

MECHANICAL 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		
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		15

¹ Course may also fulfill select general education requirements.

² Minimum grade of "C" is required.

³ Lab science courses require a lab.

Code	Title	Hours
Major Courses		
CHEM 121	General Chemistry I ^{1,2}	4
ENGI 220	Engineering Economy ¹	3
ENGM 304	Instrumentation and Measurements ¹	3
ENGM 310	Materials Engineering ¹	3
ENGM 350	Computer-Aided Engineering ¹	3
ENGM 375	Thermal Fluids Design Lab ¹	2
ENGM 415	Design of Machine Components ¹	3
ENGR 110	Introduction to Engineering Fundamentals ¹	3
ENGR 235	Statics ¹	3
ENGR 240	Dynamics ¹	3
ENGR 313	Mechatronics ¹	4
	or ENGM 445 Material and Manufacturing Processing	
ENGR 315	Fluid Dynamics ¹	3
ENGR 320	Thermodynamics ¹	3
ENGR 330	Mechanics of Materials ¹	3
ENGR 360	Heat Transfer ¹	3
ENGR 385	Thermodynamics II ¹	3
ENGR 405	Dynamic Systems Modeling ¹	3
ENGR 481	Engineering Design I ¹	3
ENGR 482	Engineering Design II ¹	3
Technical Electives		
Technical Electives ^{1,2,3,4}		3
Technical Electives ^{1,2,3,4}		3
Quantitative Studies		
ENGR 210	Probability and Statistical Methods for Engineering	3
MATH 231	Calculus and Analytical Geometry III	4
MATH 234	Introductory Differential Equations	3
	or MATH 334 Differential Equations	
PHYS 232	University Physics II	4
MATH 302	Introduction to Experimental Design in Statistics	3
	or MATH 221 Applied Linear Algebra	
	or MATH 321 Linear Algebra	
Total Hours		81

¹ Minimum grade of "C" is required.

² Lab science courses require a lab.

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

⁴ ENGR 495 is strongly recommended.

All applicable prerequisites must be met

Graduation Requirements

- **127** Total hours
- **2.0** Overall grade point average
- **31.75** 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, including technical electives and quantitative studies, taken through Liberty University
- **31.75** 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

Course	Title	Hours
Freshman Year		
First Semester		
ENGL 101	Composition and Rhetoric	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
ENGR 102	Introduction to Engineering	1
ENGR 110	Introduction to Engineering Fundamentals	3
ENGR 133	Calculus with MATLAB	1
CSER		0
Hours		15-18
Second Semester		
BIBL 105	Old Testament Survey	2
INQR 101	Inquiry	1
Communications Elective	ENGR 270 ³	3
Mathematics Elective	MATH 132 1,3	4
Natural Science Elective	PHYS 231 1,3	4
ENGI 220	Engineering Economy	3
CSER		0
Hours		17
Sophomore Year		
First Semester		
BIBL 110	New Testament Survey	2
CHEM 121	General Chemistry I	4
ENGR 125	Visualization for Engineers	1
ENGR 235	Statics	3
MATH 231	Calculus and Analytical Geometry III ¹	4
PHYS 232	University Physics II	4
CSER		0
Hours		18
Second Semester		
RSCH 201	Research	3
ENGM 310	Materials Engineering	3
ENGR 210	Probability and Statistical Methods for Engineering	3

Course	Title	Hours
ENGR 240	Dynamics	3
ENGR 320	Thermodynamics	3
MATH 334	Differential Equations	3
CSER		0
Hours		18
Junior Year		
First Semester		
THEO 201	Theology Survey I	2
Information Literacy Elective ³		3
ENGR 315	Fluid Dynamics	3
ENGR 360	Heat Transfer	3
ENGR 385	Thermodynamics II	3
Technical Elective ⁴		3
CSER		0
Hours		17
Second Semester		
THEO 202	Theology Survey II	2
Critical Thinking Elective ³		3
ENGM 350	Computer-Aided Engineering	3
ENGM 375	Thermal Fluids Design Lab	2
ENGR 330	Mechanics of Materials	3
Technical Elective ⁴		3
CSER		0
Hours		16
Senior Year		
First Semester		
EVAN 101	Evangelism and the Christian Life	2
Cultural Studies Elective ³		3
ENGM 415	Design of Machine Components	3
ENGR 405	Dynamic Systems Modeling	3
ENGR 481	Engineering Design I	3
Technical Elective ^{4,5}		3
CSER		0
Hours		17
Second Semester		
Information Literacy Elective ³		3
Social Science Elective ³		3
ENGR 313	Mechatronics	4
ENGM 445	Material and Manufacturing Processing	4
ENGR 482	Engineering Design II	3
CSER		0
Hours		17
Total Hours		135-138

¹ Minimum grade of "C" is required

² All students must pass the Computer Assessment OR complete applicable INFT course; refer to www.liberty.edu/computerassessment for more information

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

⁴ Select from the list of Approved Engineering Technical Elective Courses

⁵ ENGR 495 Directed Research is strongly recommended