Stephen F. Austin
STATE UNIVERSITY

PHY 441L
Optics Laboratory

Course Description

This course investigates some of the classic experiments in geometrical and physical optics. PHY 441L may be taken for graduate credit.

Course Corequisite

Optics (PHY 441)

Course Prerequisite

Electricity and Magnetism (PHY 440)

Specific Course Requirements

Textbook Requirements

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

Course Objectives

- Reproduce some of the classic experiments in both geometrical and physical optics
- Discover how some optical instruments work

Student Learning Outcomes

By the end of the course, a successful student will be able to:

- Develop good experimental technique and skill in error analysis.
- Effectively communicate experimental results.
- Work effectively in teams.
- Reproduce some of the classic experiments in geometrical and wave optics.

Course Content

- Measuring the Wavelength of Light from a laser
- Measuring Focal Lengths by the Hartmann Method
- Equivalent Focal Length of a Lens Combination
- Michelson Interferometer
- Double Slit Interference
- Index of Refraction
- Diffraction Theory of Image Formation and Spatial Filtering
- Transmittance and Reflectance

Course Assessment

The lecture and laboratory grades are computed into one grade, and the same grade is recorded for both lecture and laboratory. The course assessment may use any or all of the following evaluation tools: exam scores, classroom participation, homework average, quizzes, and team projects.