Physics 4C Spring 2017

Section	PHYS-D004C-66 CRN: 44389
Lecture Instructor	Lana Sheridan
Email	sheridanlana@fhda.edu
Office	S13
Office Hours	M & W, 8-8:30pm
Lecture Hours	M & W, 5:30-7:45 pm
Lab Instructor	Kashi Nath
Lab Hours	M, 2:30-5:20pm
Textbook	Physics for Scientists and Engineers, 9$^{\text{th}}$ Edition, Serway and Jewett
Prerequisites	Passing Physics 4B and at least concurrent enrollment in Math 1D
First Test Date	(TBC) Wednesday, April 19
Final Exam Date	Monday, June 26, 6:15-8:15 p.m. (check for updates on De Anza's website)

1   Topics

This course covers introductory fluid mechanics, thermodynamics, waves, light, and optics. Students should leave this course with an understanding of pressure in fluids, lift, how gases behave, what temperature is, how changing temperatures can effect materials, heat exchange, how engines work, wave reflection and interference, how sounds of particular pitches are produced in musical instruments, bow waves and shock waves, prisms, ray optics, lenses, how optical fibers work, interference patterns, diffraction patterns, and polarization of light. Along the way we will cover Archimedes' principle, Bernoulli's equation, internal energy, latent heat, Newton's law of cooling, the laws of thermodynamics, kinetic theory, Carnot's theorem, the linear wave equation, the Doppler effect, dispersion, Huygens principle, image formation, Young's double slit experiment, and the Michelson interferometer. This will be chapters 14–22 and 35–38 of the textbook.

In this course you will learn the fundamental concepts involved in these topics and how to apply them to solve problems.

2   Attendance

In order to comply with federal guidelines De Anza College requires students to attend class and class attendance records to be kept. A student may miss a few classes for medical or personal reasons, however, unexplained absence of more than 2 consecutive classes or

frequent absence will result in a student being dropped from the course. Late arrivals count as absences at my discretion.

3 Homework

There are two types of homework for this course.

- Uncollected homework - this will be set from problems at the end of each chapter in the textbook each class.

- Collected homework - these will be worksheets with more challenging questions which you will have at least 5 days to work on; they count toward your grade.

3.1 Uncollected Homework

This homework will not count towards your grade, however, it is very important to do this homework as part of your study! This will make concrete the ideas discussed in the lectures by allowing you to apply them immediately. I will try to set almost exclusively problems that have answers in the back of the textbook. If you have difficulty with the homework you can come to office hours, ask me just before or after a lecture, work together with other students, or go to the Math and Science Tutorial Center (Student Success Center). Doing these problems will help you prepare for the quizzes and tests.

The set problems should not be viewed as the only problems you can do: you are strongly encouraged to look through all of the problems at the end of each chapter and consider how each should be approached. **You should read the textbook.**

3.2 Collected Homework

Collected homework problems may contain more challenging problems. You will have a number of days to do them, so be sure not to leave them until the last minute. You will also be marked on the clarity of your logical reasoning, so be sure to use as much paper as you need to present your answer fully. You may wish to present each question on a separate piece of paper. You are encouraged to work with other students on these problems, however, you must write up your solution yourself. Identical solutions are not acceptable. Further, since you are allowed to work together, simply writing down the answer is not sufficient. You must make it clear that you understand the reasoning that got you to the answer.

4 Quizzes

There will be approximately 5 or 6 short quizzes set in class time. The quiz questions will be based on the uncollected homework problems. There will be no make-up quizzes, however, each student's lowest quiz score will be dropped.

There will be informal questions in class to test your understanding. These will not count towards your grade (unless it becomes clear that students are not putting in effort).

5 Tests

There will be three tests set in class time. The first will be on Wednesday, April 13. All three will count toward your final score, and there will be no make-up tests. (If you must miss a test, you must get clearance with me ahead of time.) In order to do well on the tests, read the textbook, and do all the homework problems.

6 Cheating

In the case that a student is found to be cheating on a piece of work, quiz, or test, the grade for that will be zero.

7 Evaluation

4 collected HWs	16% in total
quizzes	10% in total
3 tests	24% in total
final	30%
labs	20%

Projected Grading Scheme:

$$
\begin{aligned}
95\% &\to 100\% &&= A+ \\
88\% &\to 94\% &&= A \\
85\% &\to 87\% &&= A- \\
82\% &\to 84\% &&= B+ \\
73\% &\to 81\% &&= B \\
70\% &\to 72\% &&= B- \\
65\% &\to 69\% &&= C+ \\
55\% &\to 64\% &&= C \\
46\% &\to 54\% &&= D \\
0\% &\to 45\% &&= F
\end{aligned}
$$

Note: If there is any dispute about marking, I will consider it only within two school days of the paper being returned to you. Grades for the final exam are final and not subject to dispute.