APPROVAL FORM FOR

DEGREE PROGRAMS

MISSISSIPPI STATE UNIVERSITY

NOTE: This form is a cover sheet that must accompany the degree program change proposal. The actual proposal should be prepared in accordance with format requirements provided in the *Guide and Format for Curriculum Proposals* published by the UCCC. Both cover sheet and proposal should be submitted to UCCC Mail Stop 9702 (281 Garner Hall), Phone: 325-9410.

College Bagley College of Engineering **Department:** Electrical & Computer Engineering

Contact Person: Jean Mohammadi-Aragh **Mail Stop:** 9571 **E-mail:** jean@ece.msstate.edu

Nature of Change: Modification **Date Initiated:** 1/15/2025

Current Degree (BS, MS, etc.): Minor

Current Major: Electrical Engineering

Current Concentration(s): _____

Current Campus(es): ☑ **Starkville** ☐ **Meridian** ☐ **Distance** ☑ **Gulf Coast***

*Gulf Coast campus for Bagley College of Engineering only

New Degree (BS, MS, etc.): _____

Effective Date:

Semester	**Year**
Fall	2025

**Any new program or modification desiring a starting semester other than fall must include a justification

Proposed Major: _____

Proposed Concentration(s): _____

Proposed Campus(es)

- ☐ Starkville
- ☐ Meridian
- ☐ Distance
- ☐ Gulf Coast*

*Gulf Coast campus for Bagley College of Engineering o

Summary of Proposed Changes:

Updates to the minor based on changes to circuits course sequence that were previously approved for the EE degree

Approved: **Date:**

J. Patrick Donohoe — Digitally signed by J. Patrick Donohoe Date: 2025.01.22 15:42:28 -06'00' — 01/22/2025

Department Head

Dana Pomfret — 2/10/2025

Director of Academic Quality

Digitally signed by Dr. T.J. Jankun-Kelly
Date: 2025.02.07 16:28:33 -06'00'

Chair, College or School Curriculum Committee

Robert A. Shuler — 11 FEB 2025

Dean of College or School

Chair, University Committee on Courses and Curricula

Chair, Graduate Council (if applicable)

Chair, Deans Council

FOR OIRE USE ONLY

- ☐ Substantive Change to SACSCOC
- ☐ Notification to SACSCOC
- ☐ No significant departure

OIRE Representative Initials _____

PROPOSAL FOR THE MODIFICATION OF THE
MINOR IN ELECTRICAL ENGINEERING

1. CATALOG DESCRIPTION

See table below.

2. CURRICULUM OUTLINE

The changes proposed are as follows:

1. Replace the old circuits/electronics series of ECE 3413, ECE 3424, and ECE 3434 with the new sequence of ECE 3423, ECE 3421, ECE 3433, and ECE 3244..
2. Expand the restrictive elective course options to all ECE 4000-level courses, except capstone design, and select ECE 3000-level courses.

Table 1. Comparison of Current CPE Degree and Proposed CPE Degree Programs

CURRENT Degree Description		PROPOSED Degree Description	
Degree: Minor Major: Electrical Engineering Concentration:		Degree: Minor Major: Electrical Engineering Concentration:	
A minor in Electrical Engineering (EE) will prepare students for additional study or employment in electrical engineering fields. Students will become familiar with basic theory and techniques necessary for analyzing electrical and electronics systems and informing their design decisions involving electrical and electronics systems. Academic advising toward the EE minor is available from the ECE Undergraduate Advisor located in 135 Simrall. Students majoring in Electrical Engineering and Computer Engineering are not eligible. A minimum of *16* hours must be taken to obtain the EE minor. All courses used to earn the EE minor must be taken at MSU. A grade of "C" or better must be earned in all courses for the EE minor. A minimum grade point average of 2.0/4.0 is required in all courses taken as a part of the EE minor. For all eligible MSU majors, the EE minor consists of *three required courses* and two restricted elective courses. *Note that some course choices may require other courses as prerequisites.*		A minor in Electrical Engineering (EE) will prepare students for additional study or employment in electrical engineering fields. Students will become familiar with basic theory and techniques necessary for analyzing electrical and electronics systems and informing their design decisions involving electrical and electronics systems. Academic advising toward the EE minor is available from the EE advisor in the ECE Student Success Center located in Simrall 135. Students majoring in Electrical Engineering and Computer Engineering are not eligible. A minimum of **17** hours must be taken to obtain the EE minor. All courses used to earn the EE minor must be taken at MSU. A grade of "C" or better must be earned in all courses for the EE minor. A minimum grade point average of 2.0/4.0 is required in all courses taken as a part of the EE minor. For all eligible MSU majors, the EE minor consists of **four required courses/labs** and two restricted elective courses. **Some courses may require other courses as prerequisites. Students must meet all prerequisites to register for a course. Prerequisite courses of note are: PH 2223 Physics II, MA 1723 Calculus II and MA 3253 Differential Equations.**	
CURRENT CURRICULUM OUTLINE	Required Hours	PROPOSED CURRICULUM OUTLINE	Required Hours

