

**Physics 2B Syllabus**  
Spring 2018  
Instructor: Megan Ulbricht  
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**Lecture:** Tue/Thurs 5:30 - 7:20pm Room: S17  
**Lab:** Thurs 7:30 - 10:20pm Room: S17  
**Final Exam:** June 26, 2018 6:15 - 8:15pm Room: S17  
**Office hour:** Tue 4:15 - 5:15pm Room: S13

**Course Description:** This course serves as an introduction to the basic laws and theories of electricity and magnetism utilizing primarily algebra based mathematical methods and limited calculus. The topics covered in this course include electric charge, properties and sources of electric fields and electric potential, current, resistance, capacitance, DC and AC circuits, Kirchhoff's laws, properties and sources of magnetic fields, induction, Maxwell's equations, and electromagnetic waves.

**Prerequisite:** Physics 2A

**Text:** *Fundamentals of Physics*, Volume 2 (chapters 21 - 44) by Halliday, Resnick, and Walker. Any edition will suffice as homework will be assigned through WebAssign rather than the textbook. A digital copy of the required chapters of the text will be provided with the WebAssign subscription so **a physical copy of the book is optional.**

**Course Grade Distribution:**

Lab	15%
Homework:	20%
Midterm Exam I:	17.5%
Midterm Exam II:	17.5%
Final Exam:	30%

**Letter Grade Distribution:**

≥ 98%	A+
92% - 97.9%	A
90% - 91.9%	A-
88% - 89.9%	B+
82% - 87.9%	B
80% - 81.9%	B-
78% - 79.9%	C+
70% - 77.9%	C
68% - 69.9%	D+
62% - 67.9%	D
60% - 61.9%	D-
< 60%	F

**Homework:** There will be 1-2 homework assignments per week. Homework will be submitted online at [webassign.net](http://webassign.net) (more information below). You may request an extension on homework assignments by emailing me at [ulbrichtmegan@fhda.edu](mailto:ulbrichtmegan@fhda.edu). I do not read messages or extension

requests submitted via WebAssign. Extensions will be granted at my discretion and will not exceed 3 days beyond the original due date. Late homework will be worth half credit.

### Web Assign

To create a Web Assign account go to [webassign.net](http://webassign.net) and click on the "enter class key" button at the top right of the page. Enter the following into the spaces provided:

deanza 5745 6788

Follow the prompts to create your account.

**Exams:** There will be two midterm exams and one cumulative final. A 3" x 5" notecard and a calculator (any kind with the exception of a cell phone calculator) will be allowed on the exams. Make-up exams will not be offered.

### Tentative Course Outline:

Week	Dates	Content
1	4/9 - 4/13	<ul style="list-style-type: none"><li>• Chapter 21: Electric Charge</li><li>• Chapter 22: Electric Fields</li></ul>
2	4/16 - 4/20	<ul style="list-style-type: none"><li>• Chapter 23: Gauss' Law</li></ul>
3	4/23 - 4/27	<ul style="list-style-type: none"><li>• Chapter 24: Electric Potential</li></ul>
4	4/30 - 5/4	<ul style="list-style-type: none"><li>• Midterm I</li><li>• Chapter 25: Capacitance</li></ul>
5	5/7 - 5/11	<ul style="list-style-type: none"><li>• Chapter 26: Current and Resistance</li></ul>
6	5/14 - 5/18	<ul style="list-style-type: none"><li>• Chapter 27: Circuits</li></ul>
7	5/21 - 5/25	<ul style="list-style-type: none"><li>• Chapter 28: Magnetic Fields</li></ul>
8	5/28 - 6/1	<ul style="list-style-type: none"><li>• Midterm II</li><li>• Chapter 29: Magnetic Fields due to Currents</li></ul>
9	6/4 - 6/8	<ul style="list-style-type: none"><li>• Chapter 30: Induction and Inductance</li></ul>
10	6/11 - 6/15	<ul style="list-style-type: none"><li>• Chapter 31: Electromagnetic Oscillations and Alternating Current</li></ul>
11	6/18 - 6/22	<ul style="list-style-type: none"><li>• Chapter 32: Maxwell's Equations and Magnetism of Matter</li><li>• Chapter 33: Electromagnetic Waves</li></ul>
12	6/25 - 6/29	<ul style="list-style-type: none"><li>• Final exam</li></ul>

## Lab

**Attendance:** Attendance in the lab section is mandatory. **Missing more than one lab, for any reason, during the course of the quarter will result in either an F or a W in the class.**

### **Lab Policy**

- No food or drinks are allowed in the lab
- The lab assignments will be emailed to you by Monday of the week during which that lab will be performed. They should be printed out and read by the beginning of lab on Thursday.
- Lab assignments will be turned in at the end of each lab session
- There are no make-up lab sessions

**Lab Grade Distribution:** The score achieved in the lab section of this course will account for 15% of the overall Physics 2B grade. The lab score is broken down as follows:

Lab Assignments	75%
Lab Final	25%

**Exam:** The lab final will be held on Thursday 6/21/18 during the regular lab time.

**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 electricity and magnetism.

\*In order to test lab skills students are expected to 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.