

University of California, San Diego

Summer Session
PHYSICS 1C (3 units)

Instructor: Mr. Sten
Office: Mayer Hall Addition, Room #2651
Office hours: daily, 11:00-12:00
e-mail: lsten@ucsd.edu
telephone: none

Teaching Assistant (TA):
Office:
Office hours:
e-mail:
telephone:

Course Coordinator: Patti Hey
Office: 118 Urey Hall Addition,
telephone: 858-822-1468

Time and place(for 626747): duration 8/4/2008-9/6/2008

Lectures in Warren Lecture Hall (WLH) 2111
on MTuWThF, 9:30-10:50 am.

Problem session in WLH 2111 on Th, 3:00-4:20 pm.

Final Exam in TBD on Saturday, 9/6/2008, 3:00-5:59 pm.

Prerequisites: Completion of Physics 1B/1BL; Math 10C or Math 20C; concurrent enrollment in Physics 1CL. Trigonometry, vectors, and calculus will be used in lectures, problems, quizzes, and final exam.

Textbook: *College Physics (7th edition)*
by Serway & Faughn, published by Cengage Learning. The two student solutions manuals will also be very useful.

Overview: Physics 1C is a lecture course covering vibration, waves, optics, and modern physics. The course is the third quarter of a three-quarter introductory physics course geared toward life-science majors. Please see the schedule at the end of this syllabus for the chapter titles that we will cover in this course.

Teaching methodology: It will always be assumed that you have done at least one thorough reading of the material before you

come to the lecture. Please also review the necessary mathematics before class. The classes will be mostly lecture, with occasional brief periods of demonstration. There may be 5-point quizzes at random times, and there will be a Big quiz each Friday. There will be no make-up quizzes.

Goal: The goal is to learn college physics--reading, writing, hearing, speaking, and solving both symbolic and word problems--to the level set by the assigned textbook and your prerequisite mathematics background.

Project management: The soft skills of project management--communication (oral, written, artistic, creative, and critical) and teamwork--have immediate importance as learning tools, and are important to your future success in a life-science career. For these reasons, we will occasionally practice these skills on the random (5-point) quizzes.

Attendance: There is no make-up of any quiz or other class activity that you miss; a large part of the value of these is in your being present at them; also, they serve in part as a statistical attendance check; if you are absent you lose the points. Likewise, if you come to class late or leave early, you may lose some or all points that could have been earned that day.

Attendance and exams: Failure to attend the final exam will amount to zero for that exam unless prior agreement is obtained from the instructor. Such agreement is very unusual and only possible in extreme, provable circumstances. There is no make-up of quizzes or other class activities.

How much work are you expecting to do? The rule of thumb in California, based on Title V by state law and the Carnegie standard is that a course is constructed with this understanding: *For every 1 hour of lecture time, the student plans to spend 2 hours outside of class reading, studying, and working problems for the class.* Some students will need to work harder than this.

Homework: Generally, the more problems you attempt, the more you will learn, even if you do not totally succeed each time you try. (Be sure to study the book's examples first.) For each chapter it is advisable that you attempt several of the Conceptual Questions. You are encouraged to try the first problem given for each section; this would be a good starting point in preparation for working more difficult problems. For each section you are assigned the problem(s) that has (have) the

(an) open box around the problem number; the solutions to these problems are given in the student *Solutions Manual(s)* (Volumes 1 and 2, Cengage Learning). Answers to the odd problems are found in the back of the textbook. Use these solutions or answers carefully to help you learn. Homework will not be collected or graded. Your homework effort will be reflected in your quiz and exam scores.

Help: Help is available outside the class meetings. (1) The Problem Session schedule is given above. 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 and the final exam.

(2) See office hours schedule above.

