PHY 355F Quantum Mechanics
Fall term 2007 ***Information sheet***

Lecturer: Professor D. F. V. James
office: MP1014
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email: dfvj@physics.utoronto.ca (put "PHY335 student" in subject line)
Office hours: Tues-Fri 4-5PM in Room MP1014/MP1003 (or by appointment).

TA: Asma Al-Qasimi
office: MP1026
email: alqasimi@physics.utoronto.ca (put "PHY335 student" in subject line)

Schedule:
Lectures (Prof. James):
Mondays 4:10-5:0pm Room MP102
Tuesdays 2:10-3:0pm Room MP102
Recitations (Prof. James)
Tuesdays 3:10-4:0pm Room MP102
Professor James will deliver the lectures and recitations (in which he will answer questions, and cover background material as time allows; no course material will be introduced in these sessions); however, in order to compensate for lectures missed due to quizzes etc., occasionally there will be lectures in the recitation time slot.

Drop-in sessions (TA):
Tuesdays 12:0noon-2:0pm Room MP408
Thursdays 2:0pm-4:0pm Room MP606
TA will be available to discuss the lecture material, problem sets, and background material as requested. Bring your questions! You are also encouraged to use the tutorial sessions as a time and place to work on problem sets and study, alone or with a group of fellow students, even if you have no particular questions for the tutor. If questions arise the tutor will be there to answer them. Tutorial sessions begin 24 September.

Problem sets will typically be posted on the web site on Monday mornings, solutions posted about a week later. They are to help guide your study, and to give you practice; Your solutions will neither be collected nor graded. You will, however, see some of the problems on the quizzes.

Grading
10% first quiz (Tuesday, 9 October, 2:10-3PM, Room MP102)
20% second quiz (Tuesday, 30 October, 2:10-4PM, Room MP102)
20% third quiz (Tuesday, 27 November, 2:10-4PM, Room MP102)
50% final exam (to be scheduled by the Faculty of Arts and Science)
OR (if it gives you a higher mark):
100% final exam
TA and graders will mark the quizzes; Professor James will mark the final exam. The first quiz will consist of three short questions on material covered in chapter 1 of the text, and related material introduced in lectures. The second two quizzes will consist of four longer questions each; for these quizzes the material for which you are responsible is that covered in lecture on or before the Tuesday preceding the quiz. The final exam will cover the entire course.

Textbook
R. Shankar *Principles of Quantum Mechanics* (2nd edition)

Other Books (my favorites; there are plenty of others!)

P. A. M. Dirac *The Principles of Quantum Mechanics*
C. Cohen-Tannoudji, B. Diu and F. Laloë, *Quantum Mechanics* (2 vols)
L. D. Landau and E. M. Lifshitz, *Quantum Mechanics (Non-relativistic theory)*
L. I. Schiff, *Quantum Mechanics*
A. Messiah, *Quantum Mechanics* (2 vols)
J. J. Sakurai, *Modern Quantum Mechanics*

Syllabus:

1. Dirac formalism *(chapter 1)*
2. Postulates of quantum mechanics *(chapter 4)* and an introduction to spin *(chapter 14).*
3. Review of elementary quantum mechanics *(chapters 5,6,9)*
4. The harmonic oscillator *(chapter 7)*
5. Symmetries and their consequences *(chapter 11)*
6. The hydrogen atom *(chapter 13)*
7. More on spin *(chapter 14)*
8. Angular momentum *(chapter 15)*

Not all of every chapter will be covered, and some material not in the text will be introduced in lecture. Students are responsible for the material covered in lecture and additional material they are instructed to read in the text.