

Civil and Environmental Engineering and Earth and Environmental Sciences

This program is designed for students interested in combining programs in two departments: Civil & Environmental Engineering and Earth & Environmental Sciences, leading to two bachelor of science degrees, civil engineering and B.S. degree in earth and environmental sciences. Both degrees would be awarded at the end of the fifth year. This program is one of the dual degree programs mentioned in the Five-Year Programs section. The student will have a primary advisor in the P.C. Rossin College of Engineering and Applied Sciences and a secondary advisor in the College of Arts and Sciences. The program provides alternatives for students who may decide not to complete the two-degree program. Students who make this decision prior to the beginning of the fourth year may qualify at the end of that year for the bachelor of science in civil engineering, as well as a minor in earth and environmental sciences. Also, if a student decides after two years to pursue only a B.S. degree in the EES department, it is possible to complete the requirements in four years. If the decision to work toward this degree is made during the fourth year, at least one additional semester is required to qualify for either B.S. degree. Interested students should consult with the respective departmental advisors to create a schedule of courses to resolve conflicts or if a specified course is not offered that semester. Required courses and major electives for the EES B.S. degree program are listed in the catalog entry for EES. Cross-listed EES/CEE courses used to satisfy Civil Engineering Approved Electives can reduce the individual semester and total program credits when chosen to satisfy EES program requirements. Additional useful information can be found on the EES and CEE web sites (www3.lehigh.edu/engineering/cee/ and www.ees.lehigh.edu).

Suggested outline of courses for dual B.S. in CEE & EES

The freshman engineering year (see Section III) is often 29 credits. The H/SS Advanced Requirement of 13 credits are shown below as two 3-credit courses and one 4-credit course. Other options are possible.

second year, first semester (18 credit hours)

MATH 23	Analytic Geometry and Calculus III (4)
MECH 3	Elementary Engineering Mechanics (3)
CHM 31	**Chemical Equilibria in Aqueous Systems (4)
EES Gateway	Gateway Elective (3)
EES 22	Exploring Earth (1)
CEE 11	Surveying (1)
CEE 12	Civil Engineering Statistics (2)

second year, second semester (18 credit hours)

PHY 21	Introductory Physics II (4)
PHY 22	Introductory Physics Laboratory II (1)
MECH 12	Strength of Materials (3)

EES 100 Earth System Science (4)
MATH 205 Linear Methods (3)
MAT 33 Engineering Materials and Processes (3)

third year, first semester (17 credit hours)

CEE 121 Mechanics of Fluids (3)
CEE 142 Fundamentals of Soil Mechanics (3)
EES 100-300 level elective (4)
EES 100-200 level elective (4)
CEE 10 Architectural/Engineering Graphics and Design (3)

third year, second semester (18 credit hours)

CEE 242 Principles and Practices of Geotechnical Engineering (3)
CEE 222 Hydraulic Engineering (3)
CEE 170 Introduction to Environmental Engineering (4)
EES 200 Earth History (4)
ECO 1 Principles of Economics (4)

fourth year, first semester (18 credit hours)

CEE 117 Numerical Methods in Civil Engineering (2)
CEE 159 Structural Analysis I (4)
EES 100 to 300 level elective (4)
EES 100 to 300 level elective (4)
EES 100 to 300 level elective (4)

fourth year, second semester (18 credit hours)

CEE 262 Fundamentals of Structural Steel Design (3) or
CEE 264 Fundamentals of Structural Concrete Design (3)
CEE **Civil Engineering Approved Elective (4)
Engineering Course *Engineering Science Elective (3)
EES 100 to 300 level elective (4)
H/SS Humanities/Social Sciences AR Elective (4)

year 4/5 summer (0-6 credit hours)

Optional 1 field course

EES 341 Field Camp in Earth and Environmental Sciences (6)

fifth year, first semester (15-19 credit hours)

CEE 202 Civil Engineering Planning and Engineering Economics (3)

CEE 203 Professional Development (2)
CEE **Civil Engineering Approved Electives (3)
H/SS Humanities/Social Sciences AR Elective (3)

Select 1 or 2 courses from below so the total here and year 4/5 summer is at least 8 credits:

EES Course EES 380 Senior Seminar in EES
EES Course 100 to 300 level elective (4)

fifth year, second semester (18 credit hours)

CEE **Civil Engineering Approved Electives (8)
CEE ***Civil Engineering Capstone Design Project Elective (3)
H/SS Humanities/Social Sciences AR Electives (3)
EES Course (4) 100 to 300 level elective, possibly EES 380 Senior Seminar in EES

*MECH 102, ME 104, or ECE 81.

**CHEM 31 plus thirteen additional credits of CEE Approved Electives are required; see list on CEE web-site that includes five CEE/EES cross-listed courses: CEE 279 (EES 259), CEE 316 (EES 316), CEE 320 (EES 320), CEE 323 (EES 323), CEE 327 (EES 327), and CEE 379 (EES 379).

***Usually CEE 290, but can be a multidisciplinary teaming version of CEE 205, CEE 377

In addition to EES 100, EES 200, and EES 380, 8 additional EES Courses, at least 4 at the 300 level are required for the B.S. EES degree, including a Field requirement and a Writing-Intensive requirement. Please see elsewhere in the catalog for details.

A total of 160 to 175 credit hours is needed for both degrees depending on how many credits in the EES are satisfied by taking CEE Approved Electives that are cross-listed with EES courses.

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