

# PHYS 141 — General Physics I

## *Parallel Pedagogy Syllabus*

Cross-listed sections: PHYS 141-06 and PHYS 141-20

### Instructor Information

- **Instructor:** Dr. Reza Monadi
- **Department:** Cal Poly Physics
- **Email:** rmonadi@calpoly.edu
- **Office:** Building 52, Room E-14

### Course Policies and Expectations

#### Grading Overview

Your grade is based on demonstrated understanding of physics concepts, not point accumulation. Preparation—including videos, readings, homework, and projects—is essential.

- **Assessments (100%)**
  - Weekly Assessments: 70%
  - Final Exam: 30%
- **Participation (Required)**
  - At least 90% completion required to receive the earned assessment grade
  - Falling below 90% reduces the final grade

#### Grade Replacement Policy

The final exam is cumulative. If a final-exam question score exceeds the corresponding weekly assessment score, the higher score replaces the lower one. This also functions as a built-in makeup policy. Please do not request assessments outside regular class time.

### Assessments

#### Weekly Assessments

- Held Wednesdays (approximately 20 minutes)
- First two weeks do not count toward the final grade

**Final Exam**

- Cumulative
- Weighted 30%
- Functions as grade replacement

**Assessment Rules**

- No calculators permitted
- Focus on concepts, diagrams, and symbolic reasoning
- Numerical answers within  $\pm 20\%$  are acceptable

**Assessment Rubric**

- A (4/4)** Complete solution with clear statement, diagram, method, correct answer with units, and sense check
- B (3/4)** Clear statement, diagram, and valid method
- C (2/4)** Correct statement and labeled physics diagram
- D (1/4)** Statement and minimal diagram identifying the concept
- F (0/4)** Does not meet minimum threshold

*Note: A score of 2/4 (C) is considered passing per university GPA policy.*

**Participation Requirements**

To qualify for full assessment-based grading, at least 90% of participation activities must be completed.

**Videos**

- Watch assigned videos before class
- Embedded questions required
- Full credit for on-time completion; half credit if late
- Final grade penalty equals twice the percentage of videos missed

**Readings**

Verified through short reading quizzes at the beginning of class.

## Homework

- Due Tuesdays before class
- Counts as two videos per week
- Not graded for correctness

## Projects

- Project 1 (Week 3): Video analysis of motion (human power production)
- Project 2 (Week 7): Data analysis using the PhyPhox app
- Two students per group

## Surveys

Count as video participation.

## Idea Sheets

Students may bring a personal idea sheet (maximum 50 items, diagrams included). Excessive information may require removal during an exam.

## Course Materials

- **Textbook/Workbook:** *Mechanics in Parallel*
- **Notebook:** Required for drawings and notes (“thinking with your hands”)

## Policies

### Attendance and Illness

If you are sick (including COVID-like symptoms), please stay home. Stay connected by having group members Zoom you into class if needed.

### 24-Hour Policies

1. Class prep requirements will not change within 24 hours of class
2. Assessments will be returned within 24 hours (by Thursday)
3. Results will not be discussed until 24 hours after return

**Cell Phones**

Phones should be put away unless used for class experiments or remote group participation.

**Cheating**

Suspected cheating results in an F and a report per university policy. If you are struggling, please talk with the instructor before making poor decisions.

**Classroom Values**

- Commitment to student learning
- Preparation and mutual respect
- Collaboration over competition
- Diversity, inclusion, empathy, and free inquiry

**Student Learning Outcomes**

By the end of the course, students will be able to:

1. Explain the four analytical lenses of mechanics
2. Select and justify appropriate modeling approaches
3. Design and conduct simple experiments
4. Apply scientific reasoning to complex problems
5. Collaborate on evidence-based explanations
6. Recognize limits of current understanding
7. Reflect on local and global impacts of actions
8. Articulate the role of empathy in science