COURSE DESCRIPTION

Dept., Number	Phys 222	Course Title	Laboratory Physics for Science and Engineering II
Semester hours	1	Course Coordinator	Joel Mobley, Assistant Professor Thomas Jamerson, Laboratory Physicist

Current Catalog Description

Laboratory experiments coordinated with lecture topics in Phys 211.

Textbook

Department of Physics and Astronomy, *Lab Notebook for Phys 221 and 222.*

References

Course Outcomes

Upon successful completion of this course, the students:

1. understand the basic concepts of measurement and uncertainties,
2. gain direct experience with phenomena that are central to the understanding of classical mechanics,
3. have improved skills in the writing of scientific reports.

Relationship between Course Outcomes and Program Outcomes

The ABET/CAC criteria for computer science require 30 credit hours of science and mathematics appropriate for the discipline. The BSCS program meets this criterion by requiring 14 hours of natural science courses intended for majors in those fields, including a two-course sequence with associated laboratories in one field, and 18 hours of mathematics beyond the pre-calculus level. Physics 211 and 212 and their associated laboratories, Physics 221 and 222, form one option for satisfying the laboratory science requirement. The course outcomes are related to the expectations for the role of natural science in the BSCS curriculum.

Prerequisites by Topic

1. Corequisite of the associated lecture (Phys 212)
2. Introductory differential and integral calculus (Math 261, corequisite of Math 262)

Major Topics Covered in the Course

1. Electrostatics
2. Electric fields and potentials
3. Ohm's Law
4. Kirchhoff's Laws for circuits
5. Series and parallel circuits
6. RC time constants
7. The current balance
8. The Earth's magnetic field
9. The oscilloscope
10. High pass-Low pass filters
11. Reflection and refraction
12. Thin lenses
13. The eye model
14. Diffraction and interference

Assessment Plan for the Course

The instructor assesses the student performance related to the course outcomes by using examinations, quizzes, and laboratory reports.

How Data in the Course are Used to Assess Program Outcomes (unless adequately covered already in the assessment discussion under Criterion 4)

The conduct of this course is not governed by the ABET program faculty. No data are collected that are used to assess program outcomes directly.

Estimate Curriculum Category Content (Semester hours)

Science 1 hour