

ELECTRICAL ENGINEERING

Degree: Bachelor of Science in Electrical Engineering
 Minor: Electrical Engineering
 Certificate: Electrical Engineering
 Department: Electrical and Computer Engineering
 Building 70, Room 116(850) 474-2963
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ece@uwf.edu
 College: Arts and Sciences
 Semester Hours Required for Degree: 130

Faculty: L. ter Haar (Chairperson), E. Bakhoum, A. Fuchs, T. Gilbar, S. Gorman, D. Harrell, M. Islam, M. Khabou, R. Manseur, K.T. Rigby, B. Shaer, W. Weber

The mission of the Department of Electrical and Computer Engineering (ECE) is to offer baccalaureate degree programs in electrical and computer engineering which serve the needs of the West Florida region, the State, and the nation.

The goal of the baccalaureate degree program is to prepare students to embark upon a professional career in electrical engineering or to begin graduate study.

Graduates will be known for the accomplishments in the early stage of their careers and they should:

- A. Develop electrical engineering solutions individually and through interdisciplinary teams within a global and societal context.
- B. Professionally and ethically engage in technical or business activity through engineering ability, communication skills, and knowledge.
- C. Continue professional growth through post-graduate education, continuing education, or professional activity.
- D. Contribute to the Northwest Florida regional economic development.

Electrical Engineering is science-oriented and primarily concerned with all phases and development of the transmission and utilization of electric energy and intelligence. The study of electrical engineering is commonly divided into the academic areas of circuits, electronics, electromagnetics, electrical energy systems, communications, control, and computer engineering. Because of the extremely rapid growth and changes relating to the application of electrical engineering principles, the curriculum is designed to concentrate on a solid core of foundation courses. Twelve hours of electives are included to permit a student to delve deeply into selected subject matter.

Electrical Engineers find career opportunities in a wide area of settings such as aerospace contractors, manufacturers of consumer electronics,

telecommunications, energy distribution, and public-sector positions with federal, state, and local governments.

PROGRAM REQUIREMENTS

Students must complete all seven common prerequisite courses with a grade of "C" or better in each technical course with an overall GPA of 2.3 (4.0 scale) by the term they are admitted. Laboratories are required for chemistry and both physics courses, but the grades are not considered in the technical GPA. Only the last attempt will be considered in computing the technical GPA for admission.

Students are required to have a laptop or tablet PC. Students should check with the department for minimum hardware configurations. In addition to general University requirements, students seeking the B.S. in Electrical Engineering must meet the requirements listed below.

A minimum course grade of "C" or better is required in all electrical engineering core courses (EEL3111, 3112, 3135, 3472, and 3701, and EEE 3396 and 3308), and all other courses that serve as prerequisites to all EGN, EEL, or EEE prefixed courses and labs. A minimum grade of "C" is also required on EGN 4410, EGN 4411L, ENC 3240, and STA 4321.

The electrical engineering curriculum is designed to yield 13 outcomes. Each upper division course in the program contributes to at least one of these outcomes. A student must demonstrate each outcome achievement in at least one course to satisfy the graduation requirements. Contact the department for a list of the outcomes.

All students must complete an exit interview with their advisor and submit a copy of their senior design report before graduating.

Students should consult with their academic advisor for courses which may satisfy both the General Studies requirements and common prerequisites.

General Studies (24 sh)

It is recommended that students take a course in literature, ECO 2013, EUH 1001, PHI 2603, fine arts, and behavioral science.

Common Prerequisites (27 sh)

State mandated common prerequisites must be completed prior to admission to the program. Courses in brackets indicate substitutes from Florida public community/junior colleges and universities.

