Department of Civil and Environmental Engineering

Department Head: Professor Dennis D. Truax
Office: 235 Walker Engineering Building

Civil and Environmental Engineers plans, designs, and supervises construction of almost every facility essential to modern life. Roads, bridges, buildings, water supply and waste disposal systems, transit systems, airfields, dams and irrigation projects are examples of the creative efforts of Civil and Environmental Engineers. The field of Civil and Environmental Engineering offers limitless employment opportunities that range from high-tech computer-aided design to hands-on field engineering. Civil and Environmental Engineers find rewarding careers in government, military, industry or private practice to meet the challenges of pollution control, energy, transportation, housing and other problems that face modern society.

The mission of the Department of Civil and Environmental Engineering is to proactively utilize teaching, research, and service to educate baccalaureate, masters, and doctoral students so they can become competent, dynamic, and ethical engineers of the future. To complement the classroom experience, students are encouraged to reinforce instruction by participating in cooperative education programs, assisting faculty with research, or becoming involved in professional societies. Students are expected to develop an appreciation for life-long learning and pursue professional engineering licensure. The ultimate goal is to prepare students to be future leaders who will positively impact their profession and society.

Furthermore, students should become prepared to combine research and classroom experiences to solve complex interdisciplinary problems. The overall goal of the program is to challenge students to study and innovatively solve the global sustainability challenges that they encounter. Finally, faculty, students, and staff will be engaged in professional organizations, campus committees, consultancy, student organizations, and continuing education. Through these service activities, the department will be a reliable professional resource for the University, alumni, and society.

The educational objectives of the Department of Civil and Environmental Engineering are to enable graduates to achieve career and professional accomplishments that include:

1. Demonstrate a broad knowledge of principles and fundamentals of civil engineering and their application, through their successfully practice as professional civil engineers, their pursuit of graduate or professional degrees, or their engagement in other professional careers that involve the application of the engineering method.
2. Achieve success in the multidisciplinary environment of the 21st century, and demonstrate their ability to adapt to emerging and evolving technologies, social conditions, professional standards, and career opportunities, by attaining leadership, managerial, administrative, supervisory, or other positions of responsibility within their organization.
3. Demonstrate an understanding and appreciation of the ethical, societal and professional responsibilities of a civil engineer, through professional registration and active membership in professional organizations.
4. Demonstrate an appreciation for lifelong learning and for the value of continuing professional development in maintaining their professional competence, through participation in graduate and continuing education activities.

The department offers a Bachelor of Science in Civil Engineering. For those interested in Environmental Engineering, the department offers an Environmental Engineering concentration within the Bachelor of Science in Civil Engineering. The civil engineering degree program is accredited by the Engineering Accreditation Commission of ABET, http://www.abet.org.

General Education Requirements

<table>
<thead>
<tr>
<th>English Composition</th>
<th>Value</th>
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<tbody>
<tr>
<td>EN 1103 or EN 1104</td>
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<tr>
<td>EN 1113 or EN 1173</td>
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Mathematics

See Major Core

Science

See Major Core

Humanities

See General Education courses 6

Fine Arts

See General Education courses 3

Social/Behavioral Sciences

See General Education courses 6

Major Core
# Department of Civil and Environmental Engineering

## Math and Basic Science

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>MA 1713</td>
<td>Calculus I</td>
<td>3</td>
</tr>
<tr>
<td>MA 1723</td>
<td>Calculus II</td>
<td>3</td>
</tr>
<tr>
<td>MA 2733</td>
<td>Calculus III</td>
<td>3</td>
</tr>
<tr>
<td>MA 2743</td>
<td>Calculus IV</td>
<td>3</td>
</tr>
<tr>
<td>MA 3253</td>
<td>Differential Equations I</td>
<td>3</td>
</tr>
<tr>
<td>CH 1213</td>
<td>Chemistry I</td>
<td>3</td>
</tr>
<tr>
<td>CH 1211</td>
<td>Investigations in Chemistry I</td>
<td>1</td>
</tr>
<tr>
<td>CH 1223</td>
<td>Chemistry II</td>
<td>3</td>
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<td>CH 1221</td>
<td>Investigations in Chemistry II</td>
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<tr>
<td>PH 2213</td>
<td>Physics I</td>
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## Engineering Topics

