Basic Civil Engineering Curriculum Flowchart

Beginning Fall 2021

SEM 1
MA 16500 4 cr. Calculus I

SEM 2
MA 16600 4 cr. Calculus II
PHYS 17200 4 cr. Modern Mechanics

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

SEM 4
MA 26500 3 cr. Linear Algebra
CE 21101 3 cr. Thermal Energy & Sciences in CE
CE 27000 4 cr. Structural Mechanics

SEM 5
MA 26600 3 cr. Differential Equations
CE 33500 4 cr. Materials in Civil Engineering
TECH EL #1 3 cr. (Breadth)

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 #3 3 cr. (Design)

SEM 8
CE 49800 3 cr. Senior Design Pre-req: CE 39201 & CE 39800
TECH EL #4 3 cr. (Design)

Legend:
- Red: Required by First Year Engineering
- Blue: Civil Engineering Core Courses
- Yellow: Technical Electives
- Purple: General Education Courses

See Foundational Core STS Requirements

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

- 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

Purdue University Lyles School of Civil Engineering
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Curriculum Notes:

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

2. Students should consult the following CE 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/CE/Academics/Undergraduate/Policies
Students may also contact their faculty advisor or the CE Undergraduate Office for further information. The student is ultimately responsible for knowing and completing all degree requirements.

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

4. The Science Selective strongly recommended by the School of Civil Engineering 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 Civil Engineering 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, 12100*, 14600, 23000, & 28600 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. Also refer to:
https://www.purdue.edu/provost/students/s-initiatives/curriculum/courses.html

6. The Lyles School of Civil Engineering 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 is that students who plan to graduate during a summer session may take CE 49800 during the prior spring semester.

Breadth Requirement: At least four(4) courses must be completed from the following list, guaranteeing breadth of study in at least four of the emphasis areas:

ARC: CE 31100 - Architectural Engineering (prereq CE 21101)
CON: CE 22200 - Life Cycle Engr & Mgmt. of Constructed Facilities
ENV: CE 35000 - Intro to Environmental and Ecological Engr. (prereq CHM 116)
GEM: CE 408/597 - Geographic Information Systems in Engr. (prereq CE 203)
GEO: CE 38300 - Geotechnical Engr I (co-reg CE 340)
HYD: CE 44000 - Urban Hydraulics (prereq CE 340)
STRA: CE 37100 - Structural Analysis I (prereq CE 270)
TRA: CE 36100 - Transportation Engineering

Design Content Requirement: At least three(3) courses must be completed from the following list, guaranteeing sufficient design:

ARC: CE 41300, 41400
CON: CE 52200, 52300, 52700
ENV: CE 45600, 45700
GEM: CE 30300, 30600
GEO: CE 48300, 58300, 58400, 58500
HYD: CE 44000, 54300, 54600, 54900
MAT: CE 53000, 53500
STR: CE 47000, 47300, 47900
TRA: CE 36100, 46100, 56200, 56300, 56500, 56700

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.