

**Course Objectives/Course Outline
Spokane Community College**

Course Title: ELECTRICAL THEORY FOR ENGINEERING
Prefix and Course Number: CAD 262

Course Learning Outcomes:

By the end of this course, a student should be able to:

- understand alternating and direct current
- apply formulas used in electrical design

Course Outline:

- I. Introduction
- II. Direct Current Electricity
 - A. Terminology
 - B. Units of Measurement
 - C. Ohm's Law
- III. Electric Current Flow
 - A. Flow in Solids, Liquids, and Gases.
 - B. Types of Circuits
- IV. Effects of Electric Current
 - A. Thermal
 - B. Chemical
 - C. Magnetic
- V. D-C Measuring Instruments
- VI. Alternating Current Electricity
 - A. Induced Current
 - B. Generator
- VII. Characteristics of A-C
 - A. Phase
 - B. Power Factor
- VIII. A-C Factors
 - A. Resistance
 - B. Inductance and Reactance
 - C. Capacitance
 - D. Circuits
- IX. Measuring instruments
- X. Types of Generators
- XI. Practical Applications
- XII. Electronics
 - A. Electron Tube
 - B. Semiconductors