

Program Change Request

Date Submitted: 10/23/17 12:46 pm

Viewing: **ELEGBS : Electrical Engineering, Bachelor of Science in Electrical Engineering**

Last approved: 06/06/16 11:31 am

Last edit: 11/03/17 4:11 pm

Changes proposed by: cjhovar

Catalog Pages Using this Program [Electrical Engineering B.S.E.E.](#)
[Electrical Engineering \(ELEG\)](#)

In Workflow

1. ENGR Dean Initial
2. Director of Program Assessment and Review
3. Registrar Initial
4. ELEG Chair
5. ENGR Curriculum Committee
6. ENGR Faculty
7. ENGR Dean
8. Global Campus
9. Provost Review
10. University Course and Program Committee
11. Faculty Senate
12. Provost Final
13. Provost's Office-- Notification of Approval
14. Registrar Final
15. Catalog Editor Final

Submitter:	User ID:	crsleaf1	Phone:	575-3008
Program Status	Active			
Academic Level	Undergraduate			
Type of proposal	Major/Field of Study			
Select a reason for this modification				
Making Minor Changes to an Existing Degree (e.g. changing 15 or fewer hours, changing admission/graduation requirements, adding Focused Study)				
Are you adding a concentration?	No			
Are you adding a track?	No			
Are you adding a focused study?	No			
Effective Catalog Year	Fall 2018			
College/School Code	College of Engineering(ENGR)			
Department Code	Department of Electrical Engineering(ELEG)			
Program Code	ELEGBS			
Degree	Bachelor of Science in Electrical Engineering			
CIP Code	14.1001 - Electrical and Electronics Engineering			
Program Title	Electrical Engineering, Bachelor of Science in Electrical Engineering			
Program Delivery Method	On Campus			
Is this program interdisciplinary?				
No				
Does this proposal impact any courses from another College/School?				
No				
What are the total hours needed to complete the program?	125			

Approval Path

1. 10/24/17 3:23 pm Norman Dennis (ndennis): Approved for ENGR Dean Initial
2. 10/28/17 3:29 pm Alice Griffin (agriffin): Approved for Director of Program Assessment and Review
3. 11/03/17 4:11 pm Lisa Kulczak (lkulcza): Approved for Registrar Initial
4. 11/03/17 10:20 pm Juan Balda (jbalda): Approved for ELEG Chair
5. 11/07/17 1:49 pm Manuel Rossetti (rossetti): Approved for ENGR Curriculum Committee
6. 11/07/17 1:51 pm ~~Norman Dennis~~ (ndennis): Approved for ENGR Faculty
7. 11/07/17 4:37 pm Norman Dennis

Program Requirements and Description

Requirements

Undergraduate Program in Electrical Engineering

The educational objectives for the undergraduate program, which leads to a Bachelor of Science degree in electrical engineering, are to produce graduates who:

- Are recruited in a competitive market and valued as reliable and competent employees by a wide variety of industries, in particular, electrical and computer engineering industries;
- Succeed, if pursued, in graduate studies such as engineering, science, law, medicine, business, and other professions;
- Understand the need for life-long learning and continued professional development for a successful and rewarding career; and
- Accept responsibility for leadership roles in their profession, in their communities, and in the global society.

Therefore, the electrical engineering curriculum is designed to provide students with knowledge of scientific principles and methods of engineering analysis to form a solid foundation for a career in design, research and development, manufacturing and processing, measurement and characterization, or management. Students progressively build their design experience throughout the curriculum and demonstrate this ability in the senior electrical engineering design laboratories. The curriculum also introduces students to subjects in the humanities, social sciences, and ethics so they may better understand the interaction of technology and society.

