FLORIDA ATLANTIC UNIVERSITY

NEW/CHANGE PROGRAM REQUEST
Undergraduate Programs

UUPC Approval 3/25/24
UFS Approval _____
Banner _____
Catalog _____

Department Electrical Engineering and Computer Science

College Engineering and Computer Science

Program Name

BACHELOR OF SCIENCE IN ELECTRICAL ENGINEERING (B.S.E.E.)

☐ **New Program***

☑ **Change Program***

Effective Date
(TERM & YEAR)

Fall 2024

Please explain the requested change(s) and offer rationale below or on an attachment.

Core courses in the program have been changed to strengthen the program and to provide students with a more solid foundation. Introductory programming will be taught in Python (previously it was C). A new course introducing C++ and Systems Programming has been added. In the Common Core, one course has been replaced and one course has been added. In Electrical Engineering Semi-Core Group 2, students must complete two courses.
Changes made to allow a professional internship to be counted as an elective.

*All new programs and changes to existing programs must be accompanied by a catalog entry showing the new or proposed changes.

Faculty Contact/Email/Phone

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Consult and list departments that may be affected by the change(s) and attach documentation

Approved by		***Date***
Department Chair	Hai Kalva	2/12/2024
College Curriculum Chair	Hongbo Su	3/12/24
College Dean		3/12/24
UUPC Chair	Korey Sorge	3/25/24
Undergraduate Studies Dean	Dan Moeroff	3/25/24
UFS President		
Provost		

Email this form and attachments to mjenning@fau.edu seven business days before the UUPC meeting.

ELECTRICAL ENGINEERING
BACHELOR OF SCIENCE IN ELECTRICAL ENGINEERING (B.S.E.E.)

(Minimum of 123 credits required)

Admission Requirements
All students must meet the minimum admission requirements of the University. Please refer to the Admissions section of this catalog.

All students must meet the preprofessional requirements listed above in order to be accepted into the Electrical Engineering program.

Prerequisite Coursework for Transfer Students
Students transferring to Florida Atlantic University must complete both lower-division requirements (including the requirements of the Intellectual Foundations Program) and requirements for the college and major. Lower-division requirements may be completed through the A.A. degree from any Florida public college, university or community college or through equivalent coursework at another regionally accredited institution. Before transferring and to ensure timely progress toward the baccalaureate degree, students must also complete the prerequisite courses for their major as outlined in the *Transition Guides* .

All courses not approved by the Florida Statewide Course Numbering System that will be used to satisfy requirements will be evaluated individually on the basis of content and will require a catalog course description and a copy of the syllabus for assessment.

General Degree Requirements
The minimum number of credits required for the Bachelor of Science in Electrical Engineering (B.S.E.E.) degree is 123 credits. All courses that count toward the degree must be completed with grades of "C" or better. The Bachelor of Science in Electrical Engineering degree will be awarded to students who meet all admission and degree requirements of the department and the University. Notes below are referenced in the tables following the list.

Notes:
Students entering FAU with less than 30 credits must satisfy the course requirements specified in the catalog section, Degree Requirements. Students entering FAU with more than 30 credits (transfer students) must see the

undergraduate advisor for an evaluation of courses taken at another school. The general education requirements are normally satisfied if a student has an Associate in Arts (A.A.) degree from a Florida community or state college. Once students earn beyond 30 credits, they must substitute EGN 1002, Fundamentals of Engineering, with an electrical engineering elective.

Program Summary	
General Education	24
Mathematics	15
Science	9
Common Core	~~24~~ 27
Computer Engineering - Electrical Engineering Core	18
Electrical Engineering Core	9
Semi-Core Group 1	3
Semi-Core Group 2	~~9~~ 6
Electives	12
Total	**123**

General Education	
Foundations of Written Communication	6
Foundations of Society and Human Behavior	6
Foundations of Global Citizenship	6
Foundations of Humanities	6
Subtotal	**24**

Mathematics		
Calculus with Analytic Geometry 1	MAC 2311	4
Calculus with Analytic Geometry 2	MAC 2312	4
Calculus with Analytic Geometry 3	MAC 2313	4
Engineering Mathematics 1	MAP 3305	3
Subtotal		**15**

Science		
Physics for Engineers 2	PHY 2044	3
General Physics for Engineers 1	PHY 2048	4
General Physics Lab 1	PHY 2048L	1
General Physics Lab 2	PHY 2049L	1

Subtotal		**9**

Core Courses
All students must take the following core courses, which total 51 credits.