(3) The purpose of the Physics Evening Tutorial Center is to supplement lectures, problem sessions, and office hours. The Center can be used for tutoring, individual or group work, and other study. For more information go to <http://physics.ucsd.edu/students/courses/tutorialcenter>

Frustration: Learning can be fun, fulfilling, exciting, and rejuvenating. Yet, most learning involves some frustration. That is a natural part of the learning process. Please do not be discouraged when something seems difficult; usually further effort will lead to understanding. The answer usually lies partly in a willingness to do more work, and to be patient with yourself.

Add/Drop: Use WebReg to add/change/drop. If you have problems with WebReg, please contact Sharmila Poddar (534-3290) in the Physics Department, Student Affairs Office, Urey Hall Addition, Room 115. If you need advice, please see the TA or the instructor, but **they do not sign any cards.**

Grading: Grading for this course is as follows. A weighted sum (S) of scores from various categories will be computed. A grade A will be assigned for $90\% < S$, a grade B will be assigned for $80\% < S < 90\%$, a grade C will be assigned for $70\% < S < 80\%$, a grade D will be assigned for $60\% < S < 70\%$, and a grade F will be assigned for $S < 60\%$. If your score falls on a boundary, then I will review all of your scores to make a decision on your final grade.

Categories:

5-point Quizzes, etc.--10%: These quizzes will be closed book and closed note, or not, as specified at the time of the quiz.

There may be a 5-point quiz at any time. There will be 10 points of possible extra credit distributed throughout the session.

Big Quizzes: 50%: There will be a Big quiz every Friday. In preparation for the final exam, you should have your allowed 8.5"x11" equation sheet available; for each week you may prepare one sheet--one side per chapter. You are required to have a scantron answer sheet with you at all Big (Friday) quizzes, whether or not it is used for that quiz. *Any quiz may be graded on your ability to communicate (per description of Final Exam below).*

Three-hour Final Exam: 40%: The final exam will be three hours long and will cover the entire course. It will be closed book and closed note; you will be allowed to use your five sheets (10 pages) of equations. It will not be a scantron exam; *you will be graded on your ability to communicate: using the symbols, words, and diagrams of physics correctly, and organizing your work to provide an explanation to the reader.*

For the sum of your scores in the each of the above three categories, a percentage, S_i , will be computed. From these three scores, the weighted sum, S , will be computed to determine your grade: $S = 10\%S_1 + 50\%S_2 + 40\%S_3$.

Classroom rules: As a courtesy to others in and after our class period, some rules are obvious to most of us. Other than for containers with fixed caps on, no drink is allowed in the classroom; likewise, no food is allowed. If you have a cell phone, it should be turned off and in your bag. Please do not put it on vibrate and please do not check it during class time. Also, there should be no e-mail activity nor other electronic activity, except for calculators, during the class period. If you feel that your situation warrants an exception, please see me separately either before or after class.

Academic integrity: 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 1C and referral to the appropriate dean for disciplinary action.

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Class Schedule
for
PHYSICS 1C

We have 36 hours of class lecture time, in 24 class meetings, spread over 5 weeks. There are 10 chapters. We will cover two chapters per week.

Week 1: 8/4

Chapter 13: Vibrations and Waves

Chapter 14: Sound

quiz

Week 2: 8/11

Chapter 22: Reflection and Refraction of Light

Chapter 23: Mirrors and Lenses

quiz

Week 3: 8/18

Chapter 24: Wave Optics

Chapter 25: Optical Instruments

quiz

Week 4: 8/25

Chapter 27: Quantum Physics

Chapter 28: Atomic Physics (Sect. 28.1-28.11, 28.13)

quiz

Week 5: 9/1 9/1/2008 Holiday

Chapter 29: Nuclear Physics

Chapter 30: Nuclear Energy and Elementary Particles

(Sect. 30.1-30.5, Electron capture, and PET Scans)

quiz

Final Exam on Saturday, 9/6/2008 (3:00-5:59 pm).

(You must be prepared to show your ID for the Friday quizzes, as well as for the final exam.)