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 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.