

Las Positas College  
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**Course Outline for PHYS 29**  
**INDEPENDENT STUDY, PHYSICS**  
**Effective: Fall 2018**

**I. CATALOG DESCRIPTION:**

PHYS 29 — INDEPENDENT STUDY, PHYSICS — 0.50 - 2.00 units

Supervised independent study in the area of Physics. Any student interested in registering for an Independent Studies course should contact a full/part-time instructor or dean in the appropriate area.

0.50 - 2.00 Units Lab

**Grading Methods:**

Letter Grade

**Discipline:**

- Physics/Astronomy

	<b>MIN</b>	<b>MAX</b>
<b>Lab Hours:</b>	27.00	108.00
<b>Total Hours:</b>	27.00	108.00

**II. NUMBER OF TIMES COURSE MAY BE TAKEN FOR CREDIT: 1**

**III. PREREQUISITE AND/OR ADVISORY SKILLS:**

**IV. MEASURABLE OBJECTIVES:**

**Upon completion of this course, the student should be able to:**

- A. Develop a project in Physics to develop skills or deepen knowledge
- B. Complete the project according to established standards in the field.
- C. Effectively communicate the essential concepts and results to the instructor.

**V. CONTENT:**

- A. Develop skills or knowledge that reinforce or expand upon basic Physics concepts.
- B. Develop methodology and reporting structure for a project.
- C. Develop scientific communication skills.

**VI. METHODS OF INSTRUCTION:**

- A. **Demonstration** - as noted on the independent study form
- B. **Classroom Activity** - work with faculty member to develop necessary skills to fulfill project requirements
- C. **Projects** - as noted on the independent study form
- D. **Discussion** - with instructor

**VII. TYPICAL ASSIGNMENTS:**

- A. Reading Assignments
  1. identification of a research project topic may include extensive reading
  2. amassing the background information necessary to fulfill the project may include extensive reading
- B. Writing Assignment
  1. periodic write-ups of the project may be assigned every few weeks
  2. a final paper or other form of written work may be required
- C. Lab Work
  1. completion of the project may require extensive lab work

**VIII. EVALUATION:**

**A. Methods**

1. Research Projects
2. Papers
3. Oral Presentation
4. Projects
5. Lab Activities
6. Other:

- a. assignments/activities specified on the independent study form

**B. Frequency**

1. Research project due by the end of the semester

2. Written paper due by the end of the semester
3. Oral presentation given at the end of the semester
4. Status reports on all projects and lab activities may be required weekly or biweekly throughout the semester
5. All other methods of evaluation due at the end of the semester

IX. TYPICAL TEXTS:

1. Textbooks, periodicals, manuals, and references associated with the project will be determined in consultation with the instructor.

X. OTHER MATERIALS REQUIRED OF STUDENTS:

- A. as needed