Required Courses		Required Courses **(11 Hours)**	
ECE 3413 Introduction to Electronic Circuits	3	ECE 3413 Introduction to Electronic Circuits or ECE 3423 Circuits I	3
ECE 3424 Intermediate Electronic Circuits	4	ECE 3421 Circuits I Lab	1
ECE 3443 Signals and Systems	3	ECE 3433 Circuits II	3
		ECE 3244 Electronics I	4
Select two of the following courses:		**Restricted Elective Courses (6-8 Hours - Select two of the following)**	
ECE 3213 Introduction to Solid State Electronics	3	ECE 3213 Introduction to Solid State Electronics	3
ECE 3313 Electromagnetics I	3	ECE 3313 Electromagnetics I	3
ECE 3323 Electromagnetics II	3	ECE 3323 Electromagnetics II	3
ECE 3434 Advanced Electronic Circuits	*4*	**ECE 3253 Electronics II**	**3**
ECE 3614 Fundamentals of Energy Systems	4	**ECE 3443 Signals and Systems**	**3**
ECE 4263 Principles of VLSI Design	*3*	ECE 3614 Fundamentals of Energy Systems	3
ECE 4293 Nano-electronics	*3*	**ECE 3714 Digital Devices and Logic Design**	**4**
ECE 4313 Antennas	*3*	**ECE 3724 Microprocessors**	**4**
ECE 4323 Electromagnetic Compatibility	*3*	**Any ECE 4000-level course, except ECE 4512 and ECE 4522**	**3-4**
ECE 4333 RF and Microwave Engineering	*3*		
ECE 4413 Digital Signal Processing	*3*		
ECE 4433 Introduction to Radar	*3*		
ECE 4613 Power Transmission Systems	*3*		
ECE 4633 Power Distribution Systems	*3*		
ECE 4653 Introduction to Power Electronics	*3*		
ECE 4673 Fundamentals of High Voltage Engineering	*3*		
ECE 4813 Communications Theory	*3*		
ECE 4913 Feedback Control Systems I	*3*		
ECE 4923 Feedback Control Systems	*3*		
ECE 4933 State Space Design and Instruments	*3*		
Total Hours	16	Total Hours	17

3. JUSTIFICATION AND STUDENT LEARNING OUTCOMES

This update incorporates our updated and current circuits/electronics sequence from the B.S. in Electrical Engineering Degree. We have stopped offering ECE 3424 and ECE 3434, and begun offering new courses ECE 3423, ECE 3421, ECE 3433, and ECE 3244. This update reflects the new course sequence.

We also simplify the elective courses listing to reflect current course offerings and expand to include additional ECE courses.

- Will this program change meet local, state, regional, and national educational and cultural needs? **Yes**
- Will this program change result in duplication in the System? **No**
- Will this program change/advance student diversity within the discipline? **No**
- Will this program change result in an increase in the potential placement of graduates in MS, the Southeast, and the U.S.? **No**
- Will this program change result in an increase in the potential salaries of graduates in MS, the Southeast, and the U.S.? **No**

4. SUPPORT

See letters of support from ECE Departments.

5. PROPOSED 4-LETTER ABBREVIATION

No changes

6. EFFECTIVE DATE

Fall 2025

MISSISSIPPI STATE UNIVERSITY™
JAMES WORTH
BAGLEY
COLLEGE OF ENGINEERING

DEPARTMENT OF
ELECTRICAL AND COMPUTER ENGINEERING
Undergraduate Committee

October 31, 2024

To Whom It May Concern:

On October 25, 2024 the faculty of the Electrical and Computer Engineering Department voted unanimously to support the modification of courses for the EE Minor as submitted in this modification proposal.

Sincerely,

The ECE Undergraduate Committee

406 Hardy Road | 216 Simrall Hall | P.O. Box 9571 | Mississippi State, MS 39762 | P. 662.325.3912 | F. 662.325.2298 | **www.ece.msstate.edu**