INDUSTRIAL & SYSTEMS ENGINEERING (B.S.) - RESIDENT

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/Foundational Skills Requirements

Code	Title	Hours
Communication & Information Literacy [1]		
ENGL 101	Composition and Rhetoric	3
INQR 101	Inquiry	1
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
RSCH 201	Research	3
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		**46-49**

[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 Introduction to Biblical Worldview (2 c.h.) & EVAN 101 Evangelism and the Christian Life (2 c.h.) waived; Students transferring in 60 or more UG credit hours will also have the requirements of THEO 201 Theology Survey I (2 c.h.) & THEO 202 Theology Survey II (2 c.h.) 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
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		
CSIS 111	Introduction to Programming Using C++	3
ENGI 220	Engineering Economy	3
ENGI 230	Production Systems	3
ENGI 300	Enterprise Forecasting	3
ENGI 305	Data Analysis Methods and Modeling	3
ENGI 330	Facilities Design	3
ENGI 340	Introduction to Operations Research: Deterministic Models	3
ENGI 350	Introduction to Operations Research: Probabilistic Models	3
ENGI 360	Engineering Information Systems	3
ENGI 420	Advanced Data Analysis and Machine Learning	3
ENGI 430	Decision Analysis	3
ENGI 450	Human Factors and Ergonomics	3
ENGI 460	Digital Simulation	3
ENGR 102	Introduction to Engineering	1
ENGR 110	Introduction to Engineering Fundamentals	3
ENGR 370	Quality Assurance	3
ENGR 381	Introduction to Optimum Design	3
ENGR 481	Engineering Design I	3
ENGR 482	Engineering Design II	3
Total Hours		**55**

Code	Title	Hours
Technical Elective Courses		
Technical Elective [1,2]		3
Technical Elective [1,2]		3
Technical Elective [1,2]		3
Total Hours		**9**

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

[2] ENGR 495 Directed Research (3 c.h.) is strongly recommended

Code	Title	Hours
Quantitative Studies Courses		
ENGR 133	Calculus with MATLAB	1
ENGR 210	Probability and Statistical Methods for Engineering	3
MATH 221	Applied Linear Algebra	3
MATH 231	Calculus and Analytical Geometry III	4

Code	Title	Hours
MATH 250	Introduction to Discrete Mathematics	3
MATH 334	Differential Equations	3
PHYS 232	University Physics II	4
Total Hours		**21**

All applicable prerequisites must be met

Graduation Requirements

- **135** Total hours
- **2.0** Overall grade point average
- **33.75** Hours must be upper-level courses (300-400 level)
- **Grade of 'C'** Minimum required for all upper-level courses in the major
- **25%** Of major, including technical electives and quantitative studies, taken through Liberty University
- **33.75** 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