

Meat Animal Emphasis (25-28 hours)

- ADS 4213 Nutrient Requirements & Form of Rations
 ADS 4412 Livestock Sales I
 PSS 4103 Forage & Pasture Crops
 ADS 4323 Beef Cattle Science
 ADS 4113 Swine Science
 ADS 3213 Perf Analysis of Meat Animals
 ADS 4314 Meats Processing
 2-4 hours 1 Production Elective*
 2-3 hours 1 Evaluation Elective **

Dairy Emphasis (29-31 hours)

- FNH 4164 Quality Assurance of Food Products
 ADS 4213 Nutrient Requirements & Form of Rations
 ADS 4412 Livestock Sales I
 PSS 4103 Forage & Pasture Crops
 ADS 4814 Dairy Farm Management
 ADS 3813 Dairy Cattle Appraisal
 ADS 4623 Physiology of Lactation
 4-7 hours 2 Production Electives*
 2-3 hours 1 Evaluation Elective**

Equine Emphasis (28-33 hours)

- ADS 2102 Equine Conf & Performance Eval
 ADS 3223 Horse Management
 ADS 4314 Meats Process OR
 FNH 4164 Quality Assur of Food Prod
 ADS 4213 Nutrient Requirements & Form of Rations
 ADS 4412 Livestock Sales I
 PSS 4103 Forage & Pasture Crops
 ADS 4333 Equine Exercise Physiology
 2-3 hours Horsemanship Elective: choose one
 ADS 1132 Intro to Horsemanship
 ADS 2212 Equine Behavior
 ADS 2312 Advanced Horsemanship
 ADS 3233 Equine Assisted Therapy
 4-7 hours 2 Production Electives*
 2-3 hours 1 Evaluation Elective**

In addition, for all Prod/Bus Concentrations, students must select:

Business electives***

12-13 hours Approved courses listed below+

Free electives

0-7 hours Free electives

Total hours needed for major: 124

* Production Electives: ADS 3232 Horse Science; ADS 4113 Swine Science; ADS 4222 Small Rum. & Diver. L'stock Prod; ADS 4323 Beef Cattle Science; ADS 4814 Dairy Farm Mgt;

** Evaluation Electives: ADS 2102 Equine Conformation, ADS 3142 Meats Judging I, ADS 3213 Perf Anal of Meat Animals, ADS 3813 Dairy Cattle Appraisal, ADS 4212 Livestock Eval, FNH 2112 Food Products Eval.

*** These courses also count towards a Minor in Agribusiness.

+ Choose from: AEC 2713, AEC 3133, AEC 3213, AEC 3233, AEC 3413, AEC 4123, ACC 2013, EC 2113, EC 2123 OR MGT 3114.

Science Concentration

- ADS 4314 Meats Processing OR
 FNH 4164 Quality Assur of Food Prod
 PO 3103 Genetics I

- BIO 4413 Immunology
 VS 3014 Anatomy & Physiology
 PH 1113 General Physics I
 ADS 4623 Physiology of Lactation
 4-7 hours 2 Production Electives *
 2-3 hours 1 Evaluation Elective **
- Science Electives - choose two courses
 BIO 4503 Vertebrate Histology
 BIO 4504 Comparative Vertebrate Embryology
 BIO 4514 Animal Physiology
 BIO 4613 General Biochemistry
 BIO 2102 Cell Biology

Free electives

4-12 hours

Total hours needed for major: 124

* Production Electives: ADS 3232 Horse Science; ADS 4113 Swine Science; ADS 4222 Sheep Science; ADS 4323 Beef Cattle Science; ADS 4814 Dairy Farm Mgt;

** Evaluation Electives: ADS 2102 Equine Conformation, ADS 3142 Meats Judging I, ADS 3213 Perf Anal of Meat Animals, ADS 3813 Dairy Cattle Appraisal, ADS 4212 Livestock Eval, FNH 2112 Food Products Eval.

**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 B.S. degree in Animal and Dairy Sciences after successfully completing the first year of Veterinary Medicine are listed.

University Core	27 hours
Dept Core (eliminate Capstone & Seminar)	50-51 hours
Science Concentration - excl. Science & Free Elective	27-30 hours

To qualify for the B.S. degree in ADS, a student in the 3+1 program must complete the 3 years of above listed undergraduate course work (105-108 hours) and also successfully complete the first year of the Veterinary Medicine curriculum.

A minor is available in Animal and Dairy Sciences by completing a minimum of 17 hours of specified ADS courses. Requirements include an introductory course, an evaluation course, a physiology course, 5 to 7 hours of production courses and either a breeding course or a nutrition course. See an ADS advisor for a complete list of approved courses.

**Department of BIOCHEMISTRY
 and MOLECULAR BIOLOGY (BCH)**

Interim Head/Major Advisor: Scott T. Willard
 Office: 402 Dorman

Biochemistry and molecular biology are disciplines involved 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 Biochemistry and Molecular Biology aims to prepare students at Mississippi State in this exciting area.

The curriculum leads to a Bachelor of Science degree in biochemistry and molecular biology. The objective of this curriculum is to provide the student with a strong background in science as part of a liberal education and also to prepare the student for professional work and/or graduate study.

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.

University Core

English Composition (6 hours)

- EN 1103 English Comp I OR
 EN 1163 Accelerated Comp I
 EN 1113 English Comp II OR
 EN 1173 Accelerated Comp II

Mathematics (6 hours)

- MA 1713 Calculus I
MA 1723 Calculus II

Science (9 hours)

See major core

Humanities (6 hours)

Select from University Core

Fine Arts (3 hours)

Select from University Core

Social Sciences (6 hours)

Select from University Core

Major Core

- CH 1213 Chemistry I
CH 1211 Investigations in Chemistry I
CH 1223 Chemistry II
CH 1221 Investigations in Chemistry II
CH 2313 Intro to Analytical Chemistry
CH 4513 Organic Chemistry I
CH 4511 Organic Chemistry Lab
CH 4523 Organic Chemistry II
CH 4521 Organic Chemistry Lab
BCH 1001 Intro to Biochemistry
BCH 4603 General Biochemistry I
BCH 4414 Protein Methods
BCH 4613 General Biochemistry II
BCH 4623 Biochemistry of Special Tissues
BCH 4713 Molecular Biology
BCH 3901 Senior Seminar
BCH 4804 Molecular Biology Methods
BIO 1203 Plant Biology
BIO 1504 Principles of Zoology
BIO 3304 General Microbiology
BIO 4114 Cell Physiology
PH 2213 Physics I*
PH 2223 Physics II*
18 hours Technical Electives **
10 hours General Electives

Oral Communication Requirement

- CO 1003 Fundamentals of Public Speaking

Writing Requirement

Satisfied by successful completion of BCH 4414 and BCH 4804

Computer Literacy

Satisfied by successful completion of BCH 4414, BCH 4713 and BCH 4804

Total hours needed for major: 120

* PREMED, PREVET, and PREDENT majors are given the option of scheduling PH 1113 and PH 1123. In addition, PREMED majors must schedule a third semester of physics, either PH 1133 or PH 2233.

** Students desiring a B.S. degree without a concentration will be required to take 18 hours of technical electives to be selected in collaboration with an advisor. Technical electives serve to prepare students for different areas of specialization. In addition, these students will need 10 hours of general electives.

PRE-MEDICINE CONCENTRATION

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.

- BIO 2103 Cell Biology
BIO 3103 Genetics OR
BIO 4133 Human Genetics
BIO 4413 Immunology
PH 1133 General Physics III OR
PH 2233 Physics III
6 hours Technical electives
10 hours General electives

PRE-PHARMACY CONCENTRATION

Pharmacy school typically requires only two years of college work. However, four-year undergraduate programs can be of benefit to students

and Biochemistry graduates have been very successful in Pharmacy School. The following courses are required as either Social Science core courses or in lieu of technical or general electives.

- PSY 1013 General Psychology OR
SO 1003 Introduction to Sociology
EC 2113 Principles of Macroeconomics
EC 2123 Principles of Microeconomics
ST 2113 Introduction to Statistics
BIO 2014 Human Physiology
8 hours Technical electives
10 hours General electives

BIOINFORMATICS CONCENTRATION

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 job 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.

- CSE 1284 Introduction to Computer Programming
CSE 1384 Intermediate Computer Programming
CSE 2383 Data Structures and Analysis of Algorithms
CSE 2813 Discrete Structures
CSE 3833 Introduction to Analysis of Algorithms
CSE 3813 Introduction to Formal Languages and Automata
CSE 4633 Artificial Intelligence
CSE 4623 Computational Biology
ST 3123 Introduction to Statistical Inference

PRE-MBA CONCENTRATION

This concentration provides the student with a B.S. in Biochemistry incorporating a strong background in science and prepares 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 Financial Accounting
ACC 2023 Managerial Accounting
EC 2113 Macroeconomics
EC 2123 Microeconomics
BQA 2113 Business Statistics I
BQA 3123 Business Statistics II
MGT 3114 Principles of Management and Production
MKT 3013 Principles of Marketing
FIN 3123 Financial Management

FORENSIC SCIENCES CONCENTRATION

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
SO 1003 Introduction to Sociology
ST 2113 Introduction to Statistics
SO 3313 Deviant Behavior
SO 3603 Criminology
COR 3103 Criminal Justice System
PSY 4373 Forensic Psychology
3 hours Technical electives
10 hours General electives

PRE-VETERINARY MEDICINE CONCENTRATION

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

BIO 3103	Genetics
BIO 4413	Immunology
VS 3014	Anatomy and Physiology
8 hours	Technical electives
10 hours	General electives

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.

