

**PHY 7400**

**QUANTUM MECHANICS I**

**FALL 2009**

**Course Objective:** To familiarize the student with the fundamental concepts and techniques of quantum mechanics.

**Lecturer:** Caroline G. Morgan, 272 Physics Research Building  
577-2746, [morgan@physics.wayne.edu](mailto:morgan@physics.wayne.edu)

**Office Hours:** M 2:00-4:00 P.M., W 2:00-3:00 P.M.

**Textbook:** Quantum Mechanics, by Eugen Merzbacher, 3<sup>rd</sup> edition (Wiley, 1998).

**Lecture Hours/Location:** MWF 12:50-1:45 P.M., 177 Physics Research Building

**Problem Section Time/Location:** F 1:55-2:50 P.M., 177 Physics Research Building

**Grading:**

Hour Exam 1	20%
Hour Exam 2	20%
Final Exam	40%
Homework	20%

**Exams:** Two hour exams will be given during the lecture class, on Friday, October 16 and Wednesday, November 25. The final exam will be given from 10:40-1:10 P.M. on Monday, December 21. The second hour exam will focus on material covered since the first exam, which was not covered on the first exam. The final exam will cover all the course material; however, material covered at the end of the course, which was not included on the previous hour exams, will be somewhat more heavily emphasized on the final exam than material which has been covered by a previous exam. Absences during scheduled exam times are strongly discouraged - real emergencies will be dealt with on an individual basis.

**Homework:** During the weekly, one-hour problem session, solutions to the assigned problems will be presented by volunteers from the class. The homework grade will be based both on the written homework and on the presentation of solutions and additional contributions to the discussion in the problem session. Though students are encouraged to discuss with each other how to solve the assigned problems, there has to be individual effort – there should be no copying of solutions. If a student must miss class on the day that the homework is due, credit will be given for homework which is scanned and emailed or put in my mailbox before the time that the homework is due, but no credit will be given for late homework.

**Course Description:** This course is the first semester of a two-semester course sequence on quantum mechanics, covering the Schrodinger equation and its meaning and solutions as applied to simple physical and chemical problems, perturbation theory, theory of atomic collisions, matrix mechanics, transformation theory, angular momentum and spin, and theory of measurement.

**Student Disability Services:** If you have a documented disability that requires accommodations, you will need to register with Student Disability Services for coordination of your academic accommodations. The Student Disability Services (SDS) office is located at 1600 David Adamany Undergraduate Library in the Student Academic Success Services department. SDS telephone number is [313-577-1851](tel:313-577-1851) or [313-577-3365](tel:313-577-3365) (TDD only). Once you have your accommodations in place, I will be glad to meet with you privately during my office hours to discuss your special needs. Student Disability Services' mission is to assist the university in creating an accessible community where students with disabilities have an equal opportunity to fully participate in their educational experience at Wayne State University.