CIVIL ENGINEERING (B.S.) - ONLINE

Important: This degree plan is effective for those starting this degree program in fall 2023 through summer 2024. This degree plan will remain in effect for students who do not break enrollment or who do not change degree programs, concentrations, or cognates.

General Education/Foundational Skills Requirements

Code	Title	Hours
Communication & Information Literacy [1]		
ENGL 101	Composition and Rhetoric	3
Communications Elective		3
Information Literacy Elective		3
Information Literacy Elective		3
Technological Solutions & Quantitative Reasoning [1]		
UNIV 104	Instructional Technology for Successful Online Learning	0-3
Math Elective	MATH 114 or higher	4
Critical Thinking [1]		
RLGN 104	Christian Life and Biblical Worldview [2]	4
Critical Thinking Elective		3
Civic & Global Engagement [1]		
Cultural Studies Elective		3
Social & Scientific Inquiry [1]		
Natural Science Elective		4
Social Science Elective		3
Christianity & Contexts [1]		
BIBL 104	Survey of Old and New Testament	4
THEO 104	Introduction to Theology Survey [2]	4
Total Hours		**41-44**

[1] Refer to the list of approved general education electives before enrolling in foundational skill requirements

[2] Students transferring in 45 or more UG credit hours will have the requirement of RLGN 104 Christian Life and Biblical Worldview (4 c.h.) waived; Students transferring in 60 or more UG credit hours will also have the requirement of THEO 104 Introduction to Theology Survey (4 c.h.) waived

Major Requirements

Code	Title	Hours
Major Foundational Courses		
ENGR 270	Technical Communication [1]	3
MATH 131	Calculus and Analytic Geometry I [1,2]	4
MATH 132	Calculus and Analytic Geometry II [1,2]	4
PHYS 231	University Physics I [1,2]	4
Total Hours		**15**

[1] Course may fulfill select general education requirements

[2] Minimum grade of 'C' required

Code	Title	Hours
Major Core		
CHEM 115	Essentials of General Chemistry	4
ENGI 220	Engineering Economy	3
ENGR 105	Introduction to Engineering I	2
ENGR 115	Introduction to Engineering II	2
ENGR 235	Statics	3
ENGR 240	Dynamics	3
ENGR 315	Fluid Dynamics	3
ENGR 330	Mechanics of Materials	3
ENGR 481	Engineering Design I	3
ENGR 482	Engineering Design II	3
ENGV 205	Computer Aided Design	1
ENGV 225	Surveying	2
ENGV 320	Civil Engineering Lab [1]	2
ENGV 325	Structural Analysis	3
ENGV 345	Soil Mechanics	3
ENGV 355	Civil Engineering Lab II [1]	2
ENGV 365	Hydraulic Engineering	3
ENGV 380	Project and Construction Management	3
ENGV 390	Steel Structure Design	3
ENGV 395	Geotechnical Engineering	3
ENGV 410	Transportation Engineering	3
ENGV 420	Professional Practice	2
ENGV 425	Concrete Structure Design	3
ENGV 492	FE Exam	0
Science Elective [2]		3
Total Hours		**65**

[1] Course offered in Intensive Format

[2] Choose from the following approved science courses: BIOL 101, ENVR 215, ENVR 220

Code	Title	Hours
Technical Elective		
Technical Elective [1]		3
Technical Elective [1]		3
Total Hours		**6**

[1] Choose from the following courses: ENGR 381, ENGV 415, ENGV 440, ENGV 455, or ENGV 460

Code	Title	Hours
Quantitative Studies		
ENGR 133	Calculus with MATLAB	1
ENGR 210	Probability and Statistical Methods for Engineering	3
MATH 430	Multivariable Calculus	3
MATH 432	Applied Differential Equations	3
PHYS 232	University Physics II	4
Total Hours		**14**

All applicable prerequisites must be met

Graduation Requirements

- **130** Total hours
- **2.0** Overall grade point average
- **32.5** Hours must be upper-level courses (300-400 level)
- **Grade of 'C'** Minimum required for **all** courses in the major, quantitative studies, and technical electives
- **25%** Of major taken through Liberty University
- **32.5** Hours must be completed through Liberty University
- **Grad App** Submission of Degree Completion Application must be completed within the last semester of a student's anticipated graduation date

Course Sequence

Course	Title	Hours
Freshman Year		
First Semester		
ENGL 101	Composition and Rhetoric	3
RLGN 104	Christian Life and Biblical Worldview	4
UNIV 104	Instructional Technology for Successful Online Learning	0-3
Math Elective MATH 131 [1,2]		4
ENGR 105	Introduction to Engineering I	2
ENGR 133	Calculus with MATLAB	1
	Hours	**14-17**
Second Semester		
MATH 132	Calculus and Analytic Geometry II [2]	4
Information Literature Elective [1]		3
Natural Science Elective PHYS 231 [1,2]		4
ENGI 220	Engineering Economy	3
ENGR 115	Introduction to Engineering II	2
	Hours	**16**
Sophomore Year		
First Semester		
Communications Elective ENGR 270 [1]		3
ENGR 210	Probability and Statistical Methods for Engineering	3
ENGR 235	Statics	3
ENGV 205	Computer Aided Design	1
MATH 430	Multivariable Calculus	3
PHYS 232	University Physics II	4
	Hours	**17**
Second Semester		
CHEM 115	Essentials of General Chemistry	4
ENGR 240	Dynamics	3
ENGR 330	Mechanics of Materials	3
ENGV 225	Surveying	2
MATH 432	Applied Differential Equations	3
	Hours	**15**
Junior Year		
First Semester		
Critical Thinking Elective [1]		3
Social Sciences Elective [1]		3
ENGR 315	Fluid Dynamics	3
ENGV 325	Structural Analysis	3
ENGV 345	Soil Mechanics	3
ENGV 410	Transportation Engineering	3
	Hours	**18**
Second Semester		
BIBL 104	Survey of Old and New Testament	4
ENGV 320	Civil Engineering Lab [3]	2
ENGV 380	Project and Construction Management	3
ENGV 390	Steel Structure Design	3
ENGV 395	Geotechnical Engineering	3
Technical Elective [4]		3
	Hours	**18**
Senior Year		
First Semester		
ENGR 481	Engineering Design I	3
ENGV 355	Civil Engineering Lab II [3]	2
ENGV 365	Hydraulic Engineering	3
ENGV 420	Professional Practice	2
ENGV 425	Concrete Structure Design	3
Science Elective [5]		3
	Hours	**16**
Second Semester		
THEO 104	Introduction to Theology Survey	4
Cultural Studies Elective [1]		3
Information Literature Elective [1]		3
ENGR 482	Engineering Design II	3
ENGV 492	FE Exam	0
Technical Elective [4]		3
	Hours	**16**
	Total Hours	**130-133**

1. Refer to the list of approved general education electives at General Education courses before enrolling in foundational skills requirements
2. Minimum grade of 'C' required
3. Required On-campus Intensive course
4. Choose from the following courses: ENGR 381, ENGV 415, ENGV 440, ENGV 455, ENGV 460
5. Choose from the following approved Science Courses: BIOL 101, ENVR 215, or ENVR 220