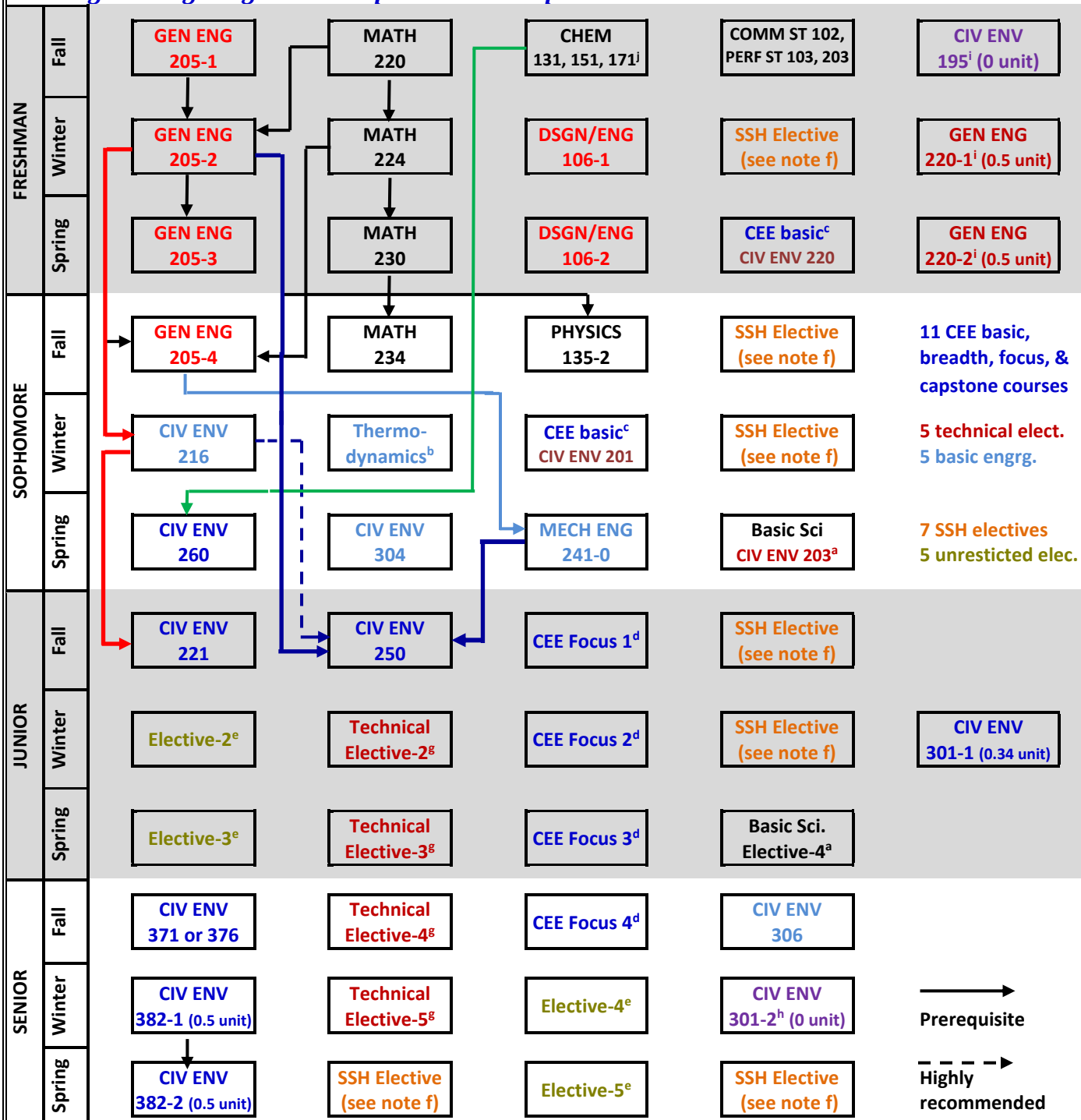


Civil Engineering Program – sample curriculum path

2018-2019



- Notes:**
- At least ONE MUST from BIO SCI, EARTH 201, 202, or CivEnv 203; the other can be any course except ASTRON and EARTH 203 listed in Basic Sciences.
 - May choose among MECH_ENG 222 (offers in winter quarter only), BMD_ENG 250 (offers in winter quarter only), and CHEM_ENG 211 (offers in winter and spring quarters only).
 - May choose among CivEnv 201, 202, and 220.
 - Choose a total of 4 courses from the approved list (see next page). One must be design defined according to ABET; 4 courses must be from at least 2 focus areas.
 - May choose from any course offered for credit by the University. First elective unit is from the basic science lab sessions and CivEnv 301-1
 - Courses must be selected to meet the Social Science-Humanities theme requirement.
 - Must choose from an APPROVED list. A minimum of 12 units of Math/Science and 18 units of Engineering Topics (ET) from 48 units are required for BSCE. Consult with the partitioning table at <http://www.mccormick.northwestern.edu/academics/undergraduate/abet/course-partitioning.php>. These partitions are valid only for the academic year the course is taken. First technical elective unit is GenEng 220-1,2.
 - Fundamental of Engineering Exam Review – all seniors are highly recommended to take.
 - CIV ENV 195 (zero unit) and GEN ENG 220-1,2 for a total of 1 credit sequence is HIGHLY recommended for freshman and sophomores. Skills acquired from these courses are necessary for summer internship in civil and environmental engineering profession.
 - If no placement in Chemistry, then take CHEM 110 & 131 sequence.

