

ELECTRICAL ENGINEERING

Degree: Bachelor of Science in Electrical Engineering
 Minor: Electrical Engineering
 Department: Electrical and Computer Engineering
 Building 70, Room 116(850) 474-2963
<http://uwf.edu/ece>
ece@uwf.edu
 College: Arts and Sciences
 Semester Hours Required for Degree: 126

Faculty: M. Law (UF Chairperson), M. Rashid (Director), R. Avant, M. Bataineh, A. Fuchs, T. Gilbar, S. Gorman, D. Harrell, 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 either individually or 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.

The UWF/UF Joint Program in Electrical and Computer Engineering is a cooperative arrangement between the University of West Florida (UWF) and the University of Florida (UF). Courses are taught on the UWF Pensacola and Ft. Walton Beach campuses. The degree is awarded by UF and is identical to the one offered students on the Gainesville campus and is accredited by ABET (Accreditation Board for Engineering and Technology).

The transfer of the electrical and computer engineering programs from UF to UWF will be completed by December 31, 2008. Students graduating from this program after December 2008 will be awarded a UWF degree. All students graduating prior to December 31, 2008 will receive a degree from UF. Students who were admitted to UWF before August 8, 2004, and are not able to complete the degree requirements by December 31, 2008, will have the option of transferring to Gainesville for the completion of the degree from UF.

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. Fifteen 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

The number of applicants who can be accepted is limited by the available classroom and laboratory space, laboratory facilities, and faculty. It is the department's policy to admit the best qualified applicants as demonstrated by high academic achievement within the enrollment limitations discussed above. Admission is directly tied to student's performance in physics and calculus courses, because subsequent work is intimately related to these disciplines. The currently accepted minimum requirements for admission to the program include completion of all eight common prerequisite courses with a grade of "C" or better in each, with an overall GPA of 2.5 (4.0 scale) in Physics courses, an overall GPA of 2.5 (4.0 scale) in Math courses, and an overall GPA of 2.5 (4.0 scale) in Chemistry I and either Chemistry II or Biology. Only the first two attempts (including withdrawals, drops, audits, etc.) will be considered in determining whether the minimum grade of "C" has been achieved and in calculating the overall GPA in common prerequisite areas. A student must be accepted into the program before the last 30sh are completed. During the semester prior to the graduation term, the student's record is officially transferred to Gainesville where it is reviewed to certify that the particular course selections satisfy all graduation requirements.

Effective fall 2006, students are required to have a laptop 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, 3304, 3396, 3472, and 3701), and in all computer science courses and labs (COT, CEN, CIS, CDA or COP prefix) prerequisites to other EEL and CS courses and labs. A minimum grade of "C" is also required on EEL 4914C, ENC 3240, and all computer science courses.

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 two courses 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.

Course descriptions are listed alphabetically by prefix in the back of this *Catalog*.

General Studies (30 sh)

Assumes Advanced Placement Credits in ENC 1101 and ENC 1102 by UF. Must include a course in literature, ECO 2013, EUH 1001, PHI 2603 and either Fine Arts or Behavioral Science. PHI 2600 should not be taken.

Common Prerequisites (33 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/Lab4 [CHS x440]
+ MAC 2311	Analytic Geometry & Calculus I4 [MAC x311, x281]
+ MAC 2312	Analytic Geometry & Calculus II4 [MAC x312, x382]
MAC 2313	Analytic Geometry & Calculus III4 [MAC x313, x283]
MAP 2302	Differential Equations3 [MAC x302]
+ PHY 2048/L	University Physics I/Lab4
PHY 2049/L	University Physics II/Lab4 General Elective3

Choose one:

CHM 2046	General Chemistry II3 Approved Biological Science3
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+ Indicates common prerequisites which can be used to satisfy General Studies requirements.

Computer Requirement (3 sh)

Choose one:

EEL 4834	C++ Programming for Electrical Engineers3
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Major (57 sh)

EEL 3111	Circuits I3
EEL 3112	Circuits II3
EEL 3135	Discrete-Time Signals & Systems3
EEL 3211	Basic Electric Energy Engineering3
EEL 3303L	Electric Circuits Laboratory1
EEL 3304	Electronic Circuits I3
EEL 3396	Solid-State Electronic Devices3
EEL 3472	Electromagnetic Fields & Applications I3
EEL 3701/L	Digital Logic & Computer Systems/Lab4
EEL 4304L	Electronics Laboratory1
EEL 4306C	Electronic Circuits II3
EEL 4514	Communication Systems & Components3
EEL 4514L	Communication Lab1
EEL 4657	Linear Control Systems3
EEL 4657L	Linear Controls Lab1
EEL 4744/L	Microprocessor Applications4
EEL 4914C	Electrical Engineering Design3
EEN 4034	Professional Ethics1
EEL Electives11

Maximum of 3 sh in EEL 4949 and maximum of 4 sh in EEL 4905, and maximum of 7 sh in EEL 4905/4949 combination. Consult the department for the current list of approved EEL elective courses. EEL 4834 cannot be used as an EEL elective.

Major-Related (18 sh)

EGM 2500	Engineering Mechanics - Statics2
EGM 4313	Intermediate Engineering Analysis4
ENC 3240	Technical Writing3

Choose one:

STA 3032	Engineering Statistics3
STA 4321	Introduction to Mathematical Statistics I3

Choose two:

EGM 3401	Engineering Mechanics - Dynamics3
EIN 4354	Engineering Economy3
MAS 3105	Linear Algebra3

Consult the department for the current list of approved technical elective courses.

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 who apply for the minor must meet the same prerequisite requirements as electrical engineering students. The currently accepted minimum requirements for the minor include completion of all eight Electrical Engineering common prerequisite courses with a grade of "C" or better in each, with an overall GPA of 2.5 (4.0 scale) in Physics courses, an overall GPA of 2.5 (4.0 scale) in Math courses, and an overall GPA of 2.5 (4.0 scale) in Chemistry I and either Chemistry II or Biology. Only the first two attempts (including withdrawals, drops, audits, etc.) will be considered in determining whether the minimum grade of "C" has been achieved and in calculating the GPA in common prerequisite areas.

CHM 2045/L	General Chemistry I/Lab4
PHY 2048/L	University Physics I/Lab4
PHY 2049/L	University Physics II/Lab4
MAC 2311	Analytic Geometry I4
MAC 2312	Analytic Geometry II4
MAC 2313	Analytic Geometry III4
MAP 2302	Differential Equations3

Choose one:

CHM 2046	General Chemistry II3
BSC 1005	General Biology for Non-Majors3

Required courses:

EEL 3111	Circuits I3
EEL 3303L	Electric Circuits Laboratory1

EEL Electives:

Any EEL 3000-4000 courses, except EEL 3003 and EEL 483411
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