QUANTUM PHYSICS III (8.06) Spring 2008

Organization

Lectures:
TR 12:30-2:00 pm in room 6-120.
Lecturer: Hong Liu
Room 6-313; Phone 253-4853; email hong_liu@mit.edu
Office Hours: Thursdays 2:30-3:30 pm, or by appointment.

Recitation Sections:
Recitation 1: MW 12-1 in room 12-142
Recitation 2: MW 1-2 in room 12-142
Recitation 3: MW 3-4 in room 4-153
Instructor: John Negele
Room 6-315; Phone 253-7077; email negele@lns.mit.edu
Office Hours: Tuesdays 2:00-3:00 pm or by appointment.

Teaching Assistant: Christiana Athanasiou
Room 6-415; Phone 253-5349; email athanasi@mit.edu
Office Hours: Mondays 6:00-7:00 pm at 8-308, or by appointment.

Course Administrator: Stephanie Jakoblich
Room 4-315; Phone 253-4461; email jakoblic@mit.edu

Texts:
D. J. Griffiths, Introduction to Quantum Mechanics, 2nd edition (required);
C. Cohen-Tannoudji, Quantum Mechanics, Vol. 2 (strongly recommended);
J. J. Sakurai, Modern Quantum Mechanics (recommended if you like it; somewhat advanced);
R. Shankar, Principles of Quantum Mechanics (recommended if you like it; somewhat advanced).

All these texts, and others which may be of value (eg Baym; Dirac; Gasiorowicz; Gottfried;
Liboff; Peebles; Schiff) are available in the Physics Reading Room.

Prerequisites:
You must complete 8.05 with a grade of C or better before attempting 8.06. If you have any questions about your background, come talk with Prof. Liu.

Use of the Web

The course webpage is http://web.mit.edu/8.06/www. All course-related documents (syllabus, problem sets and solutions, notes, handouts, announcements, etc.) will be distributed electronically over the web. Students should check the 8.06 Home Page regularly for updates and announcements. If you are attending 8.06 as a Listener then it is important that you are properly registered in order to have access to class-restricted material that will be posted on the web page. Students can also send comments to the teaching staff anonymously, using the form provided on the web page. Please be constructive! Grades for homework and tests will be posted on the web using the physics grade management system. To preserve confidentiality this system uses MIT Personal Certificates (the same certificates used by many other MIT web programs). If you do not have a certificate then you should download one when you first access the grade webpage.

Grading:

Grades will be determined by a weighted average of problem sets (30%), a Midterm that will be held in class on Thursday March 20 (15%), a Term Paper (20%), and a Final Exam (35%). The faculty may alter grades to reflect class participation, improvement, effort and other qualitative measures of performance.

Problem sets:

Problem sets are a very important part of 8.06. We believe that sitting down yourself and trying to reason your way through a problem not only helps you learn the material deeply, but also develops analytical tools fundamental to a successful career in science. We recognize that students also learn a great deal from talking to and working with each other. We therefore encourage each 8.06 student to make his/her own attempt on every problem and then, having done so, to discuss the problems with one another and collaborate on understanding them more fully. The solutions you submit must reflect your own work. They must not be transcriptions or reproductions of other people’s work. Plagiarism is a serious offense and is easy to recognize. Don’t submit work which is not your own.

Problem sets will be available at http://web.mit.edu/8.06/www/ at least one week before they are due. They will be due (in the locked boxes on the 3rd floor between Buildings 8 and 16) at 7pm on the days indicated in the calendar (which can be found at 8.06
website). Solutions will be available at http://web.mit.edu/8.06/www/ the day after
the problem set is due. Graded problem sets will be returned in section. We do not accept
problem sets after they are due. Period. However, your lowest problem set score will be
discarded at the end of the semester; only the remaining n - 1 will be used in determining
your grade. You should anticipate that the boxes will be emptied shortly after the 7 pm
deadline.

Term Paper:

Everyone in 8.06 will be expected to research, write and “publish” a short paper on a
topic related to the content of 8.05 or 8.06. The paper can explain a physical effect or further
explicate ideas or problems covered in the courses. It can be based on the student’s own
calculations and/or library research. The paper should be written in the style and format
of a brief journal article and should aim at an audience of 8.06 students. Writing, editing,
revising and “publishing” skills are an integral part of the project, which is described in full
in a separate handout.

Because 8.06 is a CI-M Subject, in order to pass 8.06 you must obtain a grade of C or
better on your term paper. If you do not succeed in this, you will get a grade of Incomplete
until you revise your term paper sufficiently to earn at least a C, and only at that time you
will be assigned a final grade based on the breakdown given above.