30 hours	University Core
CH 1213	Chemistry I
CH 1211	Investigations in Chemistry
CH 1223	Chemistry II
CH 1221	Investigations in Chemistry
CH 2313	Intro to Analytical Chemistry
CH 4513	Organic Chemistry
CH 4511	Organic Chemistry Lab
CH 4523	Organic Chemistry
CH 4521	Organic Chemistry Lab
BCH 1001	Intro to Biochemistry
BCH 4603	General Biochemistry I
BCH 4414	Protein Methods
BCH 4613	General Biochemistry II
BCH 4623	Biochemistry Special Tissues
BCH 4713	Molecular Biology
BCH 3901	Senior Seminar
BCH 4804	Biochemical Methods
BIO 1504	Principles of Zoology
BIO 4413	Immunology
BIO 3304	General Microbiology
PH 1113	General Physics I
PH 1123	General Physics II
VS 3014	Anatomy and Physiology
BIO 3103	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.

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 4413/4423 Physical Chemistry or CH 4404 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 and 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 8003, Thesis Research 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.

Department of ENTOMOLOGY and PLANT PATHOLOGY (EPP)

Department Head: Clarence H. Collison
Office: 106 Clay Lyle Entomology Complex

ENTOMOLOGY

Office: 103 Clay Lyle Entomology Complex

Entomology is the study of insects and the impact of insects on the health and economic well-being of mankind. The Clay Lyle Entomology Complex houses the staff and administrative offices of the department, and the laboratory and classroom facilities support a broad range of extension, research and teaching functions. Students have access to a wide range of entomological expertise. Most faculty have joint appointments

with the College of Agriculture and Life Sciences and the Mississippi Agricultural and Forestry Experiment Station and/or the Mississippi Cooperative Extension Service. The breadth of the department is also influenced by several USDA/ARS research laboratories located on campus and at Stoneville, Mississippi. A Master of Science in Agricultural Life Sciences with a concentration in Entomology and Plant Pathology and a Doctor of Philosophy degree in Life Sciences with a concentration in Entomology and Plant Pathology are offered (See the Graduate Bulletin for description of programs and requirements for advanced degrees.) Entomology jointly participates in the Integrated Pest Management degree program with Plant Pathology and Weed Science (see Integrated Pest Management).

PLANT PATHOLOGY

Office: 206 Dorman Hall

Plant pathology is the study of plant diseases, their causal agents and methods of control. Emphasis is placed on protection of environmental quality. A Master of Science in Agricultural Life Sciences with a concentration in Entomology and Plant Pathology and a Doctor of Philosophy degree in Life Sciences with a concentration in Entomology and Plant Pathology are offered (See the Graduate Bulletin for description of programs and requirements for advanced degrees.) Plant Pathology jointly participates in the Integrated Pest Management degree program with Entomology and Weed Science (See Integrated Pest Management).

Department of FOOD SCIENCE, NUTRITION and HEALTH PROMOTION (FNH)

Department Head: Professor William Benjy Mikel
Office: 109 Herzer Building

The Food Science, Nutrition and Health Promotion (FNH) 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 (www.ift.org/cms, 2001). Food technology is the application of food science to the selection, preservation, processing, packaging, distribution, and use of safe, nutritious, and wholesome foods (www.ift.org/cms, 2001).

Nutritionists research ways to improve health through a better understanding of nutrition. Nutritionists focus on "the science of foods, the nutrients and other substances therein; their action, interaction, and balance in relationship to health and disease; the processes by which the organism ingests, digests, absorbs, transports and utilizes nutrients and disposes of their end products. In addition, nutrition must be concerned with social, economic, cultural and psychological implications of food and eating."

~Council on Food and Nutrition, 1963. Journal of the American Medical Association 183:955

The Department of Food Science, Nutrition and Health Promotion (FNH) is proud to offer undergraduate education in Food Science (approved by the Institute of Food Technologists) and Nutrition (currently granted accreditation by the Commission on Accreditation for Dietetics Education of the American Dietetic Association, 120 South Riverside Plaza, Suite 200, Chicago, IL 60606, (800) 877-1600, ext. 5400). 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; Community Nutritionist; Public Health Nutritionist; Clinical Dietitian; Pediatric Dietitian; Cardiovascular Dietitian; Healthcare/School Food Service Director; Private Practice Dietitian; Sports/

Wellness Dietitian; Pharmaceutical Sales Representative; Dietitian in Business and Industry; Journalism and Communications; Public Relations and Marketing; and Researchers in universities and hospitals.

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, etc.

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

- Food Processing/Business
- Food Science
- Food Safety
- Nutrition

University Core

English Composition (6 hours)

- | | |
|---------|---------------------|
| EN 1103 | English Comp I OR |
| EN 1163 | Accelerated Comp I |
| EN 1113 | English Comp II OR |
| EN 1173 | Accelerated Comp II |

Mathematics (6 to 9 hours)

Refer to concentration

Science (6 to 9 hours)

Refer to concentration

Humanities (6 hours)

Select from University Core

Fine Arts (3 hours)

Select from University Core

Social Sciences (6 hours)

- | | |
|-----------|---|
| FPB/FS/PV | Select from University Core (w/ advisor approval) |
| NTR | Refer to concentration |

Major Core (7 hours)

Oral Communication Requirement

- | | |
|----------|---|
| FNH 1103 | Intro to Food Sci, Nutrition and Health Promotion |
| FNH 3111 | Food Sci, Nutrition and Health Promotion Seminar |

Writing Requirement

- | | |
|----------|---|
| FNH 4373 | Career Success Skills in Food Science, Nutrition and Health Promotion |
|----------|---|

Choose one of the following concentrations:

Food Processing/Business Concentration (FPB)

Major Advisor: Assistant Professor Wes Schilling

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

- | | |
|----------|---|
| 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 |
| PH 1113 | General Physics I |
| MA 1313 | College Algebra |
| ST 3123 | Introduction to Stat. Inference |
| BIO 1203 | Plant Biology |
| BIO 3304 | General Microbiology |
| MGT 3513 | Introduction to Human Resource Management |
| ACC 2013 | Principles of Financial Accounting |
| MKT 3013 | Principles of Marketing |
| AIS 4203 | Applications of Computer Technology* |
| FNH 2112 | Food Products Evaluation |
| FNH 2293 | Individual and Family Nutrition |
| FNH 4114 | Analysis of Food Products |
| FNH 4164 | Quality Assurance of Food Products |
| FNH 4333 | Food Law |
| FNH 4153 | Food Plant Management |
| FNH 4173 | Food Packaging |
| FNH 4583 | Food Preservation Technology OR |
| FNH 4573 | Food Engineering Fundamentals |
| FNH 4593 | New Food Product Development |
| FNH 4243 | Composition and Chemical Reactions of Foods |

FNH 4241	Applied Food Chemistry
FNH 4414	Microbiology of Foods
6-7 hours	Food Processing Electives**
6 hours	FNH Electives ***
6-8 hours	Electives

Total needed for major: 124

* Fulfills Computer Literacy requirement.

** Choose two courses (6-7 hours) from the Food Processing Electives: FNH 4314 Meat Processing; FNH 4613 Seafood Processing; FNH 4513 Poultry Processing; FNH 4123 Fermented Food Processing; FNH 4143 Dairy Foods Processing; or FNH 4583 Food Preservation Technology.

*** Choose two additional FNH 3-4000 level courses from the FNH electives, FNH 4573 Food Engineering, FNH 4583 Food Preservation Technology, or FNH 4393 Control and Prevention of Disease.

Food Science Concentration (FS)

Major Advisor: Assistant Professor Wes Schilling

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

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
BCH 4013	Principles of Biochemistry
PH 1113	General Physics I
PH 1123	General Physics II
MA 1713	Calculus
MA 1723	Calculus II
ST 3123	Introduction to Stat. Inference
BIO 1203	Plant Biology
BIO 1123	Animal Biology
BIO 3304	General Microbiology
MGT 3513	Introduction to Human Resource Management
ACC 2013	Principles of Financial Accounting OR
MKT 3013	Principles of Marketing
AIS 4203	Applications of Computer Technology*
FNH 2112	Food Products Evaluation
FNH 2293	Individual and Family Nutrition
FNH 4114	Analysis of Food Products
FNH 4164	Quality Assurance of Food Products
FNH 4153	Food Plant Management
FNH 4573	Food Engineering Fundamentals
FNH 4593	New Food Product Development
FNH 4243	Composition and Chemical Reactions of Foods
FNH 4241	Applied Food Chemistry
FNH 4414	Microbiology of Foods
3-4 hours	Food Processing Electives**
9 hours	FNH Electives***
4-5 hours	Electives

Total hours needed for major: 124

* Fulfills Computer Literacy requirement.

