INTEGRATED DESIGN ENGINEERING *Environmental Emphasis* – *FALL 2022*

						Example
1	**APPM 1350 (4)** Calculus 1 For Engineers		**GEEN 1400 (3)** Engineering Projects	**PHYS 1110 (4)** General Physics 1 (CR: APPM 1350)	**Writing Requirement(3)**	**COURSE NUMBER (Cr.)** Course Name (PR: Pre-Requisites) (CR: Co-Requisites) (Fall or Spring Only Course)
2	**APPM 1360 (4)** Calculus 2 For Engineers (PR: APPM 1350)		**CHEN 1310 (3)** Intro to Engineering Computing	**PHYS 1120 (4)** General Physics 2 (PR: PHYS 1110)	**PHYS 1140 (1)** Experimental Physics (CR: PHYS 1120)	**Humanities & Social Science (3)**
3	**APPM 2350 (4)** Calculus 3 For Engineers (PR: APPM 1360)	**GEEN 2400 (3)** Engineering Projects for the Community (PR: GEEN 1400)	**GEEN 2851 (3)** Statics & Structures (PR: APPM 1360, PHYS 1110) Fall Only	**GEEN 3852 (3)** Thermodynamics (PR: PHYS 1110) Fall Only	**CHEN 1201 (4)** *Gen Chemistry for Engineers 1 (PR: 1 yr. HS Chemistry or CHEM 1021, HS Algebra)	
4	**APPM 2360 (4)** Linear Algebra & Differential Equations (PR: APPM 1360)	**GEEN 3024 (3)** Materials Science for Engineers (PR: PHYS 1110) Spring Only	**AREN 1027 (3)** Engineering Drawing	**CVEN 3313 (3)** Theoretical Fluid Mechanics (PR: GEEN 2851) (Spring Only)	**CHEN 1203 (2)** *Gen Chemistry for Engineers 2 (PR: CHEN 1201)	**CHEM 1221 (1)** *Engineering Chemistry Lab (CR: CHEN 1203)
5	**Free Elective or 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 (3)** Hydraulic Engineering (PR: CVEN 3313) Fall Only	**CVEN 3414 (3)** Fundamentals of Environmental Engineering (PR: CHEN 1201, APPM 1360)	**Humanities & Social Science (3)**
6	**Concentration Course (3)**	**Free Elective (3)**	**GEEN 3853(4)** Data Analysis for Engineers (PR: APPM 2360, CSCI 1300, PHYS 1140) (CR: GEEN 3010, GEEN 3024, Writing) Spring Only	**EVEN Elective 1 (3)** See page 2 for options		**Humanities & Social Science (3)**
7	**Concentration Course (3)**	**Concentration Course (3)**	**Free Elective (3)**	**EVEN Elective 2 (3)** See page 2 for options	**EVEN 4464 (3)** Environmental Engineering Processes (PR: CVEN 3313, CVEN 3414) Fall Only	**Humanities & Social Science (3)** Upper Division
8	**Concentration Course (3)**	**Free Elective or Concentration Course (3)**	**Free Elective (3)**	**EVEN 4434 (4)** Senior Design Project (PR: CVEN 3414, EVEN 4464) Spring Only		**Humanities & Social Science (3)** Upper Division

Effective: Fall 2022

Integrated Design Engineering Curriculum

Environmental 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)
    - 30 total science credits are required. If alternate courses are taken, additional science credits are required to reach 30.
- **CHEN 1310**: ASEN 1320 ,CSCI 1320, CSCI 1300, ECEN 1310 approved for transfer students
- **CVEN 3313:** CHEN 3200, MCEN 3021
- **EVEN 4434:** CVEN 4434
- **EVEN 4464**: CVEN 4464
- **GEEN 2851:** CVEN 2121, MCEN 2023
- **GEEN 3010:** ECEN 3010
- **GEEN 3024:** ASEN 1022, MCEN 2024
- **GEEN 3852:** ASEN 2110, EVEN 3012, CHEN 3320, MCEN 3012
- **GEEN 3853:** MCEN 3047

EVEN Electives

- **CVEN 3424:** Water & Wastewater Treatment (Spring Only)
- **CVEN 3434:** Introduction to Applied Ecology (Spring Only)
- **CVEN 4333:** Engineering Hydrology
- **CVEN 4474:** Hazardous & Industrial Waste Management
- **EVEN 4404 or CVEN 4404:** Water Chemistry (Fall Only)
- **EVEN 4484:** Introduction to Environmental Microbiology (Spring Only)
- **MCEN 4131:** Air Pollution Control Engineering (Spring Only)

Humanities & Social Science Electives/Writing Requirements

Visit the college's Humanities, Social Sciences, and Writing Requirements webpage for options.

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.