Physics 1B: Electricity & Magnetism Summer Session I, 2010

Course Syllabus & Logistical Information

Instructor: Dr. Alex Markowitz almarkowitz@ucsd.edu

Office: 412 SERF (Science & Engineering Research Bldg.) 4-8016 Office Hours: Monday 11:30–12:30 & Wednesday 1–2

Lectures: M,Tu,W,Th, 09:30 – 10:50 a.m., York Hall 4080A

T.A.: Marcel Neeleman mneeleman@physics.ucsd.edu Office: 334 SERF Office Hours: Tuesday 12:30–1:30 & Wednesday 11–12

Problem Sessions: Every Wednesday, 3–5 p.m., in 2301 APM (Applied Physics & Math Bldg.)

Prerequisites: Physics 1A. Prior or concurrent enrollment in Math 10C, 10D, or 20C

Physics 1B Lab: Concurrent enrollment in the laboratory course, Physics 1BL, is required, but it is a separate course (separate grading, different instructor) – you must register separately.

Course web page:

http://physics.ucsd.edu/students/courses/summer2010/session1/physics1b/ Check it frequently for updates & announcements!

Text: Serway & Faughn, College Physics, 7th Edition, Vol. 2. This is a version printed especially for UCSD. (Note: some copies were printed with chapter 21 inadvertently omitted; if you're missing this chapter, you can download a .pdf copy of it from the course website.)

Quizzes: There will be four quizzes: one every Thursday (excluding the last week of classes) at 09:30 a.m. Each quiz will be approximately 45 minutes long, after which we'll continue with the lectures. THERE WILL BE NO MAKE UP QUIZZES.

You must purchase your own scantron for quizzes. They're available at the bookstore (no. X-101864-PAR) and the general store co-op. You will need to bring a no. 2 pencil for the scantrons!

Final Examination: The date and time of the final exam are already set in stone: Friday, July 30th, 8:00–11:00 a.m., 222 Center Hall. *Please check your final exam schedules and notify the instructor immediately if there are any conflicts! THERE WILL BE NO MAKE UP FINAL.*

You will be allowed to use a simple scientific calculator for all quizzes and the final. For the quizzes, you may bring one $3' \times 5'$ index card for notes (you may write on both sides), but no laptops, cell phones, or other notes. For the final, you may bring three index cards of notes.

Grading Policy: Your final grade will be calculated as follows:

63% Quizzes (Lowest quiz grade counts only for 9%; the top three quiz grades are 18% each) 37% Final Exam

Homework: Homework problems will be assigned, but will not be collected or graded. The quizzes/final will feature problems very similar to those covered by assigned homework problems and cover the same material, so the homework problems are the best way to practice for the quizzes/final.

Extra Credit: No.

Add/Drop: Use WebReg to add/drop the course or drop from waitlists. See the Physics Department's Student Affairs Office in 2521 Mayer Hall Addition for more details or for more advice. The course coordinator is Barbara Lowe, 4-1745, 2581 Mayer Hall Addition.

Deadlines:

Last day to add a class: Friday, July 2 Last day to drop a class without a W and change grade option: Friday, July 9 Last day to drop a class WITH a W but without an F: Tuesday, July 27

Academic Dishonesty: All students are responsible for reading, understanding, and adhering to the U.C. Policy on Integrity of Scholarship, available in the UCSD General Catalog, and discussed on the web at http://research.ucsd.edu/ethics/ucsd_policy.html and http://www.ucsd.edu/catalog/front/AcadRegu.html. Any form of cheating, including knowingly allowing a peer to copy your quizzes or tests, will result in an F in this course and referral to the Dean for disciplinary action.

Physics Tutorial Center: 2702 Mayer Hall Addition. Tutors will be available to assist you with applying concepts and approaches to problem solving (thought they cannot, for instance, give specific answers to all of a given course's assigned homework problems). See http://tutorialcenter.ucsd.edu for more info. (as of 06/25/2010, hours and days of availability are still T.B.D.)