** Choose one course (3-4 hours) from the Food Processing Electives: FNH 4314 Meat Processing; FNH 4613 Seafood Processing; FNH 4513 Poultry Processing; FNH 4123 Fermented Food Processing; FNH 4143 Dairy Foods Processing; or FNH 4583 Food Preservation Technology.

*** Choose three additional FNH 3-4000 level courses from the FNH electives: FNH 4573 Food Engineering Fundamentals, FNH 4583 Food Preservation Technology, or FNH 4393 Control and Prevention of Disease.

Food Safety Concentration (PV)

Major Advisor: Assistant Professor Wes Schilling

- 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.

MA 1313	College Algebra
MA 1323	Trigonometry or
MA 1713	Calculus I
CH 1213	Chemistry I
CH 1211	Invest in Chemistry I
CH 1223	Chemistry II
CH 1221	Invest in Chemistry II
CH 4511	Organic Chemistry Lab I
CH 4513	Organic Chemistry I
BIO 1504	Principles of Zoology
BIO 2103	Cell Biology

BIO 3304	General Microbiology
BIO 4413	Immunology
BCH 4013	Principles of Biochemistry
PH 1113	General Physics I
PO 3103	Genetics
ACC 2013	Principals of Financial Accounting
FNH 3142	Meats Judging
FNH 4153	Food Plant Management OR
FNH 4173	Food Packaging
NTR 4115	Nutrition
FNH 4314	Meat Processing
FNH 2112	Food Products Evaluation
FNH 4114	Analysis of Food Products
FNH 4164	Quality Assurance of Food Products
FNH 4243	Composition and Chemical Reactions of Foods
FNH 4414	Microbiology of Foods
FNH 4241	Applied Food Chemistry
FNH 4593	New Food Product Development

Total hours needed through Junior year: 107

Students will receive a B.S. in Food Science, Nutrition and Health Promotion upon completion of their first year of school in Veterinary Medicine.

If students do not obtain admittance into the College of Veterinary Medicine after their junior year, an optional fourth 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 College of Veterinary Medicine.

Optional Fourth Year

- FNH 4333 Food Law
- 6 hours of electives for 3000-4000 level FNH classes
- ST 3123 Intro to Statistical Inference
- 5 hours electives

Nutrition Concentration (NTR)

Major Advisors: Dietetics Education Director Michelle Lee,
Associate Professors Sylvia Byrd and Diane Tidwell
Assistant Professor Chiquita Briley,
and Assistant Extension Professor Brent Fountain

- Prepares students for a wide variety of careers. For students interested in becoming a Registered Dietitian, the Didactic Program in Dietetics (DPD) at Mississippi State University is currently accredited by the Commission of Accreditation for Dietetics Education (CADE) of the American Dietetic Association, 120 South Riverside Plaza, Suite 2000, Chicago, IL 60606; telephone 800-877-1600, ext. 5400. Upon completion of the DPD program, graduates may pursue participation in a supervised practice program. Successful completion of the supervised practice program, followed by the Registration Exam, fulfills the requirements to become a Registered Dietitian. All students in Nutrition are required to have a computer that meets specifications established by the Department of Food Science, Nutrition and Health Promotion.

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 Lab
BCH 4013	Principles of Biochemistry
MA 1313	College Algebra
ST 2113	Intro to Stats
BIO 1504	Principles of Zoology
BIO 2014	Human Physiology
BIO 3304	General Microbiology
BIO 4133	Human Genetics
PSY 1013	Gen Psychology
SO 1003	Intro to Sociology OR
SO 1103	Contemp Social Problems
CO 2213	Small Group Communication
MGT 3114	Prin of Management and Prod
MGT 3513	Intro Human Resources Mgt
FNH 2203	Science of Food Preparation
FNH 2293	Individual and Family Nutrition
FNH 3003	Nutrition Field Experience
FNH 3263	Research Methods in Food & Nutrition*

FNH 3274	Quantity Food Production & Service
FNH 3283	The Foodservice System
FNH 4213	Nutrition Public Policy & Promotion
FNH 4233	Medical Nutrition Therapy
FNH 4253	Nutritional Biochemistry of Foods
FNH 4353	Nutrition Throughout the Life Cycle
FNH 4273	Nutritional Assessment
FNH 4283	Purch Food & Equip for Food Service Systems
FNH 4293	Vitamins, Minerals and Supplements
FNH 3701	Nutrition Professional Development
9 hours	Electives

Total hours needed for major: 124

* Fulfills Computer Literacy requirement.

Food Science Minor (18 hours)

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

FNH 4241	Applied Food Chemistry
FNH 4243	Food Composition and Reactions
FNH 4414	Microbiology of Foods
FNH 4513	Food Preservation Technology

Choose 7 or more credits from the following electives:

FNH 4593	New Food Product Development
FNH 1103	Intro to Food Science, Nutrition & Health Promo.
FNH 4164	Quality Assurance of Food Products
FNH 4143	Dairy Processing
FNH 4314	Meats Processing
FNH 4513	Poultry Processing
FNH 4114	Analysis of Food Products

SCHOOL of HUMAN SCIENCES

Director: Professor Gary B. Jackson
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 Information Science and Education (AISE)**
- **Apparel, Textiles and Merchandising (ATM)**
- **Human Development and Family Studies (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.

Agricultural Information Science (AIS) Curriculum

Major Advisor: Associate Professor Kirk Swartzel
Office: (662) 325-2950

Agricultural Information Science is the science of assisting others to learn how to access, analyze, apply, and amend information to solve problems in agriculture. The curriculum is designed to prepare students

to enter professions requiring extensive knowledge and skill in solving agricultural and agriculturally related problems. Students are prepared to meet agriculture industry's needs for individuals who can create, access, disseminate, apply, amend, and integrate information to solve problems in agriculture. Agricultural Information Science graduates may become involved in a variety of occupations in agricultural business and industry, education, production, extension, public relations, and others. A minimum of 124 semester hours is required for this major. Students may choose to complete an emphasis in either Agricultural Science or Human Resource Management. These emphases are achieved by completing 16 hours of specified courses and five hours of electives as approved by an AIS advisor. Those students who elect to minor in communication instead of selecting one of the two concentrations can do so by taking 21 hours of specified courses through the Department of Communication.

The Agricultural Science emphasis is designed to provide skills for individuals seeking careers in production agriculture or secondary school education. The Human Resource Management emphasis is designed to provide skills for individuals seeking careers in business and industry and extension.

All students in Agricultural Information Science are required to have their own personal computer. Students should consult with the department for equipment specifications prior to purchasing.

Students desiring to receive certification to teach in secondary agriculture programs will need to complete certification requirements. This can be accomplished by completing a Master of Science Degree in Agricultural and Extension Education, Teacher Certification Concentration. To enroll in this program, individuals must possess a bachelor's degree in an agriculture area and meet requirements for regular admission to the Master of Science degree program. The minimum GPA requirement is 2.75 on a 4.0 scale during the last two years (approximately 60 hours) of undergraduate academic work or a 3.0 minimum on 24 hours of graduate level courses. Individuals must apply to Teacher Education. Individuals must present an ACT score of 21 (SAT equivalent of 860) with no sub score below 18 or minimum score on the Pre-Professional Skills Test (PPST) to meet teacher certification standards in Mississippi. The minimum scores are 170 on Reading, 172 on Writing, and 169 on Mathematics; or on the Computer Based Test (CBT), 316 on Reading, 318 on Writing, and 314 on Mathematics. Applicants to teacher education must complete the "Verification of Work Experience with Children and Youth" and provide two letters of recommendation.

Exit requirements include a 3.0 GPA, mastery on an oral comprehensive examination administered by the Graduate Committee and submission of the required score on the Praxis II – Principles of Learning and Teaching (PLT) - to the Mississippi State University College of Education and to the Mississippi Department of Education to obtain licensure.

Graduates will have knowledge of (1) agricultural and ecological information sciences; (2) principles of teaching and learning; (3) basic agricultural sciences; (4) theories and principles of human communication; and (5) agricultural business principles.

Graduates will be able to (1) plan and conduct education programs in classroom and community settings; (2) assess and prioritize the needs and goals of various audiences; (3) develop strategies to meet constituents' needs and accomplish goals; (4) assess the appropriateness of strategies and revise the strategies as needed; (5) communicate effectively orally and in writing to various audiences; and (6) access and analyze information.

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.

