STRUCTURAL DESIGN AND CONSTRUCTION ENGINEERING TECHNOLOGY, B.S.

Begin Campus: Any Penn State Campus

End Campus: Harrisburg

Degree Requirements
For the Bachelor of Science degree in Structural Design and Construction Engineering Technology, a minimum of 125 credits is required:

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Education</td>
<td>45</td>
</tr>
<tr>
<td>Electives</td>
<td>2-10</td>
</tr>
<tr>
<td>Requirements for the Major</td>
<td>95-102</td>
</tr>
</tbody>
</table>

20-24 of the 45 credits for General Education are included in the Requirements for the Major. This includes: 9 credits of GN courses; 6 credits of GQ courses; 3 credits of GS courses; 3 credits of GWS courses; 3 credits of GHW courses.

General Education
Connecting career and curiosity, the General Education curriculum provides the opportunity for students to acquire transferable skills necessary to be successful in the future and to thrive while living in interconnected contexts. General Education aids students in developing intellectual curiosity, a strengthened ability to think, and a deeper sense of aesthetic appreciation. These are requirements for all baccalaureate students and are often partially incorporated into the requirements of a program. For additional information, see the General Education Requirements (https://bulletins.psu.edu/undergraduate/general-education/baccalaureate-degree-general-education-program/) section of the Bulletin and consult your academic adviser.

The keystone symbol appears next to the title of any course that is designated as a General Education course. Program requirements may also satisfy General Education requirements and vary for each program.

Foundations (grade of C or better is required.)
• Quantification (GQ): 6 credits
• Writing and Speaking (GWS): 9 credits

Knowledge Domains
• Arts (GA): 6 credits
• Health and Wellness (GHW): 3 credits
• Humanities (GH): 6 credits
• Social and Behavioral Sciences (GS): 6 credits
• Natural Sciences (GN): 9 credits

Integrative Studies (may also complete a Knowledge Domain requirement)
• Inter-Domain or Approved Linked Courses: 6 credits

University Degree Requirements
First Year Engagement
All students enrolled in a college or the Division of Undergraduate Studies at University Park, and the World Campus are required to take 1 to 3 credits of the First-Year Seminar, as specified by their college First-Year Engagement Plan.

Other Penn State colleges and campuses may require the First-Year Seminar; colleges and campuses that do not require a First-Year Seminar provide students with a first-year engagement experience.

First-year baccalaureate students entering Penn State should consult their academic adviser for these requirements.

Cultures Requirement
6 credits are required and may satisfy other requirements
• United States Cultures: 3 credits
• International Cultures: 3 credits

Writing Across the Curriculum
3 credits required from the college of graduation and likely prescribed as part of major requirements.

Total Minimum Credits
A minimum of 120 degree credits must be earned for a baccalaureate degree. The requirements for some programs may exceed 120 credits. Students should consult with their college or department adviser for information on specific credit requirements.

Quality of Work
Candidates must complete the degree requirements for their major and earn at least a 2.00 grade-point average for all courses completed within their degree program.

Limitations on Source and Time for Credit Acquisition
The college dean or campus chancellor and program faculty may require up to 24 credits of course work in the major to be taken at the location or in the college or program where the degree is earned. Credit used toward degree programs may need to be earned from a particular source or within time constraints (see Senate Policy 83-80 (http://senate.psu.edu/policies-and-rules-for-undergraduate-students/82-00-and-83-00-degree-requirements/#83-80)). For more information, check the Suggested Academic Plan for your intended program.

Requirements for the Major
To graduate, a student enrolled in the major must earn a grade of C or better in each course designated by the major as a C-required course, as specified by Senate Policy 82-44 (http://senate.psu.edu/policies-and-rules-for-undergraduate-students/82-00-and-83-00-degree-requirements/#82-44).

