School of Engineering and Engineering Technology

Bachelor of Science
Civil Engineering (BSCE)
2024-25
APPROVED ELECTIVES LIST

APPLICABLE DEGREES IN THE DEPARTMENT OF CIVIL AND ENVIRONMENTAL ENGINEERING

- Bachelor of Science in Civil Engineering (BSCE)
  - BSCE - Structural Engineering Focus
  - BSCE - Water Resources Engineering Focus
- BSCE - Environmental Engineering

GENERAL EDUCATION / THEOLOGY AND VOCATION ELECTIVES

Biblical Engagement Electives
Any BIBL course numbered 2000-level or above

Civic Engagement Electives
Any HIST, INTL, POLS, ECON, or CRIJ

Humanities & Fine Arts Electives (Formerly Ingenuity Electives)
Cross-Cultural (CCLT 3203 only); Fine Arts (HUMA); Literature (All ENGL 2000-level or above courses except ENGL 2603, ENGL 3213, ENGL 3223, ENGL 3931, ENGL 4923, and ENGL 4933); Philosophy (PHIL); Music (MUSC); Foreign Language.

Theological Engagement Electives
2000-level or above BIBL; CCLT 3103 Cultural Anthropology; CCLT 3203 Religions of the World; CCLT 4103 Biblical and Strategic Paradigms for Mission; CMIN 3303 Evangelism and Discipleship; CMIN 3403 Ministry of Teaching; THEO 3063 Christian Ethics; THEO 3103 Christian Doctrine; THEO 3133 The History of Christian Thought; THEO 3203 Christian Apologetics; THEO 49X3 Special Topics classes that engage Theology and specific disciplines

MATH AND SCIENCE ELECTIVES

 Discipline specific engineering elective credits may require advisor approval.

(2) Science Electives
4-hr Lab Science required. Course must include lab, even if transferred. Courses must be chosen from the following:
- BIOL 1113/1111 General Biology I & Lab
- BIOL 3204 General Microbiology
- *ENVT 1113/1111 Intro to Environmental Science & Lab
- *GEOL 1114 General Geology I

*Environmental Engineering students must select one science elective from these earth science courses.

(3) Math or Science Electives
3-hr math or science course required. Science courses do not need to include a lab, unless it is a corequisite for the course. Acceptable science courses do not include lower-level versions of basic sciences intended for non-science majors. Math courses must be calculus-level or higher; MATH 3903 History of Math is not accepted. Recommended math courses include:
- MATH 2003 Discrete Mathematics
- MATH 2303 Linear Algebra
- MATH 3453 Statistical Methods
- MATH 3603 Mathematical Modeling
- MATH 3803 Financial Mathematics
- MATH 4403 Numerical Analysis
- MATH 4523 Statistical Quality Control

Revised 5/12/2024
ENGINEERING ELECTIVES

CEE Skills Electives
- CEGR 2713 Introduction to GIS  (spring only, even years)
- CEGR 2813 Introduction to Surveying  (spring only, odd years)
- CEGR 3513 Civil Engineering Design Software  (spring only)

CEE Engineering Science Electives
- CEGR 3011/3522 CEE Junior Research I & II  (consecutive spring and fall)
- EVGR 3613 Air Pollution and Solid Waste*  (spring only, even years)
- CEGR 3313 Structural Analysis**  (fall only)
- CEGR 3813 Transportation Engineering  (spring only, odd years)
- CEGR 3823 Construction Engineering  (spring only, even years)
- CEGR 4713 Groundwater Hydrology  (spring only, odd years)
- MEGR 2023 Dynamics
- ENGR 2053 Intro to Electric Circuits
- EEGR 2053 Electric Circuits
- MJET 2023/2021 Materials Joining Fundamentals & Lab (with extra credit hour)
- Any additional CEE Design elective (with extra credit hour)
- Any additional advisor-approved, non-redundant 3000+ Engineering Course

CEE Design Electives
- CEGR 4224 Hydraulic Design*  (fall only)
- CEGR 4324 Reinforced Concrete Design  (fall only)
- EVGR 4634 Water and Wastewater Design*  (spring only, odd years)
- CEGR 4744 Surface Water Hydrology*  (spring only, even years)
- CEGR 4834 Structural Steel Design  (spring only, odd years)
- CEGR 4944 Structural Loading and Wood Design  (spring only, even years)

Optional Focus Areas
Students may earn (1) a BSCE with no concentration or focus area, (2) a BSCE with a focus area, or (3) a BSCE with a concentration in Environmental Engineering. For option (2), students may choose to pursue one or more of the below focus areas:

** Structural Engineering Focus**
Required CEE Design Electives:
- CEGR 4324 Reinforced Concrete Design
- CEGR 4834 Structural Steel Design
- CEGR 4944 Structural Loading and Wood Design

** Water Resources Engineering Focus**
Required CEE Design Electives:
- CEGR 4224 Hydraulic Design
- EVGR 4634 Water and Wastewater Design
- CEGR 4744 Surface Water Hydrology

* Courses are not electives for students in the Environmental Engineering concentration
** Course is only an elective for students in the Environmental Engineering concentration