University Core

English Composition (6 hours)

EN 1103	English Comp I OR
EN 1163	Accelerated Comp I
EN 1113	English Comp II OR
EN 1173	Accelerated Comp II

Mathematics (6 hours)

MA 1313	College Algebra
ST 2113	Intro to Statistics

Science (9 hours)

BIO 1123	Animal Biology
BIO 1203	Plant Biology

CH 1043 Survey of Chemistry I

Humanities (6 hours)

PHI 1103 Introduction to Philosophy OR

PHI 1113 Intro to Logic

HI elective Select from University Core

Fine Arts (3 hours)

Select from University Core

Social Sciences (6 hours)

AEC 2713 Intro to Food and Resource Econ

PSY 1013 General Psychology

Major Core

AIS 2613 Intro to Info and Dec Science in Agrisci

AIS 3003 Information Interpretation

AIS 3333 Professional Presentations

AIS 3500 Internship

AIS 3803 Leadership Development

AIS 4103 Programs in AIS

AIS 4303 Info Tech Ag Learning Systems

AIS 4403 Development of Youth Programs

AIS 4424 Teaching Methods in Ag & Human Sciences

ADS 1114 Animal Science

CH 1051 Experimental Chemistry Lab

CH 1053 Survey of Chemistry II

EPP 2213 Intro to Insects

FNH 1103 Intro to Food Sci, Nutrition and Health

PSS 1313 Plant Science

7 hours Agriculture Electives (see advisor)

6 hours Free Electives

Oral Communication Requirement

CO 1003 Fund of Public Speaking

Writing Requirement

AIS 3203 Intro to Technical Writing in Agricom

Computer Literacy

AIS 4203 App of Computer Info Systems

Agricultural Science Emphasis

ABE 1863 Eng. Technology in Ag

PO 3103 Genetics I

PSS 2423 Plant Materials I OR

PSS 4343 Greenhouse Management

PSS 3301 Soils Laboratory

PSS 3303 Soils

PSS 3133 Weed Science

5 hours Agriculture Science Electives

Human Resources Management Emphasis

AEC 3133 Intro Agribusiness Management

AEC 3233 Intro Environmental Economics Policy

MGT 3114 Principles of Management Production

MGT 3513 Intro Human Resource Management

MGT 4533 Adv Human Resource Management

6 hours Agriculture or Management Electives

Total hours needed for major: 124

Agricultural Science (AGS) Curriculum

Major Advisor: Associate Professor Kirk Swortzel

Office: (662) 325-2950

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 33 hours of science and 58 hours of agricultural science. Thirty hours will be agricultural science electives, which must be taken from two academic departments within the College of Agriculture and Life Sciences. The student must select agricultural

science electives that are closely related and compliment each other. By selecting electives from two academic departments, a student can develop two specialization areas, such as integrated pest management and agronomy or agricultural economics and animal science. A minimum of 16 agricultural science electives must be 4000 level courses or above, and a maximum of 4 hours may be selected from 1000 level courses.

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.

University Core

English Composition (6 hours)

EN 1103 English Comp I OR

EN 1163 Accelerated Comp I

EN 1113 English Comp II OR

EN 1173 Accelerated Comp II

Mathematics (6 hours)

MA 1313 College Algebra

3 hours Select from University Core

Science (9 hours)

BIO 1203 Plant Biology

BIO 1123 Animal Biology

CH 1043 Survey of Chemistry I

Humanities (6 hours)

HI elective Select from University Core

HI elective Select from University Core

Fine Arts (3 hours)

Select from University Core

Social Science (6 hours)

AEC 2713 Intro to Food and Resource Econ

PS 1113 American Government

Major Core

ABE 1863 Eng Tech Agriculture

ADS 1114 Animal Science

BIO 2213 Survey Plant Kingdom

CH 1051 Exp Chemistry Lab

CH 1053 Survey of Chemistry II

CH 2501 Elem Organic Chemistry Lab

CH 2503 Elem Organic Chemistry

EPP 2213 Intro to Insects

EPP 3113 Plant Pathology

PO 3103 Genetics

PSS 1313 Plant Science

PSS 3133 Weed Science

PSS 3301 Soils Lab

PSS 3303 Soils

3 hours Physics Elective - see advisor

33 hours Ag Science Elect. in two CALS depts - see advisor

6 hours Free electives

Oral Communication Requirement

CO 1003 Fundamentals of Public Speaking

Writing Requirement

AIS 3203 Intro to Technical Writing in Agricom

Computer Literacy

AIS 4203 App of Computer Info Systems

Total hours needed for major: 124

Human Sciences (HS) Curriculum

The Human Sciences degree provides educational, research, and outreach programs related to the interaction of people with their environment. More importantly, the multidisciplinary areas within Human Sciences focus on the basic human needs, such as food, shelter, clothing, human interaction and relationships, commerce and family life. In light of the current trends and anticipated changes, the mission of the Human Sciences degree is to prepare students and to conduct research and outreach activities to impact the social, health, and economic concerns facing individuals, families and communities.

Transfer credits with grade of C or higher will be considered toward fulfillment of degree requirements in Human Sciences.

The following concentrations are offered in the School of Human Sciences: Apparel, Textiles, and Merchandising (ATM); and Human Development & Family Studies (HDFS).

A minor in **Human Sciences** is available. Required are HS 2293, HS 2593, HS 3303, HS 3673, HS 4853. In addition, six credits are to be selected from HS 1533, HS 2203, HS 2283, HS 2603, HS 2613, HS 2813, HS 4193, HS 4313, HS 4333, HS 4403, and HS 4513.

University Core

English Composition (6 hours)

EN 1103	English Comp I OR
EN 1163	Accelerated Comp I
EN 1113	English Comp II OR
EN 1173	Accelerated Comp II

Mathematics (6 hours)

ATM	MA 1313	College Algebra
ATM	BQA 2113	Business Stats OR
	ST 2113	Intro to Stats
HDFS	Select from University Core	

Science (9 hours)

HDFS	See Concentration Requirements	
ATM	CH 1043 + 6 hrs from University Core	

Humanities (6 hours)

ATM	3 hours Foreign Lang + 3 hours from Univ. Core	
HDFS	Select from University Core	

Fine Arts

Select from University Core

Social Sciences (6 hours)

PSY 1013	General Psychology	
3 hrs	See Concentration	

Major Core

HS 1701	Survey of Human Sciences	
HS 2293	Individual and Family Nutrition	
HS 3303	Consumer Economics	
HS 4702	Human Sciences Senior Seminar	
HS 4853	The Family: A Transactional Approach	

Choose one of the following concentrations:

Apparel, Textiles, and Merchandising (ATM) Concentration

Associate Professors Wanda Cheek and Phyllis Bell Miller;
Instructors Jane Caston and Beth Duncan

This concentration is designed to provide students with an understanding of the fashion and textile industries, consumer behavior, product quality, and business principles. Students concentrate in one of two areas: Merchandising or Apparel Production and Design. Merchandising combines an overview of the fashion industry, consumer behavior, and product knowledge with an understanding of business principles. Apparel Production and Design emphasizes the total design and production process from inception to finished product and its ultimate sale to the consumer. Apparel, Textiles, and Merchandising students are required to have a laptop computer during the freshman year, selected from a range of models recommended by the School of Human Sciences.

HS 1533	Apparel Design I	
ACC 2013	Principles of Financial Accounting	
ACC 2023	Principles of Managerial Accounting	
EC 2113	Principles of Macroeconomics*	

EC 2123	Principles of Microeconomics	
HS 1523	Visual Design in Dress	
HS 2553	Fashion Merchandising	
HS 3593	Merchandising & Promotion Strategies	
HS 2593	Apparel/Sewn Prod Analysis & Evaluation	
HS 3553	Fashion Retailing	
HS 2524	Textiles for Apparel	
HS 3573	Historic Costume	
HS 3563	Visual Merchandising	
BL 2413	The Legal Environment of Business	
MKT 3013	Principles of Marketing	
MGT 3114	Principles of Management and Prod	
HS 4513	Social-Psych Aspects of Clothing	
HS 4701	Internship Placement Seminar	
HS 1711	Professional Protocol	
HS 4763	Apparel, Textiles & Merch. Internship	
HS 4533	Merch. Planning and Buying OR	
HS 4343	Apparel Design II	

Oral Communication Requirement

CO 1003	Fundamentals of Public Speaking	
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Writing Requirement

See advisor for approved courses

Computer Literacy

HS 4733	Computer-Aided Design for Human Sciences	
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Restricted Electives - choose 9 credit hours from one area

Apparel Production and Design Area

HS 4583	Entrepreneurship for Human Sciences	
HS 4710	Study Tour	
ART 1123	Design I	
ART 1133	Design II	
ART 1213	Drawing I	
ART 1223	Drawing II	
ART 3103	Photography I	
ART 2213	Life Drawing I	
HS 4424	Teach Methods in Ag & Human Sciences	

Merchandising Area

HS 4583	Entrepreneurship for Human Sciences	
HS 4710	Study Tour	
FIN 3123	Financial Management	
IB 3913	Prin of International Business	
MKT 3933	International Marketing	
MGT 3513	Intro to Human Resource Mgt	
MKT 3213	Retailing	
MKT 4113	Personal Selling	
MKT 4123	Advertising	
MKT 4413	Consumer Analysis & Behavior	
MKT 4213	Internet Marketing	
MKT 4613	Services Marketing	
MKT 4533	Marketing Research	
PHI 3013	Business Ethics	
HS 4424	Teach Methods in Ag & Human Sciences	

Total hours needed for major: 124

* Satisfies University Core.