Exam Code numbers: Exam scores can be posted online only if names or university ID numbers are omitted, so every student will be assigned a three-digit exam code number. At the first quiz on Thursday, July 1, you'll receive a "Code Number Assignment" form, containing your code number. You'll keep the top half of the form and turn the bottom half in to the instructors.

You must write your code number on every scantron for every exam! Filling in the number incorrectly may inadvertently lead to complications in getting your grade registered!

Some online material at http://info.brookscole.com/serway/ (interactive quizzes, etc.)

Week	Date	Topic	Chapter
1	$6/28 {\rm M}$	Charges, Insulators, Coulomb's Law	15.1 - 15.3
		1, 5, 8, 10, 11, 13, 16, 48	
	6/29 Tu	Elec. fields & field lines, Properties of Conductors	15.4 - 15.8
		17, 20, 24, 27, 49, 50, 53, 63, 28, 30, 33	
	$6/30 \mathrm{W}$	Electric Flux, Gauss' Law	15.9
		39, 41, 43	
	$7/1 { m Th}$	QUIZ 1 ; Elec. Potential Difference & Potential Energy	16.1 - 16.2
		1, 5, 6, 8	
2	$7/5 {\rm M}$	University Holiday – No classes	
	7/6 Tu	Properties of Conductors; Equipotential Surfaces	16.3 - 16.5
		13, 15, 16, 21	
	$7/7 \mathrm{W}$	Capacitance & Capacitors, Dielectrics	16.6 - 16.10
		22, 23, 25, 30, 31, 33, 34, 37, 40, 43, 45, 59, 47, 49, 51	
	7/8 Th	QUIZ 2; Current; Resistance, Ohm's Law	17.1 - 17.4
		1, 3, 8, 9, 10, 11, 13, 15, 19	
3	$7/12 \mathrm{~M}$	Resistivity; Electric Energy & Power	17.5 - 17.8
		20, 21, 25, 28, 31, 32, 33, 38, 39, 53, 60	
	7/13 Tu	EMF, Batteries, DC circuits, Resistors in circuits	18.1 - 18.3
		1, 2, 5, 6, 8, 13, 15, 45	
	$7/14 { m W}$	Kirchhoff's Rules, RC circuits, Household circuits	18.4 - 18.8
		17, 19, 22, 27, 49, 31, 32, 33, 35, 44, 38, 39	
	$7/15 { m Th}$	QUIZ 3; Magnets & Magnetic Field Lines	19.1 - 19.3
		1, 3, 5, 8, 9, 10	
4	$7/19 {\rm M}$	Magnetic Forces, Electric Motors	19.4 - 19.5
		11, 13, 14, 19, 54, 22, 24, 26, 51,	10 0 10 10
	7/20 Tu	Ampere's Law, Solenoids, Magnetic materials	19.6–19.10
	7/91 W	27, 28, 30, 31, 34, 35, 37, 38, 42, 50, 44, 47, 49, 50	90 1 90 9
	(/21 W	1 2 2 6 8 10 12 14 17 52	20.1-20.2
	7/99 Th	1, 2, 3, 0, 0, 10, 13, 14, 17, 32	20.3.20.6
	1/22 111	18 21 23 25 20 61 30 23 34 30	20.3-20.0
	7/96 M	10, 21, 25, 25, 29, 01, 50, 55, 54, 59	20 7 20 2
б	(/20 M	A2 46 40 56	20.7,20.8
	7/97 Tu	42, 40, 49, 50	91 1 91 4
	<i>1/21</i> 1u	1 4 8 11 15 18 10 21	21.1-21.4
	7/28 W	AC power Besonance Transformers	91 5_91 7
	1/20 VV	20 33 35 39 40	21.0-21.1
	7/29 Th	Properties of Electromagnetic waves: the EM spectrum	21 8-21 13
	1/20 111	43, 45, 50, 52, 58	21.0 21.10
	7/30 F	FINAL EXAM (222 Center Hall. 08:00-11:00 a.m.)	15-21

Approximate Lecture Schedule; Homework Problems