

De Anza College

PHYS 50, Preparation Physics, Fall 2023

Overview

Course Description

A study in basic problem solving techniques in mechanics as a preparation for PHYS D004A.

Course Format

Instructor: Andrew Totah-McCarty

Contact:

- Canvas message (preference)
- Email: totahmccartyandrew@fhda.edu

Lecture Hours: Mondays and Wednesdays 5:30-7:20 PM

Lecture Location: Online using Zoom. Click on the Zoom link in the course navigation or find the zoom links in your calendar.

Office Hours: Online using Zoom. Fridays 9:00AM-10:00AM here: <https://us06web.zoom.us/j/81790625583>

Each lecture will be organized around four to five learning cycles. A learning cycle is organized around a Model and has three (mostly) sequential phases: Exploration, Critical Thinking & Concept Invention, and Application.

You are expected to attend every lecture discussion.

Students will use shared Google Slides primary working space during class. All students should also have a notebook (spiral, composition, tablet, etc) with them during class each day. Documenting each learning cycle will help you develop quality, cohesive course notes.

Students will engage in **Preparation Assignments** prior to each class. In these preparation assignments, students will record the models and complete the exploration questions in their notebook and upload this work to Canvas. During class, we will extend this work with the Critical Thinking & Concept Invention, and Application phases of the learning cycle. Students will also complete **Homework** assignments each week that represent applications of the course content. Homework assignments will be similar in format to Unit Assessments.

Student Learning Outcome (SLO)

Upon successful completion of this course, students will be able to:

1. Examine critically new, previously un-encountered problems, analyzing and evaluating their constituent parts, to construct and explain a logical solution utilizing, and based upon, the fundamental laws of mechanics.

Required Texts/Readings

Textbook

- PHYSICS 4th Edition Vol. 1 by James S. Walker

Other material requirements

You must identify a notebook for use in this class and bring that notebook to each lecture. Spiral, composition, or tablets will all work. Your preparation assignments and class notes will all go into this notebook. You might find it useful to have colored pencils or different colored pens as well, but that is not required.

Course Requirements and Assignments

Preparation Assignment

All Preparation Assignments are posted on the canvas webpage, and all Preparation Assignments are due electronically: **Preparation Assignments MUST be scanned and uploaded to canvas AS A ".pdf" FILE before your lecture begins.**

All preparation assignments are posted on the Canvas webpage, and all responses are submitted electronically. Preparation assignment submissions must be uploaded to Canvas as a PDF file before your lecture meeting. More information about how to submit preparation assignments will be provided in your first assignment.

Each Preparation Assignment will be graded on the same rubric (see assignments in Canvas) Preparation assignments are graded based on timeliness and completeness, not accuracy.

Homework

There will be a homework assignment each week that serves as an application of lecture content. Homework assignments resemble quizzes, but are often shorter (for example, a homework assignment might have one question while a quiz might have three or four questions).

Homework assignments are meant to be a space to practice and are graded based on timeliness and completion only. Late homework assignments will receive a 20% reduction.

We have a unique procedure for providing you with feedback on homework and quizzes. After completing your homework, you will convert it to a .pdf file, and then submit it as an assignment on Canvas. This will allow us to give you feedback that is automatically digitally organized in a rubric.

Each student will be assigned homework from other students to peer review, using a standards-based rubric. These reviews are anonymous and will combine with the instructors' review to determine the overall grade that students get for the physics they demonstrate on their quiz. Additionally, your review will be calibrated against instructor reviews and you will receive a peer review score. Your physics and peer review scores combine to give you a quiz grade as follows:

- 80% Physics Demonstrated
- 20% Peer Feedback Score

Feedback will be provided within one week of homework submission. If you do not submit the file of your homework to canvas, you will receive an F (50%) and will not receive feedback. We have a floor of 50% on all standards for homework and quizzes so that each grade band (A-F) is equal in size.

Unit Assessments

There are **three** different unit assessments throughout the quarter, each on a major topic and model. Unit assessments will be taken **asynchronously** in a window from 7:30PM Wednesday until 5:00PM Friday. These assessments should only take approximately 60-90 minutes to complete, but you may use as much time during the assessment window as you like. Please see the Canvas page “Assessment Resource Policy” (under Modules, will be published soon) regarding what resources you may use during each assessment.

Assessments will receive scores based on specific learning standards that can be demonstrated on that assessment. It is your responsibility to demonstrate the relevant standards, which might require more models, annotations, or explanations than are necessary to simply answer a question. Each standard will be scored in one of three categories:

1. Complete Evidence of Understanding: 100%
2. Evidence of Partial Understanding: 70%
3. Minimal Evidence of Understanding: 50%

The scores for the standards for each assessment will be averaged together to determine a final score. A single question may be an opportunity to demonstrate multiple standards.

If an illness or emergency causes you to miss an assessment, please notify your instructor ASAP.

Make-up exams may involve a portion where you will be required to solve problems on a whiteboard.

Similar to homework, you will engage in a peer review process for assessments. As part of this process, you will calibrate your scores with the instructor scores. Based on this calibration, you will get a peer review score, which will average with your quiz standards score.

Final Examination

There will be one final exam in this course. This exam is an opportunity to demonstrate the standards from previous assessments. For each topic, only the highest score (Unit Assessment or Final) will be used to calculate your grade in the course.

Grading Information

Grade Categories & Weights

Assignment Type	Grade Weight
Preparation Assignments	15%
Homework	10%

Average of All Assessments	75%
Total	100 %

Grade Range

Your final grade will be calculated according to the percentages shown below.

Points	Letter Grade
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90-100	=	A
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80-89	=	B
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70-79	=	C
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60-69	=	D
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< 59	=	F
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Student Learning Outcome(s):

- Examine critically new, previously un-encountered problems, analyzing and evaluating their constituent parts, to construct and explain a logical solution utilizing, and based upon, the fundamental laws of mechanics.

Office Hours:

F 09:00 AM 10:00 AM Zoom