Common Requirements for the Major (All Options)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CET 308</td>
<td>Construction Methods and Materials</td>
<td>3</td>
</tr>
<tr>
<td>CET 342</td>
<td>Civil Engineering Materials - Concrete and Bituminous</td>
<td>3</td>
</tr>
<tr>
<td>CET 343</td>
<td>Soils Mechanics</td>
<td>3</td>
</tr>
<tr>
<td>CET 434</td>
<td>Foundations</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 110</td>
<td>Chemical Principles I</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 111</td>
<td>Experimental Chemistry I</td>
<td>1</td>
</tr>
</tbody>
</table>
ENGL 202C  Effective Writing: Technical Writing  3  
ET 200  Graphic Communications  3  
MATH 140  Calculus With Analytic Geometry I  4  
SSET 295  Internship  1  

Prescribed Courses: Require a grade of C or better  
CE 254  Personal & Occupational Safety  3  
CE 333W  Construction Management I  3  
CET 430  Structural Analysis  3  
CET 431  Structural Design-Steel  3  
CET 432  Structural Design-Reinforced Concrete  3  
CET 435  Construction Estimating  3  

Additional Courses  
CE 310  Surveying  3  
or  SUR 111  Plane Surveying  
EGT 101  and Introduction to Computer Aided Drafting  2-3  
& EGT 102  or EDSGN 100  Cornerstone Engineering Design  
ET 323  Strength of Materials Laboratory  1  
or MET 214  Strength and Properties of Materials Laboratory  
MATH 141  Calculus with Analytic Geometry II  4  
or STAT 200  Elementary Statistics  
Select one of the following:  3-4  
  PHYS 150  Technical Physics I  
  PHYS 211  General Physics: Mechanics  
  PHYS 250  Introductory Physics I  
Select one of the following:  3-4  
  PHYS 151  Technical Physics II  
  PHYS 212  General Physics: Electricity and Magnetism  
  PHYS 251  Introductory Physics II  
Select one of the following:  3  
  ECON 14  Principles of Economics  
  ECON 102  Introductory Microeconomic Analysis and Policy  
  ECON 104  Introductory Macroeconomic Analysis and Policy  
Select one of the following:  3  
  CMPSC 101  Introduction to Programming  
  CMPSC 121  Introduction to Programming Techniques  
  CMPSC 201  Programming for Engineers with C++  
  CMPSC 202  
Select one of the following:  3-4  
  ACCTG 211  Financial and Managerial Accounting for Decision Making  
  MGMT 100  Survey of Management  
  MGMT 301  Basic Management Concepts  
Select one of the following:  3  
  AE 310  Fundamentals of Heating, Ventilating, and Air Conditioning  
  CE 321  Highway Engineering  
  ENVE 430  Sustainable Engineering  
  MET 435  Building Energy Systems  

Supporting Courses and Related Areas  
Select 3-4 credits from approved program list  3-4  

Structural Design Option (19-20 credits)  

Prescribed Courses  
EMCH 212  Dynamics  3  
Prescribed Courses: Require a grade of C or better  
CE 445  Advanced Structural Analysis  3  
CE 449  Advanced Structural Design  3  
CE 488D  Capstone Project - Structural Design  4  

Additional Courses  
CET 361  Fluid Flow  3  
or CE 360  Fluid Mechanics  

Supporting Courses and Related Areas  
Select 3-4 credits from approved program list  3-4  

General Option (22 credits)  

Prescribed Courses  
ACCTG 211  Financial and Managerial Accounting for Decision Making  
MGMT 100  Survey of Management  
MGMT 301  Basic Management Concepts  
Additonal Courses: Require a grade of C or better  
CE 445  Advanced Structural Analysis  3  
CE 449  Advanced Structural Design  3  
CE 456  Planning and Scheduling  3  
CE 458  Construction Management II  3  

Additional Courses  
AE 310  Fundamentals of Heating, Ventilating, and Air Conditioning  3  
or MET 435  Building Energy Systems  
CE 360  Fluid Mechanics  3  
or CET 361  Fluid Flow  

Additional Courses: Require a grade of C or better
CE 488C  Capstone Project - Construction  4
or CE 488D  Capstone Project - Structural Design