Florida Institute of Technology

CHANGING GRADUATION REQUIREMENTS IN A MAJOR/MINOR

The addition or removal of any graduation requirement in a major or minor requires that this form, accompanied by supporting documentation, be completed and approved as indicated below. Incomplete or incorrect forms will not be processed.

COLLEGE: Engineering  DEPARTMENT: Civil

DEGREE LEVEL: BS  PROGRAM TITLE: Civil Engineering

TO BE INITIATED WITH CATALOG YEAR: 2012/2013  CHANGE REQUESTED FOR: ☑ major program  ☐ minor program

EFFECTIVE DATE FOR CHANGE: 12/30/2011  NAMED TERM FOR EFFECTIVE DATE: Fall 2011

Months/Day/Year (required)

BRIEF DESCRIPTION OF REQUESTED CHANGES: Attach a more detailed description and any supporting documentation.

Replace the slot for CVE 3042 Water and Wastewater Systems for Land Development with an environmental engineering elective. The environmental engineering elective will include both CVE 3042 Water and Wastewater Systems for Land Development and CVE 3052 Municipal Water and Wastewater Systems. This change will provide greater flexibility to the students and could prepare them better for the FE examination. CVE 3042 is a fall class and CVE 3052 is a spring class. Both courses are currently taught.

Approvals: On completion of appropriate department approvals, submit form to Chair, Graduate Council, or Chair, Undergraduate Curriculum Committee, for approval below and forward to the Office of the Registrar.

Originator: [Signature]  Date: 4/14/2011

Chair, Graduate Council: [Signature]  Date: 4/14/2011

Chair, Undergraduate Curriculum Committee: [Signature]  Date: 4/16/2011

Dean or Associate Dean: [Signature]  Date:

REGISTRAR’S USE ONLY

University Catalog  ☐ Yes  ☐ No  Update completed: [Date]  Initials:

Academic Year

Extended Studies Division Catalog  ☐ Yes  ☐ No  Update completed: [Date]  Initials:

Academic Year

University Alliance Catalog  ☐ Yes  ☐ No  Update completed: [Date]  Initials:

Academic Year

CAPP / Degree Evaluation  ☐ Yes  ☐ No  Update completed: [Date]  Initials:

Academic Year

Catalog / Policy Mgmt. System  ☐ Yes  ☐ No  Update completed: [Date]  Initials:

Academic Year

DISTRIBUTION

Original - Registrar  Copy - Academic Unit

Florida Institute of Technology · Office of the Registrar

150 West University Boulevard, Melbourne, FL 32901-6975 · (321) 674-7399 · Fax (321) 674-7827

RGR 063-1105
Current 2011/2012 Catalog
UNDERGRADUATE DEGREE PROGRAMS

Civil Engineering, B.S.

Major Code: 7043 Degree Awarded: Bachelor of Science
Age Restriction: N Admission Status: undergraduate
Delivery Models: classroom Location(s): main campus

The civil engineering curriculum is designed to prepare students for professional careers and graduate school. During the first two years, emphasis is placed on foundation courses in chemistry, mathematics, physics and engineering mechanics, augmented by practice-oriented civil engineering courses. The introductory civil engineering courses include field trips and introduction to various disciplines of civil engineering. The CAD lab course, using the latest CAD software, provides knowledge that is applied in the rest of the curriculum, as do the engineering materials and construction measurement courses.

During the second and third years, emphasis is on courses in the main disciplines of civil engineering (construction, environmental/water resources, geotechnical, structures and transportation) that further develop analytical skills in preparation for design courses in the last two years. The emphasis in the third and fourth years is on design. The curriculum provides flexibility in the form of restricted electives and a technical/business elective that allow further depth in a discipline of choice, or further breadth.

Altogether, students are required to take five civil engineering laboratory courses to understand concepts and to learn, firsthand, what works and what does not. Each student is also required to be part of a multidisciplinary design project team that identifies, formulates and designs a real-world project. In this course, students must assemble information from previous courses. To enhance the application of their engineering skills to accomplish societal goals, technical courses in the third and fourth years incorporate leadership, teamwork, oral and written communication and ethics. Mandatory electives in the humanities and social sciences provide a broader understanding of the professional work environment, human history and culture.