MINOR: A minor in Apparel, Textiles and Merchandising is available, requiring: HS 2593, HS 2524, HS 2553, HS 4513. In addition, nine credits are to be elected from HS 1523, HS 1711, HS 4563, HS 3563, HS 3573, HS 3553, HS 4583, HS 1533, HS 3593, HS 4733, HS 4710.

Human Development & Family Studies (HDFS) Concentration

Professor Jan Cooper Taylor; Associate Professors Sheri Worthy and Wanda Cheek; Assistant Professors Joe Wilmoth and Erin Sharp

This program offers an interdisciplinary lifespan approach to the study of children, youth and families. It encompasses specialty areas in child studies (preschool teaching or child life), youth studies, family studies, 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 which focus on enabling children and families to function effectively in today's complex society.

Specific course work is required to specialize in each area or to meet class A teacher licensure requirement for family and consumer sciences in the state of Mississippi. Specific course work is also required to specialize in child life, preschool education, youth studies or family services.

All teacher education programs at Mississippi State University are NCATE accredited. Students must conform to the policies on teacher education, as explained under "Teacher Licensure" elsewhere in this catalog. Additional endorsement is available in these occupational areas: clothing, apparel and textiles; child care guidance; and institutional food and administration. Approved work experience is required to obtain this special endorsement.

Individual and Family Development Emphasis

SO 1003	Introduction to Sociology*
BIO 1004	Anatomy & Physiology*
6 hrs	Science with Laboratory*
EDX 3213	Psych & Ed Exceptional Children & Youth
COE 4013	Facilitative Skills Development
EPY 3543	Psychology of Adolescence*
PSY 3413	Human Sexual Behavior
HS 1802	Professional Seminar
HS 2803	Pre-natal and Infant Development
HS 2813	Child Development I
HS 3813	Child Development II
PE 3213	Emergency Health Care OR
PE 1223	Personal Health
HS 2603	Interior Design Fundamentals
HS 4403	Intro to Gerontology
HS 4424	Teach Methods in Ag & Human Sciences
HS 4313	Family Resource Management
HS 4803	Art of Parenting
HS 4823	Dev & Adm of Child Svc Programs
HS 4333	Families, Legislation, & Public Policy
HS 4750	Internship
12 hrs	Restricted Electives (see below - consult advisor)
5-8 hrs	Electives

Oral Communication Requirement

Satisfied by successful completion of HS 4424

Writing Requirement

AIS 3203	Intro to Tech Writing OR
EDF 3413	Writing for Thinking

Computer Literacy

Satisfied by successful completion of HS 3303

Restricted Electives - choose 12 hours from one area

Child Studies (Preschool/Child Life)

EDE 3233	Teach Literature at Elem & Mid. Levels
HS 3803	Child Care Procedures
HS 3823	Designing Child Care Programs
HS 4834	The Hospitalized Child (Child Life)
HS 2283	Child Health and Nutrition

Youth Studies

COE 4023	Intro to Counseling
EDE 3223	Middle Grade Education
EDX 4423	Teaching the Disadvantaged Child
HS 3673	Environments for Special Needs
AIS 4403	Development of Youth Programs
SW 4613	Child Welfare Services

Family Studies

HS 3673	Environments for Special Needs
HS 4813	Adult Development: The Middle Years
HS 4843	Family Interaction
HS 4863	Consumer Aspects of Aging

Total hours needed for major: 121-124

* Satisfies University Core.

Family & Consumer Sciences Education Emphasis

CH 1043	Survey of Chemistry I*
6 hrs	Science with laboratory*
EDF 3333	Social Foundations of Education
EDF 4243	Planning for Diversity of Learners
EDX 3213	Psych & Ed of Excep Child & Youth
EPY 3143	Human Dev & Learning Strategies in Ed

EPY 3253	Evaluating Learning
EPY 3543	Psychology of Adolescence*
EDS 3411	Practicum in Secondary Ed
EDS 4873	Seminar in Managing Secondary Class
PE 1223	Personal Health
PSY 3413	Human Sexual Behavior
HS 2593	Apparel/Sewn Product Analysis & Evaluation
HS 1533	Apparel Design I
HS 2203	Science of Food Preparation
HS 2524	Textiles for Apparel
HS 2813	Child Development I
HS 2283	Child Health and Nutrition
HS 4424	Teaching Methods in Ag & Human Sciences
HS 4803	Art of Parenting
HS 2603	Interior Design Fundamentals
HS 4333	Families, Legislation & Policy
HS 4313	Family Resource Management
HS 4462	Curriculum in Human Sciences
HS 4886	Teaching Internship in Vocat. Human Sci.
HS 4896	Teaching Internship in Vocat. Human Sci.

Oral Communication Requirement

Satisfied by successful completion of HS 4424

Writing Requirement

AIS 3203	Intro to Tech Writing OR
EDF 3413	Writing for Thinking

Computer Literacy (3 hours)

Satisfied by successful completion of HS 3303

Total hours needed for major: 122

* Satisfies University Core

A **minor** in Human Development and Family Studies is available. Requirements are: HS 2803, HS 2813, HS 3803, HS 4803, HS 4853. In addition, six credits are to be elected from HS 4403, HS 4843, HS 3813, HS 3823, HS 4863, HS 2283, and HS 4333.

Gerontology Certificate

Associate Professor Sheri Lokken Worthy

The Gerontology Certificate provides the student with current factual and theoretical data along with practicum 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 certificate in gerontology.

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

Undergraduate Certificate Requirements: (minimum 15 hours)

Select at least three of the following:

ABE 4513	Dynamics of Aging
COE 4713	Issues in Aging
HS 4403	Intro to Gerontology
HS 4813	Adult Development
HS 4863	Consumer Aspects of Aging
PSY 4983	Psychology of Aging
SO 4413	Aging and Retirement in American Society
SO 4433	Sociology of Death and Dying
SW 4623	Social Work with the Aged

Select up to two of the following: (may include courses from above)

SW 2323	Social Welfare Policy II
SO 4423	Health and Society
HS 3673	Environments for Special Needs
HS/FNH4353	Nutrition Throughout the Life Cycle
HS 4333	Families, Legislation, and Public Policy

Graduate Certificate Requirements (minimum 18 hours)

Select at least three of the following:

ABE 6513	Dynamics of Aging
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PSY 6983	Psychology of Aging
SO 6413	Aging & Retirement in American Society
SO 6433	Sociology of Death and Dying
HS 6403	Intro to Gerontology
HS 6863	Consumer Aspects of Aging
HS 6813	Adult Development
PE 8153	Wellness and Aging
COE 8813	Counseling the Elderly
COE 6713	Issues in Aging

Take up to two of the following-may include courses from above:

SO 6423	Health & Society
HS/FNH6353	Nutrition Throughout the Life Cycle
HS/FNH8243	Community Nutrition
HS 6333	Families, Legislation, and Public Policy
PSY 8313	Developmental Psychology
3 hrs	Required: Independent study/readings course

INTEGRATED PEST MANAGEMENT (IPM)

An Interdisciplinary Curriculum Including Entomology,
Plant Pathology and Weed Science

Major Advisor: Assistant Professor Fred R. Musser
Office: 123 Clay Lyle Bldg

Integrated Pest Management (IPM) is an interdisciplinary program 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. The Bachelor of Science degree in Integrated Pest Management is offered with concentrations in agricultural resources, environmental resources, urban resources, applied precision agriculture and agricultural business. Effective management of pest problems requires a broad base of knowledge in the pest disciplines and practical field experience. The undergraduate Integrated Pest Management major 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 co-op work experiences. Curricula are designed to meet the needs of students who wish to pursue advanced degrees (M.A., M.S., Ph.D.) 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, agribusiness, natural resource management and/or graduate studies preparation. A grade of "C" or better is required in all courses with the IPM, EPP, PSS, CH, or BIO 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. A student may transfer up to nine hours of "T" level technical courses from community colleges as unrestricted lower-level electives. "T" level technical courses may not be transferred for credit on any course listed specifically in the IPM curriculum.

Graduates are well prepared for employment with industries such as agricultural chemical, seed or biotechnology companies; 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.

Co-op Work: IPM students must complete a minimum 12 months or three semesters of co-op work with approved co-op sponsors in industry, private consulting firms/individuals, or governmental agencies. Typically the three co-op semesters include at least two different organizations with different job responsibilities. One of the three co-op semesters enrolled by the student must be a non-summer semester. A 2.50 cumulative GPA on all MSU work is required to participate in the IPM Co-op Program.

