

## **EE202: CIRCUIT ANALYSIS I (4 Credits, Required)**

### **Catalog Description**

Systematic development of network analysis methods. Topics include resistive circuits, Kirchhoff's laws, equivalent subcircuits; dependent sources and op amps; loop and nodal analysis and duality; energy-storage elements; transient analysis of first-order and second-order circuits.

### **Prerequisites**

Prerequisite(s): None

Corequisite(s): None

### **Textbooks(s) and/or other required material**

Electric Circuits, 8th edition, Nilsson and Riedel, Prentice Hall, 2008.

### **Course Objectives**

By the end of the course, students will: be able to analyze DC circuits, be able to use nodal and mesh analysis on DC circuits, be able to analyze first order circuits, be able to use SPICE to perform DC analysis of circuits.

### **Topics Covered**

Introduction and review of basic physics (2 lectures)

Resistive circuits, Kirchhoff's laws, equivalent subcircuits (4 lectures).

Dependent sources and OP AMPS (4 lectures).

Nodal analysis, mesh analysis, duality (7 lectures).

Energy-storage elements (2 lectures).

First-order circuits (4 lectures).

Second-order circuits (4 lectures)

### **Class / Lab Schedule**

Three 50-minute lectures per week

One 50-minute recitation per week

### **Contribution of course to professional component/criterion 5**

Engineering Topics: Basic Circuit Theory

### **Relationship of course to program outcomes**

(a) an ability to apply knowledge of mathematics, probability and statistics, computer science and electrical engineering as it applies to the fields of computer software and hardware

(e) an ability to identify, formulate, and solve hardware and software computer engineering problems using sound computer engineering principles

(k) an ability to use the techniques, skills, and modern hardware and software engineering tools necessary for computer engineering practice

**Persons who prepared this description and date of preparation**

Alexander N. Cartwright, Professor and VP for Strategic Strengths, June 2008 (reformatted for CEN by Carl Alphonse)