

PHYSICS 5383
Introduction to Quantum Mechanics
SPRING 2008

INSTRUCTOR	Roberto Vega Office: 105 Fondren Science Bldg email: vega@mail.physics.smu.edu web page: http://www.physics.smu.edu/~vega/index.html Telephone: 214-768-2498
OFFICE HOURS	By arrangement.
TEXT	<i>Introduction to Quantum Mechanics</i> by David J. Griffiths, Prentice Hall, 2nd edition.
GRADING	The final course grade will be determined as follows. Homework 50%, exams 25%, final exam 25%.
HOMEWORK	Although homework is graded you are encouraged to help each other out and discuss the problems among yourselves. However, everyone should do their write-up individually. You will learn physics more effectively through discussion. Late homework will not be accepted.
EXAMS	There will be three partial exams. The tentative schedule is: Exam #1 on February 12, 2008; Exam #2 on March 18, 2008, Exam #3 on April 15, 2008. The final exam will be as in the SMU schedule of classes Spring 2008.

General Topics to be Covered

1. Review Postulates of Quantum Mechanics
2. Uncertainty Relations
3. Periodic Potentials and Conduction in Metals
4. Quantum Mechanics in 3-d
 - Central Potentials
 - Angular Momentum
 - Spin
5. Approximation Methods
 - Time Independent Perturbation Theory
 - Variational Method
 - WKB Method
 - Time Dependent Perturbation Theory
 - Adiabatic Approximation
6. Scattering
7. The Einstein-Padosky Paradox and Bell's Theorem