University Core

English Composition (6 hours)

EN 1103	English Comp I OR
EN 1163	Accelerated Comp I
EN 1113	English Comp II OR
EN 1173	Accelerated Comp II

Mathematics (6 hours)

MA 1313	College Algebra
ST 3123	Introduction to Statistical Inference

Sciences (9 hours)

See major courses

Humanities (6 hours)

Select from University Core

Fine Arts (3 hours)

Select from University Core

Social Sciences

AEC 2713	Intro to Food and Resource Econ
3 hours	Select from University Core

Major Core

IPM 4021	Senior Seminar
BIO 1203	Plant Biology
BIO 1504	Principles of Zoology
BIO 4213	General Plant Ecology
BIO 4214	General Plant Physiology
CH 1051	Experimental Chemistry
CH 1043	Survey of Chemistry I
CH 1053	Survey of Chemistry II
CH 2503	Elementary Organic Chemistry
CO 2213	Small Group Communication
EPP 4113	Principles of Plant Pathology
EPP 4154	General Entomology
EPP 4163	Plant Disease Management
EPP 4263	Principles of Insect Pest Management
PO 3103	Genetics I
PSS 3301	Soils Lab
PSS 3303	Soils
PSS 3133	Intro to Weed Science
PSS 4313	Soil Fertility & Fertilizers
PSS 4633	Weed Biology and Ecology
PSS 4813	Herbicide Technology
11 hours	Unrestricted Electives (See advisor)

Oral Communication Requirement

CO 1003	Fundamentals of Public Speaking
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Writing Requirement

AIS 3203	Intro to Technical Writing
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Computer Literacy - choose one

AIS 4203	Applications of Computer Tech to AIS and Ed
AEC 1223	Comp Applications for Ag & Life Scientists

Co-op Experience

CP 2103	First Work Semester
CP 2203	Second Work Semester
CP 3303	Third Work Semester

Choose 17 hours from one of the following concentrations:

Agricultural Resources Concentration

AEC 3133	Intro to Agribusiness Management
BIO 3304	General Microbiology
EPP 4214	Diseases of Crops
EPP 4234	Field Crop Insects
EPP 4543	Tox. And Ins. Chemistry
PSS 4103	Forage and Pasture Crops
PSS 4123	Grain Crops
PSS 4133	Fiber and Oilseed Crops
PSS 4314	Soil Microbiology
PSS 4323	Soil Classification
PSS 4333	Soil Conservation
PSS 4343	Greenhouse Management
PSS 4373	Geospatial Agronomic Mgt.
PSS 4453	Vegetable Production

Agricultural Business Concentration

ACC 2013	Principles of Financial Accounting
AEC 3113	Intro to Quantitative Economics
AEC 3133	Intro to Agribusiness Management
AEC 3213	International Trade in Agriculture
AEC 3413	Principles of Agricultural Marketing
AEC 3513	Economics of Food/Fiber Production
AEC 4123	Commodity Futures Marketing
EPP 4214	Diseases of Crops

EPP 4234	Field Crop Insects
MGT 3513	Intro to Human Resource Management
PSS 4123	Grain Crops
PSS 4133	Fiber and Oilseed Crops
PSS 4333	Soil Conservation
PSS 4343	Greenhouse Management
PSS 4363	Nursery Management
PSS 4373	Geospatial Agronomic Mgt.
PSS 4414	Turf Management
PSS 4453	Vegetable Production

Applied Precision Agriculture Concentration

EPP 4214	Diseases of Crops
EPP 4234	Field Crop Insects
FO 4311/4313	Spatial Technology in Nat. Res. Mgt.
FO 4451/4452	Remote Sensing Applications
GR 2313	Maps and Remote Sensing
GR 3303	Survey of Geospatial Technologies
GR 3311	Geospatial Applications
GR 3313	Intro to Geodatabases
GR 4303	Principles of GIS
GR 4323	Cartographic Sciences
PSS 4123	Grain Crops
PSS 4133	Fiber and Oilseed Crops
PSS 4323	Soil Classification
PSS 4333	Soil Conservation
PSS 4373	Geospatial Agronomic Mgt.
PSS 4411	Remote Sensing Seminar
WF 4253	GIS & GPS in Wildlife/Fisheries Mgt.

Environmental Resources Concentration

AEC 3233	Intro to Environmental Econ. & Policy
BIO 3304	General Microbiology
BIO 4203	Taxonomy of Spermatophytes
ENS 2102	Intro to Environmental Sciences
EPP 3124	Forest Pest Management
EPP 4244	Aquatic Entomology
EPP 4543	Tox. And Insecticide Chemistry
FO 4311/4313	Spatial Technology in Nat. Res. Mgt.
PSS 2423	Plant Materials I
PSS 4103	Forage and Pasture Crops
PSS 4314	Soil Microbiology
PSS 4323	Soil Classification
PSS 4333	Soil Conservation
WF 4153	Prin. of Wildlife Conservation and Mgt.
WF 4253	GIS & GPS in Wildlife/Fisheries Mgt.
WF 4371/4372	Water Quality Management

Urban Resources Concentration

BIO 3304	General Microbiology
BIO 4203	Taxonomy of Spermatophytes
EPP 3423	Ornamental and Turfgrass Insects
EPP 3522	Turfgrass Diseases
EPP 4223	Pest Control
EPP 4543	Tox. And Insecticide Chemistry
LA 2433	Landscape Systems & Plant Communities
PSS 2423	Plant Materials I
PSS 3473	Plant Materials II
PSS 4314	Soil Microbiology
PSS 4333	Soil Conservation
PSS 4343	Greenhouse Management
PSS 4353	Arboriculture & Landscape Maintenance
PSS 4363	Nursery Management
PSS 4414	Turf Management
PSS 4453	Vegetable Production

Total hours needed for major: 124

Department of LANDSCAPE ARCHITECTURE (LA)

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

Landscape Architecture Curriculum

Landscape Architecture is a design profession, concerned with the harmonious relationship of man and his environment.

Thus, a student of this discipline learns how to apply the design process to discover how physical installations or activities of man can be placed upon the land in a fashion that accommodates man, functionally and aesthetically, and complements the environment.

The Landscape Architecture program at Mississippi State University is accredited by the American Society of Landscape Architects. Upon completing curriculum requirements, a student receives a Bachelor of Landscape Architecture (B.L.A) degree. A Master's degree in Landscape Architecture (M.L.A.) is also available. For more information, refer to the Graduate Bulletin.

There are career opportunities for landscape architects with private firms and in governmental agencies. The scope of this profession includes, but is not limited to: site planning for housing developments, shopping centers, malls, civic centers, industrial parks, campuses, motels, resort areas, country clubs, golf courses, and municipal, state, regional and national parks.

In addition to completing the specified courses of the curriculum, all students are required to participate in at least one major department-sponsored field trip. A field trip fee will be assessed to specific courses. Students are expected to consult with their academic advisor in choosing electives.

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 curriculum requirement.*

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

* As published in the Department of Landscape Architecture policy manual.

University Core

English Composition (6 hours)

EN 1103	English Comp I OR
EN 1163	Accelerated Comp I
EN 1113	English Comp II OR
EN 1173	Accelerated Comp II

Mathematics (6 to 9 hours)

Select from University Core

Science (6 to 9 hours)

Select from University Core

Humanities (6 hours)

Select from University Core

Fine Arts (3 hours)

ART 1113	Art Appreciation OR
ARC 1013	Arch Appreciation

Social Sciences (6 hours)

EC 2113	Principles of Macroeconomics
3 hours	Select from University Core

Major Core

ART 1123	Art Design I
LA 1153	Intro to Landscape Architecture
LA 2253	Plant Design Fund in Landscape Arch
LA 2323	Presentation Methods and Media
PSS 2423	Plant Materials I
LA 2423	History of Landscape Arch
LA 2453	Site Inventory and Analysis
LA 2433	Landscape Systems
LA 3555	Design Studio I
LA 3544	Construction I
PSS 3303	Soils OR Geology (GG) Course
LA 3655	Design Studio II
LA 3644	Construction II
LA 3623	Urban Planning Theory

LA 3652	Case Studies
LA 4244	Construction III
LA 4344	Construction IV
LA 4523	Appl of GIS in LA
LA 4755	Design Studio III
LA 4855	Capstone Studio
LA 4844	Design Sustainable Comm
4 hours	Electives

Oral Communication Requirement

CO 1003	Fundamentals of Public Speaking
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Writing Requirement

LA 4723	Professional Practice
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Computer Literacy

LA 1223	Use of Computer in Landscape Arch
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Total hours needed for major: 124

Landscape Contracting and Management Curriculum

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 Associated Landscape Contractors of America, 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 curriculum requirement.*

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.

* As published in the Department of Landscape Architecture policy manual.