The electrical engineering curriculum is divided into three phases. The first year concentrates on the development of a sound understanding of basic sciences and mathematics. The second and third years further develop scientific principles and cover the basic core of electrical engineering. The fourth year is composed primarily of senior-level elective courses. At this time, the students in consultation with their advisers may choose classes related to one or more of the major areas of electrical engineering detailed (e.g., analog and mixed-signal circuit design/test, biomedical, communications, computer hardware and digital circuit design, control systems, electronic packaging, embedded systems design, microwave and radar engineering, nanophotonics, nanotechnology/microelectronics/optoelectronics, pattern recognition and artificial intelligence, power electronics, and renewable energy and power). This final year permits the student to tailor a program suited to her or his individual career objectives. The graduation requirement in electrical engineering is 125 semester hours as given below.

- (ndennis): Approved for ENGR Dean
- 8. 11/08/17 1:13 pm
Kiersten Bible
(kbible): Approved for Global Campus
- 9. 11/10/17 10:36 am
Terry Martin
(tmartin): Approved for Provost Review
- 10. 11/20/17 2:51 pm
Alice Griffin
(agriffin): Approved for University Course and Program Committee

History

- 1. Aug 15, 2014 by
Leepfrog
Administrator
(clhelp)
- 2. Mar 24, 2015 by
Connie Howard
(cjhowar)
- 3. Oct 27, 2015 by
Connie Howard
(cjhowar)
- 4. Jun 6, 2016 by
Charlie Alison
(calison)

8-Semester Plan

Electrical Engineering B.S.E.E. Eight-Semester Degree Program

The following section contains the list of courses required for the Bachelor of Science in Electrical Engineering and a suggested eight-semester sequence. See the [Eight-Semester Degree Policy](#) for more details. Not all courses are offered every semester, so students who deviate from the suggested sequence must pay careful attention to course scheduling and course prerequisites.

First Year	Units
	FallSpring
GNEG 1111 Introduction to Engineering I (Sp, Fa)	1
ENGL 1013 Composition I (ACTS Equivalency = ENGL 1013) (Sp, Su, Fa)	3
MATH 2554 Calculus I (ACTS Equivalency = MATH 2405) (Sp, Su, Fa)	4
CHEM 1103 University Chemistry I (ACTS Equivalency = CHEM 1414 Lecture) (Su, Fa)	3
PHYS 2054 University Physics I (ACTS Equivalency = PHYS 2034) (Sp, Su, Fa)	4
GNEG 1121 Introduction to Engineering II (Sp, Fa)	1
ENGL 1023 Composition II (ACTS Equivalency = ENGL 1023) (Sp, Su, Fa)	3
MATH 2564 Calculus II (ACTS Equivalency = MATH 2505) (Sp, Su, Fa)	4
Select one of the following:	3
HIST 2003 History of the American People to 1877 (ACTS Equivalency = HIST 2113) (Sp, Su, Fa)	
HIST 2013 History of the American People, 1877 to Present (ACTS Equivalency = HIST 2123) (Sp, Su, Fa)	
PLSC 2003 American National Government (ACTS Equivalency = PLSC 2003) (Sp, Su, Fa)	
Freshman Science Elective II*	4
Year Total:	15 15
Second Year	
	Units
	FallSpring
ELEG 2104 Electric Circuits I (Fa)	4
ELEG 2904 Digital Design (Fa)	4
Sophomore Science Elective**	4
MATH 2584 Elementary Differential Equations (Sp, Su, Fa)	4

