

**PHYSICS 320
MODERN PHYSICS I**

- INSTRUCTOR: Barbara Neuhauser
- OFFICE HOURS: Monday, Wednesday, and Friday, 11:15 am – noon (tentative)
and by appointment; TH 315 or TH 106
- TELEPHONE: 415-338-1468 (TH106 – research laboratory)
- E-MAIL: barbjn@coolchips.sfsu.edu
- PREREQUISITES: Physics 220 (Introductory Mechanics)
Physics 230 (Introductory Electricity and Magnetism)
Physics 240 (Introductory Optics and Thermodynamics)
- REQUIRED TEXT: **Quantum Physics of Atoms, Molecules, Solids,
Nuclei, and Particles** by Robert Eisberg and Robert Resnick
ISBN 0-471-87373-X
- RECOMMENDED TEXT: **Physics: The Nature of Things** by Susan M. Lea and
John Robert Burke ISBN 0-314-05273-9
- CONTENT AND OBJECTIVES: Students are expected to master basic concepts in the following areas and to
be able to apply them to solve qualitative and quantitative problems.
- Special relativity
 - Evolution of quantum mechanical concepts
 - Solution techniques for the 1-D Schroedinger equation
 - Wave function of the hydrogen atom
 - Orbital angular momentum and spin
- LECTURES: **Students are expected to attend ALL lectures and to ARRIVE ON TIME
for the lectures.** A tentative lecture schedule accompanies this syllabus.
Lectures will discuss appropriate portions of the textbooks and provide
extensive supplemental materials. Usually, but not always, lecture notes will
be handed out so that students can focus on the presentation. Relevant
questions that can be answered briefly are welcomed during the lectures.
Longer discussions of topics must be deferred to scheduled office hours.
- HOMEWORK: Problem sets will be assigned each Friday and will be due immediately after
lecture on the following Friday. Students are expected to state briefly but
clearly the justification for each major step in the solution to a problem.
Sloppy homework sets may not be graded. **Students may discuss with
each other general approaches to the problems, but each student must
work out the detailed solutions by him/herself.** Each student who has
turned in a problem set will be provided with a solution sheet attached to the
graded problem set.
- FAILURE TO HAND IN THE FIRST PROBLEM SET ON TIME WILL
RESULT IN THE STUDENT BEING DROPPED FROM THE COURSE.
Failure to hand in the remaining problem sets on time may result in a
25% penalty.**

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EXAMINATIONS:

QUIZZES: Approximately eight times during the semester a "take-home quiz" will be handed out during a lecture and will be due at the beginning of the following lecture.

Each student should work out the detailed solutions by him/herself without discussing the quiz with anyone or using solutions obtained from any source.

MIDTERM EXAMS: (tentative) Friday, 16 October 2009; in-class, closed-book, closed-notes

(tentative) Friday, 30 November 2009; take-home, open-Physics 320 text, open-Physics 320 notes

The first midterm exam will be graded and returned for you to correct as an open-Physics 320 text, open-Physics 320 notes, **do-it-yourself** take-home exam. The reworked exam will then be graded, and the initial and final scores will be averaged.

FINAL EXAM: Friday, 18 December 2009, 8:00 am – 10:30 am

The final exam MUST be taken at the scheduled time to avoid assignment of a grade of zero. Do NOT make travel plans that conflict with this schedule! No make-up final exam will be given except in the case of documented illness or personal crisis.

GRADE: **A student must earn at least 50% of the total possible points in order to receive a grade of C-minus or better.**

HOMEWORK:	35 %	All homework sets will be included
QUIZZES:	15 %	All quizzes will be included
MIDTERM EXAMS:	15 % each	(Total 30 %)
FINAL EXAM:	20%	

CHEATING ON HOMEWORK, QUIZZES, OR EXAMS WILL RESULT IN FORMAL DISCIPLINARY ACTION BEING TAKEN AGAINST THE STUDENT.

LABORATORY: Students are expected to enroll in Physics 321 concurrently with Physics 320 unless an exception has been approved by the academic adviser. Physics 320 and 321 are graded separately.

STUDENTS WITH DISABILITIES: **Students with disabilities who need reasonable accommodations are encouraged to contact the instructor. The Disability Programs and Resource Center (DPRC) is available to facilitate the reasonable accommodations process. The DPRC is located in the Student Services Building room 110 and can be reached by telephone (voice/**

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TTY 415-338-2472) or by email (dprc@sfsu.edu).

STUDENT SURVEY FORM

Please fill out this form and hand it in at the beginning of the second lecture.

Name: _____
(family) (given) _____

Major: _____

Address: _____

Telephone: _____ E-mail: _____

Summary of undergraduate and graduate Physics and Mathematics courses already taken:

Course	Date Completed	Grade (optional)
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Comments or questions: _____

Fall Semester 2009

San Francisco State University

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