



PHY 132 Electricity, Sound, and Light (PHYS 1302)

Course Description

General Bulletin Description: Basic electrical and magnetic phenomena, wave motion, sound and light. Computation of lecture and laboratory grades into one grade; same grade recorded for both lecture and laboratory.

Number of Credit Hours - 3 for lecture, 1 for lab

Course Corequisite

Electricity, Sound, and Light Laboratory (PHY 132L)

Course Prerequisite

Mechanics and Heat (PHY 131)

Specific Course Requirements

Textbook Requirements

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

Program Learning Outcome

- The student will demonstrate proficiency in the basic and applied fields of physics.

General Education Core Curriculum Objectives/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 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

Student Learning Outcomes

- Solve problems using principles derived from Maxwell's Equations.
- Analyze and DC and AC circuits.
- Demonstrate an understanding of fundamental wave motion as applied to mechanical and electrical waves.
- Solve problems involving geometrical and physical optics.

Outline of Topics

- Mechanical Waves (15%)
- Electromagnetic Waves (8%)
- Electric Forces (27%)
- Magnetic Forces and Fields (20%)
- Geometric Optics (15%)
- Physical Optics(15%)

Laboratory

The PHY 132 laboratory and lecture are fully integrated and share the same learning outcomes and course objectives.