Civil Engineering Program 2018-2019

Summary

MATHEMATICS (4 units)		MATH 220, 224, 230, 234
ENGINEERING ANALYSIS & COMPUTER PROFICIENCY (4 units)		GEN ENG 205-1, 2, 3, 4
DESIGN & COMMUNICATIONS (3 units)		DSGN 106-1,2; ENGLISH 106-1,2; COMM ST 102, PERF ST 103, 203
BASIC SCIENCE (4 units)	1	Chemistry 131, 151, or 171 (note: lab units goes to unrestricted elective)
	2	Physics 135-2 (note: lab units goes to unrestricted elective)
	3	Earth 201 or CivEnv 203 (recommended, spring quarter); Earth 202 or BioSci course listed in this group are acceptable. Earth 203 and Astronomy are not acceptable
	4	any acceptable chemistry, physics, Earth, CivEnv, and BioSci listed under Basic Sciences. Earth 203 and Astronomy are not acceptable
BASIC ENGINEERING (5 units)		CivEnv 216 (recommended for sophomore year); ME 241 (recommended spring quarter); Thermo (winter quarter: ME 222, BME 250, ChemE 211); CivEnv 304 and 306
SOCIAL SCIENCE & HUMANITY (7 units)		maximum of 5 units from either social science or humanities category; at least 3 units must be thematically related; no more than 3 units of 100-level courses; and AP credits allowed. <i>Must submit theme form via MAS; theme must be approved by McCormick</i>
UNRESTRICTED ELECTIVES (5 units)	1	Chemistry & Physics labs (0.68 unit) + CivEnv 301-1 (0.34 unit)
	2-5	choose any courses offered for credits by the university
CIVIL ENGINEERING MAJOR (16 units)		
BASIC COURSES (2 units)		choose 2: CivEnv 201, 202, 220; [201 – Data Analysis (Winter, sophomore year) and 220 – Structural Art (Spring, freshmen year) recommended]
CIVIL ENGINEERING BREADTH (4 units)		CivEnv 221, 371 or 376, 250, (recommended for junior or senior fall), and 260 (recommended sophomore spring quarter)
FOCUS AREAS (4 units)		<i>must be chosen from at least 2 areas (see below) from an approved list provided in CEE web and student handbook, 1 must be a design course defined according to ABET program criteria</i>
CAPSTONE DESIGN (1 unit)		CivEnv 382-1,2^D – 0.5 unit each in winter and spring quarters
TECHNICAL ELECTIVES (5 units)	1	GenEng 220-1,2 – highly recommended for freshmen winter and spring quarters
	2-5	choose from an approved list, must meet 18 units of ET requirement
PROFESSIONAL DEVELOPMENT		CivEnv 301-1 (recommended for junior winter quarter)

The following courses must be taken in sequence: **205-2→216→221→325 or 323; 205-2→ME 241→250**; to be in compliance with ABET accreditation criteria. **Appropriate design and analysis courses from focus areas must be taken before CivEnv 382 which is taken during the last winter & spring quarters (contiguously) prior to graduation.**

Focus Areas Approved list

Architectural Engineering & Design

CivEnv 386^D – Design of High Performance Buildings (*Fall*)

CivEnv 395 – Design of Sustainable Urban Districts (*Winter*)

Environmental Engineering

CivEnv 340 – Hydraulics and Hydrology; pre-req.: ME 241 (*Spring*)

Geotechnics

CivEnv 352^D – Foundation Design; pre-req.: CivEnv 250 (*Winter, odd year*)

Management

CivEnv 330 – Engineering Project Management (*Fall*)

CivEnv 332 – Construction Estimating (*Spring*)

CivEnv 336^D – Construction Scheduling (*Winter*)

Structural Engineering

CivEnv 323^D – Structural Steel Design; pre-req.: CivEnv 221 (*Winter, even year*)

CivEnv 325^D – Reinforced Concrete Design; pre-req.: CivEnv 221 (*Winter*)

Transportation

CivEnv 371/376 - Introduction to Transportation Planning & Analysis or Transportation System Operations whichever is not taken in the core course (*Fall*)

Others

CivEnv 399 – Projects (*must be approved by ABET Coordinator if it is design*), max. 1 unit permitted in major

Note: You must meet pre-requisite requirements to be in compliance with ABET accreditation criteria.

^D denoted as design course

To ensure compliance to this ABET MTS and ET requirements, please consult with your academic advisor and the partition table at <http://www.mccormick.northwestern.edu/academics/undergraduate/abet/course-partitioning.php> on courses offered by McCormick before registering.

Professionalism and Life-Long Learning

All seniors are highly recommended to take CivEnv 301-2 – Professional Development Seminar II. This is a no credit, no tuition course on the review for Fundamental of Engineering Exam.