Freshman Year

FALL CREDITS
ASC 1000 University Experience.............................................. 1
CHM 1101 General Chemistry I................................................. 4
COM 1101 Composition and Rhetoric........................................ 3
CVE 1000 Introduction to Civil Engineering.............................. 3
CVE 1001 Computer Applications Lab....................................... 1
MTH 1001 Calculus 1................................................................ 4
16

SPRING
COM 1102 Writing about Literature.......................................... 3
CVE 2080 Construction Measurements...................................... 3
MTH 1002 Calculus 2................................................................ 4
PHY 1001 Physics 1................................................................. 4
100 Florida Tech
PHY 2091 Physics Lab 1......................................................... 1
Social Science Elective............................................................. 3
18

Sophomore Year

FALL CREDITS
COM 2223 Scientific and Technical Communication.................. 3
MAE 2081 Applied Mechanics: Statics..................................... 3
MTH 2001 Calculus 3................................................................ 4
PHY 2002 Physics 2................................................................ 4
PHY 2092 Physics Lab 2......................................................... 1
15

SPRING
HUM 2051 Civilization 1........................................................... 3
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAE 2082</td>
<td>Applied Mechanics: Dynamics</td>
<td>3</td>
</tr>
<tr>
<td>MAE 3083</td>
<td>Mechanics of Materials</td>
<td>3</td>
</tr>
<tr>
<td>MTH 2201</td>
<td>Differential Equations/Linear Algebra</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Business or Technical Elective</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Free Elective</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>17</strong></td>
</tr>
</tbody>
</table>

**Junior Year**

**FALL CREDITS**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CVE 3012</td>
<td>Engineering Materials</td>
<td>3</td>
</tr>
<tr>
<td>CVE 3013</td>
<td>Engineering Materials Lab.</td>
<td>1</td>
</tr>
<tr>
<td>CVE 3015</td>
<td>Structural Analysis and Design</td>
<td>3</td>
</tr>
<tr>
<td>CVE 3030</td>
<td>Fluid Mechanics</td>
<td>3</td>
</tr>
<tr>
<td>CVE 3033</td>
<td>Hydraulics Lab</td>
<td>1</td>
</tr>
<tr>
<td>CVE 3042</td>
<td>Water and Wastewater Systems for Land Development</td>
<td>3</td>
</tr>
<tr>
<td>HUM 2052</td>
<td>Civilization 2</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>17</strong></td>
</tr>
</tbody>
</table>

**SPRING**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CVE 3020</td>
<td>Soils and Foundations</td>
<td>3</td>
</tr>
<tr>
<td>CVE 3021</td>
<td>Soil Mechanics Lab</td>
<td>1</td>
</tr>
<tr>
<td>CVE 401x</td>
<td>Structures Elective</td>
<td>3</td>
</tr>
<tr>
<td>CVE 4032</td>
<td>Hydraulics and Hydrology</td>
<td>3</td>
</tr>
<tr>
<td>MTH 2401</td>
<td>Probability and Statistics</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Science Elective*</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>16</strong></td>
</tr>
</tbody>
</table>

**Senior Year**

**FALL CREDITS**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CVE 4060</td>
<td>Transportation Engineering</td>
<td>3</td>
</tr>
<tr>
<td>CVE 4070</td>
<td>Construction Engineering</td>
<td>3</td>
</tr>
<tr>
<td>CVE 4091</td>
<td>Design Project 1 (Q)</td>
<td>1</td>
</tr>
<tr>
<td>ECE 4991</td>
<td>Electric and Electronic Circuits or MAE 3191</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Engineering Thermodynamics</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Humanities Elective</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Restricted Elective (CVE)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>16</strong></td>
</tr>
</tbody>
</table>

**SPRING**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CVE 4000</td>
<td>Engineering Economy and Planning</td>
<td>3</td>
</tr>
<tr>
<td>CVE 4074</td>
<td>Leading Construction Operations</td>
<td>3</td>
</tr>
<tr>
<td>CVE 4092</td>
<td>Design Project 2 (Q)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Free Elective</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Restricted Electives (CVE)</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>16</strong></td>
</tr>
</tbody>
</table>

**TOTAL CREDITS REQUIRED**...........................................131

*Note: Restricted electives may be selected, with approval, from other upperdivision courses in civil engineering or related fields.*

*Approved Science electives include Meteorology (OCN 2407), Environmental Geology (OCN 2602) and Atmospheric Environments (ENS 3101).*
Proposed Course Listing
UNDERGRADUATE DEGREE PROGRAMS

Civil Engineering, B.S.

