

## **Atoms, Molecules, Spectroscopy**

Chemistry 260

Section: D100

Term: 2009 Fall

Instructor: Dr. R. Goyan

Discussion Topics: General Course Description:

Elements of physical chemistry from the molecular point of view. Introduction to quantum chemistry, atomic and molecular structure, and spectroscopy.

3 lecture hours/week; 1 tutorial hour/week; 2 lab hours/week.

Lecture Topics:

Introduction to Principles of Quantum Mechanics

Introduction to Spectroscopy

Applications of Quantum Mechanics: Rotation of Molecules

Magnetic Resonance Spectroscopy

Atomic Structure and Spectroscopy

Applications of Quantum Mechanics: Vibrations of Molecules

Molecular Structure

Molecular Electronic Spectroscopy

35% Assignments & Laboratory; 25% Midterm; 40% Final Exam

Peter Atkins and Julio de Paula & Ron Friedman, "Quanta, Matter and Change A Molecular Approach to Physical Change ", 1st Edition, 2009.

OR

Peter Atkins and Julio de Paula, "Physical Chemistry", 8th Edition, VHPS Freeman & Co.

Grading: 35% Assignments & Laboratory; 25% Midterm; 40% Final Exam

Required Texts: Peter Atkins and Julio de Paula & Ron Friedman, "Quanta, Matter and Change A Molecular Approach to Physical Change ", 1st Edition, 2009.

OR

Peter Atkins and Julio de Paula, "Physical Chemistry", 8th Edition, VHPS Freeman & Co.

Recommended Texts: D.A.McQuarrie and J.D. Simon, "Physical Chemistry". 1st Edition, 1997. University science Books.

OR

R. Gilmore, "Alice in Quantomland: An Allegory of Quantum Physics". Spriner-Verlab 1995.

Materials/Supplies: i-clicker

Prerequisite/Corequisite: Prerequisite: CHEM 122 (or 103). MATH 152, PHYS 121.

Recommended: MATH 232.

Notes: See website: <http://www.sfu.ca/chemistry/students/courses>

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