+CHM	2045/L	General Chemistry I/Lab..... 4 [CHS X440 or CHM X045C]
+MAC	2311	Analytic Geometry & Calculus I 4 [MAC X311, X281]
+MAC	2312	Analytic Geometry & Calculus II 4 [MAC X312, X382]
MAC	2313	Analytic Geometry & Calculus III 4 [MAC X313, X283]
MAP	2302	Differential Equations 3 [MAC X302]
+PHY	2048/L	University Physics I/Lab 4 [PHY X048/L or PHY X048C]
PHY	2049/L	University Physics II/Lab 4 [PHY X049/L or PHY X049C]

+ Indicates common prerequisites which can be used to satisfy General Studies requirements.

Lower Division Electives (0 sh)

Major (70 sh)

EEL 3111	Circuits I.....	3
EEL 3112	Circuits II.....	3
EEL 3135	Discrete-Time Signals & Systems	3
EEL 3211	Basic Electric Energy Engineering	3
EEL 3117L	Electric Circuits Laboratory	1
EEE 3308	Electronic Circuits I	3
EEE 3396	Solid-State Electronic Devices	3
EEL 3472	Electromagnetic Fields & Applications I.....	3
EEL 3701/L	Digital Logic & Computer Systems/Lab	4
EEE 4308L	Electronics Laboratory	1
EEE 4306/L	Electronic Circuits II/Lab	4
EEL 4514/L	Communication Systems & Components/Lab4	
EEL 4657/L	Linear Control Systems/Lab	4
EEL 4744/L	Microprocessor Applications/Lab.....	4
EEL 4834	C++ Programming for Electrical Engineers...	3
EGM 2500	Engineering Mechanics - Statics	2
EGM 4313	Intermediate Engineering Analysis	3
EGN 3203	Engineering Software Tools	1
EGN 4032	Professional Ethics	3
EGN 4410	Capstone Design I	1
EGN 4411L	Capstone Design II	2
EEL/EEE Electives.....		12

Maximum of 3 sh in EEL 4949 and maximum of 3 sh in EEL 4905. Also, a maximum of 2 credits of Engineering Internship (EEL 4xxx) will be accepted. A maximum of 3 credits of EEL 4949/4xxx(combination of co-op and internship) will be accepted as elective credits. Consult the Department for the current list of approved EEL/EEE Elective courses.

Major-Related (9 sh)

STA 4321	Introduction to Mathematical Statistics I	3
Advisor approved professional development elective.....		3

Choose one:

EGM 3401	Engineering Mechanics - Dynamics	3
EIN 4354	Engineering Economy.....	3

Consult the department for the current list of approved professional development elective courses.

Upper Division Electives (0 sh)

MINOR

This minor provides an opportunity for students majoring in other areas to take a limited number of electrical engineering courses to complement their majors. The Minor in Electrical Engineering is open to all UWF students with the exception of computer and electrical engineering majors. Students applying for the minor must have a declared major. Students may not take a course and its prerequisite during the same semester.

Students must complete all seven common prerequisite courses with a grade of "C" or better in each technical course with an overall GPA of 2.3 (4.0 scale) by the term they are admitted. Laboratories are required for chemistry and both physics courses, but the grades are not considered in the technical GPA. Only the last attempt will be considered in computing the technical GPA for admission.

Students seeking the Minor in Electrical Engineering must have a minimum course grade of "C" or better in all electrical engineering courses and prerequisites to other EEL courses and labs.

Common Prerequisites (27 sh)

CHM 2045/L	General Chemistry I/Lab.....	4
PHY 2048/L	University Physics I/Lab.....	4
PHY 2049/L	University Physics II/Lab.....	4
MAC 2311	Analytic Geometry I	4
MAC 2312	Analytic Geometry II	4
MAC 2313	Analytic Geometry III	4
MAP 2302	Differential Equations.....	3

Required courses:

EEL 3111	Circuits I	3
EEL 3303L	Electric Circuits Laboratory	1

EEL Electives:

Any EEL 3000-4000 courses, except EEL 3003 and EEL 483411 Students may use EGN 4034 Professional Ethics (3 sh) as an elective, but a minimum grade of C is required.