

Date Submitted: 04/22/20 7:21 pm

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

Last approved: 05/01/18 11:50 am

Last edit: 08/24/20 5:16 pm

Changes proposed by: rsaunder

Catalog Pages Using
this Program

[Electrical Engineering B.S.E.E.](#)

[Electrical Engineering_\(ELEG\)](#)

Submitter: User ID: **rsaunder ersleaf1** 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/changing Focused Study or Track)

Are you adding a concentration?

No

Are you adding or modifying a track?

No

Are you adding or modifying a focused study?

No

Effective Catalog Year Fall 2021

College/School Code

College of Engineering (ENGR)

Department Code

In Workflow

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

Approval Path

1. 03/10/20 12:52 pm
Norman Dennis (ndennis): Rollback to Initiator
2. 03/22/20 4:46 pm
Norman Dennis (ndennis): Rollback to Initiator
3. 03/23/20 4:01 pm

Department of Electrical Engineering (ELEG)

Program Code ELEGBS
Degree Bachelor of Science in Electrical Engineering
CIP Code

Norman Dennis
(ndennis): Approved
for ENGR Dean
Initial

4. 04/03/20 3:20 pm
Alice Griffin
(agriffin): Rollback
to Initiator
5. 04/23/20 9:24 am
Norman Dennis
(ndennis): Approved
for ENGR Dean
Initial
6. 05/04/20 3:57 pm
Alice Griffin
(agriffin): Approved
for Director of
Program
Assessment and
Review
7. 05/05/20 4:01 pm
Lisa Kulczak
(lkulcza): Rollback to
Director of Program
Assessment and
Review for Registrar
Initial
8. 05/08/20 1:52 pm
Alice Griffin
(agriffin): Approved
for Director of
Program
Assessment and
Review
9. 07/22/20 12:37 pm
Lisa Kulczak
(lkulcza): Approved
for Registrar Initial
10. 07/22/20 1:04 pm
Gary Gunderman
(ggunderm):

Approved for
Institutional
Research

11. 07/22/20 1:24 pm
Juan Balda (jbalda):
Approved for ELEG
Chair
12. 08/24/20 3:09 pm
Manuel Rossetti
(rossetti): Rollback
to Director of
Program
Assessment and
Review for ENGR
Curriculum
Committee
13. 08/25/20 1:46 pm
Alice Griffin
(agriffin): Approved
for Director of
Program
Assessment and
Review
14. 09/02/20 9:53 am
Lisa Kulczak
(lkulcza): Approved
for Registrar Initial
15. 09/02/20 10:04 am
Gary Gunderman
(ggunderm):
Approved for
Institutional
Research
16. 09/02/20 10:13 am
Juan Balda (jbalda):
Approved for ELEG
Chair
17. 09/11/20 1:04 pm
Manuel Rossetti
(rossetti): Approved
for ENGR

Curriculum

Committee

18. 09/11/20 1:20 pm
Norman Dennis
(ndennis): Approved
for ENGR Faculty
19. 09/11/20 5:03 pm
Jeannie Hulen
(jhulen): Approved
for ARSC Dean
20. 09/11/20 7:12 pm
Norman Dennis
(ndennis): Approved
for ENGR Dean
21. 09/14/20 10:41 am
Suzanne Kenner
(skenner): Approved
for Global Campus
22. 09/17/20 1:00 pm
Terry Martin
(tmartin): Approved
for Provost Review

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)
5. May 1, 2018 by
Connie Howard
(cjhowar)

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?

Yes ~~No~~

College(s)/School(s)

College/School Name

Fulbright College of Arts and Sciences (ARSC)

What are the total
hours needed to
complete the
program?

125

Program Requirements and Description

Requirements

Undergraduate Program in Electrical Engineering

The **Electrical Engineering Department maintains** ~~educational objectives for~~ the **following student learning outcomes:** ~~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.~~ **an ability** ~~Therefore, the electrical engineering curriculum is designed to~~ **identify, formulate, provide students with knowledge of scientific principles and solve complex engineering problems by applying principles of engineering, science, methods of engineering analysis to form a solid foundation for a career in design, research and mathematics,**

~~development, manufacturing and processing, measurement and characterization, or management.~~ **an ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors,**
an ability to communicate effectively with a range of audiences,
an ability to recognize ethical and professional responsibilities in engineering situations and make informed judgements, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts,
an ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks and meet objectives,
an ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgement to draw conclusions,
an ability to acquire and apply new knowledge as needed, using appropriate learning strategies.

For more information visit www.abet.org.

