Civil Engineering Curriculum Flowchart

STRUCTURAL Engineering Concentration

Beginning Fall 2023

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
COM 11400 3 cr. Oral Comm. Core

SEM 2
MA 16600 4 cr. Calculus II
PHYS 17200 4 cr. Modern Mechanics
SCI Select 3 cr. (CHM 11600)
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
ENGR 20300 2 cr. CM 16400 2 cr.

SEM 4
MA 26500 3 cr. Linear Algebra
CE 21101 3 cr. Thermal Energy & 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 233500 4 cr. Materials in Civil Engineering
CE 37100 3 cr. Structural Analysis I
CE 34000 3 cr. Geohydraulics

SEM 6
STAT 51100 3 cr. Statistical Methods
CE 39800 3 cr. Engineering System Design
CE 37300 4 cr. Reinforced Concrete Design
CE 34300 1 cr.

SEM 7
BASIC SCI 3 cr. (BIOL, EAPS, FNR) also for STS
CE 47000 3 cr. Structural Steel Design
CE 47300 4 cr. Reinforced Concrete Design
CE 48300 3 cr.

SEM 8
CE 49800 3 cr. Senior Design
CE 47400 3 cr. Structural Analysis II
CE 47900 3 cr. (Breadth)

Senior Design
Pre-reqs CE 39201 & CE 39800

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

Revised 3/2023
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 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 22200: Life Cyc Engr & Mngt Const Fac (B; CON)  
CE 32201: Prjt Ctrl Life Cyc Exc Const Fac (CON)  
CE 31100: Architectural Engineering (B; ARC)  
CE 35000: Environmental Engineering (B; ENV)  
CE 36100: Transportation Engineering (B & D; TRA)  
CE 44000: Urban Hydraulics (B & D; HYD)  
CE 47900: Dsgn of Bldg Components and Sys (D; STR)  
CE 57000: Advanced Structural Mechanics (STR)  
CE 57100: Earthquake Engineering (STR)  
CE 57200: Prestressed Concrete Design (STR)  
CE 57300: Structural Dynamics (STR)  
CE 57400: Advanced Reinforced Concrete Design (STR)  
CE 57500: Finite Elements in Elasticity (STR)  
CE 57600: Advanced Structural Steel Design (STR)  
CE 57700: Advanced Structural Mechanics (STR)  
CE 57800: Earthquake Engineering (STR)  
CE 57900: Structural Stability (STR)  
CE 58100: Advanced Structural Steel Design (STR)  
CE 58200: Advanced Structural Mechanics (STR)  
CE 58300: Advanced Structural Steel Design (STR)  
CE 58400: Advanced Structural Mechanics (STR)  
CE 58500: Advanced Structural Steel Design (STR)  
CE 58600: Advanced Structural Mechanics (STR)  
CE 58700: Advanced Structural Steel Design (STR)  
CE 58800: Advanced Structural Mechanics (STR)  
CE 58900: Advanced Structural Steel Design (STR)  
CE 59100: Advanced Structural Steel Design (STR)  
CE 59200: Advanced Structural Mechanics (STR)  
CE 59300: Advanced Structural Steel Design (STR)  
CE 59400: Advanced Structural Mechanics (STR)  
CE 59500: Finite Elements in Elasticity (STR)  
CE 59600: Advanced Structural Steel Design (STR)  
CE 59700: Advanced Structural Mechanics (STR)  
CE 59800: Advanced Structural Steel Design (STR)  
CE 59900: Advanced Structural Mechanics (STR)

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.