

Physical Chemistry II (Chemistry 232)
Quantum Mechanics and Spectroscopy
Beury 415
Tuesday/Thursday 10:10 AM - 11:30 AM

Professor Robert J. Stanley
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Office Hours: M 1:00-2:00, W 1:00-2:00, F 9:30-10:30, or by appointment

Recitations: *Instructor: Kongsheng "Jeff" Yang* BE 356
Section 1: M 10:40-11:30 in Beury 120
Section 2: T 1:10-2:00 in Beury 120

Prerequisites: Physics 87 or 121, Math 85-86

Corequisites: Physics 88, Math 127 or 251

Any student who has a need for accommodation based on the impact of a disability should contact me privately to discuss the specific situation as soon as possible. Contact Disability Resources and Services at 215-204-1280 in 100 Ritter Annex to coordinate reasonable accommodations for students with documented disabilities.

Course Synopsis: In this course you will explore the concepts underlying the quantum world, a world invisible to us in our day-to-day lives but of incredible practical and philosophical importance. Quantum theory and applications will be explored. Chemical bonding will be developed on this framework. A fundamental understanding of Spectroscopy will grow out of the Quantum theory and theories of chemical bonding.

Required Course Material:

Physical Chemistry, 7th or 8th ed., P.W. Atkins and J. de Paulo

8th Ed. Chapters 8-11, and 13-14 will be covered

7th Ed. Chapters 11-14 and 16-17 will be covered

Recommended:

Solutions Manual to Physical Chemistry, 7th or 8th ed., Atkins and de Paulo

Mathematica, mathematics software

Symmetry and Spectroscopy, Harris and Bertolucci, Dover ed. (*cheap!*)

Quantum Theory, D. Bohm, Dover ed. (nice bit of philosophy about the meaning of QM)

Resources:

- Mathematics and Science Resource Center : 17 Curtis Hall (13th and Montgomery)
- SEAL Library Reserve (in Engineering) :
 - Quantum Chemistry D. McQuarrie
 - Quantum Physics Eisberg and Resnick
 - Symmetry and Spectroscopy Harris and Bertolucci
 - Quantum Chemistry Lowe

Grading:	Final	30%
	Midterm I	20%
	Midterm II	20%
	Homework	20%
	Quizzes	10%

<i>N.B. Make-up exams will be given only for a verifiable medical excuse.</i>

Homework: Homework will be assigned and graded. Assignments will be made available in class and on Blackboard on Thursday and are due the following Thursday. *Your grade for late homework will be reduced by 10% for every late day. After 3 days the homework will not be accepted.*

Some advice:

- *If you do not do the homework you will fail this course.*
- You are encouraged to work in groups but be sure you master the material on your own; your study buddies can't take your test for you.
- Homework problems almost always include a worked-out example (the "a" problem) followed by one lacking the solution.

Cheating: Don't do it. If you are caught you will receive an "F" for the course.