

PHYSICS 218X

UNIVERSITY PHYSICS 2

FALL 2017

An introduction to electricity and magnetism for scientists and engineers.

Learning Outcomes:

Students will learn to apply fundamental laws of electricity and magnetism to analyze real-world problems both qualitatively and quantitatively.

Instructor:	Robert Harr	Office:	262 Physics
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Office Hours:	3:00 - 4:00 MW or by appointment.	Web Page:	WSU Blackboard

Textbook: *Fundamentals of Physics, tenth edition* by Jearl Walker, Wiley, 2010.

WebAssign: WebAssign (webassign.com) is an online homework system. A two-semester WebAssign access card is included in the price of a new textbook purchased at the B&N campus bookstore, or can be purchased separately at the bookstore, or can be purchased online at the WebAssign site. If you pay online, make sure to select the correct textbook: Giambattista, Richardson, and Richardson, second edition.

Your UserID is your AccessID. The institution is wayne. Your initial password is your first initial and up to 7 characters of your last name. Please change your password to something you can remember.

Lectures: 5:30 - 6:45pm TuTh, Room 2009 Science Hall

Homework: There are graded problems to be done on WebAssign (<http://webassign.com>). If requested, I will include additional, ungraded WebAssign problems.

While the ungraded problems will NOT be collected and graded, it is expected that you will devote time to understanding and solving these problems. In the same way that you must practice to become proficient at a sport or musical instrument, you must work problems in order to master basic physics. Furthermore, the exam problems will be based on the assigned homework, both graded and ungraded.

Discussion Sections: Discussion sections are an important part of this course. They allow you to meet together in small groups to ask questions, discuss material, and discuss the assigned problems. During the semester, 6 quizzes will be given. The best scores plus attendance will be used for 50 points of your total.

Lab: For those of you taking the lab, the first meetings of your lab section is during the week of Sept. 18.

Exams: There will be three in-class and a cumulative final exam. The in-class exams will be given during a lecture period (80 min.). The lowest exam score can be replaced by half of your score on the final exam if greater. There are no makeup exams. You **MUST** bring your Wayne State ID to the exams and present it to a proctor when asked. Exams are closed book. A simple, standalone calculator is allowed -- standalone excludes calculators on smart phones and graphing calculators. No other electronic devices are allowed.

Grading: Grades will be determined by the three class exams, the final exam, the WebAssign problems, and the quizzes as follows:

First Exam	100	Sep. 26
Second Exam	100	Oct. 19
Third Exam	100	Nov. 14
Final Exam	200	Dec. 14, 5:30 -- 7:30pm
Discussion Session Participation	100	
Graded WebAssign Problems	100	
Clicker Scores	100	Only announced sessions count!
Assessment (Extra Credit)	10	Dec. 7

The grade scale is as follows:

A	90 -- 100%	720 -- 800
A--	85 -- 90%	680 -- 720
B+	80 -- 85%	640 -- 680
B	75 -- 80%	600 -- 640
B--	70 -- 75%	560 -- 600
C+	65 -- 70%	520 -- 560
C	60 -- 65%	480 -- 520
C--	55 -- 60%	440 -- 480
D+	50 -- 55%	400 -- 440
D	45 -- 50%	360 -- 400
F	<45%	<360

Additional Resources: You can get additional help with this course in the *Physics Resource Center* located in the Physics Building, room 172. More information will be posted on BlackBoard when scheduling is done. This course may have a *Supplemental Instructor*, and details will be announced when available. My office hours are listed at the top of the syllabus.

Withdrawals: The last day to withdraw with tuition cancellation is Sep. 13. The last day to withdraw is Nov. 12.

Academic Integrity: All forms of academic dishonesty are forbidden. Specific examples of academic dishonesty include cheating during exams or changing test answers for re-grading. Continuing to write

after the exam time is up will result in the grade of zero for that exam. Academic dishonesty will be pursued following the policies of Wayne State's Student Code of Conduct, available from the University website.

COURSE OUTLINE

WEEK	DAY	DATE	TOPIC	CHAPTER,SECTION
1	Th	8/31	Electric Charges, Coulomb's Law	21.1
2	Tu	9/5	Coulomb's Law, Charge Quantization	21.2-21.3
	Th	9/7	Electric Fields	22.1-22.4
	Su	9/10	Homework #1 Due at 11:59 pm	
3	Tu	9/12	Field of Charge Distributions	22.4-22.7
	Th	9/14	Gauss's Law	23.1
	Su	9/17	Homework #2 Due at 11:59 pm	
4	Tu	9/19	Gauss's Law	23
	Th	9/21	Review of Chapters 21 to 23	
	Su	9/24	Homework #3 Due at 11:59 pm	
5	Tu	9/26	FIRST EXAM (CHAPTERS 21-23)	
	Th	9/28	Electric Potential	24.1-24.3
6	Tu	10/3	Electric Potential	24.4-24.7
	Th	10/5	Potential of Charge Distributions, Capacitors	24.6, 25.1-25.2
	Su	10/8	Homework #4 Due at 11:59 pm	
7	Tu	10/10	Capacitors	25.3-25.8
	Th	10/12	Current and Resistance	26.1-26.4
8	Tu	10/17	Current and Resistance	26.5-26.8
	W	10/18	Homework #6 Due at 11:59 pm	
	Th	10/19	SECOND EXAM (CHAPTERS 24-26)	
9	Tu	10/24	Circuits	27.1-27.2
	Th	10/26	Circuits	27.2-27.4
	Su	10/20	Homework #7 Due at 11:59 pm	
10	Tu	10/31	Magnetic Fields	28.1-28.4
	Th	11/2	Magnetic Fields	28.5-28.8
	Su	11/5	Homework #8 Due at 11:59 pm	
11	Tu	11/7	Magnetic Fields Due to Currents	29.1-29.2
	Th	11/9	Magnetic Fields Due to Currents	29.3-29.5
	Su	11/12	Homework #9 Due at 11:59 pm	
12	Tu	11/14	THIRD EXAM (CHAPTERS 27, 28, and 29)	
	Th	11/16	Induction and Inductance	30.1-30.4
13	Tu	11/21	Induction and Inductance	30.4-30.9

	Th	11/23	Thanksgiving and birthday	
	Su	11/26	Homework #10 Due at 11:59 pm	
14	Tu	11/28	Maxwell's Equations	32.1-32.4
	Th	11/30	Electromagnetic Waves	33.1-33.4
	Su	12/3	Homework #11 Due at 11:59 pm	
15	Tu	12/5	Reflection and Refraction	33.5-33.7
	Th	12/7	Review (30 min) and Assessment (45 min)	
	Su	12/10	Homework #12 Due at 11:59 pm	
17	Th	12/14	FINAL EXAM: 5:30 --7:30 pm	

[Robert Harr](#)
Oct. 10, 2017