PHY 110
Fundamentals of Electronics

Course Description

This is an introductory study of fundamental electrical circuits, including DC and AC circuits, filter networks, amplifiers, diodes, transistors, and logic gates.

Course Corequisite

Fundamentals of Electronics Laboratory (PHY 110L)

Specific Course Requirements

Textbook Requirements

See current semester textbook list at http://www.physics.sfasu.edu/docs/books.pdf

Course Objectives

The course objectives are to become familiar with and develop an understanding of the basic principles of electronics.

Student Learning Outcomes

- To understand and apply method and appropriate technology to the study of physical science
- To recognize scientific and quantitative methods and the differences between these approaches and other methods of inquiry, and to communicate findings, analyses, and interpretation both orally and in writing
- To identify and recognize the differences among competing scientific theories.
- To demonstrate knowledge of the major issues and problems facing modern science, including issues that touch upon ethics, values, and public policies
- To demonstrate knowledge of the interdependence of science and technology and their influence on, and contribution to, modern culture

Course Content

- DC and AC Circuits - Ohm's Law, Kirchhoff's Voltage Law, Kirchhoff's Current Law
- Electronic Devices - Diodes, Bipolar Junction Transistors, Field Effect Transistors, Op-Amps
- Digital Electronics - Boolean Algebra, Logic Gates, Digital Signal Processing

Course Assessment

Assessment is done with exams, homework, and laboratory exercises.