University Core

English Composition (6 hours)

EN 1103	English Comp I* OR
EN 1163	Accelerated Comp I
EN 1113	English Comp II* OR
EN 1173	Accelerated Comp II

Mathematics (6 hours)

ST 3123	Intro to Statistical Inference***
3 hrs	Select from University Core

Science (10 hours)**

BIO 1203	Plant Biology with Lab
CH 1043	Survey of Chemistry I
PSS 3303	Soils
PSS 3301	Soils Lab

Humanities (6 hours)

FLS 1113	Spanish I
FLS 1123	Spanish II

Fine Arts (3 hours)

Select from University Core

Social Sciences (6 hours)

EC 2113	Principles of Macroeconomics
EC 2123	Principles of Microeconomics

Major Core

LA 1701	Intro to Landscape Contracting
LA 1711	Landscape Contracting Internship I
LA 2323	Presentation Methods & Media
LA 1153	Intro to Landscape Arch

LA 2701	Landscape Contracting Seminar I
PSS 2423	Plant Materials I
PSS 3473	Plant Materials II
PSS 4353	Arboriculture & Landscape Maintenance
ACC 2013	Principles of Financial Accounting
LA 2711	Landscape Contracting Internship II
LA 3713	Landscape Contracting I
LA 3544	Landscape Construction I with Lab
LA 3701	Landscape Contracting Seminar II
PSS 3133	Intro to Weed Science
ACC 2023	Prin of Managerial Accounting
LA 2334	Plant Specs for Small Properties
LA 4724	Landscape Contracting II
LA 3721	Landscape Contracting Field Trip I
EPP 3423	Ornamental & Turfgrass Insects
MGT 3114	Prin of Management & Prod
LA 3711	Landscape Contracting Internship III
LA 4701	Landscape Contracting Seminar III
PSS 4414	Turfgrass Management
MKT 3013	Principles of Marketing
LA 4744	Landscape Contracting IV
LA 4721	Landscape Contracting Field Trip II
BL 3223	Law of Commercial Transactions
MGT 3513	Intro Human Resource Management

Oral Communication Requirement

CO 1003	Fundamentals of Public Speaking
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Writing Requirement

LA 4733	Landscape Contracting III
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Computer Literacy

LA 1223	Use of Computer in Landscape Arch
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Total hours needed for major: 124

* If a student makes below "B" in English Comp I or II, MGT 3213 Organization of Communications I will be required.

** at least two science courses must include a lab to comply with University Core.

*** MA 1313 College Algebra is a prerequisite for ST 3123 Intro to Statistical Inference.

Department of PLANT and SOIL SCIENCES (PSS)

Department Head: Dr. Michael Collins
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, 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 either Agronomy (AGN) or Horticulture (HO) and specialize in various concentration areas such as Agricultural and Environmental Soil Sciences (AGN), Golf and Sports Turf Management (AGN), Integrated Crop Management (AGN), Floriculture and Ornamental Horticulture (HO), and Floral Management (HO).

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

Agronomy (AGN)

University Core

English Composition (6 hours)

EN 1103	English Comp I OR
EN 1163	Accelerated Comp I
EN 1113	English Comp II OR
EN 1173	Accelerated Comp II

Mathematics (6 to 9 hours)

MA 1313	College Algebra
3 hours	Select from University Core or see Concentrations

Science (6 to 9 hours)

See major core/concentration

Humanities (6 hours)

See major core/concentration or University Core list

Fine Arts (3 hours)

See major core/concentration or University Core list

Social Science (6 hours)

See major core/concentration or University Core list

Major Core

BIO 1203 Plant Biology*
 BIO 4214 General Plant Physiology
 PSS 3301 Soils Laboratory
 PSS 3303 Soils
 PSS 4313 Soil Fertility and Fertilizers

Oral Communication Requirement

CO 1003 Fundamentals of Public Speaking

* Satisfies University Core

Choose one of the following concentrations:

Agricultural and Environmental Soil Sciences Concentration

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.

Cooperative Education: Agricultural and Environmental Soil Science students are encouraged to participate in the cooperative education program.

GR 1123 Intro to World Geography
 MA 1323 Trigonometry*
 MA 1713 Calculus I
 ST 3123 Intro to Statistical Inference
 AEC 2713 Intro to Food & Resource Econ*
 BIO 3304 General Microbiology
 CH 1211 Investigations in Chemistry I*
 CH 1213 Chemistry I*
 CH 1221 Investigations in Chemistry II*
 CH 1223 Chemistry II*
 CH 2314 Analytical Chemistry I
 CH 4513 Organic Chemistry I
 CH 4523 Organic Chemistry II
 GG 1111 Earth Science Lab
 GG 1113 Survey of Earth Science I
 PH 1113 General Physics I
 PH 1123 General Physics II
 PSS 4314 Soil Microbiology
 PSS 4603 Soil Chemistry
 PSS 4323 Soil Classifications
 PSS 4333 Soil Conservation and Land Use
 19 hours Restricted Electives**

Computer Science Requirement

AIS 4203 Applications of Computer Tech of AIS & Ed OR
 AEC 1223 Computer Applications for Ag and Life Scientists

Writing Requirement

AIS 3203 Intro to Tech Writing in Agricomm

Total hours needed for major: 123

* Satisfies University Core

** See advisor or department office for a list of approved courses.

Golf and Sports Turf Management Concentration

Major Advisor: Associate Professor Barry Stewart
 Assistant Professor Gregg Munshaw

The 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 QPA 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
 ABE 2873 Land Surveying
 ABE 4163 Machinery Mgt for Agro-Ecosystems
 CH 1043 Survey of Chemistry I*
 CH 1053 Survey of Chemistry II*
 CH 1051 Experimental Chemistry (lab for CH 1053)*
 CH 2503 Elementary Organic Chemistry
 CH 2501 Elementary Organic Chemistry Lab
 EC 2113 Principles of Macroeconomics*
 EPP 4113 Principles of Plant Pathology
 EPP 3423 Ornamental & Turfgrass Insects
 EPP 4523 Turfgrass Diseases
 FLS 1113 Spanish I*
 FLS 1123 Spanish II*
 LA 3603 Design of Golf Environment
 LA 4344 Landscape Arch Construction IV
 MGT 3513 Intro to Human Resource Mgt
 PE 3213 Emergency Health Care
 PSS 1313 Plant Science
 PSS 2423 Plant Materials I
 PSS 3133 Intro Weed Science
 PSS 3411 Turf Seminar I
 PSS 3421 Turf Seminar II
 PSS 4353 Arboriculture & Landscape Maint
 PSS 4414 Turfgrass Management
 PSS 4423 Golf Course Operations
 PSS 4443 Athletic Field Management
 PSS 4823 Turfgrass Weed Management
 CP 2103 First Work Semester
 CP 2203 Second Work Semester
 CP 3303 Third Work Semester
 9 hours Restricted Electives**

Computer Science Requirement

Satisfied by successful completion of PSS 4423 and 4443

Writing Requirement

Satisfied by successful completion of PSS 3411 and 3421

Total hours needed for major: 122

* Satisfies University Core

** See advisor or department office for a list of approved courses.

Integrated Crop Management Concentration

Major Advisors: Professor Frank B. Matta
Associate Professors Brian Baldwin, David J. Lang, and 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 representative 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.

AEC 2713	Intro to Food & Resource Econ*
AEC 3133	Intro to Agribusiness Mgt
AEC 3413	Intro to Food Marketing
BCH 3613	Principles of Biochemistry
BIO 3304	General Microbiology
CH 1043	Survey of Chemistry I*
CH 1053	Survey of Chemistry II*
CH 1051	Experimental Chemistry (CH 1053)
CH 2503	Elementary Organic Chemistry
CH 2501	Elementary Organic Chemistry Lab
EPP 2213	Introduction to Insects
EPP 4113	Principles of Plant Pathology
PO 3103	Genetics I
PSS 1313	Plant Science
PSS 3133	Intro Weed Science
24 hours	Restricted Electives**
9 hours	Unrestricted Electives

Computer Science Requirement

AIS 4203	Applications of Computer Tech of AIS & Ed OR
AEC 1223	Computer Applications for Ag and Life Scientists

Writing Requirement

AIS 3203	Intro to Tech Writing in Agricom
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Total hours needed for major: 122

* Satisfies University Core

** See advisor or department office for a list of approved courses. Consult with the appropriate faculty advisor for restricted course selection emphasizing the following program areas: Crop Science, Agronomic Crop Production, Vegetable Crop Production, Fruit Science, and Golf and Sports Turf Mgt.

HORTICULTURE (HO)

University Core

English Composition (6 hours)

EN 1103	English Comp I OR
EN 1163	Accelerated Comp I
EN 1113	English Comp II OR
EN 1173	Accelerated Comp II

Mathematics (6 hours)

MA 1313	College Algebra
3 hours	See concentration

Science (9 hours)

BIO 1203	Plant Biology
CH 1043	Survey of Chemistry I
CH 1051	Experimental Chemistry
CH 1053	Survey of Chemistry II

Humanities (6 hours)

Floriculture - See concentration
Floral Management - Select from University Core

Fine Arts (3 hours)

PSS 2343	Floral Design
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Social/Behavioral Sciences (6 hours)

Floriculture

AEC 2713	Intro to Food & Resource Economics
3 hours	Select from University Core

Floral Management

AEC 2713	Intro to Food & Resource Econ OR
EC 2123	Microeconomics
PSY 1013	General Psychology
EC 2113	Macroeconomics

Major Core

ACC 2013	Principles of Financial Accounting
MKT 3013	Principles of Marketing
PSS 1313	Plant Science
PSS 2423	Plant Materials I
PSS 3313	Interior Plant Design & Maint
PSS 3473	Plant Materials II
PSS 3923	Plant Propagation
PSS 3511	Seminar

Writing Requirement

AIS 3203	Intro to Tech Writing Agricom
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Choose one of the following concentrations:

Floral Management Concentration

Major Advisors: Assoc. Professor James DelPrince
and Instructor Lynette McDougald

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 12 week, 480 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.

