

CH 344 Physical Chemistry

Lecture: MWF 8:00-8:50 am, Henry Hall 33

Instructor: Janet Jensen

Office: Henry Hall 24

Phone: 735-4858

Office Hours: MWF 9:30-10:30 am, TuTh 12:00-1:00 pm,
or by appointment

email: jjensen@chaminade.edu

Course Description: CH 344 is the second half of a two semester study of the theories and principles of physical chemistry. The topics covered in CH 344 include kinetics, basic quantum mechanics, atomic and molecular structure, molecular symmetry and spectroscopy. **Prerequisites:** CH 343, PHY 253, and MA 211. Concurrent registration in CH 344L is required.

Performance Objectives:

- Students will learn about the connection between a reaction mechanism and an observed rate law. We will discuss how the reaction rates are controlled by the energies of the reactants as well as their concentration.
- Students will develop an understanding of the fundamental principles of quantum mechanics. QM theory provides the basis for discussions on atomic and molecular electronic structure, and spectroscopy.

Texts:

- *Physical Chemistry*, by Peter Atkins, 6th ed. W.H. Freeman, 1998.
- Student Solutions Manual (recommended)

Class Requirements: Students are expected to attend all scheduled classes, to be on time, and stay until class is finished. They are responsible for any material covered or announcements made in their absence. In case of illness or other unavoidable absences, please contact me as soon as possible.

Homework: Recommended problems will be assigned for each chapter. They will not be collected, because the solutions manual is available. Students are strongly urged to work these problems to better understand the course material.

Exams: There will be four exams (including the final) and eight quizzes given this semester. The tentative dates are shown in the class schedule. If you anticipate an excused absence from any examination, you should arrange to take the exam early. Make-up examinations will only be given for excused absences or documented medical reasons.

Grades: The final course grade will be based on the following point scheme:

- | | |
|--------------------------------|------------|
| • Exams (100 points each) | 400 points |
| • Quizzes (25 points each) | 200 |
| • Attendance and participation | 25 |
| | 625 points |

The grading scale shown below will be used to determine the final grade. Any changes will be announced in class.

88-100%	A
75-87%	B
60-74%	C
45-59%	D
below 45 %	Fail

CH 344 Tentative Schedule

Spring 2002

Date	Chapter		Date	Chapter
14-Jan	Ch 25, Rates of Rxns		11-Mar	Ch 13
16-Jan	Ch 25		13-Mar	Ch 13
18-Jan	Ch 25		15-Mar	Ch 14, Molecular Structure
21-Jan	holiday		18-Mar	Quiz 5, Ch 14
23-Jan	Ch 26, Kinetics		20-Mar	Ch 14
25-Jan	Quiz 1, Ch 26		22-Mar	Ch 14
28-Jan	Ch 26		Mar 25 to 29	Spring Break
30-Jan	Ch 27, Rxn Dynamics			
1-Feb	Quiz 2, Ch 27		1-Apr	Ch 15, Molecular Symmetry
			3-Apr	Ch 15
4-Feb	Ch 27		5-Apr	Quiz 6, Ch 15
6-Feb	Ch 27			
8-Feb	Exam 1		8-Apr	Ch 16, Rotational & Vibrational Spectra
			10-Apr	Ch 16
11-Feb	Ch 11, Quantum Theory Principles		12-Apr	Exam 3, Ch 16
13-Feb	Ch 11			
15-Feb	Ch 11		15-Apr	Ch 16
			17-Apr	Ch 17, Electronic Transitions
18-Feb	holiday		19-Apr	Quiz 7, Ch 17
20-Feb	Quiz 3, Ch 11			
22-Feb	Ch 12, Quantum Theory Applications		22-Apr	Ch 17
			24-Apr	Ch 17
25-Feb	Ch 12		26-Apr	Quiz 8, Ch 18
27-Feb	Ch 12			
1-Mar	Quiz 4, Ch 12		29-Apr	Ch 18
			1-May	Ch 18
4-Mar	Ch 13, Atomic Structure		3-May	Ch 18
6-Mar	Ch 13			
8-Mar	Exam 2		9-May	Final Exam 8:00-10:00