



Course Outcome Summary

Required Program Core Course

ELEC 132 Electronics 1

Course Information

Division	Applied Science and Engineering Technology
Contact Hours	90
Total Credits	4.0

Prerequisites	ELEC 125 MATH 124 or 151 or 159 or 164
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Course Description

An introduction to electronic components and applications. Topics covered are semiconductor basics, diode characteristics and applications. Special-purpose diodes (i.e., LED, Zener Regulators, etc.), and bipolar junction transistor characteristics. In additions, transistor bias circuits and various types of transistor amplifiers, Field effect transistors, operational amplifiers, and integrated circuits applications will be also discussed.

This course is a required core course for students pursuing a degree in

Electrical Engineering Technology

Program Outcomes Addressed by this Course:

Upon successful completion of this course, students should be able to meet the program outcomes listed below:

- A. Acquire and apply technical expertise in the areas of Circuit analysis, Analog electronics, Digital electronics, Microprocessors, and Communication systems.
- D. Develop a willingness to learn independently.
- E. Develop and demonstrate effective wiring and laboratory skills.
- G. Develop and demonstrate Technical Documentation/Lab Report writing skills and the ability to comprehend Technical Documentation including Schematic Diagrams
- J. Develop and demonstrate the synergistic relationship and integration of various technical and academic fields into the study of Electronics (i.e. Mechatronics)



Course Outcomes

1. Recognize semiconductor basics, diode characteristics and applications. Recognize and understand the basic operations and characteristics of half-wave power supplies and full-wave power supplies.

Applies Program Outcome

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2. Recognize and understand special-purpose diode (i.e., LED, Zener Regulators, etc.) characteristics and applications. Recognize bipolar junction transistor its characteristics and operations

Applies Program Outcome

- A. Acquire and apply technical expertise in the areas of Circuit analysis, Analog electronics, Digital electronics, Microprocessors, and Communication systems.
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3. Demonstrate/Practice Schmitt trigger and switching circuits.

Applies to Program Outcome

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- D. Develop a willingness to learn independently.
- E. Develop and demonstrate effective wiring and laboratory skills.



ELEC 132 Electronics 1

- G. Develop and demonstrate Technical Documentation/Lab Report writing skills and the ability to comprehend Technical Documentation including Schematic Diagrams
 - J. Develop and demonstrate the synergistic relationship and integration of various technical and academic fields into the study of Electronics (i.e. Mechatronics)
4. Demonstrate/Practice transistor bias circuits and bipolar junction transistor amplifiers.
Applies to Program Outcome
- A. Acquire and apply technical expertise in the areas of Circuit analysis, Analog electronics, Digital electronics, Microprocessors, and Communication systems.
 - D. Develop a willingness to learn independently.
 - E. Develop and demonstrate effective wiring and laboratory skills.
 - G. Develop and demonstrate Technical Documentation/Lab Report writing skills and the ability to comprehend Technical Documentation including Schematic Diagrams
 - J. Develop and demonstrate the synergistic relationship and integration of various technical and academic fields into the study of Electronics (i.e. Mechatronics)
5. Demonstrate/Practice CE/CC/CB amplifiers and power amplifiers.
Applies to Program Outcome
- A. Acquire and apply technical expertise in the areas of Circuit analysis, Analog electronics, Digital electronics, Microprocessors, and Communication systems.
 - D. Develop a willingness to learn independently.
 - E. Develop and demonstrate effective wiring and laboratory skills.
 - G. Develop and demonstrate Technical Documentation/Lab Report writing skills and the ability to comprehend Technical Documentation including Schematic Diagrams
 - J. Develop and demonstrate the synergistic relationship and integration of various technical and academic fields into the study of Electronics (i.e. Mechatronics)
6. Recognize field effect transistors (FET) characteristics and operations.
Applies to Program Outcome
- A. Acquire and apply technical expertise in the areas of Circuit analysis, Analog electronics, Digital electronics, Microprocessors, and Communication systems.
 - D. Develop a willingness to learn independently.
 - E. Develop and demonstrate effective wiring and laboratory skills.



ELEC 132 Electronics 1

- G. Develop and demonstrate Technical Documentation/Lab Report writing skills and the ability to comprehend Technical Documentation including Schematic Diagrams
 - J. Develop and demonstrate the synergistic relationship and integration of various technical and academic fields into the study of Electronics (i.e. Mechatronics)
7. Demonstrate/Practice FET Amplifier applications.
Applies to Program Outcome
- A. Acquire and apply technical expertise in the areas of Circuit analysis, Analog electronics, Digital electronics, Microprocessors, and Communication systems.
 - D. Develop a willingness to learn independently.
 - E. Develop and demonstrate effective wiring and laboratory skills.
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8. Demonstrate/Practice operational amplifiers (op amps) applications. Recognize Integrated Circuits (IC) basics and applications
Applies to Program Outcome
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 - D. Develop a willingness to learn independently.
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 - J. Develop and demonstrate the synergistic relationship and integration of various technical and academic fields into the study of Electronics (i.e. Mechatronics)



MONROE COUNTY
COMMUNITY COLLEGE

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