Major Code: 7043 Degree Awarded: Bachelor of Science
Age Restriction: N Admission Status: undergraduate
Delivery Models: classroom only Locations: main campus

The civil engineering curriculum is designed to prepare students for professional careers and graduate school. During the first two years, emphasis is placed on foundation courses in chemistry, mathematics, physics and engineering mechanics, augmented by practice-oriented civil engineering courses. The introductory civil engineering courses include field trips and introduction to various disciplines of civil engineering. The CAD lab course, using the latest CAD software, provides knowledge that is applied in the rest of the curriculum, as do the engineering materials and construction measurement courses.

During the second and third years, emphasis is on courses in the main disciplines of civil engineering (construction, environmental/water resources, geotechnical, structures and transportation) that further develop analytical skills in preparation for design courses in the last two years. The emphasis in the third and fourth years is on design. The curriculum provides flexibility in the form of restricted electives and a technical/business elective that allow further depth in a discipline of choice, or farther breadth.

Altogether, students are required to take five civil engineering laboratory courses to understand concepts and to learn, firsthand, what works and what does not. Each student is also required to be part of a multidisciplinary design project team that identifies, formulates and designs a real-world project. In this course, students must assemble information from previous courses. To enhance the application of their engineering skills to accomplish societal goals, technical courses in the third and fourth years incorporate leadership, teamwork, oral and written communication and ethics.

Mandatory electives in the humanities and social sciences provide a broader understanding of the professional work environment, human history and culture.

Freshman Year

FALL CREDITS
ASC 1000 University Experience .................................................. 1
CHM 1101 General Chemistry ......................................................... 4
COM 1101 Composition and Rhetoric .............................................. 3
CVE 1000 Introduction to Civil Engineering ...................................... 3
CVE 1001 Computer Applications Lab ........................................... 1
MTH 1001 Calculus I ................................................................. 4
16

SPRING
COM 1102 Writing about Literature ................................................ 3
CVE 2080 Construction Measurements ........................................... 3
MTH 1002 Calculus II ................................................................... 4
PHY 1001 Physics I ................................................................. 4
100 Florida Tech
PHY 2091 Physics Lab 1 .............................................................. 1
Social Science Elective .............................................................. 3
18

Sophomore Year

FALL CREDITS
COM 2223 Scientific and Technical Communication .......................... 3
MAE 2081 Applied Mechanics: Statics ............................................ 3
MTH 2001 Calculus III ............................................................... 4
PHY 2002 Physics 2 ................................................................. 4
PHY 2092 Physics Lab 2 ............................................................ 1
15

SPRING
HUM 2051 Civilization I ............................................................. 3
MAE 2082 Applied Mechanics: Dynamics ........................................... 3
MAE 3083 Mechanics of Materials ............................................. 3
MTH 2201 Differential Equations/Linear Algebra ......................... 4
Business or Technical Elective .................................................. 3
Free Elective ................................................................. 1

17

Junior Year

FALL CREDITS
CVE 3012 Engineering Materials ............................................. 3
CVE 3013 Engineering Materials Lab ........................................ 1
CVE 3015 Structural Analysis and Design ................................ 3
CVE 3030 Fluid Mechanics .................................................. 3
CVE 3033 Hydraulics Lab ....................................................... 1
Environmental Engineering Elective* .................................... 3
HUM 2652 Civilization 2 ..................................................... 3

17

SPRING
CVE 3020 Soils and Foundations ............................................. 3
CVE 3021 Soil Mechanics Lab ................................................ 1
CVE 401x Structures Elective ................................................. 3
CVE 4032 Hydraulics and Hydrology ...................................... 3
MTH 2401 Probability and Statistics ...................................... 3
Science Elective** .............................................................. 3

16

Senior Year

FALL CREDITS
CVE 4060 Transportation Engineering ................................... 3
CVE 4070 Construction Engineering ......................................... 3
CVE 4091 Design Project 1 (Q) ........................................... 1
ECE 4991 Electric and Electronic Circuits or MAE 3191
Engineering Thermodynamics............................................... 3

16

SPRING
CVE 4000 Engineering Economy and Planning ......................... 3
CVE 4074 Leading Construction Operations ......................... 3
g
CVE 4092 Design Project 2 (Q) ........................................... 3
Free Elective ................................................................. 1

16

TOTAL CREDITS REQUIRED .................................................. 131

Note: Restricted electives may be selected, with approval, from other upper division
courses in civil engineering or related fields.

*Approved Environmental Engineering Electives are CVE 3042 and CVE 3052.
**Approved Science Electives include Meteorology (OCN 2407),
Environmental Geology (OCN 2602) and Atmospheric Environments
(ENS 3101).