

# Physics 4A: Syllabus

## Winter 2021

**Class Details:**

6 units  
Lecture Mon/Wed 5:30pm-7:45pm, online  
Lab Wed 8:00- 10:55pm, online

**Instructor:**

Megan Ulbricht

**Email:**

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

**Office Hours:**

Mon and Wed 4:30pm-5:20pm, online  
January 6 - March 22

**Final Exam:**

**Monday March 22, 2021 6:15pm-8:15pm, online**

**Text:**

Physics for Scientists and Engineers, 9th edition, volume 1 by Serway and Jewett  
You will have the option of purchasing the eText with the WebAssign online homework submission program. **A physical copy of the text is not required.**

**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:**

January 18, Last day to drop a class  
January 18, Martin Luther King Jr. Holiday, no class  
February 12-15, President's Holiday, no class  
February 26, 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 WebAssign. There is a link on Canvas to get started with the program. Homework done on paper will not be accepted.

Because we are using a version of WebAssign that is integrated with Canvas, **you must login to WebAssign through Canvas**. If you go directly to the WebAssign site you will be unable to access the course content. There is no “class key” associated with our WebAssign course.

Any homework problems done more than 24 hours before the due date will be awarded 5% extra credit. You do not need to *finish* the assignment 24 hours before the due date; the extra credit will be applied to individual problems. This will be the only extra credit opportunity so take advantage!

Late homework will be accepted up to one week past the original due date. Send homework extension requests by email or Canvas message. **I do not check messages and extension requests on WebAssign.**

### 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. This arrangement requires some maneuvering- I will share some tips in class prior to the first exam.

**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. Either way, 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 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.

**Extra Credit:**

As mentioned above, the only extra credit offered in this course is the 5% extra credit on homework problems submitted more than 24 hours before the original due date. If you are unhappy with your grade at the end of the course and contact me requesting extra credit, my answer will be no.

**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.