



# Civil Engineering

College of Engineering

The student of civil engineering has a broad field of study to provide a strong foundation for entry into the profession or graduate school. Major areas include construction engineering, environmental engineering, geotechnical engineering, materials engineering, structural engineering, transportation engineering, and water resources engineering.

Admission to the degree program is selective. Students should refer to the UK *Bulletin* for general information concerning admission and graduation requirements.

## Degree Requirements

The following curriculum meets the requirements for a B.S. in Civil Engineering, provided the student satisfies University Studies and College of Engineering requirements.

### Freshman Year

First Semester	Hours
CE 120 Introduction to Civil Engineering .....	1
ENG 104 Writing: An Accelerated Foundational Course .....	4
MA 113 Calculus I .....	4
USP Social Sciences Elective .....	3
ECO 201 Principles of Economics I [R] .....	3

Second Semester	Hours
CE 106 Computer Graphics and Communication .....	3
CHE 105 General College Chemistry I .....	3
MA 114 Calculus II .....	4
PHY 231 General University Physics .....	4
PHY 241 General University Physics Laboratory .....	1

### Sophomore Year

First Semester	Hours
CE 211 Surveying .....	4
CHE 107 General College Chemistry II .....	3
EM 221 Statics .....	3
GLY 220 Principles of Physical Geology .....	4
MA 213 Calculus III .....	4

Second Semester	Hours
COM – Communications Elective [1]	
EM 302 Mechanics of Deformable Solids .....	3
MNG 303 Deformable Solids Laboratory .....	1
MA 214 Calculus IV .....	3
PHY 232 General University Physics .....	4
PHY 242 General University Physics Laboratory .....	1
STA 381 Introduction to Engineering Statistics .....	3

### Junior Year

First Semester	Hours
CE 303 Introduction to Construction Engineering** .....	4
CE 331 Transportation Engineering** .....	3
CE 341 Introduction to Fluid Mechanics .....	4
CE 381 Civil Engineering Materials I** .....	3
Engineering Science Elective [2] .....	3

### Second Semester

CE 351 Introduction to Environmental Engineering .....	3
CE 382 Structural Analysis .....	3
CE 471G Soil Mechanics** .....	4
CS 221 First Course in Computer Science for Engineers .....	2
HIS 107 Western Culture: Science and Technology II [R] .....	3
Math Elective or Science Elective [3] .....	3

### Senior Year

First Semester	Hours
CE 401 Seminar** .....	1
CE 461G Hydrology** .....	3
Structures Elective [4] .....	3
Technical Electives*** .....	6
USP Humanities Elective [5] .....	3

Second Semester	Hours
CE 429 Civil Engineering Systems Design** .....	4
CE Technical Design Elective [6] .....	3
Supportive Elective [7] .....	3
Technical Elective*** .....	3
USP Cross-Cultural Elective [5] .....	3

[R] Recommended University Studies course.

\*\*CE communication throughout the curriculum component.

\*\*\*Technical Electives are to be chosen from any of the courses at the 300-level or above that carry a CE prefix and in which a student is qualified to enroll, exclusive of required courses. CHE 230 or CHE 236 is acceptable. **Engineering elective courses are typically taught once per year.**

[1] To be chosen from COM 252 or COM 281.

[2] To be chosen from ME 220 or EM 313.

[3] Math or Science Elective Options: MA 321, MA 322, MA 416G, MA 432G, BIO 208, CHE 230, CHE 236, EE 305, GEO 409G, GLY 430, GLY 560, MNG 551, or the other half of the Engineering Science Elective in [2].

[4] To be selected from: CE 482 (non-structural option) or CE 486G and CE 487G (technical elective).

[5] Either the Humanities or Cross-Cultural Elective can be used to simultaneously satisfy the second-tier University Writing requirement. In the Humanities area, choosing from the ENG 200-level humanities courses satisfies both. In the Cross-Cultural area, ENG 264 satisfies both. Only one second-tier writing course is required to meet the graduation writing requirements. Completion of the second-tier course must be in the sophomore year or later and after ENG 104.

[6] Choose from: CE 403, 451, 505, 533, 539, 549, 579, or 589. (NOTE: CE 579 is a co-requisite for CE 589.)

[7] Supportive elective is to be chosen from any University course, excluding a more elementary version of a required course, such as precalculus mathematics or PHY 211. However, each CE area has at least one recommendation for the supportive elective. Please review the Optional Specialization section in the Civil Engineering Undergraduate Handbook. The supportive elective can be taken pass-fail.