TA:

- Nirmal Raj
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- phone: 6-5569
- office: 463 WIL
- office hours: M 12:00 - 13:00

Textbooks and other helpful material:

1. Recommended texts:
   - R. Shankar, *Quantum Mechanics*
   - L.D. Landau and E.M. Lifshitz, *Quantum Mechanics*

2. Other useful books:
   - M. Abramowitz and I.A. Stegun, *Handbook of Mathematical Functions*
   - N.I. Achieze and I.M. Glazman, *Theory of Linear Operators in Hilbert Space*
   - G.B. Arfken, *Mathematical Methods for Physicists*
   - C.M. Bender and S.A. Orszag, *Advanced Mathematical Methods for Scientists and Engineers*
   - R. Courant and D. Hilbert, *Methods of Mathematical Physics*
   - P. Dennery and A. Krzywicki, *Mathematics for Physicists*
   - I.S. Gradshteyn and I.M. Ryzhik, *Table of Integrals, Series, and Products*
   - M.J. Lighthill, *Introduction to Fourier analysis and generalized functions*
   - A. Messiah, *Quantum Mechanics*
   - P.M. Morse and H. Feshbach, *Methods of Theoretical Physics*
   - V.I. Smirnov, *A Course of Higher Mathematics*
   - M. Stone and P. Goldbart, *Mathematics for Physics*
   - E.T. Whittaker and G.N. Watson, *A course of modern analysis*

Exams and Grading

PHYS 414 Midterm: Thursday, Oct 27, in class
PHYS 414 Final: Thursday, Dec 8, 8:00 - 9:45, 360 CON
PHYS 415 Midterm: Thursday, Feb 16, in class
PHYS 415 Final: Thursday, Mar 22, 8:00 - 9:45, 318 WIL

Your grade will be mostly based on the exams (see below), but it will be next to impossible to do well on the exams unless you have spent a lot of time and effort on the homework problems.

Homework will be graded and count for 25% of the class grade. If your performance on the final is better than on the midterm, the final will count 75% and the midterm will not count. If your
performance on the midterm is better than on the final, the midterm will count 25% and the final will count 50%. In marginal cases participation in class will be taken into account.

Homework, and Lecture Notes:

The homework problems are an integral part of the course, and spending substantial time on the homework will be essential for understanding the material discussed in class. One can learn very little physics by just reading a book, or listening to lectures, so make sure you allow adequate time for doing the homework problems. Also, doing well on the exam will be next to impossible without a thorough understanding of the homework problems.

Homework problems will be assigned weekly on Thursday via a posting in pdf format on this page, and will be due the following Thursday at 5pm in Nirmal Raj’s box in the Binney Lounge. I will post my solutions, also in pdf format.

Collaborating on the homework is okay, and even encouraged. You should make sure, however, that you really understand the material yourself rather than just tagging along, or you will be in for an unpleasant surprise at exam time.

I will also make my (hand written) lecture notes available in pdf format. Please keep in mind, however, that anybody else's lecture notes, including the lecturer's, are next to useless unless you have your own set taken by YOU. My notes are only meant as a permanent record of my blackboard art to check against.

Lecture notes

Lecture notes will be posted in pdf format as the course progresses. You can access them through the table of contents link.

Problem Sets

Problem Assignment #1: 09/29/2011, past due, Solutions
Problem Assignment #2: 10/06/2011, past due, Solutions
Problem Assignment #3: 10/13/2011, past due, Solutions
Problem Assignment #4: 10/20/2011, past due, Solutions
Problem Assignment #5: 10/27/2011, past due, Solutions
Problem Assignment #6: 11/03/2011, past due, Solutions
Problem Assignment #7: 11/10/2011, past due, Solutions
Problem Assignment #8: 11/17/2011, past due, Solutions
Problem Assignment #9: 11/22/2011, past due, Solutions
Problem Assignment #10: 1/12/2012, past due, Solutions
Problem Assignment #11: 1/19/2012, past due, Solutions
Problem Assignment #12: 1/26/2012, past due, Solutions
Problem Assignment #13: 2/02/2012, past due, Solutions
Problem Assignment #14: 2/09/2012, past due, Solutions
Problem Assignment #15: 2/16/2012, past due, Solutions
Problem Assignment #16: 2/23/2012, past due, Solutions
Problem Assignment #17: 3/01/2012, past due, Solutions
Problem Assignment #18: 3/08/2012, past due, Solutions
Problem Assignment #19: 4/05/2012, due 4/13/2012

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