

INTEGRATED DESIGN ENGINEERING *Civil Emphasis – FALL 2025*

1	Example	COURSE NUMBER (Cr.) Course Name (PR: Pre-Requisites) (CR: Co-Requisites) Fall or Spring Only Course	APPM 1350 (4) Calculus 1 For Engineers	GEEN 1400 (3) Engineering Projects	PHYS 1110 (4) General Physics 1 (CR: APPM 1350)	COEN 1500 (1) First-Year Seminar	Humanities & Social Science (2)
			APPM 1360 (4) Calculus 2 For Engineers (PR: APPM 1350)	AREN 1027 (3) Engineering Drawing	PHYS 1120 (4) General Physics 2 (PR: PHYS 1110) (CR: APPM 1360)	PHYS 1140 (1) Experimental Physics (CR: PHYS 1120)	Writing Requirement(3)
2		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	CSCI 1200 (3) Intro to Computational Thinking Fall Only	Humanities & Social Science (3)	
		Concentration Course (3)	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)	CHEM 1201 (4) General Chemistry for Engineers 1 (PR: 1 yr. HS Chemistry or CHEM 1021, HS Algebra)	Math or Science Elective (1) Rec: CHEM 1114 See Page 2 for Options
3		GEEN 3400 (3) Invention & Innovation (RPR: GEEN 1400)	GEEN 3852 (3) Thermodynamics (PR: PHYS 1110) Fall Only	CVEN 3323 or CVEN 3708 (3) Hydraulic Eng/Geotechnical (PR: CVEN 3313/CVEN 3161)	Emphasis Elective 1 (3) See page 2 for options	Humanities & Social Science (3)	
		Concentration Course (3)	GEEN 3010 (3) Circuits for Engineers (PR: PHYS 1140) (CR: APPM 2360) Spring Only	GEEN 3853(4) Data Analysis for Engineers (PR: APPM 2360, Computing, PHYS 1140) (CR: GEEN 3010, Writing) Spring Only	Focus Area Course 1 (3) See page 2 for options	Emphasis Elective 2 (3) See page 2 for options	
4		Concentration Course (3)	Free Elective (3)	Free Elective (3)	Free Elective (3)	Focus Area Course 1 (3) See page 2 for options	Humanities & Social Science (3) Upper Division
		Concentration Course (3)	Free Elective (3)	Free Elective (3)		CVEN 4899 (4) Civil Engineering Senior Project Design See page 2 for requisites Spring Only	Humanities & Social Science (3) Upper Division

Integrated Design Engineering Curriculum

Civil Engineering Emphasis

Standard Course Substitutions

- **AREN 1027:** CVEN 1027
- **APPM 1350:** APPM 1345, MATH 1300
- **APPM 1360:** MATH 2300
- **APPM 2350:** MATH 2400
- **APPM 2360:** MATH 2130 and MATH 3430, MATH 2135 and MATH 3430
- **CHEM 1114:** CHEM 1221
- **CHEM 1201:** CHEM 1113, CHEN 1211, MCEN 1024, ASEN 1022
- **CSCI 1200:** ASEN 1320, CSCI 1300, CSCI 1320, CHEN 1310, ECEN 1310, MCEN 1030
- **GEEN 1400:** ASEN 1400, ASEN 1403, ECEN 1400
- **GEEN 2851:** CVEN 2121, MCEN 2023, ASEN 2701/2001/2401
- **GEEN 3010:** ECEN 3010
- **GEEN 3852:** AREN 2110, CHEN 3320, MCEN 3012, EVEN 3012, ASEN 2702/2002/2402
- **GEEN 3853:** CVEN 3227, MCEN 3047
- **CVEN 3161:** MCEN 2063
- **CVEN 3313:** AREN 2120, CHEN 3200, MCEN 3021

Focus Area Courses (choose 2 within 1 focus):

