

# Physics 4A Syllabus

## Winter 2023

**Class Details:**

6 units

Lecture MTWTh 1:30-2:20pm, S32; F 1:30-2:20pm, Online

Lab T or Th 2:30- 5:20pm, S11

**Instructor:**

Megan Ulbricht

**Email:**

[ulbrichtmegan@fhda.edu](mailto:ulbrichtmegan@fhda.edu)

**Final Exam:**

Tuesday March 28, 2023 1:45pm-3:45pm, S32

**Text:**

Physics for Scientists and Engineers, 10th 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:**

Jan 16, Martin Luther King Jr. Holiday, campus closed

Jan 21, Last day to add a class

Jan 22, Last day to drop a class

Feb 17-20, Presidents' Holiday, campus closed

March 3, Last day to drop with a W

**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.

Some late homework will be accepted with deductions. Once the answers to the assignment are available, no late work will be accepted for that assignment. There is no set length of time between when the assignment is due and when the answers become available— it varies depending on proximity to an exam— but it is usually between one day and one week.

Any 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,  $3 \times 5\% = 15\%$  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 roughly 75% 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 as long as it is not on a web-enabled device (i.e., no cellphone calculators, Desmos, etc.) 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 midterms, I will average your final exam score with your lowest midterm score and replace your lowest midterm score with that value. For example, if your lowest midterm score is 60% and you earn 80% on the final, I will replace the 60% with  $(60\%+80\%)/2 = 70\%$ .

Communicating with classmates or having a phone or other web-enabled device out during an exam may constitute academic dishonesty and may result in a zero on the exam. Phones, tablets, and computers are not allowed out during exams.

**Lab:**

**Attendance is mandatory.** You may be dropped from the class or receive a non-passing grade 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:**

An academic integrity violation 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. Violations include communicating with a classmate or using a phone or other prohibited device during an exam, copying another student's work, allowing someone to copy your work, copying online solutions, and plagiarism.

**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.

**Office Hours:**

T,TH 12:30 PM 01:20 PM In-Person S13