Physics 4C Syllabus
Spring 2025

Class Details:

6 units
Lecture TTh 5:30-7:45pm, S34
Lab T 2:30-5:20pm, S11, see lab syllabus

Instructor:

Megan Ulbricht

Email (best way to reach me):

ulbrichtmegan@fhda.edu

Office Hours:

T 1:30-2:20pm, Th 4:30-5:20pm, S13

Final Exam:

Tuesday June 24, 6:15pm-8:15pm, S34

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 covers fluid mechanics (pressure, Archimedes's Principle, Bernoulli's equation), thermodynamics (temperature, the zeroth, first, and second laws of thermodynamics, thermal expansion, the ideal gas law, calorimetry, kinetic theory of gases, heat engines, entropy), mechanical waves (traveling waves, wave on a string, sound waves, wave interference, standing waves, doppler effect), and optics (geometric optics, reflection, refraction, image formation, single and double slit interference, polarization). This corresponds with chapters 14, 16-21, and 34-37 in the text.

Requisites:

Passing grade (C or higher) in Physics 4B and at least concurrent enrollment in Math 1D or 1DH

Important Dates:

April 20, Last day to drop without a W
May 24-26, Memorial Day Weekend, campus closed
May 30, last day to drop with a W
June 19, Juneteenth Holiday, campus closed

Course Grade Distribution:

Homework	15%
Midterm 1	20%
Midterm 2	20%
Lab	15%
Final Exam	30%

Letter Grade Distribution:

Percent	Grade	Grade Points
>97%	A+	4.0
93% - 96.9%	A	4.0
90% - 92.9%	A-	3.7
87% - 89.9%	B+	3.3
83% - 86.9%	B	3.0
80% - 82.9%	B-	2.7
77% - 79.9%	C+	2.3
70% - 76.9%	C	2.0
67% - 69.9%	D+	1.3
63% - 66.9%	D	1.0
60% - 62.9%	D-	0.7
<60%	F	0.0

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 majority 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.**

Bring a pencil, eraser, and scientific calculator to the exams. Graphing calculators and calculators on web-enabled devices are not allowed. An equation list and scratch paper will be provided. No additional notes or materials are allowed on the exams.

The average of your final exam score and your lowest midterm will replace your lowest midterm, providing the final exam score is higher. For example, if your lowest midterm score is a 60% and you get an 80% on the final exam, 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.

Failing to turn in exam promptly when the exam time has ended may result in a deduction from your exam score at my discretion.

Homework:

Homework will be submitted online via Expert TA. A one-quarter-long subscription costs $23.34 and can be purchased online or at the bookstore. Click on an assignment link on Canvas to get started with the program. Homework done on paper will not be accepted.

Some 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. **Late work is accepted only until the closing date of the assignment**, when the answers become available. Closing dates can be found under the column labeled "End" on the Expert TA assignment list.

Lab:

Attendance is mandatory. See lab syllabus for more details.

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. 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 waves, fluids, optics, and thermodynamics.
• Acquire 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	2:30 PM - 5:20 PM	S13