

De Anza College Physics 4A Syllabus

Spring 2022

Class Details:

Lecture: M-F 1:30pm-2:20pm

Lab: Tuesday/Wednesday 2:30pm-5:30pm

6 units

Instructor:

David Laubner

Email:

laubnerdavid@fhda.edu

This is the best way to reach me!

Office Hour:

Tuesday 12:30pm-1:20pm

Final Exam:

Tuesday, June 21st 1:45pm-3:45pm, online

Text:

Physics for Scientists and Engineers (Vol. 1), 10th Edition, Serway/Jewett

A PDF online copy of the textbook is fine unless you prefer a physical copy. I will be working from the 10th edition, but you are welcome to use an earlier edition if that is more accessible to you.

Course Description:

This course will serve as an introduction to the laws and theories of classical mechanics. The topics that we will cover include kinematics in one and two dimensions, vectors and how they relate to the physical world, Newton's laws of motion, conservation of energy and momentum, including both linear and angular momentum, rotational mechanics, gravitation, and oscillatory motion.

Learning Outcomes:

The goal of the course is to understand the laws of motion both conceptually and practically, in order to better understand the world around us. Problem solving will strengthen critical thinking, careful analysis, and logical evaluation.

Homework:

Homework will be submitted online via Expert TA. Late homework will be accepted with deductions on a question-by-question basis. Late questions will receive a 10% per day penalty. For example, if you submit 8 out of 10 questions on time, then you will receive full credit for that question. If you submit the other two questions two days later, then 20% of your score will be deducted from those questions only.

Labs:

Most labs will be conducted online via PhET simulations from the University of Colorado, Boulder, and some labs may include a video of an experiment with accompanying data to be analyzed. In any case, labs are to be completed and submitted within 24 hours of the lab completion time. This means that, for students in the Wednesday lab section, labs must be submitted by Thursday at 5:30pm.

Attendance of labs is mandatory. Communication in advance should be given prior to any labs that must be missed. Absences will be excused for extenuating circumstances at my discretion. Two or more unexcused absences may result in being dropped from the course.

Exams:

There will be three 50-minute midterms and one comprehensive final exam. **There are no makeup exams.** Missed exams will receive a score of 0. The key to success for the exams is preparation. This includes attending and engaging in lectures, reading and understanding the textbook, asking questions when you don't understand something, doing the assigned homework, and practicing solving problems. You may use a calculator on an exam, such as a scientific or graphing calculator. However, a phone may not be used as a calculator for exams. Exams will be proctored via Zoom. You will be required to have your camera on during the exams.

Academic Integrity:

The work that you submit must be your own. Cheating will result in a score of 0 for the assignment or exam in question. Further action will be taken for subsequent incidents of cheating.

Course Grade Distribution:

| | |
|----------|-----|
| Homework | 20% |
| Exam 1 | 15% |
| Exam 2 | 15% |
| Exam 3 | 15% |
| Labs | 15% |
| Final | 20% |

Letter grades will be determined in the following manner:

| | |
|----------|---|
| 90 - 100 | A |
| 80 - 89 | B |
| 70 - 79 | C |
| 60 - 69 | D |
| 0 - 59 | F |

Student Learning Outcome(s):

*Critically examine 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.

*Gain confidence in taking precise and accurate scientific measurements, with their uncertainties, and then with calculations from them, analyze their meaning as relative, in an experimental context, to the verification and support of physics theories.