

Physics 401 Quantum Physics I - Spring 2017

Instructor

Prof. Greg Sullivan
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Office: Physical Sciences Complex 2208D
Office hours: M: 2:00-3:00 PM, drop-ins encouraged.

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Course Goals

Introduces some quantum phenomena leading to wave-particle duality. Schrödinger theory for bound states and scattering in one dimension. One-particle Schrödinger equation and the hydrogen atom. We will primarily cover the 1st half of *Griffiths* (Chaps. 1-4)

Class Schedule

Room: PHYS 1201 Toll Physics Building
Hours: MWF: 11:00-11:50, M: 10:00-10:50
4 Credits

Prerequisites

Pre-requisite: PHYS 371 & PHYS 373

Required Text

David Griffiths, *Introduction to Quantum Mechanics* 2nd Edition (ISBN: 0-13-111892-7).

Not required, but you may find useful: Richard Liboff, *Introductory Quantum Mechanics* 5th Edition (ISBN 0-8053-8714-5). Although, any edition will do!

Course Website

<http://elms.umd.edu>

Homework

Assignments will be posted on ELMS approximately weekly, due in one week, hardcopy in class. Collaboration is encouraged, but copying is not, and will not help you learn. Your lowest homework grade will be dropped.

Exams

Quiz: there will be ~ 5 quizzes generally held in either the first or second hour of alternate Mondays. The lowest grade will be dropped, so there will be no make-ups.

Midterms: There will be three mid-term exams. The first midterm (M, Feb 6) will cover the introductory historical and mathematical background and should be used as a gauge to determine if you are ready for the later material. The second and third midterms will be on 15-March and 14-April respectively. Dates for midterm exams may change as needed, so pay attention.

Final: the final exam will be on Tuesday 16-May at 8:00-10:00 AM.

Grades

Homework: 15 %
Quizzes: 20%
Early Mid-term : 10%
2nd Midterm: 15%
3rd Midterm: 15%
Final: 25%

Tips for Doing Well

Read the book

Do the homework - feel free to work with classmates, but do work the problems yourself (relying on answers from the Web will do yourself a disservice).

Ask questions - if you do not understand it, chances are some of your classmates do not as well.

Come to lectures - much of the material is not going to be in the book, or will be presented in a different way.

Academic Dishonesty

The University of Maryland has a nationally recognized Code of Academic Integrity, administered by the Student Honor Council. This Code sets standards for academic integrity at Maryland for all undergraduate and graduate students. You are responsible for upholding these standards. Failure to do so can result in a "XF" grade denoting "failure due to academic dishonesty."