

# Civil Engineering Major

The Civil Engineering program (ABET -accredited) is designed to prepare students for a wide range of engineering careers in industry and covers topics encompassing structural, environmental, geotechnical, hydraulics and transportation. Students are given a broad education in engineering topics along with foundational math and sciences while experiencing engineering analysis and design through open-ended and hands-on projects. Students in their senior year pursue more specific interests and complete a two-course sequence of capstone design. Upon graduation, students will have the opportunity to pursue careers in design and construction of commercial building and public infrastructure among many others or consider graduate school for an advanced degree in a specialized field of civil engineering.

## BS: Civil Engineering 2023 – 2024 (Applied Math minor included)

Catalog Expires in August 2024

Name: \_\_\_\_\_

L# \_\_\_\_\_

ACT/SAT: \_\_\_\_\_ EPS/MPT: \_\_\_\_\_ Honors: \_\_\_\_\_ DE/AP/IB: \_\_\_\_\_

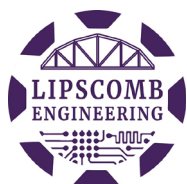
Total Hours: 138

<b>FR Fall 17 hrs.</b>	BI 1093 The Story of Israel	CM 1113 (C) Gen Chemistry 1 [CM 1211] [MA 1113 or Higher]	CM 1211 Gen Chemistry 1 Lab [CM 1113]	ENGR 1113 Introduction to Engineering [MA 1123 or Higher]	LU 1203 Lipscomb Experience [SAT=480, ACT=20]	MA 1314 (C) Calculus 1 [SAT=620, ACT=26] or [MA 1123 or MA1135]	ENGR 0110 Networking and Prof. Development
<b>FR Spring 17 hrs.</b>	BI 1073 The Story of Jesus	CEE 1123 Fundamentals of Engineering Design [ENGR 1113]	EN 1313 University Writing [EPT=3-5 or EN 1113]	MA 2314 (C) Calculus 2 [MA 1314]	PH 2414 (C) General Physics 1 (with Lab) [MA 1314]		ENGR 0120 Networking and Prof. Development
<b>SO Fall 17 hrs.</b>	BI 1083 The Story of the Church	CEE 2113 (C) Statics [PH 2414, ENGR 1113]	CEE 2133 Surveying and Geomatics [CEE 1123]	CM 1123 (C) General Chemistry 2 [CM 1113] [CM 1221]	CM 1221 General Chemistry 2 Lab [CM 1211] [CM 1123]	MA 2324 (C) Calculus 3 [MA 2314]	ENGR 0210 Networking and Prof. Development
<b>SO Spring 17 hrs.</b>	EN 3143 Technical Writing [EN 1313]	CEE 2123 (C) Dynamics [CEE 2113, MA 2314]	ESS 1013 Environmental Biology	CEE 3113 (C) Strength of Materials [CEE 2113, MA 2314]	MA 3133 Differential Equations [MA 2314]	PE 2012 Lifetime Wellness or Two (2) PE XXX1	ENGR 0220 Networking and Prof. Development
<b>JR Fall 17 hrs.</b>	CEE 3211 Solid Mechanics/ Materials Lab [CEE 3113]	CEE 3213 (C) Structural Analysis [CEE 3113]	CEE 3313 Environmental Engineering [CM 1123, 1221] [CEE 3613]	CEE 3443 Civil Engineering Materials [CEE 3113, CM 1113, CM 1211] [CEE 3211]	CEE 3451 CE Construction Materials Lab [CEE 3443]	CEE 3613 (C) Fluid Mechanics [CEE 2123, MA 2324]	ENGR 3303 Applied Mathematics [MA 3133] ENGR 0310
<b>JR Spring 17 hrs</b>	ENGR 3943 Engr. Econ. and Project Planning [Jr. standing]	CEE 3413 Construction [CEE 2133] [ENGR 3943]	CEE 3621 Hydraulics Lab [CEE 2211, 3613]	CEE 3713 Geotechnical Engineering [CEE 3113, 3613]	CEE 3721 Geotechnical Engineering Lab [CEE 3443, 3713]	CEE 4223 Structural Steel Design [CEE 3213]	CEE 4313 Water & Wastewater [CEE 3313] ENGR 0320
<b>SR Fall 18 hrs.</b>	BI XXX3 Bible Elective	CEE 3513 Transportation [CEE 2133]	CEE 4213 Reinforced Concrete Structural Design [CEE 3213] [CEE 3443]	CEE 4613 Urban Hydrology and Hydraulic Systems [CEE 3613]	CEE 4713 Foundations [CEE 3713]	ENGR 4943 Capstone Design 1 [ENGR 3943] [ENGR 0110]	ENGR 0410 Networking and Prof. Development
<b>SR Spring 18 hrs.</b>	BI 3123 Engineering Ethics	CEE 4xx3 Technical Elective [CEE 3xx3]	LUPEG 3xn3 Counts as a Bible Elective [60 hours earned credit]	ENGR 4953 Capstone Design 2 [ENGR 4943] [ENGR 0110]	LUHP 2xn3 Integrated History	LULT 2xn3 Integrated Literature [EN 1313]	ENGR 0420 Networking and Prof. Development

