

El Paso Community College

Syllabus

Part II

Official Course Description

SUBJECT AREA	<u>Physics</u>
COURSE RUBRIC AND NUMBER	<u>PHYS 1102</u>
COURSE TITLE	<u>General Physics Laboratory II</u>
COURSE CREDIT HOURS	<u>1 0 : 3</u> Credits Lec Lab

I. Catalog Description

Accompanies PHYS 1302, College Physics II laboratory-based course. Laboratory activities will reinforce fundamental principles of physics, using algebra and trigonometry; the principles and applications of electricity and magnetism, including circuits, electrostatics, electromagnetism, waves, sound, light, optics, and modern physics topics; with emphasis on problem solving. **Prerequisite: PHYS 1101. Corequisite: PHYS 1302. (0:3). Lab fee.**

II. Course Objectives

Upon satisfactory completion of this laboratory course, the student will be able to:

- A. To experiment, collect data, conclude and report about various electrical and magnetic systems.
- B. Apply learned concepts in electricity for problem solving and live or simulated experiments, such as:
 1. Static electricity
 2. Current electricity
 3. Ohm's law
 4. Series circuits
 5. Parallel circuits
 6. Combination circuits
 7. Electrical power
- B. Apply learned concepts in magnetism for problem solving and live experiments, such as:
 1. Magnetism
 2. Electromagnetic interactions
 3. Electromagnetic radiation
 4. Electromagnetic spectrum
- C. Experiment with light and optic devices.
- D. Demonstrate and apply learned concepts of light properties to solve problems related to color spectrum, frequency and wavelength.
- E. Demonstrate and apply learned concepts of optics to solve problems related to Reflection, Refraction, Interference, and Diffraction using mirrors and lenses.

III. THECB Learning Outcomes (ACGM)

1. Develop techniques to set up and perform experiments, collect data from those experiments, and formulate conclusions from an experiment.
2. Demonstrate the collections, analysis, and reporting of data using the scientific method.
3. Record experimental work completely and accurately in laboratory notebooks, and communicate experimental results clearly in written reports.
4. Solve problems involving the inter-relationship of fundamental charged particles, and electrical forces, fields, and currents.
5. Apply Kirchhoff's Rules to analysis of circuits with potential sources, capacitance, inductance, and resistance, including parallel and series capacitance and resistance.
6. Solve problems in the electrostatic interaction of point charges through the application of Coulomb's Law.
7. Solve problems involving the effects of magnetic fields on moving charges or currents, and the relationship of magnetic fields to the currents which produce them.
8. Use Faraday's and Lenz's laws to determine electromotive forces and solve problems involving electromagnetic induction.
9. Solve problems applying the principles of reflection, refraction, diffraction, interference, and superposition of waves.
10. Solve practical problems involving optics, lenses, mirrors, and optical instruments.

IV. Evaluation

A. Preassessment

There is no preassessment for this course.

B. Postassessment

The scheduling of laboratory exercises will be the sole prerogative of the instructor. This will be indicated to the student in the course syllabus that is distributed at the beginning of the semester. The philosophy of the college endorses frequent evaluation.

C. Remediation

The instructor may provide a student with a means of improving a grade. The timing, form, and method of remediation will be determined by the instructor and included in the course syllabus.

D. Grading

All grading will follow current EPCC Catalog standards. The assignment of letter grades to percent scores obtained in various class activities will be determined by the instructor and included in the course syllabus.

V. Disability Statement (American with/Disabilities Act [ADA])

EPCC offers a variety of services to persons with documented sensory, mental, physical, or temporary disabling conditions to promote success in classes. If you have a disability and believe you may need services, you are encouraged to contact the Center for Students with Disabilities to discuss your needs with a counselor. All discussions and documentation are kept confidential. Offices located: VV Room C-112 (831-2426); TM Room 1400 (831-5808); RG Room B-201 (831-4198); NWC Room M-54 (831-8815); and MDP Room A-125 (831-7024).

V. 6 Drop Rule

Students who began attending Texas public institutions of higher education for the first time during the fall 2007 semester or later are subject to a 6-Drop limit for all undergraduate classes. Developmental, ESL, Dual Credit and Early College High School classes are exempt from this rule. All students should consult with their instructor before dropping a class. Academic assistance is available. Students are encouraged to

see Counseling Services if dropping because exemptions may apply. Refer to the EPCC catalog and website for additional information.