

El Paso Community College

Syllabus

Part II

Official Course Description

SUBJECT AREA	<u>Physics</u>
COURSE RUBRIC AND NUMBER	<u>PHYS 1301</u>
COURSE TITLE	<u>General Physics I</u>
COURSE CREDIT HOURS	<u>3 3 0</u> Credits Lec Lab

I. Catalog Description

Provides the fundamental principles of physics, using algebra and trigonometry; the principles and applications of classical mechanics and thermodynamics, including harmonic motion, mechanical waves and sound, physical systems, Newton's Laws of Motion, and gravitation and other fundamental forces; with emphasis on problem solving. Fulfills the laboratory science requirements for non-science and Health Career majors. **Prerequisites: MATH 1314 or by placement exam and INRW 0311 or ESOL 0340 (can be taken concurrently) or by placement exam or ENGL 1301 with a "C" or better or ENGL 1302 with a "C" better. Corequisite: PHYS 1101. (3:0).**

II. Course Objectives

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

- A. Define and solve problems dealing with terms about motion, such as:
 1. Displacement
 2. Speed and velocity
 3. Acceleration
- B. State Newton's Laws and solve problems about them.
- C. Define work, energy, momentum and power and solve problems about them.
- D. State the conservation of energy principle and solve problems about them.
- E. Discuss the different kinds of collisions and solve problems about it.
- F. Define terms dealing with rotational motion and solve problems about them.
- G. State the Laws of Thermodynamics and solve problems about them.
- H. Solve problems about fluids and fluid dynamics.
- I. Solve problems about Waves and Sound.
- J. **Critical thinking skills** students will engage in creative thinking, innovation, inquiry, and analysis, evaluations, and synthesis of information.
- K. **Communication skills** students will demonstrate effective written, oral, and/or visual communication.
- L. **Teamwork skills** students will demonstrate the ability to consider different points of view and to work effectively with others to support a shared purpose or goal.
- M. **Empirical and quantitative skills** students will demonstrate the ability to formulate an inquiry and then identify and follow an investigative process using empirical and/or qualitative/quantitative reasoning to satisfy the inquiry.

III. THECB Learning Outcomes (ACGM)

1. Determine the components of linear motion (displacement, velocity, and acceleration), and especially motion under conditions of constant acceleration.
2. Apply Newton's laws to physical problems including gravity.
3. Solve problems using principles of energy.
4. Use principles of impulse and linear momentum to solve problems.
5. Solve problems in rotational kinematics and dynamics, including the determination of the location of the center of mass and center of rotation for rigid bodies in motion.
6. Solve problems involving rotational and linear motion.
7. Describe the components of a wave and relate those components to mechanical vibrations, sound, and decibel level.
8. Demonstrate an understanding of equilibrium, including the different types of equilibrium.
9. Discuss simple harmonic motion and its application to quantitative problems or qualitative questions.
10. Solve problems using the principles of heat and thermodynamics.
11. Solve basic fluid mechanics problems.

IV. Evaluation

A. Preassessment

There is no preassessment for this course.

B. Postassessment

The scheduling of examinations, homework, and quizzes will be the sole prerogative of the instructor. The manner, frequency, and extent of these instruments 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 (Americans 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 Rm C-112 (831-2426); TM Rm 1400 (831-5808); RG Rm B-201 (831-4198); NWC Rm M-54 (831-8815); and MDP Rm A-125 (831-7024).

VI. 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.