Course Info

Physics 411: Introduction to Quantum mechanics
Section 411001

Fall Semester 2005

Hours: Tuesdays and Thursdays, 11:10 am – 12.25 pm in P306
Instructor: Dr. Hanno H. Weitering
Phone: 974-7841 or 574-1911
Email: hanno@utk.edu
Office hours: Tuesday and Thursday, 10.00-11.00 a.m. or see me right after class, or make an appointment.

Textbook: “Introduction to Quantum Mechanics” by D.J. Griffiths

Prerequisites: PHY 240 or, equivalently MATH 435

Brief course description:
Introduction to Quantum Mechanics is a two-semester course (411 and 412) and is mandatory for all physics majors pursuing the Academic Physics Concentration. Roughly, 411 deals with the foundations and development of quantum theory whereas 412 is more geared toward the applications of quantum theory. The topics of PHY 411 cover chapters 1-4 of Griffith (Ch. 1-7 of Bransden and Joachain):

- Wave function and the uncertainty principle; Fourier analysis
- Time independent Schrödinger Equation
- One-dimensional examples: bound states and scattering states; harmonic oscillator
- Linear algebra, formalisms, and Hilbert space
- Schrödinger Equation in three dimensions, angular momentum, H-atom.

Other recommended reading:

“Quantum Physics” by S. Gasiorowicz
“Quantum Mechanics” by A. Goswani
“Introduction to Quantum Mechanics” by B.H. Bransden and C.J. Joachain
**Grading Scheme:**

Homework 20 points  
2 midterms: 40 points  
Comprehensive Final Exam: 40 points  
Maximum score: 100 points

Homework assignments will be handed out once per week and must be turned in one week later, same day. We typically have ten homework assignments per semester. Homework is graded on a scale from 1 (= poor) to 3 (very good or excellent). Midterms will be split into a take home problem and a test in class. For the take-home problems, you can take advantage of the opportunity to brainstorm with your class mates and consult other textbooks, while I can make the problems much more challenging.

There will be no class on October 13 (Fall break). The last class will be on Tuesday, Dec. 6, 2005. The comprehensive exam will be in class and is tentatively scheduled for 5:00 – 7:00 PM on Monday, December 12, 2005 in P306.

Come to class well prepared. Preview the topics for the next class. Ask questions and participate in discussion. Finally, I strongly recommend that each of you see me regularly to discuss your progress. Also, do not hesitate to contact me if you are stuck with the homework. If you drop me an email, you will usually get a response within a day!