# Civil Engineering B.S.C.E.

## Degree Requirements: 130 Credit Hours

*See Core Curriculum for required courses in Area A1 through Area E.*

<table>
<thead>
<tr>
<th>Credit Hours</th>
<th>General Requirements (Core A - E)</th>
<th>42</th>
</tr>
</thead>
<tbody>
<tr>
<td>Additional Requirements</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td><strong>Area F - Courses Appropriate to Major</strong></td>
<td></td>
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<tr>
<td>CHEM 1310 Comprehensive General Chemistry</td>
<td>4</td>
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<tr>
<td>CENG 1133 Engineering Graphics for Civil and Construction Engineers</td>
<td>3</td>
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<tr>
<td>MATH 2160 Elementary Linear Algebra</td>
<td>3</td>
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<tr>
<td>MATH 2242 Calculus II</td>
<td>4</td>
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<tr>
<td>MATH 2243 Calculus III</td>
<td>4</td>
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## Specific Requirements

- **General Requirements**: 1
- **Area D**: 1
- **CENG 1731**: Civil Engineering Computations | 3 |
- **ENGR 2231**: Engineering Mechanics I | 3 |
- **ENGR 2232**: Dynamics of Rigid Bodies | 3 |
- **ENGR 3233**: Mechanics of Materials | 3 |
- **MATH 3230**: Ordinary Differential Equations | 3 |
- **STAT 2231**: Introduction to Statistics I | 3 |

## Major Requirements

- **CENG 2131**: Civil Engineering Fluid Mechanics | 3 |
- **CENG 2231**: Surveying | 3 |
- **CENG 3131**: Introduction to Environmental Engineering | 3 |
- **CENG 3132**: Introduction to Water and Wastewater Treatment | 3 |
- **CENG 3135**: Construction Cost Control and Finance | 3 |
- **CENG 3232**: Soil Mechanics | 3 |
- **CENG 3233**: Civil Engineering Materials | 3 |
- **CENG 3331**: Structural Analysis | 3 |
- **CENG 3333**: Reinforced Concrete Design | 3 |
- **CENG 4135**: Highway Design | 3 |
- **CENG 4331**: Structural Steel Design | 3 |
- **CENG 4518**: Introduction to Senior Project | 1 |
- **CENG 4539**: Senior Project | 3 |

Select 6 credit hours from the following recommended technical elective courses:  

- **CENG 4133**: Transportation Systems |
- **CENG 4232**: Foundation Design |
- **CENG 4730**: Experiential Learning in Civil and Construction Engineering - COOP |
- **CENG 4890**: Special Problems in Civil Engineering |
- **CENG 5090**: Selected Topics in Civil Engineering |
- **CENG 5133**: Water Supply and Wastewater Collection Systems |
- **CENG 5136**: Watershed Management |
- **CENG 5137**: Engineering Hydrology and Hydraulics |
- **CENG 5138**: Water and Sanitation for International Development |
- **CENG 5139**: Advanced Water and Wastewater Treatment |
- **CENG 5231**: Pavement Analysis and Design |
- **CENG 5232**: Foundation Design |
- **CENG 5234**: Asphalt Mix Design |
- **CENG 5331**: Advanced Structural Analysis |
- **CENG 5332**: Prestressed Concrete Design |
- **CENG 5333**: Advanced Reinforced Concrete Design |
- **CENG 5334**: Advanced Structural Steel Design |
- **CENG 5335**: Structural Dynamics |
- **CENG 5336**: Introduction to Finite Elements |
- **CENG 5337**: Advanced Strength |
- **CENG 5338**: Theory of Elasticity |
- **CENG 5339**: Theory of Elastic Stability |
- **CENG 5431**: Advanced Surveying |
- **CENG 5432**: Introduction to GIS in Surveying-Geomatics and Transportation |
- **CENG 5433**: Drainage & Erosion Control |
- **CENG 5434**: Surveying History & Law |
- **CENG 5435**: Introduction to Terrestrial LiDAR |
- **CENG 5436**: Introduction to Close-Range Photogrammetry |
- **TCM 5330**: Green Building and Sustainable Construction |
- **TCM 5333**: Building Information Modeling |
- **TCM 5431**: Construction Cost Estimating |
- **TCM 5433**: Proj Planning/Scheduling |
- **or other appropriate topics approved by the Department Chair.**

## Free Elective

Select 3 credit hours of Free Electives | 3 |

**Total Credit Hours**: 130

1. While Calculus I (MATH 1441) is 4 credit hours, only 3 credit hours will count toward fulfilling Area A2. The remaining credit hour will be applied toward Specific Requirements.
2. The listed courses are recommended in the Core Areas noted and may be prerequisites for major courses.
3. The 6 hours listed for technical electives must be upper division courses in order to meet the 39 upper division hours requirement.

## Other Program Requirements

- A minimum grade of “C” is required for all CENG courses.
- A minimum grade of “C” is required for all prerequisite courses.
- A minimum grade of “C” is required for all Technical Elective courses.
- At least 33 credit hours of approved upper division Engineering credit hours must be earned at Georgia Southern.
- At least 100 hours of Departmental pre-approved community service must be completed prior to graduation clearance.
- Students must take the Fundamentals of Engineering (FE) Exam prior to Graduation.

## Honors in Civil Engineering

To graduate with Honors in Civil Engineering a student must:
• Be admitted in the University Honors Program
• Complete a Honors thesis (in a minimum of two regular semesters) for a total of 3-credit hours in Honors Research (HONS 4999)
• Maintain a 3.3 institution grade point average, including a 3.5 minimum GPA in all major courses applied towards graduation

Advisement

CEC Office of Student Services, Room 1208, Allen E. Paulson College of Engineering and Computing, Telephone: (912) 478-4877.