ACC 2023	Principles of Managerial Accounting
ART 1113	Art Appreciation
ART 1123	Design I
BL 2413	The Legal Environment of Business
EPP 2213	Intro to Insects*
FIN 3113	Financial Systems
HS 2603	Interior Design Fundamentals
LA 2423	History of Landscape Architecture
PS 1113	American Government
PSS 2351	Techniques in Flower Shop Mgt
PSS 3023	Retail Floristry Operation and Mgt
PSS 3343	Advanced Floral Design I
PSS 3413	Retail Floristry Internship
PSS 3443	Advanced Floral Design II
3 hours	Math course from University Core
6 hours	Select from Art Electives list**
6 hours	Select from Restricted Electives list**

Oral Communication Requirement

CO 1003	Fund of Public Speaking
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Computer Literacy Requirement - choose one

AEC 1223	Comp Applications for Ag & Life Sci
AIS 4203	Appl Computer Tech AIS and Ed
BIS 1012	Intro to Business Information Systems
TKT 1273	Computer Applications

Total hours needed for major: 123

* Satisfies University Core

** See advisor or department office for a list of approved courses.

A **minor** in Floral Management is available. To obtain a minor, students are required to complete the following 15 hours: PSS 2343, PSS 3023, PSS 3313, PSS 3343 and PSS 3443.

Floriculture and Ornamental Horticulture Concentration

Major Advisors: Associate Professor Richard L. Harkess;
Assistant Professor Brian Trader

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, marketing, and utilizing flowers, flowering and foliage plants, and woody ornamental landscape 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, and technical product research and sales.

BIO 2213	Survey of Plant and Fungi Kingdom
BIO 4203	Taxonomy of Spermatophytes
BIO 4214	General Plant Physiology
CH 2501	Elementary Organic Chemistry Lab
CH 2503	Elementary Organic Chemistry
EPP 4113	Principles of Plant Pathology
EPP 3423	Ornamental and Turfgrass Insects
FLS 1113	Spanish I*
FLS 1123	Spanish II*
MA 2113	Intro to Statistics* OR
ST 2113	Intro to Statistics*
PO 3103	Genetics
PSS 3301	Soils Laboratory
PSS 3303	Soils
PSS 3433	Horticulture Internship
PSS 4343	Greenhouse Management
PSS 4363	Nursery Management
PSS 4444	Plant Tissue Culture
PSS 4613	Floriculture Crop Programming
15 hours	Restricted Electives**

Oral Communication Requirement

Satisfied by successful completion of PSS 4363 and PSS 3511

Computer Literacy Requirement

Satisfied by successful completion of PSS 4613

Total hours needed for major: 120

* Satisfies University Core

** See advisor or department office for a list of approved courses.

A **minor** in Floriculture and Ornamental Horticulture is available. To obtain a minor, students are required to complete PSS 2423, PSS 3473 and PSS 3923, and choose two of the following courses: PSS 3313, PSS 4343, PSS 4353, PSS 4363, or PSS 4613.

Department of POULTRY SCIENCE (PO)

Major Advisor: Associate Professor Timothy N. Chamblee
Office: 103 Hill Poultry Science

The U.S. poultry industry is a \$21 billion+ business employing hundreds of thousands of people in the United States. Mississippi ranks 4th in broiler production and is continuing to expand. This dynamic industry employs about 20,000 Mississippians and has approximately 3,000 poultry farming operations throughout the state. Poultry is the number one farm revenue commodity in Mississippi.

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:

- Business
- Management
- Manufacturing

-Pre-Veterinary Medicine

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

University Core

English Composition (6 hours)

EN 1103	English Comp I OR
EN 1163	Accelerated Comp I
EN 1113	English Comp II OR
EN 1173	Accelerated Comp II

Mathematics (6 hours)

MA 1313	College Algebra
MA/ST	3 hours (see major/concentration)

Science (9 hours)

See major/concentration

Humanities (6 hours)

Select from University Core

Fine Arts (3 hours)

Select from University Core

Social Sciences (6 hours)

AEC 2713	Intro to Food & Resource Econ
PS 1113	American Government

Major Core

ACC 2013	Principles of Financial Accounting
AEC 3133	Intro to Agribusiness Management
MGT 3513	Intro to Human Resource Mgt
PO 3011	Seminar
PO 3021	Seminar
PO 3103	Genetics
PO 3313	Commercial Poultry Production
PO 3323	Poultry Judging
PO 3834	Microbiology of Food Animal Production
PO 4031	Seminar
PO 4041	Seminar
PO 4313	Management of Commercial Layers
PO 4324	Avian Reproduction
PO 4333	Broiler Production
PO 4413	Poultry Nutrition
PO 4423	Feed Manufacturing
PO 4513	Poultry Processing
PO 4523	Commercial Broiler Processing Tech
PO 4833	Avian Anatomy
PO 4843	Avian Physiology
VS 2033	Diseases of Poultry
PO 3353	Poultry Production Internship
PO 3363	Poultry Processing Internship

Oral Communication Requirement

Satisfied by successful completion of PO 3021, 4031, and 4041

Writing Requirement

Satisfied by successful completion of PO 4324 and 3834

Computer Literacy

Satisfied by successful completion of PO 4324 and 3834

Choose one of the following concentrations:

Management Concentration

The management concentration is appropriate for students interested in entering into a personal poultry operation, in service and sales work with large poultry enterprises, in federal, state or local government employment, and in many employment opportunities in the allied fields relating to poultry.

ACC 2023	Principles of Managerial Accounting
AEC 3233	Intro to Envir. Econ and Policy
AEC 3413	Intro to Food Marketing
BIO 1123	Animal Biology
BIO 1203	Plant Biology
BL 2413	Legal Environment of Business
CH 1043	Survey of Chemistry I
CH 1053	Survey of Chemistry II
PO 3333	Advanced Poultry Judging
PSS 3303	Soils
ST 2113	Introduction to Statistics

Total hours needed for major: 120

Business Concentration

The rapid growth in poultry production in Mississippi has created a large demand for graduates with good backgrounds in poultry and strong supporting work in business. The business concentration satisfies all the requirements for a minor in Agribusiness. Thus, this concentration offers lucrative employment opportunities to the poultry science major.

ACC 2023	Principles of Managerial Accounting
AEC 3413	Principles of Ag Marketing
AEC 3113	Intro to Quantitative Econ.
AEC 3213	International Trade in Ag
AEC 4113	Agribusiness Firm Mgt
BL 2413	Legal Environment of Business
CH 1043	Survey of Chemistry I
CH 1051	Experimental Chemistry Lab
CH 1053	Survey of Chemistry II
EC 2113	Principles of Macroeconomics
MA 1613	Calculus for Business and Life Sciences
PO 3333	Advanced Poultry Judging

Total hours needed for major: 121

Manufacturing Concentration

The future growth of the poultry industry is closely associated with advancements in manufacturing technology. There is a large demand for well trained poultry scientists with this capability. This concentration elective offers rapid career advancement for the poultry science major and prepares the student for future graduate work.

BCH 4013	Principles of Biochemistry
BIO 1123	Animal Biology
CH 1211	Investigations in Chemistry I
CH 1213	Chemistry I
CH 1221	Investigations in Chemistry II
CH 1223	Chemistry II
CH 4513	Organic Chemistry I
CH 4523	Organic Chemistry II
FNH 4164	Quality Assurance of Food Products
FNH 4243	Composition and Chemical Reactions of Foods
FNH 4414	Microbiology of Foods
ST 3123	Intro to Statistical Inference

Total hours needed for major: 121

Pre-Veterinary Concentration

The Pre-Veterinary concentration allows a student to satisfy the pre-veterinary requirements while completing a B.S. in Poultry Science. The Poultry Science department offers a 3 + 1 program for admission to the College of Veterinary Medicine. Contact the Poultry Science department for these requirements.

AEC 3413	Principles of Ag. Marketing
BCH 4013	Principles of Biochemistry
BIO 1504	Principles of Zoology
BIO 4413	Immunology
BL 2413	Legal Environment of Business
CH 1211	Investigations in Chemistry I
CH 1221	Investigations in Chemistry II
CH 1213	Chemistry I
CH 1223	Chemistry II
CH 4511	Organic Chemistry I Lab
CH 4513	Organic Chemistry I
PH 1113	General Physics I
ST 3123	Intro to Statistical Inference

Total hours needed for major: 121

Poultry 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
PO 4313	Management of Commercial Layers
PO 4333	Broiler Production
PO 4413	Poultry Nutrition
PO 4513	Poultry Processing