The electrical engineering curriculum is designed to provide students with knowledge of scientific principles ~~Are recruited in a competitive market~~ and methods of engineering analysis to form a solid foundation for ~~valued as reliable and competent employees by~~ a career in design, research and development, manufacturing ~~wide variety of industries, in particular, electrical~~ and processing, measurement and characterization, or ~~management.~~ **computer engineering industries;** 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, students~~ in consultation with their ~~advisers,~~ **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.

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
	Fall Spring
GNEG 1111 Introduction to Engineering I	1
ENGL 1013 Composition I (ACTS Equivalency = ENGL 1013) (Satisfies General Education Outcome 1.1)	3
MATH 2554 Calculus I (ACTS Equivalency = MATH 2405) (Satisfies General Education Outcome 2.1)	4
CHEM 1103 University Chemistry I (ACTS Equivalency = CHEM 1414 Lecture)	3
PHYS 2054 University Physics I (ACTS Equivalency = PHYS 2034) (Satisfies General Education Outcome 3.4)	4
GNEG 1121 Introduction to Engineering II	1
ENGL 1023 Composition II (ACTS Equivalency = ENGL 1023)	- 3
ENGL 1033 Technical Composition II (ACTS Equivalency = ENGL 1023) (Satisfies General Education Outcome 1.2)	3
MATH 2564 Calculus II (ACTS Equivalency = MATH 2505)	4
Select one of the following (Satisfies General Education Outcome 4.2):	3
HIST 2003 History of the American People to 1877 (ACTS Equivalency = HIST 2113)	
HIST 2013 History of the American People, 1877 to Present (ACTS Equivalency = HIST 2123)	
PLSC 2003 American National Government (ACTS Equivalency = PLSC 2003)	
Freshman Science Elective II*	- 4
PHYS 2074 University Physics II (ACTS Equivalency = PHYS 2044 Lecture)	4
Year Total:	15 15

Second Year	Units
	Fall Spring
ELEG 2104 Electric Circuits I	4
ELEG 2904 Digital Design	4
Sophomore Science Elective2	4
MATH 2584 Elementary Differential Equations	4
CSCE 2004 Programming Foundations I	4
ELEG 2114 Electric Circuits II	4

Are Similar Programs available in the area?

No

Estimated Student 300

Demand for Program

Scheduled Program 2020-2021

Review Date

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
Updating general education requirements	To comply with University policy

Upload attachments

Reviewer Comments

Norman Dennis (ndennis) (03/10/20 12:52 pm): Rollback: Per your request.

Norman Dennis (ndennis) (03/22/20 4:46 pm): Rollback: Please identify in the footnotes the actual Gen Ed outcome(s) that will be satisfied by taking a course from the provided list.

Alice Griffin (agriffin) (04/03/20 3:20 pm): Rollback: Please change response to the question regarding the proposal impacting another college. Since ENGL 1033 is required, it will impact Fulbright College. Also change the effective date to fall 2021. It is too late to complete approval for fall 2020. In addition, please review and edit the footnotes to identify curriculum for learning outcomes 4.2, 5.1, and 6.1.

Norman Dennis (ndennis) (04/23/20 9:20 am): Modified the verbiage describing student learning outcomes.

Alice Griffin (agriffin) (05/04/20 3:18 pm): Changed effective date from fall 2020 to fall 2021.

Alice Griffin (agriffin) (05/04/20 3:52 pm): Adjusted formatting to eight semester plan to meet catalog formatting guidelines. Adjusted letter reference to number reference for footnotes.

Removed course titles and hyper-linked all courses for reference. College is encouraged to review for accuracy.

Lisa Kulczak (lkulcza) (05/05/20 4:01 pm): Rollback: Per Alice's request.

Alice Griffin (agriffin) (05/06/20 1:03 pm): Revised formatting of the eight semester degree plan to provide consistency with the General Education curriculum language. Also removed course titles in footnotes and hyper-linked courses for access to course details.

Alice Griffin (agriffin) (05/08/20 11:57 am): Added blanket statement regarding the 40 hour rule in the bottom paragraph with permission from college dean's office.

Manuel Rossetti (rossetti) (08/24/20 3:09 pm): Rollback: update footnotes

Alice Griffin (agriffin) (08/24/20 5:16 pm): Revised footnotes to include a clearer statement for learning outcome 2.1 with approval from Gen Ed and Core Curriculum Committee Chair. As a result, renumbered each footnote. Also inserted into footnotes the additional courses approved later in the spring. Renamed Social Science to Social Sciences to match domain area in State Minimum Core.

Key: 496