

Physics 403
Spring 2008

Instructor: Peter Siegel, Room 8-215, Phone: 869-4029
email: pbsiegel@csupomona.edu
Web page: www.csupomona.edu/~pbsiegel

Lecture Hours: Mon, Wed, Fri 11:45-12:50 in Room 8-210

Office Hours: Mon 1-2, Tues 10-11, Wed 1-2, Fri 2-3 in MASH room

Textbook: *Introduction to Quantum Mechanics* (Second Edition) by Griffiths

Grading:

Homework (best 5 problem sets)	20%
First Exam	25%
Second Exam	25%
Final Exam (June 13)	30%

Homework: Homework problems will be posted **on my home page**, and will be due by midnight on the due day. The 6 due dates are listed on the syllabus. If I am not in my office when you turn it in, slide it under my door. Homework will be accepted after the due date, but will be marked down. The due dates are indicated on the other side of this sheet. The solutions will be posted on my home page after the due date. The best five scores will be included in the homework grade.

Exams: The first exam will be a take-home exam. (25%) You are to work on the exam by yourself without help from anyone. The second exam will also be a take-home exam. (25%) You are to work on the exam by yourself without help from anyone. The final will be similar in format to the midterms. (30%).

The time for the final is Friday, June 13, from 7:00 - 9:00.

Rough Course Outline Phy403 Spring 2008 (Siegel)

Day	Sections in text	Topic
Wed 2		Introduction, Review
Fri 4	9.1.1	Two State Systems
Mon 7	9.1.1	Two State Systems: Magnetic Resonance
Wed 9	9.1.2	Time-Dependent Perturbation Theory
Fri 11	9.1.3	Sinusoidal Perturbations Problem Set Due
Mon 14	9.2	E.M. Interaction and Dipole Radiation
Wed 16	9.2.2	Absorption, Stimulated and Spontaneous Emission
Fri 18	9.3.3	Selection Rules
Mon 21	9.3.3	Review of Dipole Radiation Problem Set Due
Wed 23		Review and Pick up First Exam
Fri 25	11.1	Classical Scattering Theory
Mon 28	11.1.2	Quantum Scattering Theory 1-Dim
Wed 30	11.1.2	Quantum Scattering Theory 3-Dim
Fri May 2	11.2	Partial Wave Analysis
Mon 5	11.3	Phase Shifts Problem Set Due
Wed 7	11.4.1	Integral Form of the Schroedinger Equation
Fri 9	11.4.2	Born Approximation
Mon 12	11.4.2	Total Cross Section
Wed 14	11.4.2	Optical Theorem Problem Set Due
Fri 16		Review and Pick up Second Exam
Mon 19		Review of Relativistic Kinematics
Wed 21		Intro to Dirac Equation: Free Particle Solutions
Fri 23		Dirac Equation, Non-relativistic limit
Mon 26		Holiday: Memorial Day
Wed 28		Symmetry and Conserved Quantities
Fri 30		SU2 Symmetry: Spin and Isospin Problem Set Due
Mon June 2		Review of Dirac Equation
Wed 4	10.1	The Adiabatic Theorem
Fri 6	10.2	Berry's Phase Problem Set Due
Fri 13	7:00-9:00	Final Exam