Course Information
Physics 411: Introduction to Quantum Mechanics
Fall Semester 2014

Meeting Time: Tuesdays and Thursdays, 11:10 am – 12:25 pm
1st class meeting on Thursday, Aug 21
Class will not meet on Thursday Oct 16 (Fall Break)
Class will not meet on Thursday Nov 27 (T’giving)
Final class meeting on Tuesday, Dec 2

Location: Neilsen 306

Instructor: Dr. Geoffrey Greene
515 Nielsen
ggreene@utk.edu

Office Hours: Tuesday & Thursday 10:00am -11:00 or by appointment
(Please contact Dr. Greene by email to arrange an appointment)

Textbook: Introduction to Quantum Mechanics, 2nd Edition, D.J. Griffiths

Prerequisites: PHY 250 and MATH 435
Note about prerequisites –
Physics 411 requires a rather high degree of mathematical sophistication.
A confident facility with differential equations and a familiarity with linear algebra are essential for success in this course.

Physics 411 is the first semester of a two semester sequence (with 412) and is mandatory for all physics majors pursuing the Academic Physics Concentration. 411 will deal with the foundations of quantum mechanics and the development of formalism and techniques. The topics of Physics 411 will roughly cover chapters 1-4 of Griffiths and will follow the text quite closely. Specific Topics will include:

- The wave function and the uncertainty principle
- The time independent Schrödinger Equation
- Examples of one dimensional potential:
  - Square well
  - Harmonic oscillator
  - Bound and scattering states
- Introduction to linear algebra, Hilbert Space
- Schrödinger Equation in 3-Dimensions
- Angular Momentum
- The Hydrogen Atom

The solving of problems is an integral and essential part of this course.

Recommended Additional Reading (particularly chapter 1):

Introduction to Quantum Mechanics, B.H.Bransden and C.J.Jaochain
Course Policies

Course Information – IMPORTANT NOTE

Lecture note, assignments, course announcements, and other information will be announced in class and posted in the Physics 411 section of Blackboard at Online@UT. It is the student’s responsibility to remain current with posted information.

Grading

In addition to the lectures, the course will include problem sets, one midterm exam, and a final. Course grades will be determined by a weighted average of

1) Problem Sets weight 40%
2) Midterm, weight 30%
3) Final, weight 30%

Problem Set Policy

It is anticipated (and recommended) that students work together on the problem sets. However, solutions to problem sets must be submitted in each student’s own hand. If the student worked with a study group, the names of the study group members must be noted on the submitted homework. Students should be prepared to discuss solutions to the homework in class and will expected to be able to all solve assigned problems on the board in class. Homework grades will be based in part on in-class activities.

Exam Schedule

The date of the midterm exam will be announced in class and will be posted in Online@UT. The date of the final will be made available on the University Academic Calendar. It is the student’s responsibility to remain current on these dates.

University Disability Statement

Any student who feels s/he may need an accommodation based on the impact of a disability should contact me privately to discuss your specific needs. Please contact the Office of Disability Services at 865-974-6087 in Hoskins Library to coordinate reasonable accommodations for students with documented disabilities.