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>EG 1143</td>
<td>Graphic Communication</td>
<td>3</td>
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<tr>
<td>IE 3913</td>
<td>Engineering Economy I</td>
<td>3</td>
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<tr>
<td>ST 3123</td>
<td>Introduction to Statistical Inference</td>
<td>3</td>
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<tr>
<td>ME 3513</td>
<td>Thermodynamics I</td>
<td>3</td>
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<td>EM 2413</td>
<td>Engineering Mechanics I</td>
<td>3</td>
</tr>
<tr>
<td>EM 2433</td>
<td>Engineering Mechanics II</td>
<td>3</td>
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<tr>
<td>EM 3213</td>
<td>Mechanics of Materials</td>
<td>3</td>
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<td>EM 3313</td>
<td>Fluid Mechanics</td>
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<tr>
<td>CE 1001</td>
<td>Introduction to Civil Engineering</td>
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<tr>
<td>CE 2213</td>
<td>Surveying</td>
<td>3</td>
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<tr>
<td>CE 2803</td>
<td>Environmental Engineering Issues</td>
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<tr>
<td>CE 3113</td>
<td>Transportation Engineering</td>
<td>3</td>
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<tr>
<td>CE 3311</td>
<td>Construction Materials Lab</td>
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<td>CE 3313</td>
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<tr>
<td>CE 3411</td>
<td>Soil Mechanics Laboratory</td>
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<td>CE 3413</td>
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<td>CE 3501</td>
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<td>CE 3503</td>
<td>Water Resource Engineering</td>
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<td>CE 3603</td>
<td>Structural Mechanics</td>
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<td>CE 3801</td>
<td>Environmental Engineering and Water Resources Engineering Lab</td>
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<td>CE 3823</td>
<td>Environmental Engineering</td>
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<td>CE 4903</td>
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## Oral Communication Requirement

Fulfilled in GE 3513 and various CE courses

## Writing Requirement

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>GE 3513</td>
<td>Technical Writing</td>
<td>3</td>
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</table>

## Computer Literacy

Fulfilled in various Engineering Topics courses

## Civil Engineering Electives

12

Choose one course from each of the following two lists:

### List A

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>CE 4513</td>
<td>Engineering Hydrology</td>
</tr>
<tr>
<td>CE 4523</td>
<td>Open Channel Hydraulics</td>
</tr>
<tr>
<td>CE 4863</td>
<td>Water and Wastewater Engineering</td>
</tr>
<tr>
<td>CE 4883</td>
<td>Engineered Environmental Systems</td>
</tr>
</tbody>
</table>

### List B

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tr>
<td>CE 4963</td>
<td>Steel Structures I</td>
</tr>
<tr>
<td>CE 4973</td>
<td>Concrete Structures I</td>
</tr>
</tbody>
</table>

Choose one course from two of the following four lists:

### List C
Minor in Civil Engineering

Civil engineers design, build, and maintain the infrastructure, the very foundation of any civilization. All undergraduate students at Mississippi State University, with the exception of those already majoring in civil engineering, are eligible to pursue a minor in civil engineering. Civil engineering is an incredibly broad field, and students have a choice of five specialty tracks to match interests and career objectives: Construction Engineering and Management, Environmental and Water Resources Engineering, Geotechnical and Materials Engineering, Structural Engineering, and Transportation Engineering. The civil engineering minor requires at least 15 credit hours of undergraduate coursework, typically at the junior and senior levels. Students develop a program of study in consultation with CEE faculty members.
Students interested in pursuing a civil engineering minor should consult with a CEE advisor for specific information regarding specialty tracks, prerequisites, and other requirements.