

Civil Engineering BS

Civil Engineering, BS

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Curriculum

Total Credits Required: 127

Effective: Fall 2021

| Fall Semester Courses | Spring Semester Courses |
|--|---|
| <p>First Year, Fall Semester</p> <ul style="list-style-type: none">• MAT 295 Calculus I (4)• CHE 106 General Chemistry Lecture I (3)• CHE 107 General Chemistry Laboratory I (1)• ECS 101 Introduction to ECS (3)• WRT 105 WRT - Studio 1 (3)• SS/HUM Elective (3)• FYS 101 First Year Seminar (1) <p>Total 18</p> | <p>First Year, Spring Semester</p> <ul style="list-style-type: none">• MAT 296 Calculus II (4)• PHY 211 General Physics I (3)• PHY 221 General Physics Laboratory I (1)• SS/HUM Elective (3)• EAR 203 - Earth System Science (4) OR;• EAR 104 & 105 – Earth Science Lab (3+1) <p>Total 15</p> |
| <p>Second Year, Fall Semester</p> <ul style="list-style-type: none">• MAT 397 Calculus III (4)• PHY 212 General Physics II (3)• PHY 222 General Physics Laboratory II (1)• ECS 221 Statics (3)• CEE 273 Intro to Geomatics and BIM (3)• SS/HUM Elective (3) <p>Total 17</p> | <p>Second Year, Spring Semester</p> <ul style="list-style-type: none">• MAT 485 Differential Equations (3)• ECS 222 Dynamics (3)• CEE 274 Civil and Env Systems (3)• WRT 205 - Studio 2: Critical Research (3)• CEE 325 Mechanics of Materials (3) <p>Total 15</p> |

| | |
|--|--|
| <p>Third Year, Fall Semester</p> <ul style="list-style-type: none"> • CEE 331 Analysis of Structure and Mtrls (3) • CEE 337 Intro to Geotechnical Eng (4) • CEE 341 Intro to Env Engineering (3) • CEE 327 Prin of Fluid Mechanics (4) • SS/HUM Elective (3) <p>Total 17</p> | <p>Third Year, Spring Semester</p> <ul style="list-style-type: none"> • CEE 329 Statistics and Risk (4) • CEE 332 Design of Concrete Structures (3) • CEE 338 Foundation Engineering (3) • CEE 352 Water Resources Eng (4) • SS/HUM Elective (3) <p>Total 17</p> |
| <p>Fourth Year, Fall Semester</p> <ul style="list-style-type: none"> • CEE 326 Engineering Materials (3) • CEE 401 Construction Eng (3) • CEE 443 Transportation Eng (3) • Technical Elective (3) • SS/HUM Elective (3) <p>Total 15</p> | <p>Fourth Year, Spring Semester</p> <ul style="list-style-type: none"> • CEE 475 Civil and Env Design (4) • Free Elective (3) • Technical Elective (3) • Professional Elective (3) <p>Total 13</p> |

Elective Requirements

Social Science & Humanities Electives

All CEE students are required to complete at least 18 credits of SS/HUM electives. A *minimum* of one course (3 credits) must be chosen from each of the three groups of designated courses listed below. The remaining three SS/HUM electives (9 credits) can be selected from the lists below or, in addition to the lists, may be chosen from:

- any College of Arts and Sciences courses that are listed on their [Humanities](#) or [Social Sciences](#) list in the SU Bulletin – Undergraduate Course Catalog/Liberal Arts Core
- any foreign language courses (except the student's native language)
- ECS 391 – Legal Aspects of Engineering and Computer Science
- ECS 392 – Ethical Aspects of Engineering and Computer Science

Group 1: Economics and Social Issues

ECN 101 – Intro to Microeconomics

ECN 102 – Intro to Macroeconomics

ECN 203 – Economics Ideas and Issues

GEO 353 – Geographies of Environmental Justice

SOC 101 – Introduction to Sociology

SOC 102 – Social Problems

SOC 230/WGS 230 – Intergroup dialogue

SOC 248/WGS 248 – Ethnic Inequality & Intergroup Relations

SOC 305/WGS 305 - Sociology of Sex and Gender

SOC 363 – Urban Sociology

Group 2: Global Affairs

ECN 365 – The World Economy (Requires ECN101,102 or 203 as pre-req)

GEO 103 – Environment and Society

GEO 105 – World Urban Geography

GEO 272 – World Cultures

GEO 273 – World Political Economy

MAX 123 – Critical Issues for the U.S.

