

ECE-100 - Fundamentals of Circuits and Electronics

Elective Course

2003-2005 Catalog Data:

Fundamentals and basic principles of electricity, magnetic devices and electronics.
Credit: 3 hours (2 hours lecture, 3 hours lab)
Prerequisite: MATH-111 or equivalent high school physics.

Textbook & Required Materials:

1. *Principles of Electric Circuits*, Conventional Current Flow Version, Thomas L. Floyd, Prentice Hall, 7th Edition, 2003.
2. *Experiments in Electric Circuits*, B Stanley, 7th Edition.

Course Objectives:

1. Recognize components and measuring Instruments, understand Quantities and Units.
2. Understand Voltage, Current and Resistance.
3. Understand Ohms Law, Power and Energy.
4. Understand Series and Parallel circuits.
5. Understand Circuit Theorems.
6. Understand Sine waves and Phasors.
7. Understand DC RC and RL circuits.
8. Understand AC RC and RL circuits.

Topics Covered:

1. Components, Quantities and Units
2. Voltage, Current and Resistance.
3. Ohms Law.
4. Energy and Power.
5. Series Circuits.
6. Parallel Circuits.
7. Series-Parallel Circuits.
8. Circuit Theorems.
9. Sine waves and Phasors.
10. RC and RL circuits, both AC and DC.

Class / Lab Schedule:

- (2) 50 Minute Lectures per week,
(1) 3 Hour Lab per week.

Contribution to Professional Component:

ABET professional component as estimated by faculty member who prepared this course description:

- Engineering Design: 0 credit or 0%
Engineering Science: 3 credit or 100%

Relation of Course to Program Outcomes:

This course provides significant support for:
ABET Criterion 3 categories a, g, h and i
ECE Program Outcomes...

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