Common Core		
Introduction to Data Science and Analytics	CAP 4773	3
Computer Logic Design	CDA 3203	3
Computer Architecture	CDA 4102	3
Foundations of Computing*	COT 2000C	3
~~Programming 1~~	~~COP 2220~~	~~3~~
Systems Programming with C++***	CEN 3062C	3
Introduction to Programming in Python	COP 3035C	3
Stochastic Processes and Random Signals**	EEE 4541	3
RI: Engineering Design 1	EGN 4950C	3
RI: Engineering Design 2	EGN 4952C	3
Subtotal		~~**24**~~ **27**

* MAD 2104 may be substituted for COT 2000C.
** STA 4821 may be substituted for EEE 4541

***May be used as an elective for a minor in Computer Science

Computer Engineering - Electrical Engineering Core		
Design of Digital Systems and Lab	CDA 4240C	3
Electronics 1	EEE 3300	3
Circuits 1	EEL 3111	3
Electronics Laboratory 1	EEL 3118L	3
Signals and Digital Filter Design	EEL 3502	3
Fundamentals of Engineering	EGN 1002	3
Subtotal		**18**

Electrical Engineering Core		
Electronics 2 and Lab	EEE 4361C	3
Principles of Communication Systems	EEL 4512C	3
Control Systems 1	EEL 4652C	3
Subtotal		**9**

Semi-Core Courses
All students must take 3 credits from Semi-Core Group 1 and ~~9~~ 6 credits from Semi-Core Group 2.

Electrical Engineering Semi-Core Group 1 (Select one course)		
Electric Power Systems	EEL 4216	3
Electrical Machines	EEL 4220	3
Subtotal		**3**

Electrical Engineering Semi-Core Group 2 (Select two ~~three~~ courses)		
~~Introduction to Embedded System Design~~	~~CDA 4630~~	~~3~~
~~Communication Networks~~	~~CNT 4007~~	~~3~~
Electronics 3 and Lab	EEE 4362C	3
Introduction to Digital Signal Processing	EEE 4510	3
Electromagnetic Fields and Waves	EEL 3470	3
Photovoltaic Power Systems	EEL 4281	3
Digital Communication Systems	EEL 4522	3
Introduction to Wireless Communication Systems	EEL 4580	3
Subtotal		**~~9~~ 6**

Electives
All students must take 6 credits of technical electives and 6 credits of Electrical Engineering electives. Certain 3000- and 4000-level courses offered by the Electrical Engineering and Computer Science Department may be used as a technical or Electrical Engineering elective. In addition, any two Computer Science courses listed in the Computer Science minor program may be used as technical electives. Certain 5000- or 6000-level courses offered by the Electrical Engineering and Computer Science Department may be taken as technical electives or Electrical Engineering electives. Students must see an advisor for a current list of approved elective courses.

Electrical Engineering Electives	**6**
Technical Electives	**6**

Students are permitted to take no more than the equivalent of one course (3 credits) of the following three courses as an Electrical Engineering

elective. ~~***The following courses may be taken as a Electrical Engineering elective.***~~

Professional Internship	IDS 3949	0-3
Directed Independent Study	~~***COT 4900***~~ EEL 4905	1-3
Directed Independent Research	EGN 4915	1-3

Professional Internship
Students must have completed EEE 3300 Electronics 1 and EEL 3118L Electronics 1 Lab, with a minimum grade of "C" before being eligible to register for a professional internship. Approval through the Career Center is required prior to enrollment.

Directed Independent Study and Directed Independent Research

Students must have completed EEE 4361C, Electronics 2 and Lab, with a minimum grade of "C" before being eligible to register for directed independent study or Directed Independent Research. ~~***Students are permitted to take no more than the equivalent of one course (3 credits) to satisfy degree requirements.***~~

Sample Four-Year Program of Study
For the sample four-year program of study for the Bachelor of Science in Electrical Engineering, refer to the Curriculum Sheets and Flight Plans by major.

Second Bachelor's Degree
This program is for those individuals with a degree in another discipline who are seeking a Bachelor of Science in Electrical Engineering degree at FAU.

Admission Requirements
Students seeking a bachelor's degree or graduate degree in another discipline must satisfy all admission requirements of the first bachelor's degree in Electrical Engineering at FAU.

Degree Requirements

1. Earn a minimum of 30 credits in residence at FAU, at the 3000 level or higher, beyond those required for the first degree. Students earning two degrees simultaneously (a dual degree) must earn at least 150 credits.
2. Earn at least 75 percent of all upper-division credits required for the major from FAU.
3. Students must have completed 15 credits in mathematics, 9 credits in science and **54** ~~**51**~~ credits in core courses listed in the Electrical Engineering degree program. Each course must be completed with a minimum grade of "C."

Undergraduate Transfer Students

Prior to the academic advising session, course syllabi need to be submitted to the Undergraduate Academic Advisor for evaluation of possible transfer credits. Course descriptions can be provided by submitting an undergraduate catalog from the post-secondary institution attended, submitting course descriptions from an online catalog (requires that the post-secondary institution web address be at the bottom of each page) or by providing course syllabi. The Academic Advisor evaluation needs to be performed even if a student has an evaluation by an approved agency.