

MASSACHUSETTS INSTITUTE OF TECHNOLOGY
Department of Physics

Physics 8.01

Fall 2000

8.01 COURSE INFORMATION SHEET

Lecturer	Address	Office Phone	E-mail
Edward Farhi	6-309	253-4871	farhi@mit.edu
Course Administrator			
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Course Manager			
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8.01 Study Guide:

Wit Busza, Susan Cartwright, and Alan H. Guth: *Essentials of Introductory Classical Mechanics*, 4th Edition; available from The Coop for \$22.50. This is a required purchase. The *Study Guide* was written especially for this course, and will be your main resource for the course's material. It *defines* the content of the course and provides a concise discussion of the relevant principles of physics. If by the end of the term you understand and know how to use the material in the *Study Guide*, you will deserve an A for the course.

Text Book:

Douglas C. Giancoli: *Physics For Scientists and Engineers, 3rd Edition, Vol. I*; available at the Coop for \$72.00. The 8.02 course to be taught next spring (2001) is expected to use a different textbook, so the purchase of Vol. II or the combined edition will not free you from purchasing another textbook next term.

When the material in the *Study Guide* is too concise for your taste, you can turn to the textbook, which provides more detailed derivations and explanations of the results and formulas. It also has more worked examples and problems, problem-solving hints, etc. You should buy this book as it contains material essential to the course.

Lectures:

Lectures will be given by Prof. Edward Farhi on Mondays, Wednesdays, and Fridays at 10:05 a.m. and again at 11:05 a.m., in Room 26-100. The lectures will explain the concepts that you are expected to understand, and will also include demonstrations aimed at solidifying your grasp of the material.

Recitation Classes:

You will be assigned to a class instructor and a class that meets two hours each week. These classes will provide an opportunity to ask questions about the material and to practice the art of problem solving. If you need to change your recitation class, ask at the Physics Education Office, Room 4-352.

Tutoring and instructors' office hours:

Graduate student tutors will be available throughout the term. You are strongly encouraged to seek help both from the tutors and from all the instructors in the course. The tutoring schedule and list of the office hours of all the instructors will be made available in 4-339B and on the website.

Problem sets:

Problem sets will be assigned about once a week; they will be handed out in a Wednesday lecture and will be available on the website. They will be due in room 4-339B the following Tuesday by 4:30 p.m. Late problem sets will not be graded. Most of the problems will come from the *Study Guide*. The problem sets will be graded. You will find them essential in preparing for the quizzes and the examinations. Trying to learn physics without doing problems is like trying to learn to ride a bicycle by reading a book. Solutions to each problem set will be made available on its due date. We strongly encourage students to get together in groups to discuss the homework.

Examinations:

Recitation Quizzes: On 5 selected weeks, 25-minute quizzes on the current chapter will be given in the Wednesday and Thursday recitation sections. The lowest of each student's 5 recitation quiz scores will be dropped. The dates of the recitation quizzes are shown on the Course Calendar.

In-class Exams: Three lecture periods during the term – Friday September 22, Friday October 13, and Monday November 20 – will be used for 50-minute exams, each of which will focus on all the material since the previous exam. Each exam will include at least one problem that is at most a slight modification of a previously assigned homework problem. Some students will take these exams in the usual lecture room, 26-100, and others will be assigned to Room 50-340 (3rd floor of Walker Memorial). Students who do poorly on an exam will have the opportunity to somewhat improve their score by taking a make-up exam. The make-up exam will be given on a Tuesday evening at 7:30 p.m. The dates of the in-class exams and of make-up exams are shown on the Course Calendar. All students who do not pass an exam will be required to have their subsequent problem sets graded by a tutor with the student present, to discuss his or her work. This gives the student the opportunity for some one on one interaction with a staff person. This requirement will be relaxed if the student passes the next exam.

Final Examination: There will be a three-hour final exam during the regular final examination period at the end of the term. The final exam will cover all the material from the course. There will be no make-up final.

Grading:

The homework will count 10%. The exams will count 36% of the grade (12% each). For those students who take the make-up exam, the grade will be either the in-class exam score, or the average of the scores on the in-class and make-up exams, whichever is higher. However if you take the make-up exam there will be a maximum score that you can receive. This maximum will be determined at the end of each in-class exam. The recitation quizzes will count 16% (4% each), with the lowest of the 5 quizzes being dropped, and the final exam will count 38%.

There will be no make-up quizzes, so in the case of excused absences, the remaining grades will be averaged. A grade of zero will be assigned for any missed quiz that is not excused. Excuses for the exams must be requested in advance of the exam (if you are physically able to do so) from the Course Administrator, Prof. Wit Busza. Acceptable excuses include verifiable and significant medical problems, religious holidays, and also serious personal situations. For conflicts between exams and athletic events, Prof. Busza will try to make alternative arrangements for the student to take the exam. For conflicts between a recitation quiz and an athletic event, an excused absence is appropriate. To request an excused absence for a recitation quiz, see your recitation instructor.

Academic Behavior and Honesty

During quizzes and exams, exchange of information with others is unacceptable. So is the use of notes or other materials, unless explicitly authorized. You will not be allowed to use calculators (they will not be needed). Anyone suspected of violating these guidelines will be charged with academic dishonesty and subject to MIT's disciplinary procedures. However, you are **strongly** encouraged to get together in groups to discuss the homeworks and the material presented in the course.

The Physics Interactive Video Tutor (PIVOT)

MIT's Center for Advanced Educational Service (CAES), in collaboration with the Physics Department, is producing a new learning environment on the web for those taking a Newtonian Mechanics course. You might find it useful and we encourage you to check it out. You can access PIVOT through Athena: <http://curricula2.mit.edu/pivot/>

8.01 WWW Website:

At <http://web.mit.edu/8.01/www>, the 8.01 website includes quizzes and solutions from past years. It will also be used to post all announcements, homework assignments, homework solutions, and quiz solutions as the term progresses. (Announcements and assignments will also be available in Room 4-339B). You are invited to use the anonymous feedback page to relay comments, complaints, or suggestions about the Website or about any aspect of the course. Messages that you write on the feedback page are forwarded anonymously to the lecturer, Edward Farhi.

Comments by Wit Busza:

Susan Cartwright, Alan Guth and I worked hard over the summer to make further improvements to the *Study Guide*, which we hope you will find a concise and convenient summary of the material, as well as an instructive collection of problems and solutions. We are asking you to also buy the textbook, however, because we expect that you will sometimes find the explanations in the *Study Guide* to be too concise.

Since the *Study Guide* is still under development, there will inevitably be some errors in it. As we discover these errors, we will post them on the website. If you discover any errors, I would very much appreciate your sending me an e-mail message about them (busza@mit.edu). No error is too small to be worth correcting.

8.01 is the mid-level first-year physics course, aimed at the majority of MIT students. It is paced faster than 8.01L, it is less rigorous than 8.012, and it does not have the emphasis on take-home experiments that characterizes 8.01X. Our goal is to convey the excitement of the physicist's quest to understand nature at its deepest level, and at the same time to provide the knowledge and tools that you will need to continue your studies in science or engineering. We hope you will enjoy the course.