Physics 11C, Fall 2015

General Physics: Electricity and Magnetism

Tuesday-Thursday-Friday 9:00-9:50pm

Mendocino 1015

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Course Description

General Physics: Electricity and Magnetism, Modern Physics. This sequence satisfies the lower division physics requirement for a major in physics, physical science, chemistry, geology, or engineering. Two hours of lecture, one hour of discussion and three hours of laboratory. Physics 11C is the second semester of the calculus based general physics sequence. This course will cover electricity, circuits, and magnetisms.

Prerequisites

Physics 11A and second semester calculus, Math 31, must have been passed. Differential and integral calculus are necessary to understand the techniques used in this course.

Course Outline

Physics 11C is divided into two components: lecture and laboratory. Lectures (and discussion) will typically cover about one chapter per week. In order for you to better absorb the material which is presented in lecture, you will be expected to read the chapter prior to the first lecture covering the chapter. You will be given a reading quiz online in Mastering Physics to help motivate you to do the reading before class. There will be one homework set due for each chapter with the deadlines listed clearly on Mastering Physics but will in general be due approximately 2 classes after completing the chapter in class. Attendance in laboratory is mandatory. You will have a separate laboratory instructor who will send me your laboratory grade that I will use in determining your overall course grade.

Text and Materials

- *Physics for Scientist and Engineers, Volume 4*, 3^{rd} Edition, by Randall D. Knight
  We will cover Chapters 25-35. The text will be followed fairly closely and the table of contents is a decent outline for the course. We will average about one chapter per week. If you opt to use a different text, it is your responsibility to identify the appropriate material for readings, homework assignments and tests.

- Mastering Physics (online homework system)
  Use of the online homework system is required. Reading quizzes and weekly homework sets will be submitted and graded via Mastering Physics.
  The URL for Mastering Physicsis http://masteringphysics.com.
  This course is named PHYS11CFALL2015MOSS.

- Physics 11C Laboratory Manual

- Scientific Calculator
  You will need to have a scientific calculator with trigonometric functions (at the minimum). Most of you will have either a phone or a tablet with a decent calculator app. This is fine for homeworks but since phones and tables may not be used during exams, you will need an alternative for the midterms and final.

Add/Drop Policy

If you are on the waiting list, you will only be added if you've been attending classes AND the lab section. Labs will NOT be filled beyond the capacity listed in the schedule due to safety concerns. The open seats will be filled via the LABORATORY waiting lists. If a spot in the laboratory section you are on the wait list for becomes available, the first person will have the chance to see if they can fill in the corresponding spot in the lecture. If not, then the next person on the waiting list will have the chance and so on. You may drop during the first two weeks for any reason. After two weeks instructor permission is required and you must have a compelling reason. Not doing well is not a compelling reason because you have prevented someone else from taking that seat. I'm sorry, but this will be strictly enforced.

Grading

Your grade wil be determined using each of these components:

1. Homework - 20%
2. Laboratory - 15%
3. Midterms - 45%
4. Final Exam - 20%

The final grades will be given as follows:

A:	100% - 93%	
A-:	93% - 90%	Depending on the final distribution of scores at the end of
B+:	90% - 87%	the semester, I may lower the boundaries on each grade, but
B:	87% - 83%	these grade ranges are guaranteed to be the minimum.
B-:	83% - 80%	
C+:	80% - 77%	
C:	77% - 73%	
C-:	73% - 70%	A curve may be applied to the exams, homework, laboratory
D+:	70% - 67%	and discussion sections at the discretion of the instructor.
D:	67% - 63%	Do not assume that there will be a curve!
D-:	63% - 60%	
F:	60% - 0%	

Homework (20%)

Homework in this classes consists of 2 components: Reading Quizzes (4%) and Homework Sets(16%) Each chapter we cover will have one of each component. The deadlines for the Reading Quizzes and Homework sets will be listed clearly on Mastering Physics. The lowest grade in each component will be dropped when determining the final grade.

- Reading Quizzes are short qualitative problem sets that you do prior to the start of each new chapter. They are there to encourage you to read the material before we cover it in class to maximize your understanding of the lectures. The quizzes will be administered on Mastering Physics and are worth 20% of your homework grade. They are due on the day we start the chapter. No credit will be given for completing the reading quizzes late.
- Homework Sets are problems to test your understanding of the material. They are also done on Mastering Physics. They are automatically graded and give you six opportunities to get the right answer, with the maximum number of available points reduced by 2.5% with each incorrect response. (See Mastering Physics for grading details). They are due approximately 2 classses after we have finished discussing a chapter, the exact due dates are listed in Mastering Physics. Late homework will be penalized by 25% for each day that it is late (only incomplete problems) up to a maximum of 50% penalty. You will be able to do the assignment late only until the homework solutions are posted on the SacCT page. The homework set is worth 80% of your total homework grade.

Laboratory (15%)

Each lab instructor will provide a syllabus describing how they will assess the laboratory portion of the class. They may consult me in designing their grading system, but ultimately it is their system. Grades from laboratory instructor may be normalized to adjust for significant differences in the grade distributions among the laboratory instructors. Typically, the section averages for 11 C are 80%. If you fail the laboratory, you cannot receive higher than a "C" (75%) in this class. Additionally, there is a practical exam during the last week of the lab that is an individual test.

