

## CH 431 Physical Chemistry I Spring Session 2009

Class Time: 10:15-11:30 Tu,Th, Dab 330  
Problem Period: M 11:20-12:10 or 12:25-1:15 Dab 330

Instructor: Dr. Stefan Franzen, 363E Partners III, Tel. 515-8915  
Office Hours: F 2:30-3:30 321A Dab & by appointment (Stefan\_Franzen@ncsu.edu)

Text: Physical Chemistry, 8th Edition, Peter Atkins & Julio de Paula, Freeman Press, 2006

Date	Topic	Reading
8 Jan	Blackbody Radiation	8.1, 16.1
13 Jan	Quantum vs Classical Physics	8.2
15 Jan	The Wave Equation	8.3
20 Jan	Operators and Wavefunctions	8.3
22 Jan	The Particle in a Box	9.1-9.2, 16.2
27 Jan	The Harmonic Oscillator	9.3-9.6
29 Jan	Quantized Rotation	9.7-9.8
3 Feb	Transitions, Approximation	9.10
5 Feb	The Hydrogen Atom	10.1-10.2
10 Feb	Atomic Transitions	10.3-10.6
12 Feb	Spin Orbit Coupling	10.7-10.9
17 Feb	Midterm I	
19 Feb	Homonuclear Diatomics	11.1-11.3
24 Feb	Heteronuclear Diatomics	11.4-11.5
26 Feb	Molecular Structure	11.6
3/5 Mar	Spring Break	
10 Mar	Symmetry	12.1-12.3
12 Mar	Symmetry	12.4-12.6
17 Mar	Intro to Spectroscopy	13.1-13.3
19 Mar	Rotational Spectroscopy	13.4-13.8
25 Mar	Vibrational Spectroscopy	13.9-13.15
27 Mar	Electronic Spectroscopy	14.1-14.4
31 Mar	Mid-term II	
2 Apr	Lasers and Applications	14.5
7 Apr	Biological Spectroscopy	14.6
9 Apr	NMR Spectroscopy	15.1-15.3
14 Apr	Experimental NMR	15.4-15.6
16 Apr	Fourier Transform NMR	15.7-15.13
21 Apr	EPR Spectroscopy	15.14-15.16
23 Apr	Dielectric properties	18.1-18.3

Grades will be based as follows:

Homework	300 pts
Mid-Terms	400 pts
Final Exam	<u>300 pts</u>
Semester Total	1000 pts

There will be +/- grading.

The Final Exam can substitute for one mid-term (i.e. 500 pts) in case of excused absence.