Civil Engineering Curriculum Flowchart

ARCHITECTURAL Engineering Concentration

Beginning Fall 2023

SEM 1
MA 161/165 4 cr. Calculus I
CHM 11500 4 cr. General Chemistry I
ENGL 10800 3 cr. Written Comm. Core
ENGR 13100 2 cr. Ideas to Innovation I

SEM 2
MA 162/166 4 cr. Calculus II
PHYS 17200 3 cr. Modern Mechanics
SCI Select 3-4 cr CHM 116/CS159
ENGR 13200 2 cr.

SEM 3
MA 26100 4 cr. Multivariate Calculus
PHYS 24100 3 cr. Electricity & Optics
CE 29700 3 cr. Basic Mechanics: Statics
CE 20300 4 cr. Geomatics

SEM 4
MA 25000 3 cr. Linear Algebra
CE 21101 3 cr. Thermal Energy & Sciences in CE
CE 27000 4 cr. Structural Mechanics
CM 16400 2 cr. Computer Graphics

SEM 5
MA 26600 3 cr. Differential Equations
CE 33500 4 cr. Materials in Civil Engr
CE 31100 3 cr. Architectural Engineering
CE 34000 3 cr. Hydraulics

SEM 6
STAT 51100 3 cr. Statistical Methods
CE 39800 3 cr. Engineering System Design
TECH EL #2 3 cr. (Breadth)

SEM 7
Basic Sci 3 cr. (BIOL, EAPS, FNR) also for STS
TECH EL #5 3 cr. ARCH Tech Elec

SEM 8
CE 49800 3 cr. Senior Design
Pre-reqs CE 39201 & CE 39800
TECH EL #8 3 cr. ARCH Tech Elec

Legend:
Red
Required by First Year Engineering

Blue
Civil Engineering Core Course

Yellow
Technical Elective

Purple
General Education Course

Pre-requisite
Co-requisite

CE 20300 & 21101 can be interchanged between semesters 3 & 4 of sophomore year

Italics: suggested Technical Electives listed on next page; total of 30 cr. Required

130 credit hours required for BSCE degree

See Foundational Core STS Requirements

See the other side of this document for Curriculum Notes & other information.

Purdue University Lyles School of Civil and Construction Engineering
Bachelor of Science in Civil Engineering
Revised 6/2024
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Curriculum Notes:

1. This flowchart shows the standard BSCE course requirements and the typical sequencing of such courses. Some deviations, both in courses and sequencing, can occur; students should speak to their advisors in the CE Undergraduate Office for further information.

2. Students should consult the following LSCCE website for guidance on the requirements for Technical Electives and General Education Elective courses, respectively and the limitations on transfer credits: https://engineering.purdue.edu/CCE/Academics/Undergraduate/Policies The student is ultimately responsible for knowing and completing all BSCE degree requirements.

3. Communication Courses - Written Communication (WCC) and Oral Communication (OCC) required for First Year engineering are BSCE degree requirements that are separate from BSCE general education elective requirements.

4. The Science Selective strongly recommended by Civil Engr faculty is CHM 11600. Either CHM 11600 or CS 15900 is accepted. However, we prefer CHM 11600, especially if you are interested in the environmental or water resources side of civil engineering, because CE 35000 Intro to Environmental & Ecological Engr., a technical elective, requires CHM 11600 as a pre-requisite. Students using another Science Selective such as BIOL 11000 to meet FYE requirements will still be required to take CHM 11600 or CS 15900 to graduate in CE but can use BIOL 11000 for the Basic Science Elective.

5. The Basic Science Requirement courses are chosen from an approved list. Examples include: BIOL 11000 or EAPS 10000*, 10400*, 11100, 12000*, 12500* & 22100. See advisor for current approved list. Choose starred * courses to meet the Foundational Core STS (Science, Technology, & Society) if not satisfied by other general education courses. https://www.purdue.edu/provost/students/s-initiatives/curriculum/courses.html

6. The Civil Engr faculty recommend ECON 25100 as a Foundational Behavioral/Social Science (BSS) general education course.

7. CE 49800 Senior Design must be taken in a student's final semester before graduation. The only exception to this rule are students who plan to graduate during a summer session may take CE 49800 during the prior spring semester.

8. To graduate all students are required to complete 30 technical credits, including four (4) breadth and three (3) design, a minimum of 21 credits in Civil Engineering, and at least a minimum of two (2) technical elective sequences.

9. Sequence Requirement: A sequence is defined as a minimum of two (2) technical elective courses from a given CE emphasis area. Each student must complete at least two (2) such sequences of technical electives. Note that completing four courses from a single CE area of emphasis does not meet this requirement; the emphasis areas must be distinct. Certain non-CE designated courses may be used in satisfying this requirement.

Required for the Concentration: (B=Breadth Courses; D=Design Courses)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>CE 31100</td>
<td>Architectural Engineering (B; ARC)</td>
</tr>
<tr>
<td>CE 41300</td>
<td>Bldg Envelope Design &amp; Thermal Loads (D; ARC)</td>
</tr>
<tr>
<td>CE 41400</td>
<td>Bldg Mechanical &amp; Electrical System Design (D; ARC)</td>
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2. Arch Tech Elective Choose Two (6 cr.):

<table>
<thead>
<tr>
<th>Course Code</th>
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<tbody>
<tr>
<td>CE 51300</td>
<td>Lighting in Buildings (ARC)</td>
</tr>
<tr>
<td>CE 51401</td>
<td>Building Controls (ARC)</td>
</tr>
<tr>
<td>CE 51501</td>
<td>Bldg Energy Audits (ARC)</td>
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</tbody>
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Other Suggested Technical Electives: (B = Breadth Courses; D = Design Courses)

<table>
<thead>
<tr>
<th>Course Code</th>
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<tbody>
<tr>
<td>CE 22200</td>
<td>Life Cycle Engr and Mngt of Constructed Facilities (B; CON)</td>
</tr>
<tr>
<td>CE/EEE 35500</td>
<td>Environmental Sustainability (ENV)</td>
</tr>
<tr>
<td>CE 37100</td>
<td>Structural Analysis (B; STR)</td>
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<tr>
<td>CE 38300</td>
<td>Geotechnical Engineering I (B; GEO)</td>
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<tr>
<td>CE 44000</td>
<td>Urban Hydraulics (B &amp; D; HYD)</td>
</tr>
<tr>
<td>CE 47000</td>
<td>Structural Steel Design (D; STR)</td>
</tr>
<tr>
<td>CE 47300</td>
<td>Reinforced Concrete Design (D; STR)</td>
</tr>
<tr>
<td>CE 49700</td>
<td>CE Projects - Building Information Modeling (CON)</td>
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<tbody>
<tr>
<td>CE 59700</td>
<td>CE Projects-Sustain Bldg Dsgn, Constr &amp; Oper (ARC)</td>
</tr>
<tr>
<td>ME 31500</td>
<td>Heat and Mass Transfer</td>
</tr>
<tr>
<td>ME 41800</td>
<td>Engr of Environmental Systems &amp; Equip (typically Spring)</td>
</tr>
<tr>
<td>ME 50200</td>
<td>Indoor Environment</td>
</tr>
<tr>
<td>ME 51800</td>
<td>Analysis of Thermal Systems</td>
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<tr>
<td>ME 52900</td>
<td>Sustainable Energy Options and Analysis</td>
</tr>
<tr>
<td>ME 59700</td>
<td>ME Projects - Solar Energy Engr</td>
</tr>
<tr>
<td>ECE 48300</td>
<td>Digital Control Systems</td>
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