

Bachelor of Science in Civil Engineering

2022-2023 Degree Completion Plan

ONLINE

FOUNDATIONAL SKILLS REQUIREMENTS (41-44 hours)

Important: This degree plan is effective for those starting this degree program in fall 2022 through summer 2023. 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/

Course		Hrs	Sem	Grade	Course		<u>Hrs</u>	Sem	Gra
	tion & Information Literacy (12 hou					dational Courses (4-15 hours)			
ENGL 101	Composition & Rhetoric	3			ENGR 270	Technical Communication ³	3		-
	Communications Elective	3			MATH 131	Calculus & Analytical Geometry I ^{3,4}	4		
	Information Literacy Elective	3			MATH 132	Calculus & Analytical Geometry II ^{3,4}	4		
	Information Literacy Elective	3			PHYS 231	University Physics I ^{3,4}	4		
Technologic	al Solutions & Quantitative Reasonin	ıg (4-7	7 hours	1	MAJOR				
UNIV 104	Instructional Tech. for Online Learning	0-3				Core (68 hours)			
MATH	Math Elective (MATH 114 or higher)	4			CHEM 115	Essentials of General Chemistry	4		
					ENGI 220	Engineering Economy	3		_
Critical Thi	nking (7 hours) ¹				ENGR 105	Introduction to Engineering I	2		
RLGN 104	Christian Life & Biblical Worldview ²	4			ENGR 115	Introduction to Engineering II	2		_
	Critical Thinking Elective	3			ENGR 235	Statics	3		_
					ENGR 240	Dynamics	3		
Civic & Glo	bal Engagement (3 hours) ¹				ENGR 315	Fluid Dynamics	3		
	Cultural Studies Elective	3			ENGR 330	Mechanics of Materials	3		
					ENGR 381	Engineering Design Introduction	3		_
Social & Sci	entific Inquiry (7 hours) ¹				ENGR 481	Engineering Design I	3		
	Natural Science Elective	4			ENGR 482	Engineering Design II	3		
	Social Science Elective	3			ENGV 205	Computer Aided Design	1		
					ENGV 225	Surveying	2		
Christianity & Contexts (8 hours) ¹				ENGV 320	Civil Engineering Lab I ⁵	2			
BIBL 104	Survey of Old & New Testament	4			ENGV 325	Structural Analysis	3		
THEO 104	Introduction to Theology Survey ²	4		' <u></u>	ENGV 345	Soil Mechanics	3		
					ENGV 355	Civil Engineering Lab II ⁵	2		
					ENGV 365	Hydraulic Engineering	3		
					ENGV 380	Project & 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 ⁶	3		_
						<u>Technical Elective</u> (3 hours) ⁷			
							3		

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 <u>all</u> 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

PHYS 232 Notes

ENGR 133

ENGR 210

MATH 430

MATH 432

All applicable prerequisites must be met

¹Refer to the list of approved general education electives at www.liberty.edu/gened before enrolling in foundational skills requirements

3

3

Quantitative Studies (14 hours)

Applied Differential Equations

Prob. & Statistical Methods for Engr.

Calculus with MATLAB

Multivariable Calculus

University Physics II

²Students transferring in 45 or more UG credit hours will have the requirement of RLGN 104 waived; Students transferring in 60 or more UG credit hours will also have the requirement of THEO 104 waived

³Courses may also fulfill select General Education Requirements. Please refer to the list of approved general education electives at www.liberty.edu/gened

⁴Minimum grade of 'C' required

⁵Course offered in Intensive Format

⁶Choose from the following approved Science Courses: BIOL 101, ENVR 215, or ENVR 220 ⁷Choose from the following courses: ENGV 415, 440, 455, or 460

