

SYLLABUS

DEPARTMENT OF PHYSICS

Winter 2010

Physics 1C

Jan. 4, 2010

General Physics – Waves, Optics and Modern Physics

WEB PAGE: <http://www-physics.ucsd.edu/students/courses/winter/2010/physics1C/>

INSTRUCTOR: Melvin Okamura
Office: 4517 Mayer Hall Addition
Office Hours: Thu 2-3 pm
Email: mokamura@physics.ucsd.edu
Phone: 534-2506

TEACHING ASSISTANT: Anthony Hopp
Email: ahopp@physics.ucsd.edu
Office: TBA
Office hrs: TBA

COURSE COORDINATOR: Patti Hey, 2571 Mayer Hall Addition, 822-1468
plhey@physics.ucsd.edu

CLASS SCHEDULE:

<i>Lecture:</i>	Mon, Wed, Fri	3:00 – 3:50 pm	York 2622
<i>Quizzes:</i>	Fri(alternate)	3:00 – 3:50 pm	York 2622
<i>Problem Session:</i>	Thu	8:00 – 9:20 pm	Center 214

Final Exam: Wed Mar. 17, 2009, 3:00 pm -5:59 pm. Location TBA

TEXT: Serway & Faughn, College Physics, 07 Edition, Thomson/Brooks/Cole

PREREQUISITES: Math 10A, concurrent in 10B or 20A. Trigonometry, vectors and calculus will be used in lectures, problem sets and exams.

COURSE FORMAT: Physics 1A-B-C is a lecture course covering mechanics, electricity and magnetism, waves and modern physics. This sequence is not suitable for students majoring in Physics, MAE, ECE or CSE. Other majors should check with their departments for the appropriate sequence. Physics 1C deals with waves, optics and modern physics. A course schedule is attached. A separate laboratory course which meets each week will give hands on experience of the physical concepts dealt with in the course. Enrollment in the lab is required. Labs are a separate course which must be registered separately.

HELP IS AVAILABLE:

Problem Session. A problem session will be held on Thursday evening. At these sessions the TA will work problems and go over the weekly lectures. Attendance is voluntary, but students are encouraged to use these meetings to help master course material and prepare for quizzes. Individual assistance is available during office hours *or by appointment*.

Physics Evening Tutorial Center. The purpose of this Center is to provide a supplement to your lectures, TA discussion and/or problem sessions and office hours. Students may come to the Center for tutoring, individual and/or group assistance with homework, studying for quizzes or exams. For more information about the Center see <http://tutorialcenter.ucsd.edu/>

HOMEWORK ASSIGNMENTS: Problem sets will be assigned as selections from each text chapter. Solutions will be available on the course web site. The problems will be worked in detail during the Thursday problem session. The homework will not be collected or graded, but quiz problems may resemble assigned homework problems.

QUIZZES: Four quizzes will be given during the quarter every other Friday. There will be no quiz during the last (10th) week. You will be allowed to drop one quiz. You will be allowed to bring a sheet of equations to the quiz. **There will be no make-up quizzes. If you miss a quiz you can use this as the one to drop. The quizzes will consist of multiple choice questions. You must purchase your own scantron forms for quizzes. They are available at the Bookstore (no. X-101864-PAR) and the general store co-op. You will need a No. 2 pencil to fill in the scantron.**

CLICKERS: You have the opportunity to earn extra credit (up to 5%) for classroom participation using the in class clicker system. InterWrite Personal Response System (PRS). Available at Price Center Bookstore. See <http://clickers.ucsd.edu/>. During lectures, questions will be asked to which you can respond using your clicker. You will be given 1 point for an incorrect answer and 2 points for the correct answer.

FINAL EXAMINATION: The final examination will cover all of the material of the course. **Please check your final exam schedule and inform instructor of any conflicts within the first two weeks of quarter.**

GRADING POLICY	Quizzes	60% (best 3 out of 4)
	Final Exam	40%
	Clickers	5%

ADD/DROP

Use WebReg to add/change/drop, drop from waitlists. See Sharmila Poddar (822-1074) in the Physics Department, Student Affairs Office, Mayer Hall Addition, Room 2561, if you have problems with WebReg. If you need advice, see the TA or the instructor, **but they do not sign any cards.**

ACADEMIC DISHONESTY: Please read "UC Policy on Integrity of Scholarship" in the UCSD General Catalog. The Policy regarding Academic Dishonesty will be rigorously enforced. *Any confirmed case of cheating will result in an "F" grade in Physics 1 and referral to the appropriate dean for disciplinary action.*

DEADLINES

Last day to add a class: Friday, Jan. 15

Last day to drop a class w/o a W and change grade option: Friday, Jan. 29

Last day to drop a class w/o an F: Friday, Mar. 5

Tentative Schedule of Topics

week	Date	Topic	Chapter
1	1/4	Harmonic Oscillations	13
	1/6	Waves	13
	1/8	Sound Waves	14
2	1/11	Standing Waves	14
	1/13	Doppler Effect -Beats	14
	1/15	Electromagnetic waves	21
3	1/18	Holiday – Martin Luther King	
	1/20	Reflection and Refraction	22
	1/22	Quiz 1 (Chapt. 13 , 14 and 21)	
4	1/25	Dispersion -Total internal reflection	22
	1/27	Mirrors	23
	1/29	Lenses	23
5	2/1	Geometrical Optics- Simple optical systems	25
	2/3	Microscopes, Telescopes	25
	2/5	Quiz 2 (Ch. 22, 23, 25.1-25.5)	
6	2/8	Polarization	24
	2/10	Double Slit Interference	24
	2/12	Diffraction Grating, Circular Diffraction	24, 25.6
7	2/15	Holiday – President’s Day	
	2/17	Quantum Physics Planck's Constant	27
	2/19	Quiz 3 (Ch. 24 and 25.6)	
8	2/22	Quantum Physics -Wave nature of matter	27
	2/24	Atomic Physics - Bohr Atom	28
	2/26	Exclusion Principle-Periodic Table	28
9	3/1	Lasers/Semiconductors	28
	3/3	Nuclear Physics- Binding Energy	29
	3/5	Quiz 4 (Ch. 27 and 28)	
10	3/8	Radioactivity	29
	3/10	Nuclear Energy- Fission and Fusion	30
	3/12	Review	