General Areas of Service:
A civil engineer plans, designs, and directs construction and maintenance of sustainable man-made and natural systems. Applications include facilities such as buildings, bridges, airframes, ships, roadways, railways, waterways, airports, harbors, dams, pipelines, and water and environmental protection systems for water supply and wastewater handling. Civil engineers are employed by private industries, consulting firms, and the government. Many advance to managerial or administrative positions, or establish their own firms.

Professional Training:
A bachelor's degree in civil engineering is the minimum educational requirement for civil engineering professional registration, although graduate training is preferred or required for many jobs.

Job Outlook:
The Bureau of Labor Statistics (BLS) states, “[e]mployment of civil engineers is projected to grow 8 percent from 2014 to 2024, about as fast as the average for all occupations.” Civil engineers will be needed to maintain and improve aging infrastructure, develop renewable energy projects, and expand water supply systems and waste treatment operations to meet the demands of a growing population. (See www.bls.gov)

Earnings:
In their May 2016 salary survey, the Bureau of Labor Statistics reports the median annual wage for civil engineers as $83,540, with the lowest 10 percent earning less than $53,470 and the top 10 percent earning more than $132,880. (See www.bls.gov)

Global Humanitarian Engineering Certificate:
This additional certificate shows prospective employers that a student has training working with more than one culture. It requires a few additional classes beyond the standard engineering classes. The number of extra classes can be minimized if general studies classes are chosen carefully. Freshmen interested in this program should take General Sociology rather than General Psychology to meet prerequisites for the program. For specifics on the program and an application form, contact the School of Engineering.
The chart below details one suggested path a student may take to complete a bachelor’s degree in Civil Engineering. Cognates, general studies courses, and electives should be taken to complete 200 credit hours to complete a Bachelor of Science in Engineering with a concentration in Civil Engineering. See the Undergraduate Bulletin for complete requirements.

<table>
<thead>
<tr>
<th>Freshman</th>
<th>Winter</th>
<th>Spring</th>
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<tbody>
<tr>
<td>ENGR 121 Introduction to Engineering</td>
<td>ENGR 122 Introduction to CAD</td>
<td>ENGR 123 Introduction to System Design</td>
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<tr>
<td>ENGR 321 Mechanics of Materials</td>
<td>ENGR 342 Hydrology</td>
<td>ENGR 323 Civil Engineering Materials</td>
</tr>
<tr>
<td>ENGR 331 Fluid Mechanics</td>
<td>ENGR 344 Civil Engineering Analysis</td>
<td>ENGR 343 Environmental Engineering Systems</td>
</tr>
<tr>
<td>ENGR 341 Geology &amp; Soils Mechanics</td>
<td>ENGR 347 Structural Analysis I</td>
<td>ENGR 346 Surveying</td>
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<tr>
<td>ENGR 396 Junior Seminar</td>
<td>ENGR 348 Structural Analysis II</td>
<td>ENGR 397 Junior Seminar</td>
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<thead>
<tr>
<th>Sophomore</th>
<th>Junior</th>
<th>Senior</th>
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<tbody>
<tr>
<td>ENGR 228 Circuit Analysis</td>
<td>ENGR 321 Mechanics of Materials</td>
<td>ENGR 228 Circuit Analysis</td>
</tr>
<tr>
<td>ENGR 345 Contracts &amp; Specifications</td>
<td>ENGR 331 Fluid Mechanics</td>
<td>ENGR 442 Concrete Design</td>
</tr>
<tr>
<td>ENGR 441 Steel Structural Design</td>
<td>ENGR 341 Geology &amp; Soils Mechanics</td>
<td>ENGR 444 Treatment Plant Design</td>
</tr>
<tr>
<td>ENGR 445 Collection &amp; Distribution System Design</td>
<td>ENGR 396 Junior Seminar</td>
<td>ENGR 497 Capstone Engineering Project</td>
</tr>
<tr>
<td>ENGR 496 Capstone Engineering Project</td>
<td>ENGR 342 Hydrology</td>
<td>ENGR 326 Engineering Economy</td>
</tr>
<tr>
<td>ENGR 442 Concrete Design</td>
<td>ENGR 344 Civil Engineering Analysis</td>
<td>ENGR 336 Engineering Economy</td>
</tr>
<tr>
<td>ENGR 444 Treatment Plant Design</td>
<td>ENGR 347 Structural Analysis I</td>
<td>ENGR 497 Capstone Engineering Project</td>
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<td>ENGR 497 Capstone Engineering Project</td>
<td>ENGR 396 Junior Seminar</td>
<td>ENGR 398 Capstone Engineering Project</td>
</tr>
</tbody>
</table>

Total Credits Required: 192 Credits

Cognates:
- Freshman
  - CHEM 141, 142, 143/144, 145, 146 – General Chemistry
  - CPTR 141 – Fundamentals of Programming
- Sophomore
  - PHYS 251, 254 – Principles of Physics

English Requirements:
- Freshman
  - ENGL 121 & 122 – College Writing
- Sophomore
  - ENGL 223 – Research Writing

Math Requirements:
- Freshman
  - MATH 181, 281, 282 – Calculus I, II, III
- Sophomore
  - MATH 283 – Calculus IV
  - MATH 289 – Intro to Linear Algebra
- Junior
  - MATH 315 – Probability & Statistics
  - MATH 312 – Ordinary Differential Equations

Colloquium Requirements:
- Engineering majors are required to attend 3 colloquia to complete their degree requirements.

General Requirements:
- Language Arts 11 cr.
- Religion & Theology 18 cr.
- Humanities & Social Science 10 cr.
- Health & P.E. 2-3 cr.

Notes:
- + Classes offered even years
- - Classes offered odd years

Students should take pre-calculus in high school or during the summer to allow them to enroll in Calculus I during their first quarter. Failure to complete Calculus II prior to the start of the second year will delay the student’s graduation.

Students are expected to take 30 credits of Technical Electives to meet their degree requirements. Technical electives are to be selected with the approval of the student’s Engineering advisor.

Before graduation, all students must take an exit exam.