

DEPARTMENT OF ELECTRICAL ENGINEERING (ELE)

Ibrahim Abdel-Motaleb, Acting Chair and Professor

Phone: 815-753-9974

Fax: 815-753-1289

The Department of Electrical Engineering offers a B.S. in electrical engineering which will equip students with basic competence and job skills needed to design, develop, and operate systems which generate and use electronic signals. These technologies include machinery, electronics, communications, and computers.

Mission Statement:

The Electrical Engineering Department of the College of Engineering and Engineering Technology joins the university in its commitment to the transmission, expansion, and application of knowledge through teaching, research, and public service. In this commitment, the Electrical Engineering Department will feature close interaction with area industries and foster an ongoing exchange of ideas to benefit its students, alumni, and the community at large.

Electrical Engineering Program Educational Objectives

As individual and as members of a team, our graduates will be able to:

1. Demonstrate the ability to formulate, analyze and solve electrical engineering problems and ensures the ability to handle current, as well as, future engineering issues.
2. Demonstrate the ability to apply the design process to engineering problems.
3. Communicate effectively with those inside and outside of electrical engineering.
4. Exhibit social and professional responsibility in a global context.

Electrical Engineering Program Outcomes

Our graduates have:

1. Ability to apply knowledge of mathematics, science, and engineering.
2. Ability to design and conduct experiments, as well as to analyze and interpret data.
3. Ability to design a system, component, or process to meet desired needs.
4. Ability to function on multi-disciplinary teams.
5. Ability to identify, formulate, and solve engineering problems.
6. Understanding of professional and ethical responsibility.
7. Ability to communicate effectively.
8. Broad education necessary to understand the impact of engineering solutions in a global and societal context.
9. Recognition of the need for, and an ability to engage in life-long learning.
10. Knowledge of contemporary issues.
11. Ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.

Department Requirements

Candidates for the Bachelor of Science degree in electrical engineering must select their general education courses in the humanities and the arts, social sciences, and interdisciplinary studies to satisfy both university and the accrediting agency (Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology) requirements. These requirements are described under "Special General Education Requirements for Electrical, Industrial, and Mechanical Engineering Majors" in the College of Engineering and Engineering Technology section of the undergraduate catalog. Students must consult with their faculty advisers to determine appropriate courses.

All electrical engineering students must have their schedule reviewed, approved, and signed by their faculty adviser each semester. Any deviation from an approved course schedule may delay graduation.

During the senior year, electrical engineering majors complete a two-semester senior design project which is the capstone of the electrical engineering curriculum.

Suggested 4-Year Degree Plan (Electrical & Computer Engineering Emphasis)
(2009-2010 Undergraduate Catalog)

FRESHMAN YEAR					
FIRST SEMESTER: Total 15 Hours			SECOND SEMESTER: Total 18 Hours		
ENGL 103	Rhetoric and Composition I	3	ENGL 104	Rhetoric and Composition II	3
MATH 229 ¹	Calculus I	4	MATH 230	Calculus II	4
PHYS 253	Fund of Physics I: Mechanics	4	PHYS 273	Fund of Physics II: Electromagnetism	4
UEET 101	Introduction to Engineering	1	CSCI 240	Computer Programming in C++	4
GEN-ED ²	Humanities from LA&S	3	GEN-ED ²	Humanities from V&PA	3
SOPHOMORE YEAR					
FIRST SEMESTER: Total 18 Hours			SECOND SEMESTER: Total 17 Hours		
MATH 232	Calculus III	4	ELE 250	Computer Engineering I	4
CHEM 210 + 212	General Chemistry I & Lab	4	MATH 336	Ordinary Differential Equations	3
ELE 210 + 210U	Engineering Circuit Analysis & Lab	4	ELE 340	Electrical Power Systems	4
STAT 350	Intro to Probability and Statistics	3	PHYS 283	Fund of Physics III: Quantum Physics	3
or ISYE 335	Statistics for Engineering (3)		GEN-ED ²	Humanities from LA&S or V&PA	3
COMS 100	Fund of Oral Communication	3			
JUNIOR YEAR					
FIRST SEMESTER: Total 18 Hours			SECOND SEMESTER: Total 14 Hours		
ELE 315	Signals and Systems	3	ELE 360	Communications Systems	4
ELE 330	Electronic Circuits	4	ISYE 220	Engineering Economy	3
ELE 335	Theory of Semiconductor Dev I	3	ELE 370	Engineering Electromagnetics	3
ELE 356	Computer Engineering II	4	ELE 380	Control Systems I	4
MEE 209	Engineering Mechanics: Statics and Dynamics	4			
SENIOR YEAR					
FIRST SEMESTER: Total 16 Hours			SECOND SEMESTER: Total 15 Hours		
ELE 491	Electrical Engineering Dsgn Proposal	1	ELE 492	Electrical Engineering Dsgn Project	3
TECH ELE ³	Technical Elective	3	or ELE 429	Biomedical Engineering Dsgn Project	
TECH ELE ³	Technical Elective	3	TECH ELE ³	Technical Elective	3
TECH ELE ³	Technical Elective	3	TECH ELE ³	Technical Elective	3
GEN-ED ²	Social Science	3	TECH ELE ³	Technical Elective	3
GEN-ED ²	Interdisciplinary	3	GEN-ED ²	Social Science	3

TOTAL HOURS FOR DEGREE PROGRAM: 131

¹Need placement examination.

²Your adviser must approve your general education courses.

³Electives may be any ELE course numbered 400 or higher with the exception of ELE 429, ELE 491, ELE 492, and ELE 497. With the approval of the Department of Electrical Engineering, other mathematics, sciences, or engineering courses may be used as electives. At least 12 of these 18 semester hours must be from the Department of Electrical Engineering. Also, see "Department Requirement."