Physics 4A: Syllabus
Fall 2021

Class Details:

6 units
Lecture Mon/Wed 5:30pm-7:45pm, online
Lab Wed 7:55- 10:45pm, online

Instructor:

Megan Ulbricht

Email:

ulbrichtmegan@fhda.edu

Office Hours:

Mon and Wed 4:30pm-5:20pm, online
Sept. 22 – Dec. 6

Final Exam:

Monday Dec. 6, 2021 6:15pm-8:15pm, online

Text:

Physics for Scientists and Engineers, 9th edition, volume 1 by Serway and Jewett
It is not required but strongly recommended that you obtain a copy of the text. There is no need for a physical copy unless that is the format that you prefer (in other words, a pdf is fine).

Course Description:

This course serves as an introduction to the basic laws and theories of classical mechanics. The topics covered in this course include kinematics in one and two dimensions, vectors and trigonometry as they relate to the physical world, Newton's Laws of motion, work, conservation of energy and momentum, rotational kinematics and dynamics, equilibrium of rigid bodies, gravitation, and oscillations.

Important Dates:

October 3, Last day to drop a class
November 11, Veteran's Day Holiday, no class
November 12, Last day to drop with a W
November 25-28, Thanksgiving Holiday, no class

Course Grade Distribution:

Homework	15%
Midterm I	20%
Midterm II	20%
Final Exam	30%
Lab	15%

Letter Grade Distribution:

Percent	Grade	Grade Points
>98%	A+	4.0
92% - 97.9%	A	4.0
90% - 91.9%	A-	3.7
88% - 89.9%	B+	3.3
82% - 87.9%	B	3.0
80% - 81.9%	B-	2.7
78% - 79.9%	C+	2.3
70% - 77.9%	C	2.0
68% - 69.9%	D+	1.3
62% - 67.9%	D	1.0
60% - 61.9%	D-	0.7
<60%	F	0.0

Homework:

Homework will be submitted online via Expert TA. Click an assignment link on Canvas to get started with the program. Homework done on paper will not be accepted.

Late homework is accepted, with deductions. Each problem completed after the due date will be docked 5% per day. For example, if 8 out of 10 problems are completed by the due date, you will keep all points earned on those 8 problems, regardless of whether/when you complete the remaining 2 problems. If you finish the remaining problems 3 days after the due date, 3x5%=15% will be deducted from your score on those 2 problems only.

Exams:

There will be two midterms and one comprehensive final. The exams will include a multiple choice and a free response section, with the free response section accounting for the bulk of the points. The grading on the multiple choice section is all-or-nothing. Partial credit will be awarded where appropriate on the free response problems. **There are no makeup exams.**

You may use any calculator that you would like, with the exception of a cellphone calculator, as well as a 3”x5” notecard containing any equations/notes that you find helpful.

If you perform better on the final exam than one or both of the midterms, I will average your final exam score with your lowest midterm score and replace your midterm score with that value. For example, if your lowest midterm score is 60% and you earn an 80% on the final, I will replace the 60% with (60%+80%)/2 = 70%.

Exams will be proctored via Zoom. You will be required to turn your camera on during the exams and position your camera so that I can see your workspace (more info on this as the first midterm approaches).

Lab:

Most of the labs will be done online using PhET simulations created at the University of Colorado at Boulder. Others may involve videos of experiments with accompanying data to analyze or practice problems done on paper. Regardless of the format, work will be submitted via Canvas by noon the following day.

Attendance is mandatory. You may be dropped from the class if you have more than one unexcused absence in lab. Absences will be excused only in the case of serious injury or illness or other serious events, at my discretion. Notification of a forthcoming absence should be given prior to the missed lab.

The lowest lab score will be dropped.

Academic Integrity:

Cheating will result in a score of 0 on the assignment or exam in question. Further disciplinary action may be taken on a case by case basis.

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.