Midterms (45%)

There will be three exams during the semester. Exam 1 is expected to cover chapters 25-28. Exam 2 is expected to cover chapters 29-31 and exam 3 is expected to cover chapters 32-33. Laboratory experiments performed by the date of the exam are also fair game for questions on the exam. The exams can have numeric problems, short answer questions, and multiple-choice questions. A sheet of equations and constants will be provided with the exam. I will post a copy of it on SacCT so that you know what information you will be given. No other notes are allowed. You may use any scientific calculator on exams, but I reserve the right to inspect them to make sure that no unauthorized material is stored on it. I also reserve the right to reset the memory of or impound any calculator that I suspect has unauthorized material on it. Smartphones, tablets and/or PDAs are forbidden during exams (even as a calculator!). If I see you using one you will fail the exam (if extenuating circumstances exist, you must inform me before the exam begins).

Final Exam (20%)

The final exam is comprehensive, including all chapter previously tested plus any new material introduced after Exam 3. You will have the equation and constant sheets provided to you as on the midterm exams. The calculator rules also remain unchanged. Per the university exam schedule, this final for this course is scheduled for Tuesday December 15th from 10:15pm - 2:15pm. The final is expected to be administered in Mendocino 1015, our usual lecture room (unless otherwise announced at the end of the semester).

Academic Dishonesty Statement

The faculty of the Department of Physics and Astronomy will not tolerate academic dishonesty. Falsification of data, copying, unauthorized collaboration, plagiarism, alteration of graded materials, or other actions (as described in, but not necessarily limited to the CSUS Policy Manual) will be promptly reported to the Office of Student Affairs. The offending student will be penalized on the assignment in question. Serious infractions will result in course failure and a recommendation for administrative sanctions.

Additional Information

- If you have a disability and require accommodations, you need to provide disability documentation to SSWD, Lassen Hall 1008, (916)278-6955. Please discuss your accommodation needs with me after class or during my office hours early in the semester.
- I encourage you to work together on homework problems. BUT, sitting in a study group while others do the work and copying solutions will not likely enable you to get good results on the exams. Getting 100% on the homework and 40% on the exams will not earn you a good course grade.
- I have selected homework problems that I feel are, for the most part, representative of the material that you should know to pass this class. That said, there are generally one or two problems that will be very challenging. They are not meant to be punishment or to embarrass you, many people like to test themselves against hard problems and they are there for this reason.
- Please clearly write your name on all things that you hand in to me.
- While attendance is not mandatory for lecture and discussion (aside from first two weeks as noted in add/drop policy), keep in mind that I may emphasize material in lecture that the text does not. I also might give hints and tips. ¡F6¿
- Your laboratory instructor sets the policies in the laboratory portion of the class, with the exception of the grading issues noted above. In that room, he/she's the boss.
- Per department policy (effective Fall 2004), no laboratory exemptions will be given. Please don't waste either of our times explaining why you deserve an exception to a policy that explicitly says "no exceptions."
- Please respect your classmates and me by turning off your cell phone during class. If you are expecting an emergency call (i.e. pregnant wife), please let me know. Repeat violators will be noted by me and are subject to a grade reduction.
- While I have no trouble ignoring your texting in class, your classmates may not. Please have respect for your classmates and do not do it. If something is more important than this class - deal with it, don't distract your classmates.
- Cell phones, cameras, recording devices, as well as laptops, tablets, and other electronic devices are strictly prohibited in class at any time. Any attempts of using them will lead to a removal of the device. The offending students will be penalized, and may be permanently removed from the class. Serious infractions will result in course failure and a recommendation for administrative sanctions.

Weekly Schedule

Week	Date	Day	Chapter	Topic	Assignment Due Dates
1	September 1	T		Introduction and Syllabus	
		Th F	25	Electric Charge and Forces	Reading Quiz [RQ] (Th)
2	September 8	T	25	Electric Charge and Forces	
		Th F	26	The Electric Field	RQ (Th), Ch 25 HW (F)
3	September 15	T	26	The Electric Field	
		Th F	27	Gauss's Law	RQ (Th), Ch 26 HW (F)
4	September 22	T Th F	28	The Electric Potential	RQ (T), Ch 27 HW(Th)
5	September 29	T	28	The Electric Potential	
		Th	29	Potential and Field	RQ
		F		Review For Midterm 1	Ch 28 HW (due at 9am!)
6	October 6	T		**Midterm Exam 1**	
		Th F	29	Potential and Field	
7	October 13	T Th F	30	Current and Resistance	RQ (T), Ch 29 HW (Th)
8	October 20	T Th F	31	Fudamentals of Circuits	RQ (T), Ch 30 HW (Th)
9	October 27	T	31	Fudamentals of Circuits	
		Th	32	The Magnetic Field	RQ
		F		Review for Midterm 2	Ch 31 HW (due at 9am!)
10	November 3	T		**Midterm Exam 2**	
		Th F	32	The Magnetic Field	
11	November 10	T	32	The Magnetic Field	
		Th F	33	Electromagnetic Induction	RQ (Th), Ch 32 HW (F)
12	November 17	T Th	33	Electromagnetic Induction	
		F		Review for Midterm 3	Ch 33 HW (due at 9am!)
13	November 24	T		**Midterm 3**	
		Th F		Thanksgiving, No Class!	
14	December 1	T Th	34	Electromagnetic fields and Waves	RQ (T)
		F	35	AC Circuits	RQ
15	December 8	T Th	35	AC Circuits	
		F		Review for Final	Ch 35 HW (due at 9am!)