

**PALOMAR COLLEGE**  
**COURSE OUTLINE OF RECORD FOR**  
**DEGREE CREDIT COURSE**

X  Transfer Course     X  A.A. Degree applicable course  
(check all that apply)

**COURSE NUMBER AND TITLE:** PHYS 120 - General Physics

**UNIT VALUE:** 4

**MINIMUM NUMBER OF SEMESTER HOURS:** 96

**BASIC SKILLS REQUIREMENTS:** Appropriate language and computational skills.

**ENTRANCE REQUIREMENTS**

**PREREQUISITE:** MATH 110

**COREQUISITE:** None

**RECOMMENDED PREPARATION:** MATH 115

**SCOPE OF COURSE:**

The fundamental principles of classical mechanics, wave motion, sound, thermodynamics, and fluids.

**SPECIFIC COURSE OBJECTIVES:**

The successful student will be able to:

1. Demonstrate a comprehensive understanding of introductory classical mechanics, wave motion, sound, and heat which is intended for lower division students who may need to satisfy certain physical science requirements with an algebra based physics course.
2. Apply the physics concepts and principles included in this course.
3. Use critical thinking skills to analytically solve quantitative physics problems.
4. Apply the appropriate laws of physics to laboratory situations, perform experiments, collect and analyze data, and prepare and present reports.

**CONTENT IN TERMS OF SPECIFIC BODY OF KNOWLEDGE:**

**LECTURE:**

- I. Classical Mechanics
  - A. Measurements and units
  - B. Vectors
  - C. Kinematics
  - D. Dynamics
  - E. Gravitation and circular motion
  - F. Work and energy
  - G. Linear momentum
  - H. Rotational motion
  - I. Harmonic motion and waves
  - J. Sound

- II. Thermodynamics
  - A. Temperature, Heat, and the first law of thermodynamics
  - B. Kinetic theory of gases
  - C. Entropy and the second law of thermodynamics
- III. Fluids
  - A. Density and pressure
  - B. Fluids at rest
  - C. Pascal's Principle
  - D. Archimedes' Principle
  - E. Fluids in motion
  - F. Bernoulli's Equation

**LABORATORY:**

Selected experiments dealing with the above subject matter.

Additional topics may be included at instructor's discretion.

**REQUIRED READING:**

Giancoli, Douglas C. Physics. 5<sup>th</sup> Ed. Upper Saddle River: Prentice Hall, 1998.

OR

Serway, Raymond A. and Jerry S. Faughn. College Physics. 5<sup>th</sup> Ed. Fort Worth: Saunders College Publishing, 1999.

AND

Finkenthal, D. Physics 120/200 Lab Experiments. Palomar College, 2001.

**SUGGESTED READING:**

Boyle, Joseph. Physics the Study Guide. 4<sup>th</sup> Ed. Englewood Cliffs: Prentice Hall, 1995.

**REQUIRED WRITING:**

Students may be required to submit written lab reports and written and/or quantitative answers for assigned work and/or examinations.

**OUTSIDE ASSIGNMENTS:**

**Students are expected to spend a minimum of three hours per unit per week in class and on outside assignments, prorated for short-term classes.**

Preparation includes such activities as readings in assigned text, review of lecture and laboratory materials, and solving assigned problems.

**INSTRUCTIONAL METHODOLOGY:**

**Check all that apply:**

- lecture
- laboratory
- lecture-laboratory combination
- directed study

**DISTANCE LEARNING:**

**This course may be offered as a distance learning course and meets Title 5 regulations 55370, 55372, 55374, 55376, 55378, and 55380.**

Yes \_\_\_ No X

**If yes, check all that apply:**

- Television Course (Video one-way, e.g. ITV, video cassette, etc.)
- Online Course (Text one-way, e.g. newspaper, correspondence, electronic file, etc.)
- Two-Way Video Conferencing (Two-way interactive video and audio)
- One-Way Video Conferencing (One-way interactive video and two-way interactive audio)
- Computer Assisted Instruction (A specialized form of mediated instruction relying primarily on student access to information and prepared lessons or teaching materials through a computer terminal, but not under immediate supervision of a qualified instructor.)

**GRADING POLICY AND STANDARDS** (include methods of determining whether the stated objectives have been met by students):

Grades are determined by scores on exams and laboratory work according to the following plan:

Three or more exams	45%
Final exam	30%
Lab	25%

An insufficient performance in lab may result in effectively lowering the course grade by more than 25%.

**IS COURSE REPEATABLE FOR REASON(S) OTHER THAN DEFICIENT GRADE?**

Yes \_\_\_ No X Number of times course may be taken for credit: 1

If yes, identify specific provision of Title 5 Division 2 section(s), 55761-55763 and 58161 which qualifies course as repeatable:

**CONTACT PERSON:** Daniel Finkenthal

**SIGNATURES ON FILE**