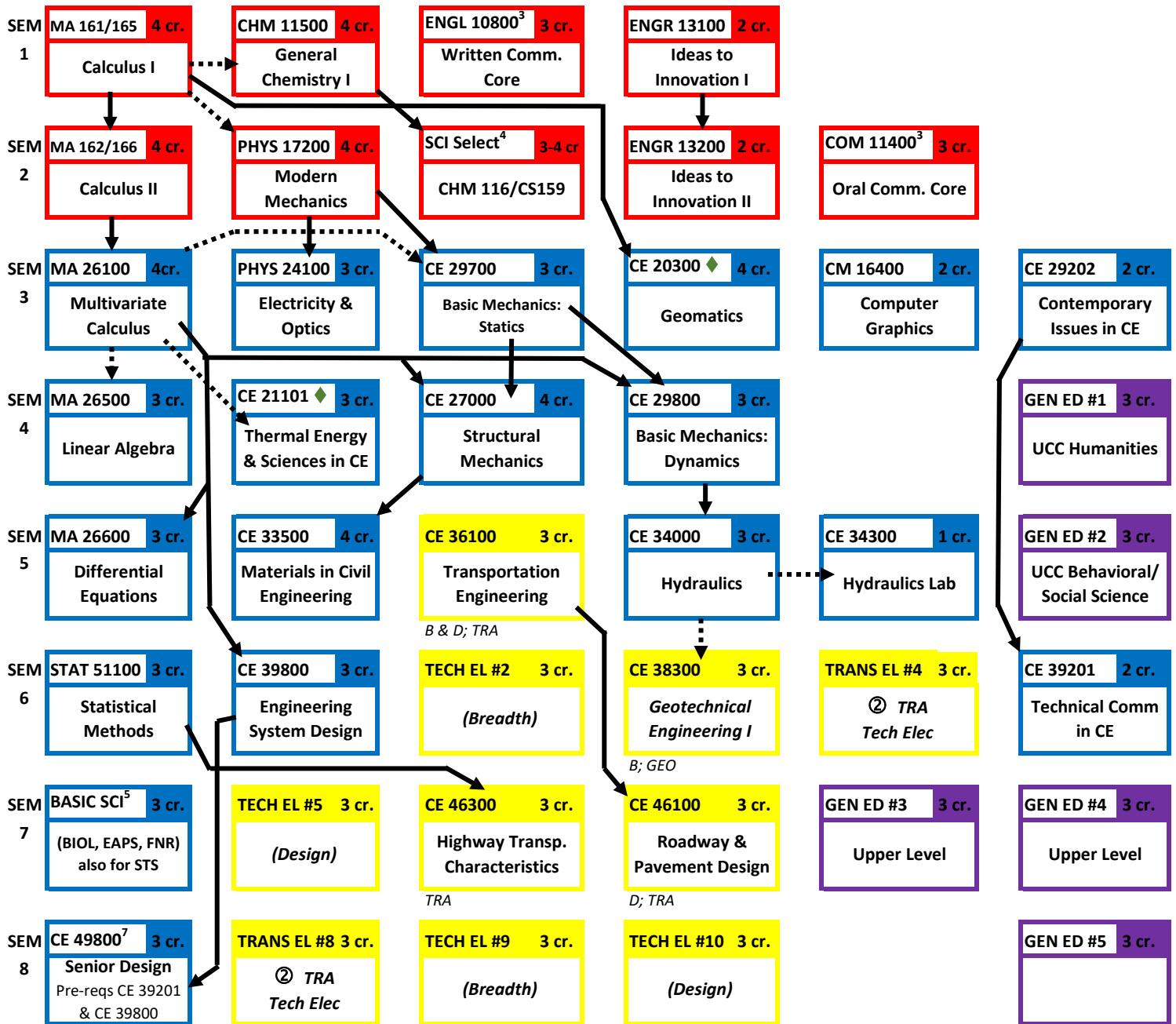


# Civil Engineering Curriculum Flowchart<sup>1,2</sup>

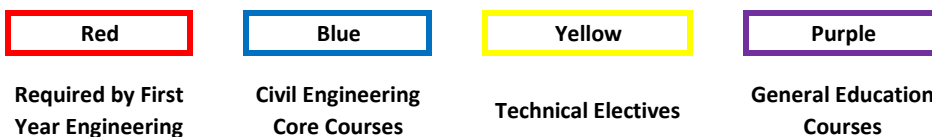
## TRANSPORTATION & INFRASTRUCTURE SYSTEMS Engineering Concentration

**Beginning  
Fall 2024**



See Foundational Core STS Requirements<sup>5</sup>

### Legend:



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



<sup>◆</sup> 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

**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)

CE 36100: Transportation Engineering (B&D; TRA )  
CE 46100: Roadway and Pavement Design (D; TRA )

CE 46300: Highway Transportation Characteristics (TRA)

② **TRA Tech Elective Choose Two (6 cr.):**

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 (TRA)  
CE 56201: Vehicular Cyber-Physical Systems (D; TRA )  
CE 56300: Airport Design (TRA)  
CE 56401: Data Science for Smart Cities (D; TRA )

CE 56500: Traffic Engr: Op & Cntl (D; TRA)  
CE 56600: Transportation Planning (TRA)  
CE 56601: Ntwk Models Connected & Autonomous Vehicles (TRA)  
CE 56700: Highway Traffic & Safety Analysis (D; TRA )  
CE 56800: Hywy Infrastructure Mngt Sys (TRA)  
CE 56901: Smart Logistics (TRA)

**Additional Suggests for Technical Electives:** (B = Breadth Courses; D = Design Courses)

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 (TRA)  
CE 56201: Vehicular Cyber-Physical Systems (D; TRA )  
CE 56300: Airport Design (TRA)  
CE 56401: Data Science for Smart Cities (D; TRA )

CE 56500: Traffic Engineering (D; TRA)  
CE 56600: Transportation Planning (TRA)  
CE 56601: Network Models for Connected & Autonomous Vehicles (TRA)  
CE 56700: Highway Traffic & Safety Analysis (D; TRA )  
CE 56800: Hywy Infrastructure Mngt Sys (TRA)  
CE 56901: Smart Logistics (TRA)  
CE 59400: Transportation Systems Analysis (TRA)