

Physics 4B Fall 2015

Section	PHYS-D004B-03	CRN: 23319
Lecture Instructor	Lana Sheridan	
Email	sheridanlana@fhda.edu	
Office	S13	
Office Hours	Tuesdays 2:30-3:30pm & 4:30-5:30pm; Fridays 2:30-3:00pm	
Lecture Hours	M-F, 1:30-2:20 pm	
Lab Instructor	Ronald Francis	
Textbook	Physics for Scientists and Engineers, 9 th Edition, Serway and Jewett	
Prerequisites	Passing Physics 4A and at least concurrent enrollment in Math 1C	
First Test Date	Friday, Oct 9	
Final Exam Date	Wednesday, Dec 9, 1:45-3:45 p.m.	

1 Topics

This course covers electricity and magnetism. Students should leave this course with an understanding of how to use the principles of electromagnetism in order to predict the behavior of systems, and gain an intuition for how various technologies that make use of electromagnetism work. We will cover electric charge, charge interactions, electric fields, Gauss's law, electrical potential, capacitance, DC circuits, magnetism and magnetic fields, the relationship between electric and magnetic fields, Ampère's law, Faraday's law, induction, and the Ampère-Maxwell's law. By the end of the course students should know Maxwell's equations in integral form and the form of the Lorentz force and when and how to apply these expressions. This will be chapters 23–34 of the textbook.

2 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 on a nightly basis.
- 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.

2.1 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 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.**

2.2 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.

3 Tests

There are no formal quizzes in this course, but there will be informal questions to test your understanding in class. These will not count towards your grade (unless it becomes clear that students are not putting in effort).

There will be three tests set in class time, spaced at roughly three week intervals. The first will be on Friday, Oct 9. All three will count toward your final score, and there will be no make-up tests. In order to do well on the tests, read the textbook, and do the homework problems.

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.

4 Cheating

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

5 Evaluation

4 collected HWs	5% each (20%)
3 tests	10% each (30%)
final	30%
labs	20%

Projected Grading Scheme:

85% → 100%	= <i>A</i>
70% → 84%	= <i>B</i>
55% → 69%	= <i>C</i>
46% → 54%	= <i>D</i>
0% → 45%	= <i>F</i>