

COCONINO COMMUNITY COLLEGE
COURSE OUTLINE

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Status: Permanent
Effective: Fall 2016

December 4, 1991
April 11, 1997
November 26, 2001
February 21, 2009
May 7, 2015

A. Identification:

1. Subject Area: Physics (PHY)
2. Course Number: 112
3. Course Title: College Physics II
4. Credit Hours: 4
5. Course Description: Second-semester algebra based physics course. Introduction to the concepts of electricity and magnetism, light, and optics. Prerequisite: PHY 111. General Education: Physical and Biological Sciences. Three lecture. Three lab. Spring.

B. Course Goals: To give students a general understanding of physics laws, principles and concepts in electricity, magnetism, and optics. Provide the students with laboratory experience with circuits, magnetism, and optics.

C. Course Outcomes: Students will:

1. participate in laboratory investigations, utilizing scientific methods and equipment;
2. explain concepts in electricity and magnetism;
3. solve problems involving electric force, fields, potential, and current;
4. analyze DC circuits involving resistors and capacitors;
5. solve problems involving magnetic force and fields;
6. explain the concept of electromagnetic induction;
7. solve problems involving magnetic flux;
8. describe concepts of electromagnetic waves;
9. analyze light;
10. solve problems in light and optics;
11. describe different lenses;
12. and draw ray diagrams showing image formation from lenses and mirrors.

D. Course Outcomes Assessment will include:

1. course grades determined by the instructor as outlined in the course syllabus;
2. comprehensive final exam;
3. and at least one formal lab report.

E. Course Content will include:

1. electricity (charge, Coulomb force, potential, capacitance, currents, circuits);
2. magnetism (field, electromagnetism, induction, electromagnetic waves);
3. and optics (ray tracing, lenses, mirrors, reflection, refraction, wave behavior, optical instruments).