ELECTRICAL ENGINEERING (B.S.) - RESIDENT

Important: This degree plan is effective for those starting this degree program in fall 2025 through summer 2026. 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 101	Foundational Skills	1
Math Elective	MATH 114 or higher	4
Technology Competency [2]		0-3
Critical Thinking [1]		
RLGN 105	Introduction to Biblical Worldview [3]	2
Critical Thinking Elective		3
Civic & Global Engagement [1]		
EVAN 101	Evangelism and the Christian Life [3]	2
Cultural Studies Elective		3
Social & Scientific Inquiry [1]		
Natural Science Elective		4
Social Science Elective		3
Christianity & Contexts [1]		
BIBL 105	Old Testament Survey	2
BIBL 110	New Testament Survey	2
THEO 201	Theology Survey I [3]	2
THEO 202	Theology Survey II [3]	2
Total Hours		**42-45**

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

[2] All students must pass the Computer Assessment OR complete applicable INFT course

[3] Students transferring in 45 or more UG credit hours will have the requirements of RLGN 105 & EVAN 101 waived; Students transferring in 60 or more UG credit hours will also have the requirements of THEO 201 & THEO 202 waived

Major Requirements

Code	Title	Hours
Major Foundational Courses		
CSCN 111	Programming In C++ Beginner [1,2]	3
ENGR 270	Technical Communication [1,2]	3
MATH 131	Calculus and Analytic Geometry I [1,2]	4
MATH 132	Calculus and Analytic Geometry II [1,2]	4

Code	Title	Hours
PHYS 231	University Physics I [1,2,3]	4
Total Hours		**18**

[1] Course may fulfill select general education requirements.

[2] Minimum grade of "C" is required.

[3] Lab sciences courses require a lab.

Code	Title	Hours
Major Courses		
ENGC 361	Computer Architecture [1]	3
ENGE 201	Introduction to Logic Design [1]	3
ENGE 211	Introduction to Electrical and Electronic Circuits [1]	4
ENGE 212	AC Circuit Analysis [1]	4
ENGE 311	Signals and Systems [1]	3
ENGE 312	Digital Signal Processing [1]	3
ENGE 321	Electronics [1]	4
ENGE 331	Electromagnetic Fields [1]	4
ENGE 341	Communications Systems [1]	3
ENGE 411	Control Systems [1]	3
ENGE 421	Advanced Electronics [1]	3
ENGI 220	Engineering Economy [1]	3
ENGR 110	Introduction to Engineering Fundamentals [1]	3
ENGR 481	Engineering Design I [1]	3
ENGR 482	Engineering Design II [1]	3
Electrical Engineering Elective [2]		3
Technical Electives		
Technical Elective [1,3,4]		3
Technical Elective [1,3,4]		3
Quantitative Studies		
ENGR 210	Probability and Statistical Methods for Engineering [1]	3
MATH 221	Applied Linear Algebra [1]	3
MATH 231	Calculus and Analytical Geometry III [1]	4
MATH 234 or MATH 334	Introductory Differential Equations [1] Differential Equations	3
MATH 250	Introduction to Discrete Mathematics [1]	3
PHYS 232	University Physics II [1,5]	4
Total Hours		**78**

[1] Minimum grade of "C" is required.

[2] Choose from: ENGC 465, ENGE 351, ENGE 431, or ENGE 496.

[3] Select from the list of Approved Engineering Technical Elective Courses.

[4] ENGR 495 is strongly recommended.

[5] Lab science courses require a lab.

All applicable prerequisites must be met

Graduation Requirements

- **124** Total hours
- **2.0** Overall grade point average
- **31** Hours must be upper-level courses (300-400 level)

- **Grade of 'C'** Minimum required for all courses in the <u>major, quantitative studies, and technical electives</u>
- **25%** Of major, including technical electives and quantitative studies, taken through Liberty University
- **31** 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
- **CSER** All requirements must be satisfied before a degree will be awarded

Course Sequence

Freshman Year

First Semester

		Hours
BIBL 105	Old Testament Survey	2
ENGL 101	Composition and Rhetoric	3
ENGR 110	Introduction to Engineering Fundamentals [1]	3
MATH 131	Calculus and Analytic Geometry I [1]	4
RLGN 105	Introduction to Biblical Worldview	2
UNIV 101	Foundational Skills	1
Technology Competency [2]		0-3
CSER		0
	Hours	**15-18**

Second Semester

Communications Elective ENGR 270 [1,3]		3
Math Elective MATH 132 [1,3]		4
Natural Science Elective PHYS 231 [1,3]		4
BIBL 110	New Testament Survey	2
ENGI 220	Engineering Economy [1]	3
CSER		0
	Hours	**16**

Sophomore Year

Third Semester

Information Literacy Elective I CSCN 111 [1,3]		3
ENGE 211	Introduction to Electrical and Electronic Circuits [1]	4
MATH 231	Calculus and Analytical Geometry III [1]	4
MATH 250	Introduction to Discrete Mathematics [1]	3
CSER		0
	Hours	**14**

Fourth Semester

ENGE 201	Introduction to Logic Design [1]	3
ENGE 212	AC Circuit Analysis [1]	4
MATH 221	Applied Linear Algebra [1]	3
MATH 234 or MATH 334	Introductory Differential Equations [1] or Differential Equations	3
PHYS 232	University Physics II [1]	4
CSER		0
	Hours	**17**

Junior Year

Fifth Semester

ENGE 311	Signals and Systems [1]	3
ENGE 321	Electronics [1]	4
ENGE 331	Electromagnetic Fields [1]	4
ENGR 210	Probability and Statistical Methods for Engineering [1]	3
THEO 201	Theology Survey I	2
CSER		0
	Hours	**16**

Sixth Semester

ENGE 312	Digital Signal Processing [1]	3
ENGE 341	Communications Systems [1]	3
ENGE 421	Advanced Electronics [1]	3
THEO 202	Theology Survey II	2
Technical Elective [1,4]		3
CSER		0
	Hours	**14**

Senior Year

Seventh Semester

Critical Thinking Elective [3]		3
ENGC 361	Computer Architecture [1]	3
ENGE 411	Control Systems [1]	3
ENGR 481	Engineering Design I [1]	3
EVAN 101	Evangelism and the Christian Life	2
Electrical Engineering Elective [1,5]		3
CSER		0
	Hours	**17**

Eighth Semester

Cultural Studies Elective [3]		3
Information Literacy Elective II [3]		3
Social Science Elective [3]		3
ENGR 482	Engineering Design II [1]	3
Technical Elective [1,4,6]		3
CSER		0
	Hours	**15**
	Total Hours	**124-127**

[1] Minimum Grade of "C" is required.

[2] All students must pass the Computer Assessment OR complete applicable INFT course; refer to the Computer Assessment for more information.

[3] Refer to the list of approved general education electives before enrolling in foundational skills requirements.

[4] Select from the list of approved Engineering Technical Elective Courses.

[5] Choose 3 credits from ENGC 465, ENGE 351, ENGE 431, or ENGE 496

[6] ENGR 495 is strongly recommended.

All applicable prerequisites must be met