PHY 2180/2185 Fall 2011

Lecture time and place: MWF 11:45-12:40 pm, room 2009 Science Hall
T 11:45-12:40 pm, room 1109 Science Hall

Lecturer: Dr. J. S. Payson
166 Physics, 313 577-3280, payson@wayne.edu

Office hours: to be announced

Text: University Physics, Bauer and Westfall, 1st. edition.

Exams: three in-class one-hour exams and a final exam. Exams are closed book and cumulative. There will be NO make-up exams. If one exam is missed, the grade will be based on the other exams; if two or more exams are missed, they will factored in as zeros.

Quiz Sections meet once a week. There will be 6 quizzes given during the semester, during non-test weeks. The best five will be factored into the grade. Quiz dates will not be announced beforehand.

Grade determination: Hour exams—20 points, final exam—40 points, quizzes—10 points; the quiz grade constitute extra credit. The grade of Incomplete (I) will be assigned only if the student's situation completely complies with the rules promulgated by the university.

Grading scale: A—100 - 90 points
B—90 - 78
C—78 - 64
D—64 - 52
F—less than 52 points

Plusses and minuses (+ / -) will be use in borderline cases. The lecturer reserves the right to change the final grade distribution as he sees fit.

Assumptions made by me about You:

You have taken MAT 2010 and PHY 2170 or PHY 2175 and passed. Those in PHY 2180 are taking PHY 2181. You have passed or are currently taking MAT 2020. I will refuse to give a grade for those who have not satisfied both the pre-requisites and the co-requisites. You also have a good working knowledge of algebra and trigonometry. You are responsible adults who will arrive promptly for class and be courteous and considerate. Arriving late or leaving class early will be considered inconsiderate. Academic dishonesty will not be tolerated.

If you have a documented disability that requires accommodations, you will need to register with Student Disability Services (SDS) for coordination of your academic accommodations. The Student Disability Services (SDS) office is located at 1600 David Adamany Undergraduate Library in the Student Academic Success Services department.

SDS telephone number is 313-577-1851 or 313-577-3365 (TDD only). Once you have your accommodations in place, I will be glad to meet with you privately during my office hours to discuss your special needs. Student Disability Services' mission is to assist the university in creating an accessible community where students with disabilities have an equal opportunity to fully participate in their educational experience at Wayne State University.

Please be aware that a delay in getting SDS accommodation letters for the current semester may hinder the availability or facilitation of those accommodations in a timely manner. Therefore, it is in your best interest to get your accommodation letters as early in the semester as possible.

Tentative Lecture Schedule

Lec.	Day	Date	Topics	Chapters
1	W	8/31	Review of what You already know-or should	
2	F	9/2	Vectors, Vector Fields, Coordinate systems	
3	T	9/6	Electrostatics—Coulomb's Law	21
4	W	9/7	Electric Fields, charge distributions	22
5	F	9/9	Electric Flux	
6	M	9/12	Gauss' Law of Normal Flux	22
7	T	9/13	more on Gauss' Law	22
8	W	9/14	Electrostatic Potential, conductors	23
9	F	9/16	more on Electrostatic Potential	23
10	M	9/19	Divergence Theorem, review	23
11	T	9/20	Electric Potential for distributions	23
12	W	9/21	more on Potential and Vector Fields	23
13	F	9/23	Capacitance, dielectrics	24
14	M	9/26	Polarizability, circuits	25
15	T	9/27	Tie it all together day	
16	W	9/28	EXAM #1	21-25
17	F	9/30	Capacitance, Go over test	26
18	M	10/3	Electric Current, resistance, drift velocity	26
19	T	10/4	Ohm's Law, material considerations	26
20	W	10/5	Direct current circuits w/ C,R, dielectrics	27
21	F	10/7	Kirchoff's rules, RC circuits	27
22	M	10/10	more on dc circuits	27
23	T	10/11	Magnetism, reference frames	28
24	W	10/12	Biot-Savart, symmetry	28
25	F	10/14	Ampere's law	28
26	M	10/17	Electrostatics vs. Magnetostatics, Lorentz force	28
27	T	10/18	kinematics	28
28	W	10/19	current distributions in Magnetic Fields	28
29	F	10/21	Dipoles, review	29, 30
30	M	10/24	Gauss' Law in magnetism, applications	27-29

31	T	10/25	Tie it all together	
32	W	10/26	Exam #2	21-28
33	F	10/28	Magnetism in matter, Hall effect	29
34	M	10/31	Faraday, motional EMF	29
35	T	11/1	Lenz's Law, Induced EMF	29
36	W	11/2	More on EMF	29
37	F	11/4	Generators, motors, eddy currents	29
38	M	11/7	Inductance	29
39	T	11/8	RL circuits	29
40	W	11/9	Energy, mutual inductance, RLC circuits	30
41	F	11/11	ac circuits	30
42	M	11/14	phasor formulation, ac circuits	30
43	T	11/15	Transformers, more applications	30
44	W	11/16	Diplacement current, Ampere's, Maxwell's	31
45	F	11/18	Electromagnetic waves	31
46	M	11/21	Light, reflection, refraction, dispersion	32
47	T	11/22	Tie it all together	
48	M	11/28	EXAM #3	21-32
49	T	11/29	Reflection, Refraction, Dispersion	32
50	W	11/30	Image formation, mirrors	33
51	F	12/2	Image formation, lenses	33
52	M	12/5	Wave optics, single and double slits	34
53	T	12/6	Interferometers	34
54	W	12/7	Diffraction	34
55	F	12/9	Fall-behind day	
56	M	12/12	Tie-it-all-together day	
	T	12/13	Study Day	
	Th	12/15	FINAL EXAM 1040-1310	comprehensive

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