Suggested Course Sequence on second page

SUGGESTED COURSE SEQUENCE

FRESHMAN YEAR

RLGN 104	First Semester		Second Semester			
UNIV 104 Math Elective¹ [MATH 131]² A ENGI 220 ENGR 105 ENGR 133 L Total 14-17 SOPHOMORE YEAR Communications Elective¹ [ENGR 270] 3 ENGR 240 ENGR 235 ENGR 235 A ENGR 330 ENGR 235 A ENGR 240 ENGR 236 ENGR 295 A ENGR 295 A ENGR 296 ENGR 296 BATH 430	ENGL 101	3	MATH 132 ²			
Math Elective ¹ [MATH 131] ²	RLGN 104	4	Information Literature Elective ¹		3	
ENGR 105 ENGR 133 ENGR 133 ENGR 134-17 SOPHOMORE YEAR Communications Elective [ENGR 270] 3 CHEM 115 ENGR 210 SENGR 210 SENGR 235 SENGR 230 ENGR 235 SENGR 230 SENGR 225 MATH 430 SUNIOR YEAR Critical Thinking Elective 1 3 BIBL 104 Social Sciences Elective 1 3 ENGR 381 ENGR 315 SENGR 35 SENGR 36 ENGV 325 SENGV 345 SENGV 355 SENGV 355 SENGV 365 SENGV 365 SENGV 365 SENGV 365 SENGV 365 SENGV 365 SENGV 420 SENGR 482 SENGV 420 SENGV 425 Science Elective 4 SENGV 492 SCience Elective 4 SENGV 492 SCience Elective 5 SENGR 481 SENGV 492 SCience Elective 4 SENGV 492 SCience Elective 5 SENGR 481 SENGV 492 SCience Elective 4 SENGV 492 SCience Elective 4 SENGV 492 SCIENCY 492 S	UNIV 104	0-3	Natural Science Elective ¹ [PHYS 2	31] ²	4	
Total 1	Math Elective ¹ [MATH 131] ²	4	ENGI 220		3	
Total 14-17 Total 14-17 Total 14-17	ENGR 105	2	ENGR 115		2	
Communications Elective ¹ [ENGR 270] 3	ENGR 133	1		Total	16	
Communications Elective ¹ [ENGR 270] 3 CHEM 115 4 ENGR 210 3 ENGR 240 3 ENGR 235 3 ENGR 330 3 ENGR 235 4 ENGV 205 1 ENGV 225 2 ENGV 205 1 ENGV 225 2 ENGV 232 4 Total 17 Total 19 ENGV 325 3 ENGV 320 3 ENGV 325 3 ENGV 320 3 ENGV 325 3 ENGV 380 3 ENGV 345 3 ENGV 390 3 ENGV 395 3 ENGV 345 4 ENGV 316 ENGV 395 5 Total 18 Total 1 ENGV 355³ 2 Cultural Studies Elective¹ 3 ENGV 365 3 Information Literature Elective¹ 3 ENGV 420 2 ENGR 482 ENGV 420 5 ENGV 492 5 EN	Total	14-17				
ENGR 210 ENGR 235 ENGR 235 ENGR 236 ENGV 205 MATH 430 ATH 440 ATH 430 ATH 44	SOPI	HOMOR	E YEAR			
ENGR 235 ENGV 205 I ENGV 225 MATH 430 BHYS 232 A Total 17 JUNIOR YEAR	Communications Elective ¹ [ENGR 270]	3	CHEM 115		4	
ENGV 205 MATH 430 3 MATH 432 PHYS 232 4 Total 17 JUNIOR YEAR Critical Thinking Elective 1 Social Sciences Elective 1 3 BIBL 104 SOCIAL SCIENCES S	ENGR 210	3	ENGR 240		3	
MATH 430 PHYS 232 4 Total 17 JUNIOR YEAR Critical Thinking Elective ¹ Social Sciences Elective ¹ Social Sciences Elective ¹ SINGR 315 ENGR 315 ENGR 325 ENGV 325 ENGV 325 ENGV 345 ENGV 345 ENGV 345 ENGV 340 ENGV 390 ENGV 390 ENGV 390 ENGV 395 Total 18 SENIOR YEAR ENGR 481 ENGR 481 SENIOR YEAR ENGR 481 ENGV 355 ³ Cultural Studies Elective ¹ ENGV 365 Information Literature Elective ¹ ENGV 420 ENGV 425 Science Elective ⁴ ENGV 492 Science Elective ⁴ ENGR 481 ENGV 492 Science Elective ⁴ ENGV 492 Science Elective ⁴ ENGR 481 ENGR 482 ENGV 492 Science Elective ⁴ ENGR 481 ENGR 482 ENGR 482 ENGR 485 ENGR 485 ENGR 486 ENGR 487 ENGR 4888 ENGR 4889 ENGR 4890 ENGR 4890 ENGR 4891 ENGR 4891 ENGR 4892 ENGR 4892 ENGR 4892 ENGR 4893 ENGR 4894 ENGR	ENGR 235	3	ENGR 330		3	
PHYS 232 JUNIOR YEAR	ENGV 205	1	ENGV 225		2	
PHYS 232 JUNIOR YEAR	MATH 430	3	MATH 432		3	
Total 17 JUNIOR YEAR Social Sciences Elective 3 BIBL 104 4 4 4 5 5 5 6 6 6 6 6 6 6	PHYS 232	<u>4</u>		Total	15	
Critical Thinking Elective ¹ 3 BIBL 104 Social Sciences Elective ¹ 3 ENGR 381 ENGR 315 3 ENGV 320 ³ ENGV 325 ENGV 345 ENGV 345 ENGV 340 Total 18 SENIOR YEAR ENGR 481 ENGV 355 ³ 2 Cultural Studies Elective ¹ ENGV 365 ENGV 365 ENGV 420 2 ENGR 482 ENGV 425 Science Elective ⁴ 3 BIBL 104 4 ABUBL 104 ABUBL	Total					