\*It is recommended that students are prepared to enroll in MA 1314 Calculus 1 during fall of freshman year. Students starting their program in MA 1123 Trigonometry and Analytical Geometry or MA 1135 Precalculus may be able to complete the program in four years by taking MA 2314 Calculus 2 and PH 2414 General Physics 1 during the summer between freshman and sophomore year. Students starting in MA 1113 College Algebra may choose to complete the program in five years or work with their advisor to find opportunities to reduce the program length. In addition to the above courses, students must also complete the Fundamentals of Engineering (FE) Exam prior to graduation. Completing the FE Exam provides a path toward licensure as a Professional Engineering (PE).

[Prerequisites required prior to – not concurrently] [Prerequisite w/ concurrency] [Corequisite]  
A minimum grade of C is required in math, science, and engineering prerequisite courses.

This is a suggested guide to course scheduling and does not replace the university catalog as the official listing of program requirements. Students interested in studying abroad through the Global Learning program should work with their advisor to adjust their degree plan. Alternative degree plans are available with fall sophomore year study abroad options for semester-long programs. The engineering program also offers a Maymester study abroad opportunity to Germany which is recommended after the sophomore year. During the four-week Maymester, students complete two required engineering courses with opportunities to visit well-known engineering companies in Germany.



[www.lipscomb.edu/academics/programs/civil-engineering](http://www.lipscomb.edu/academics/programs/civil-engineering)

# Civil Engineering Major

## Required Courses

General Education Requirements		Credit	Semester
EN 3143	Technical Writing ( <i>satisfies Communication course</i> )	3	F, SP
BI 3123	Engineering Ethics ( <i>satisfies Bible elective</i> )	3	SP

### Related Math and Science Courses

CM 1113 & 1211	General Chemistry 1 & lab	4	F, SP, SU
CM 1123 & 1221	General Chemistry 2 & lab	4	F, SP, SU
ESS 1013	Environmental Biology	3	SP
MA 1314	Calculus 1	4	F, SP, SU
MA 2314	Calculus 2	4	F, SP, SU
MA 2324	Calculus 3	4	F, SP, SU
MA 3133	Differential Equations	3	F, SP
PH 2414	General Physics 1 (with lab)	4	SP, SU

### Engineering Courses

ENGR 0xy0	Networking and Professional Development	0	F, SP
ENGR 1113	Introduction to Engineering (with lab)	3	F
ENGR 3303	Applied Math	3	F
ENGR 3943	Engineering Economy & Planning	3	SP
ENGR 4943	Capstone Design 1	3	F
ENGR 4953	Capstone Design 2	3	SP
CEE 1123	Fundamentals of Engineering Design	3	SP
CEE 2113	Statics	3	F, SP
CEE 2123	Dynamics	3	SP, SU
CEE 2133	Surveying and Geomatics	3	F
CEE 3113	Strength of Materials	3	SP, SU
CEE 3211	Solid Mechanics and Materials Laboratory	1	F
CEE 3213	Structural Analysis	3	F
CEE 3313	Environmental Engineering	3	F
CEE 3413	Construction	3	SP
CEE 3443	Civil Engineering Materials	3	F
CEE 3451	CE Construction Materials Lab	1	F
CEE 3513	Transportation Engineering 1	3	F
CEE 3613	Fluid Mechanics	3	F
CEE 3621	Hydraulic Laboratory	1	SP
CEE 3713	Geotechnical Engineering	3	SP
CEE 3721	Geotechnical Engineering Laboratory	1	SP
CEE 4213	Reinforced Concrete Structural Design	3	F
CEE 4223	Structural Steel Design	3	SP
CEE 4313	Water and Wastewater	3	SP
CEE 4613	Urban Hydrology and Hydraulic Systems	3	F
CEE 4713	Foundation Engineering	3	F

Choose 1 of the following courses (3 credits) for the CEE 4xn3 elective:

ENGR 3613, CEE 4413, CEE 4513, CEE 491V

2023-24 Academic Year

**TOTAL: 103**