CSCE 2004 Programming Foundations I (Sp, Fa)	4
ELEG 2114 Electric Circuits II (Sp)	4
MATH 2574 Calculus III (ACTS Equivalency = MATH 2603) (Sp, Su, Fa)	4
Humanities Elective (from University/State Core List)	3
Year Total:	16 15
Third Year	
	Units FallSpring
ELEG 3124 System & Signal Analysis (Fa)	4
ELEG 3214 Electronics I (Fa)	4
ELEG 3924 Microprocessor Systems Design (Fa)	4
ELEG 3704 Applied Electromagnetics (Fa)	4
ELEG 3143 Probability & Stochastic Processes (Sp)	3
ELEG 3224 Electronics II (Sp)	4
ELEG 3304 Energy Systems (Sp)	4
Social Science Elective (from University/State Core List)	3
Math/Science/Technical Elective	3
Year Total:	16 17
Fourth Year	
	Units FallSpring
Engineering Science/Technical Elective***	3
Two Electrical Engineering Technical Elective****	6
ELEG 4063 Electrical Engineering Design I (Sp, Fa)	3
Select one of the following:	3
ECON 2013 Principles of Macroeconomics (ACTS Equivalency = ECON 2103) (Sp, Su, Fa)	
ECON 2023 Principles of Microeconomics (ACTS Equivalency = ECON 2203) (Sp, Su, Fa)	
ECON 2143 Basic Economics: Theory and Practice (Sp, Su, Fa)	
Electrical Engineering Technical Elective****	3
ELEG 4071 Electrical Engineering Design II (Sp, Fa)	1
Two Technical Elective	6
Social Science Elective (from University/State Core List)	3
Fine Arts Elective (from University Core)	3
Year Total:	15 16
Total Units in Sequence:	125
<p>* Freshman Science Elective -CHEM 1123/CHEM 1121 University Chemistry II or PHYS 2074 University Physics II (ACTS Equivalency = PHYS 2044 Lecture) (Sp, Su, Fa)</p> <p>** If CHEM 1123/CHEM 1121 University Chemistry II was taken for Freshman Science Elective, then PHYS 2074 University Physics II</p> <p> If PHYS 2074 University Physics II was taken for the Freshman Science Elective, then CHEM 1123/CHEM 1121 University Chemistry II or BIOL 1543/BIOL 1541L Principles of Biology or BIOL 2213/BIOL 2211L Human Physiology, PHYS 2094 University Physics III</p> <p>*** Engineering Science/Technical Elective: MEEG 2103 Introduction to Machine Analysis (Sp, Su), MEEG 2303 Introduction to Materials (Sp, Fa), MEEG 2403 Thermodynamics (Sp, Su, Fa), CHEG 2313 Thermodynamics of Single-Component Systems (Sp, Su, Fa), INEG 2413 Engineering Economic Analysis (Sp, Fa), or another Technical Elective</p> <p>**** CSCE 4114, CSCE 4613, CSCE 4233 are approved ELEG Technical Electives for students pursuing a dual ELEG / CSCE undergraduate degree.</p> <p>Students should become very familiar with the Academic Regulations chapter for university requirements that apply to the electrical engineering program as well as the College of Engineering requirements (in particular the "D rule" and the "Transfer of Credit" for courses taken at another institution). In addition to these graduation requirements, candidates for an electrical engineering degree must have earned a grade-point average of no less than 2.00 on all ELEG courses.</p>	

No	Are Similar Programs available in the area?
Estimated Student Demand for Program	300
Scheduled Program Review Date	2020-2021 2020
Program Goals and Objectives	
	Program Goals and Objectives
Per ABET	
Learning Outcomes	
	Learning Outcomes
Per ABET	

Description and justification of the request

Description of specific change	Justification for this change
Adding INEG 2413, Engineering Economic Analysis as an Engineering Science/Technical Elective.	This change was approved by the ELEG faculty in a recent faculty meeting to give students an additional option for electives.

Upload attachments

Reviewer Comments **Alice Griffin (agriffin) (10/28/17 3:29 pm)**: Changed effective catalog date from spring 2018 to fall 2018. Program changes go into effect at the beginning of the catalog term, not mid-year. Hyper-linked INEG 2413 in eight semester plan. Added 2021 to program review information.

Lisa Kulczak (lkulcza) (11/03/17 4:10 pm): Per discussion with dean's office, removed references to CHEM for Engineers courses, which are no longer active. It is still the college's intent for those courses to meet degree requirements, for all students who previously took them instead of University Chem I/II.

Key: 496