SCHOOL OF ENGINEERING

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Administration

Mark Horstemeyer, B.S., M.S., Ph.D.
Dean, School of Engineering

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Associate Dean, School of Engineering

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Associate Dean, School of Engineering

Program Directors

A listing of program directors can be viewed on the Program Director webpage.

Research Intensive Courses

All research intensive courses are listed online on the Center for Research & Scholarship QEP Overview webpage.

Purpose

The School of Engineering functions with the purpose of teaching Christ-centered men and women with the values, knowledge, and skills critical for impacting engineering and the associated technologies for tomorrow's world. Established in the fall of 2007, the school has the long-term vision of creating and maintaining nationally recognized technology-related degrees, centers, institutes, and initiatives in education, research, training, and missions so that our Christ-centered graduates can have the greatest impact on tomorrow's world.

The school offers degrees that provide students with the skills, knowledge, and understanding of engineering necessary for impacting tomorrow's socio-technological culture.

Technical Electives

Certain degrees within the School of Engineering require specific technical electives to be completed as part of the degree. The intent of the technical electives is to enhance (i.e. deepen and/or broaden) the scientific, mathematical, technological, or engineering knowledge or experience of the student in his or her career potential and development.

The following stipulations must be followed when choosing allowable technical electives in any of the residential engineering degree programs.

Code	Title	Hours
Engineering Technical Electives		
AVIA 230	Unmanned Aerial Systems	3
CSCN 112	Programming in C++ Advanced	3
CSCN 215	Data Structures and Algorithms using C++	3
CSCN 326	Database Design and Management	3
CSCN 340	Information Security Concepts and Principles	3
CSCN 342	Computer Architecture	3
CSCN 345	Linux Operating System	3
CSCN 355	Network Architecture, Protocols, and Theory	3
CSCN 434	Programming Language Design and Compiler Theory	3
CSCN 443	Operating Systems Design	3
CSCN 461	Aspects of Computer Security-Defensive	3
ENGI 307	Data Analysis and Machine Learning	3
ENGI 428	CNC and Programming Logic Chips	3
MATH 302	Introduction to Experimental Design in Statistics	3
MATH 307	Introductory Number Theory	3
MATH 311	Probability and Statistics I	3
MATH 331	Complex Variables	3
MATH 332	Advanced Calculus	3
MATH 350	Discrete Mathematics	3
MATH 352	Numerical Analysis	3
MATH 402	Linear Regression	3
Any 200-400-level engineering (ENGC, ENGE, ENGI, ENGM, ENGR, ENGV) course offered residentially. [1,2]		

[1] The student is limited to 2 semesters of ENGR 495 at 3 credits per semester (which will give a total of 6 hours of technical electives) to count toward technical electives, as specified in the syllabus.
[2] Engineering technical electives transferred in must satisfy a Liberty University engineering specific 200, 300, 400 level course. Engineering transfer, XX courses do not satisfy this requirement, students must substitute for a current Liberty University engineering specific 200, 300, 400 level course barring special exceptions to the policy.

Code	Title	Hours
Major Specific Technical Electives		
CHEM 121	General Chemistry I [1]	4
ENGE 205	Electrical Systems [2]	3
ENGI 310	Operations and Research Logistics [2]	3
ENGI 371	Six Sigma, Lean and Kaizen [3]	3
FACS 243	Digital Drafting I [3]	3
MATH 221	Applied Linear Algebra [4,5]	3
or MATH 321	Linear Algebra	
PHYS 320	Thermodynamics [1]	3
or ENGR 320	Thermodynamics	

[1] Able to apply to the B.S. in Industrial and Systems Engineering, B.S. in Electrical Engineering, or B.S. in Computer Engineering degree
[2] Able to apply to the B.S. in Mechanical Engineering degree or B.S. in Industrial and Systems Engineering only
[3] Able to apply to the B.S. in Industrial and Systems Engineering degree only
[4] Only one course is able to satisfy the technical elective
[5] Able to apply to the B.S. in Mechanical Engineering degree only

The student is responsible for satisfying any prerequisites for the technical electives chosen and any requirements specified in the college catalog course description [e.g., courses such as the 497 Topics & 499 Internship courses require the permission of the instructor]. Under certain circumstances and where denoted, the course instructor, in consultation with the student's engineering advisor, has the option to approve or deny a student's technical elective choice.

Engineering Program Learning Outcomes

The student will be able to:

1. Identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics.
2. Apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors.
3. Communicate effectively with a range of audiences.
4. Recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts.
5. Function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives.
6. Develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions.
7. Acquire and apply new knowledge as needed, using appropriate learning strategies.

Programs

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- Civil Engineering Major (B.S.)
- Computer Engineering Major (B.S.)
- Electrical Engineering Major (B.S.)
- Industrial & Systems Engineering Major (B.S.)
- Industrial Engineering Technology Major (B.S.)
- Mechanical Engineering Major (B.S.)
- School of Engineering Minors