

INTEGRATED DESIGN ENGINEERING *Civil Emphasis – FALL 2022*

	Example					
1	COURSE NUMBER (Cr.) Course Name (PR: Pre-Requisites) (CR: Co-Requisites) Fall or Spring Only Course	GEEN 1400 (3) Engineering Projects	APPM 1350 (4) Calculus 1 For Engineers	CHEN 1201 (4) Chemistry of Energy & Materials	CHEM 1114 (1) Gen Chemistry 1 Lab	CSCI 1200 (3) Intro to Computational Thinking Fall Only
2		AREN 1027 (3) Engineering Drawing	APPM 1360 (4) Calculus 2 For Engineers (PR: APPM 1350)	PHYS 1110 (4) General Physics 1 (CR: APPM 1350)	Writing Requirement (3)	Humanities & Social Science (3)
3	GEEN 2851 (3) Statics & Structures (PR: APPM 1360, PHYS 1110) Fall Only	GEEN 3852 (3) Thermodynamics (PR: PHYS 1110) Fall Only	APPM 2350 (4) Calculus 3 For Engineers (PR: APPM 1360)	PHYS 1120 (4) General Physics 2 (PR: PHYS 1110)	PHYS 1140 (1) Experimental Physics (CR: PHYS 1120)	
4		GEEN 2400 (3) Engineering Projects for the Community (PR: GEEN 1400)	APPM 2360 (4) Linear Algebra & Differential Equations (PR: APPM 1360)	CVEN 3313 (3) Theoretical Fluid Mechanics (PR: GEEN 2851) (Spring Only)	CVEN 3161(3) Mechanics of Materials I (PR: GEEN 2851, CR: APPM 2360)	Humanities & Social Science (3)
5	Concentration Course (3)	GEEN 3010 (3) Circuits for Engineers (PR: APPM 2360) (CR: PHYS 1140)	GEEN 3400 (3) Invention & Innovation (PR: GEEN 2400)	CVEN 3323 or CVEN 3708 (3) Hydraulic Eng/Geotechnical (PR: CVEN 3313/CVEN 3161)	CVEN Elective 1 (3) See page 2 for options	Humanities & Social Science (3)
6	Concentration Course (3)	Free Elective (3)	GEEN 3853(4) Data Analysis for Engineers (PR: APPM 2360, CSO 1300, PHYS 1140) (CR: GEEN 3010, GEEN3024, Writing) Spring Only	CVEN Focus 1 (3) See page 2 for options	CVEN Elective 2 (3) See page 2 for options	
7	Concentration Course (3)	Free Elective (3)	Free Elective (3)	CVEN Focus 2 (3) See page 2 for options		Humanities & Social Science (3) Upper Division
8	Concentration Course (3)	Free Elective (3)	Free Elective (3)	CVEN 4899 (4) Civil Engineering Senior Project Design Spring Only		Humanities & Social Science (3) Upper Division

Integrated Design Engineering Curriculum

Civil Engineering Emphasis

Standard Course Substitutions

- **APPM 1350:** MATH 1300
- **APPM 1360:** MATH 2300
- **APPM 2350:** MATH 2400
- **APPM 2360:** MATH 2130 and MATH 3430
- **AREN 1027:** CVEN 1027, GEEN 1017, MCEN 1025
- **CHEN 1201:** CHEN 1211, MCEN 1024 (CHEM 1113 approved for transfer students)
- **CSCI 1200:** ASEN 1320 ,CSCI 1320, CSCI 1300, CHEN 1310, ECEN 1310 approved for transfer students
- **CVEN 3161:** MCEN 2063
- **CVEN 3313:** CHEN 3200, MCEN 3021
- **GEEN 2851:** CVEN 2121, MCEN 2023
- **GEEN 3010:** ECEN 3010
- **GEEN 3024:** ASEN 1022, MCEN 2024
- **GEEN 3852:** ASEN 2110, ECEN 3012, CHEN 3320, MCEN 3012
- **GEEN 3853:** MCEN 3047

CVEN Electives

- **CVEN 3246:** Introduction to Construction
- **CVEN 3323:** Hydraulic Engineering (PR: Fluids)
- **CVEN 3414:** Fundamentals of Environmental Engineering (PR: Gen Chemistry 1, Calculus 2)
- **CVEN 3525:** Structural Analysis (PR: Mechanics of Materials/Solids)
- **CVEN 3708:** Geotechnical Engineering 1 (PR: Mechanics of Materials/Solids)

CVEN Focus Area Courses

- **Construction:**
 - CVEN 3256 Construction Equip/Methods
 - AREN 4506 Pre-construction Estimating and Scheduling
- **Environmental:**
 - CVEN 3424 Water & Wastewater Treatment (Spring Only)
 - CVEN 4474 Haz & Indstrl Waste Mgmt
- **Geotechnical:**
 - CVEN 3718 Geotechnical Engineering 2
 - CVEN 4728 Foundation Engineering (Spring Only)
- **Structures:**
 - CVEN 4545 Steel Design
 - CVEN 4555 Reinforced Concrete Design
- **Water Resources:**
 - CVEN 4333 Engineering Hydrology
 - CVEN 4353 Groundwater Engineering (Fall Only)

Grade Requirements

The minimum passing grade for a prerequisite or co-requisite course within the Civil Engineering Emphasis is a C-. This requirement includes courses completed in another program or department (APPM, PHYS, etc.). The minimum passing grade for standalone classes is a **D-**. In addition, students need to have a cumulative and major GPA of at least 2.000 in order to graduate from the College of Engineering. **Pass/Fail** is only permitted for up to 16 Free Elective credits.

Humanities & Social Science Electives/Writing Requirements

Visit the college's [Humanities, Social Sciences, and Writing Requirements](#) webpage for options.