

CHM 532 Advanced Physical Chemistry (II)

Course Syllabus

Spring 2009

Class Meetings: Tuesday and Thursday 9:30 to 10:45 P.M.

Classroom: Pastore Hall, Room 219

Instructor: Sze Yang

Office: Room 334, Pastore Hall

Office Hours: Tuesday, Wednesday, Thursday, 11:00 A.M.

Textbook: D. A. McQuarrie, *Quantum Chemistry*, 2nd Edition
University Science Books, 2008; ISBN 978-891389-50-4

Course web site: <http://www.uri.edu/webct/>

Course contents:

Historical Background
Classical Mechanics and Wave Equations
The Schrodinger Equation, One-dimensional Particle in a Box, Uncertainty Principle.
Fundamental postulates of Quantum Mechanics.
The Harmonic Oscillator.
Three-dimensional Particle in a Box, Rigid Rotor, Angular Momentum.
Hydrogen Atom.
Approximate methods.
Atoms and intrinsic spin angular momentum.
Hydrogen Molecule and chemical bonds.
Molecular Orbitals. Molecular orbital theory and valence bond theory.
Molecular Spectroscopy.
Electronic bands, properties of solid state materials.

Exams:

1st Hour Exam	Thursday, February 19
2nd Hour Exam	Thursday, March 26
3 rd Hour Exam	Tuesday, April 28
Final Exam	Tuesday, May 5, 8:00 am - 11:00 pm

Grade:

Homework problems	30%
Two best of three hour-exams, 20% each	40%
Final Exam	30%