

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 121 - General Physics

UNIT VALUE: 4

MINIMUM NUMBER OF SEMESTER HOURS: 96

BASIC SKILLS REQUIREMENTS: Appropriate language and computational skills.

ENTRANCE REQUIREMENTS

PREREQUISITE: PHYS 120

COREQUISITE: None

RECOMMENDED PREPARATION: None

SCOPE OF COURSE:

A second-semester continuation of PHYS 120. The fundamental principles of optics, electricity, magnetism, and modern physics.

SPECIFIC COURSE OBJECTIVES:

The successful student will be able to:

1. Demonstrate a comprehensive understanding of introductory classical electromagnetism, optics, and modern physics 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. Electricity and Magnetism
 - A. Electric forces and fields
 - B. Electrical potential
 - C. Capacitance
 - D. Electric currents and DC circuits
 - E. Magnetism
 - F. Electromagnetic induction
 - H. Electromagnetic waves
- II. Optics
 - A. Properties of light
 - B. Geometric Optics

- C. Physical Optics
- III. Modern Physics
 - A. Special Relativity
 - B. Early Quantum Theory
 - C. Atomic Physics
 - D. Nuclear Physics

LABORATORY:

Selected experiments dealing with the above subject matter.

Additional topics may in included at instructor's discretion.

REQUIRED READING:

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

AND

Finkenthal, D. Physics 121/201 Lab Experiments. Palomar College, 2001.

SUGGESTED READING:

Boyle, Joseph. Physics the Study Guide. 4th 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

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 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