- **Construction:**
 - CVEN 3256 Construction Equip/Methods (PR: CVEN 3246)
 - AREN 4506 Pre-construction Estimating and Scheduling (PR: CVEN 3246)
- **Environmental:**
 - CVEN 3424 Water & Wastewater Treatment (PR: CVEN 3414) (Spring Only)
 - One of the following:
 - CVEN 4474 Haz & Industrial Waste Management
 - CVEN 3434 Introduction to Applied Ecology (PR: CHEN 1201, CHEM 1114)
 - CVEN 4404 Water Chemistry (PR: CHEN 1201, CHEM 1114)
 - CVEN 4484 Intro to Environmental Microbiology (PR: CHEN 1201, CHEM 1114)
- **Geotechnical:**
 - CVEN 3718 Geotechnical Engineering 2
 - CVEN 4728 Foundation Engineering (Spring Only)
- **Structures:**
 - CVEN 4545 Steel Design (PR: CVEN 3525) (Spring Only)
 - CVEN 4555 Reinforced Concrete Design (PR: CVEN 3525) (Fall Only)
- **Water Resources:**
 - CVEN 4333 Engineering Hydrology (PR: CVEN 3313, CR: CVEN 3227)
 - CVEN 4353 Groundwater Engineering (PR: CVEN 3313) (Fall Only)

Grade Requirements

The minimum passing grade for a course that is a prerequisite or corequisite for another required course is a C-. If a grade of D+ or lower is received in a course which is a prerequisite to another, the student may not register for the subsequent course until the first grade has been raised to a C- or higher. If a grade of D+ or lower is received in a course which is a corequisite to another, the course must be repeated until a grade of C- or higher is achieved.

The minimum passing grade for all required engineering core, disciplinary emphasis, and concentration courses is a C-. The minimum passing grade for a course that is not specifically a prerequisite or corequisite for another required course is D-, if not otherwise noted above.

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 6 Free Elective credits.

Math or Science Electives

- Must reach at least 30 total math & science credits.
- [This is a list](#) of CU Boulder courses that have been approved to satisfy this requirement.
- Visit the [IDE Advising](#) webpage for more information.

Humanities & Social Science Electives/Writing Requirements

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

FE Exam

Completion of the [FE Exam](#) is required of all IDE students to graduate.

Concentration

IDE majors are required to officially declare a [Concentration](#) by the end of their second year at the latest. Students who transfer into the IDE major after their second year must declare a Concentration by the end of their first semester in IDE. Students who have not declared a Concentration before those deadlines will receive a hold on their registration until they declare. Students can initiate the declaration process by emailing or meeting with an IDE Academic Advisor.

Emphasis Electives (choose 2):

- **CVEN 3246:** Introduction to Construction
- **CVEN 3323:** Hydraulic Engineering (PR: CVEN 3313) (Fall Only)
- **CVEN 3414:** Fundamentals of Environmental Engineering (PR: CHEN 1201, APPM 1360)
- **CVEN 3525:** Structural Analysis (PR: CVEN 3161)
- **CVEN 3708:** Geotechnical Engineering 1 (PR: CVEN 3161)

CVEN 4899 Pre/Co-Requisite Information

- **Construction:** PR: CVEN 3256 and AREN 4506
- **Environmental:** PR: CVEN 3424; CR: CVEN 4474 or CVEN 3434 or CVEN 4404 or CVEN 4484
- **Geotechnical:** PR: CVEN 3718; CR : CVEN 4728
- **Structures:** PR: CVEN 4555; CR: CVEN 4545
- **Water Resources:** CR: CVEN 4333 and CVEN 4353

Helpful Links

- [IDE Emphasis Areas](#)
- [IDE Concentrations](#)
- [IDE Core Courses](#)
- [IDE Projects](#)
- [FE Exam](#)
- [H&SS Requirements](#)
- [CEAS Forms](#) (including Petition, Incomplete Grade, and Independent Study)
- [Study Abroad](#)