Civil Engineering Curriculum Flowchart

TRANSPORTATION & INFRASTRUCTURE SYSTEMS Engineering Emphasis

Beginning Fall 2021

SEM 1
MA 16500 4 cr. Calculus I
CHM 11500 4 cr. General Chemistry I
ENGL 10600 4 cr. Written Comm. Core
ENGR 13100 2 cr. Ideas to Innovation I

SEM 2
MA 16600 4 cr. Calculus II
PHYS 17200 4 cr. Modern Mechanics
SCI Select* 3 cr. (CHM 11600)
ENGR 13200 2 cr. COM 11400 3 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 26500 3 cr. Linear Algebra
CE 21101 3 cr. Thermodynamics & Sciences in CE
CE 27000 4 cr. Structural Mechanics
CE 29800 3 cr. Basic Mechanics: Dynamics

SEM 5
MA 26600 3 cr. Differential Equations
CE 33500 4 cr. Materials in Civil Engineering
CE 36100 3 cr. Transportation Engineering
CE 34000 3 cr.

SEM 6
STAT 51100 3 cr. Statistical Methods
CE 39800 3 cr. Engineering System Design
CE 34300 1 cr. Hydraulics

SEM 7
BASIC SCI* 3 cr. (BIOL, EAPS, FNR) also for STS
CE 59400 3 cr. Transportation System Analysis
CE 46300 3 cr. Highway Transp. Characteristics
CE 46100 3 cr. Roadway & Pavement Design

SEM 8
CE 49800 3 cr. Senior Design
Pre-reqs CE 39201 & CE 39800
TECH EL #8 3 cr.
TECH EL #9 3 cr.
TECH EL #10 3 cr.

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.

Suggestions for Technical Electives: (B = Breadth Courses; D = Design Courses)

CE 36100: Transportation Engineering (B&D)
CE 46100: Roadway and Pavement Design (D; TRA)
CE 46300: Highway Transportation Characteristics
CE 51200: Comprehensive Urban Planning Process (TRA)
CE 56000: Public Mass Transportation (TRA)
CE 56100: Transportation Systems Evaluation (TRA)
CE 56200: Geometric Design of Highways (D; TRA)
CE 46300: Highway Transportation Characteristics
CE 56000: Public Mass Transportation (TRA)
CE 56100: Transportation Systems Evaluation (TRA)
CE 56200: Geometric Design of Highways (D; TRA)

CE 56300: Airport Design (D; TRA)
CE 56500: Traffic Engineering (D; TRA)
CE 56600: Transportation Planning (TRA)
CE 56700: Hywy Traffic and Safety Analysis (D; TRA)
CE 56800: Hywy Infrastructure Mngt Sys (TRA)
CE 59400: Transportation Systems Analysis

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.