Course Syllabus

Number: PHYS 411

Title: Introduction to Quantum Mechanics

Prerequisite: PHYS 250 (If a waiver has been given, the student accepts full responsibility in the event the lack of fulfilling a prerequisite adversely impacts the student’s performance.)

Semester, Year: Fall Semester, 2015

Meeting Dates/Times/Location: Tuesdays/Thursdays, 11:10-12:25, Nielsen 304

Instructor/Contact Information: Prof. Anthony Mezzacappa, Room 206 South College, mezz@utk.edu

Grader/Contact Information: TBD

Office Hours: Tuesday/Thursday, 4-5 (or by appointment)

Required Textbook: Introduction to Quantum Mechanics (Second Edition), David J. Griffiths

Material Covered: Chapters 1 through 4

Brief Course Description: In PHY411, we will cover the fundamentals of quantum mechanics. We will supplant our understanding of these fundamentals and learn how to compute in quantum mechanics by first solving idealized problems in one spatial dimension. These problems are also relevant to more complex, realistic problems we will consider later in the course and in PHY412. We will then generalize what we have learned in these idealized systems by studying the formalism of quantum mechanics. We will conclude the course by considering idealized quantum mechanical systems in three spatial dimensions, the hydrogen atom, and angular momentum and spin.

Central Learning Objectives: Understand the physical meaning and fundamentals of quantum mechanics. Develop a proficiency in being able to compute quantum mechanical quantities.

Degree-Level Learning Objective: PHYS 411-412 are core course requirements for the Physics Major.

Semester Outline: August - Chapter 1, September - Chapter 2, October - Chapter 3, November/December - Chapter 4

Grading: A student’s final grade will be based on his/her combined performance on weekly problem sets (weight 40%), the midterm exam (weight 30%), and the final exam (weight 30%). The student’s final course (letter) grade will be computed using a scale determined by the instructor at the end of the course.

Problem sets will be assigned each Thursday (except for the first day of class) and will be due at the beginning of class the following Thursday. Solutions to problem sets must be submitted in the student’s own hand.
The date of the midterm exam will be announced in class. The date of the final exam will be made available on the University Academic Calendar.

Make-Up Policies: For circumstances beyond a student’s control, late problem sets and make-up exams (mid-term, final) may be permitted. This will be determined on a case-by-case basis.