MAX 132 – Global Community

PST 351 – Global Social Problems

PSC 124 – International Relations

PSC 352 – International Law

PSC 355 – International Political Economy

PSC 364/AAS364 – African International Relations

PSC 365/AAS 365 – International Political Economy of the Third World

Group 3: Public Policy and Policy Studies

ECN/WGS 358 – Economics of US Poverty & Discrimination

GEO 203 – Society and the Politics of Nature

GEO 314 – Hazardous Geographic Environments

GEO 356 – Environmental Ideas & Policy

PST 101 – An Introduction to the Analysis of Public Policy

PST 451 – Environmental Policy

PSC 121 – American National Government & Politics

PSC 125 – Political Theory

PSC 202 – Intro to Political Analysis

PSC 302- Environmental Politics and Policy

PSC 305 – US Congressional Politics

PSC 306 – African American Politics

PSC 308 – The Politics of US Public Policy

PSC 312 – Urban Government & Politics

PSC 318 – Technology, Politics & Environment

PSC 360/GEO 360 – Sustainability Science & Policy

* requires ECN 203 as prerequisite

+ requires PAF 101 with a grade of A as prerequisite

Check with your advisor to make sure the courses you have selected will fulfill your degree requirements.

The SSH credits can be, and are encouraged to be, used towards the completion of a minor.

IDEA Course

Students must take at least one [IDEA Course](#) in the fulfillment of the curriculum requirements. The course may be used to fulfill the following CEE requirements:

1. IDEA courses can be used to fulfill free elective credits.
2. IDEA courses may be used to fulfill any of the (9) credits of CEE general SSH course requirements if they are on the approved SSH lists.
 - a. The Humanities List (Humanities Division) in the catalog.
 - b. The Social Sciences List (Social Sciences Division) in the catalog.
3. IDEA courses may be used to fulfill CEE Group SSH electives if they meet the requirements of the specific CEE Group 1, 2, or 3 SSH per list in the CEE curriculum notes.
4. IDEA courses may be used to fulfill professional elective credits if the IDEA course prefix and level (3xx) meets the Professional Electives requirements in the CEE Curriculum notes.

Professional Electives

Professional Electives are upper-level courses (300 and above; as well as ECS 222, ELE 231, and MAE 251 that have not been used for degree credits), generally from professional schools at SU or SUNY-ESF, and must be selected in consultation with the student's academic advisor. Many Professional Electives can be used towards completion of a minor. Approved Professional Electives are courses offered in the following schools/colleges with the indicated prefixes that meet the above stated criteria.

| School/College | Course Prefix |
|----------------------------------|---|
| Architecture | ARC |
| Arts and Sciences | AST, BCM, BIO, CHE, ECN, GEO, EAR, MAX, MAT, PAF, PHY |
| Engineering and Computer Science | All course prefixes |
| Information Studies | IST |
| Whitman | ACC, BUA, EEE, FIN, INB, LPP, MAR, O&M, SOM |
| Newhouse | COM |
| VPA | CRS |
| SUNY-ESF | All course prefixes |

Technical Electives

Technical Electives MUST be CEE courses numbered 300 and above. They are to be selected in consultation with a student's advisor to advance the student's knowledge in a specific area of interest in civil or environmental engineering.

Free Electives

Any SU or ESF three or four credit course, or a combination of several one and two credit courses can be used as free electives. Academic Excellence Workshops (AEW), Physical Education (PED) courses, remedial courses (e.g., MAT 193, MAT 194, WRT 104, ENL 207, etc.) and ROTC courses that are not cross-listed with other SU courses cannot be used as free electives. ROTC courses that are cross-listed with other SU courses are treated in the same manner as the cross-listed courses and thus may be used as free electives if those cross-listed courses satisfy the free electives requirement.