

# PHYS6510 *Quantum Mechanics I*

Problem Sets for Fall 2002 Semester

Instructor: Jim Napolitano

November 14, 2002

Your grade in this course will be based on these problem sets. You are encouraged to collaborate with other students on all problem sets, **except for the midterm and final sets** on which you must work independently. The due dates and times are indicated and will be strictly enforced.

Number	Due	Material
1	Sept 9 Start of Class	Thru Sept 5 (Sakurai Section 1.4): Dirac Notation, Measurements, Observables, The Uncertainty Principle
2	Sept 23 Start of Class	Thru Sept 19 (Sakurai Section 2.2; (Merzbacher Sections 2.2-4): Wave functions, Unitary Transformations, Dynamics, Wave Packets
3	Oct 7 Start of Class	Thru Oct 3 (Sakurai Section 2.4; (Merzbacher Chapters 4,5): The Simple Harmonic Oscillator, The Schrödinger Equation, Some solutions,
	<b>Midterm Problem Set: Work on this independently</b>	
4	Oct 21 Start of Class	Thru Oct 17 (Merzbacher Chapters 7,8; Sakurai Sections 3.1,2): More Schrödinger Equation solutions, Rotations and angular momentum, Spin-1/2
5	Nov 4 Start of Class	Thru Oct 31 (Sakurai Section 3.6; Merzbacher Chapter 12): Eigenstates of angular momentum; Spherically Symmetric Potentials, One-Electron Atoms
6	Nov 21 Start of Class	Thru Nov 14 (Sakurai Sec 3.10): Addition of Angular momenta; Wigner-Eckart Theorem
	<b>Final Problem Set: Work on this independently</b>	
7	Dec 9 (Monday) At 5pm <i>in the Physics Department office</i>	All of the course