Social Sciences Elective¹ 3 ENGR 381 3 ENGR 315 3 ENGV 320³ 2 ENGV 325 3 ENGV 380 3 ENGV 345 3 ENGV 390 3 ENGV 410 3 ENGV 395 3 Total 18 Total 1 Total 1 SENIOR YEAR ENGR 481 3 THEO 104 4 ENGV 355³ 2 Cultural Studies Elective¹ 3 ENGV 365 3 Information Literature Elective¹ 3 ENGV 420 2 ENGR 482 3 ENGV 425 3 ENGV 492 0 Science Elective⁴ 3 Technical Elective⁵ 3	и	UNIOR Y	EAR			
ENGR 315 ENGV 325 ENGV 345 ENGV 346 ENGV 410 SENIOR YEAR ENGR 481 ENGV 355³ ENGV 365 ENGV 365 ENGV 365 ENGV 420 ENGV 420 ENGV 425 Science Elective⁴ 3 ENGV 320³ ENGV 380 ENGV 390 ENGV 395 Total 18 Total 1 Total 1 SENIOR YEAR Total 1 SENIOR YEAR ENGR 481 3 THEO 104 4 ENGV 355³ 2 Cultural Studies Elective¹ 3 Information Literature Elective¹ 3 ENGV 420 5 ENGR 482 5 Science Elective⁴ 5 Technical Elective⁵ 5 Science Elective⁴	Critical Thinking Elective ¹	3	BIBL 104		4	
ENGV 325 ENGV 345 ENGV 346 ENGV 347 ENGV 410 SENIOR YEAR ENGR 481 ENGV 355³ ENGV 365 ENGV 365 ENGV 365 ENGV 365 ENGV 420 ENGV 420 ENGV 420 ENGV 425 Science Elective⁴ 3 ENGV 492 Science Elective⁴	Social Sciences Elective ¹				3	
ENGV 345 ENGV 410 3 ENGV 395 Total 18 SENIOR YEAR ENGR 481 ENGV 355³ 2 Cultural Studies Elective¹ ENGV 365 ENGV 420 ENGV 420 ENGV 425 Science Elective⁴ 3 ENGV 492 Science Elective⁴ 3 Technical Elective⁵ 3 ENGV 492 Science Elective⁴ 3 Technical Elective⁵	ENGR 315	3	ENGV 320 ³		2	
ENGV 410 Total 18 ENGV 395 Total 18 Total 1 SENIOR YEAR ENGR 481 ENGV 355³ 2 Cultural Studies Elective¹ ENGV 365 ENGV 365 ENGV 420 2 ENGR 482 ENGV 425 Science Elective⁴ 3 ENGV 492 Science Elective⁴ 3 Technical Elective⁵ 3 ENGV 492 Science Elective⁴	ENGV 325				3	
Total 18	ENGV 345		ENGV 390		3	
SENIOR YEAR ENGR 481 3 THEO 104 4 ENGV 3553 2 Cultural Studies Elective1 3 ENGV 365 3 Information Literature Elective1 3 ENGV 420 2 ENGR 482 3 ENGV 425 3 ENGV 492 0 Science Elective4 3 Technical Elective5 3	ENGV 410	<u>3</u>	ENGV 395		3	
ENGR 481 3 THEO 104 4 ENGV 355 ³ 2 Cultural Studies Elective ¹ 3 ENGV 365 3 Information Literature Elective ¹ 3 ENGV 420 2 ENGR 482 3 ENGV 425 3 ENGV 492 0 Science Elective ⁴ 3 Technical Elective ⁵ 3	Total	18		Total	18	
ENGV 355^3 2 Cultural Studies Elective ¹ 3 ENGV 365 3 Information Literature Elective ¹ 3 ENGV 420 2 ENGR 482 3 ENGV 425 3 ENGV 492 0 Science Elective ⁴ 3 Technical Elective ⁵ 3	SI	ENIOR Y	EAR			
ENGV 365 3 Information Literature Elective 1 3 ENGV 420 2 ENGR 482 3 ENGV 425 3 ENGV 492 0 Science Elective 4 3 Technical Elective 5 3	ENGR 481	3	THEO 104		4	
ENGV 365 3 Information Literature Elective 1 3 ENGV 420 2 ENGR 482 3 ENGV 425 3 ENGV 492 0 Science Elective 4 3 Technical Elective 5 3	ENGV 355 ³	2	Cultural Studies Elective ¹		3	
ENGV 425 3 ENGV 492 0 Science Elective $\frac{4}{3}$ Technical Elective $\frac{5}{3}$ $\frac{3}{4}$	ENGV 365	3	Information Literature Elective ¹		3	
Science Elective ⁴ <u>3</u> Technical Elective ⁵	ENGV 420	2	ENGR 482		3	
Science Elective ⁴ <u>3</u> Technical Elective ⁵	ENGV 425	3	ENGV 492		0	
——————————————————————————————————————	Science Elective ⁴	<u>3</u>	Technical Elective ⁵		3	
	Total	16		Total	16	

Revised: 03.09.2022 Effective: Catalog Term 2022-40

Notes

1 Refer to the list of approved general education electives at www.libertv.edu/gened before enrolling in foundational skills requirements

2 Minimum grade of 'C' required

3 Course offered in Intensive Format

4 Choose from the following approved Science Courses: BIOL 101, ENVR 215, or ENVR 220

5 Choose from the following courses: ENGV 415, 440, 455, 460