

Department of ENGINEERING

Mission Statement

The engineering program prepares graduates to be engineering leaders who are able to coordinate a multidisciplinary team to research, design, and implement solutions with consideration of standard procedures, ethical practices, contemporary technologies, and the impact on creation for God-honoring service to the profession, community, and world.

NOTE: WHEN A STUDENT RECEIVES A "U" GRADE FOR THE LAB PORTION OF A SCIENCE COURSE, HE/SHE RECEIVES CREDIT FOR THE COURSE, BUT THE COURSE DOES NOT COUNT FOR LABORATORY SCIENCE CREDIT IN CORE CURRICULUM.

Engineering Major Bachelor of Science

Students in the Engineering major learn to apply fundamental knowledge of mathematics, science, and engineering to the creative development of solutions to complex technical problems. The core curriculum provides students with an understanding of ideas that have shaped human thinking in engineering and the humanities, arts, and sciences. This broad perspective gives students the context to comprehend the intentions of God's plan for human activity and realize the environmental, economic, ethical, sustainability, social, and safety impact of their engineering designs on creation and mankind. Graduates are well prepared to pursue employment in industry and to pursue graduate studies in engineering and related fields. The degree is granted upon completion of credits specified on pages 46–47 (40 credits must be in 3000- or 4000-level courses).

- **Natural World** courses in core curriculum must include MAT3252 and PHY1202.
- Engineering students must have a laptop computer capable of running applications in Windows.

Engineering Core 60 cr

CHE1021	Principles of Chemistry I	4
EGR1005	Introduction to Engineering	4
EGR2105	Statics and Dynamics	4
EGR2107	Introduction to Electronics and Electrical Circuits	3
EGR2107L	Electronics and Electrical Circuits Laboratory	1
EGR2205	Mechanics of Materials	4
EGR2206	MATLAB	2
EGR2207	Thermodynamics	4
EGR3115	Materials Science and Engineering	4
EGR3215	Control Systems	4
EGR4311	Engineering Design I [WCE]	4
EGR4312	Engineering Design II [OCE]	4
MAT2122	Calculus and Analytic Geometry II	4
MAT2215	Linear Algebra	2
MAT3223	Calculus and Analytic Geometry III	4
MAT3252	Calculus-based Statistics (SEE NATURAL WORLD REQUIREMENT ABOVE)	4
MAT3335	Ordinary Differential Equations	4
PHY1201	Engineering Physics I	4

Emphasis 20 cr

Civil Engineering Emphasis (20 cr)

EGR3245	Structural Analysis	4
EGR3246L	Materials Laboratory for Civil Engineering	2
EGR3347	Geotechnical Engineering	4
EGR3348L	Soils and Concrete Laboratory	2

Technical Electives 8

Select from EGR-prefix courses at the 3000 or 4000 level. Students may not receive credit toward the major for both EGR3246L and EGR3326L.

Electrical Engineering Emphasis (20 cr)

EGR3235	Electronic Devices	4
EGR3236L	Digital Electronics Laboratory	2
EGR3337	Signals & Systems	4
EGR3338L	Communication Systems Laboratory	2

Technical Electives 8

Select from EGR-prefix courses at the 3000 or 4000 level. Students may not receive credit toward the major for both EGR3246L and EGR3326L.

Mechanical Engineering Emphasis (20 cr)

EGR3225	Fluid Mechanics	4
EGR3326L	Materials Laboratory for Mechanical Engineering	2
EGR3327	Heat and Mass Transfer	4
EGR3328L	Thermal-Fluids Laboratory	2

Technical Electives 8

Select from EGR-prefix courses at the 3000 or 4000 level or EGR4339. Students may not receive credit toward the major for both EGR3246L and EGR3326L.