Instructor: Prof. Alexei Tivanski  
Office: E272 CB  
Phone: 384-3692  
Office Hours in E272 CB: WF 10:00-11:30 AM or by appointment  
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Department of Chemistry Contact Information: Students in need of additional information may contact staff in the Chemistry Center (231 CB or phone: 335-1341) during normal business hours.

Lecture: MWF 8:30-9:20 AM  W228 CB
Course Materials: Course Web Page: http://courses.uiowa.edu/index.html  
Textbooks: Physical Chemistry 9th Ed. by P. A. Atkins and J. de Paula;  
Student Solutions Manual for the textbook

Objectives: Physical chemistry is the study of the interaction of energy and matter. This course covers kinetic theory of gases, intermolecular forces, thermodynamics, and electrochemistry. The course is intended primarily for chemistry, biochemistry, environmental science, and chemical and biochemical engineering majors.

Discussion Sessions: You should be registered for a discussion session. A teaching assistant will conduct discussion sessions at the times listed below. This provides a good opportunity to have questions answered, work assigned problems, and to have concepts explained from a different perspective.
Discussion Sessions TA: Daniel Roston, office hours: Th 2:30-4:30 PM; E208  
004:131:001: Tue 5:00-5:50 PM, C139 PC  
004:131:002: Wed 3:30-4:20 PM, C139 PC

Exams: There will be three exams of equal weight (100 points each) and a comprehensive final (200 points). The times and dates of the exams are listed below. Note that the time limit for taking each exam and the final is 2.0 hours. Make-up exams will be given only for excused absences or documented medical reasons. Please contact the instructor before the missed exam.
Exam I February 18, 6:30-8:30 PM, Rm. W128 CB  
Exam II March 25, 6:30-8:30 PM, Rm. W128 CB  
Exam III April 22, 6:30-8:30 PM, Rm. W128 CB  
Final TBA

Homework: Three graded homework assignments (50 points each) will be given during the course of the semester. Homework may be discussed, but all written work must be performed independently.
Grading System: The +/- grading scale will be used. The homework, exams, and final exam will be weighted in the following manner:

- 3 homework assignments at 50 points each 150 points (23%)
- 3 two-hour exams at 100 points each 300 points (46%)
- Final exam 200 points (31%)
- Total 650 points (100%)

Use of Calculators: You will be permitted to use "simple" scientific calculators on exams. Palm-size, laptop, or other portable computing devices are not permitted during exams.

Course Contents: We will cover much of the material in the textbook not covered in 004:132. Problem solving is an important component of the learning process. Accordingly, you are expected to work (at a minimum) the problems that will be assigned from each chapter. These assigned problems will be graded and returned to you. The problems are representative of the type you will find on exams.

The chapter coverage follows:

Ideal and Real Gasses
Ch 1 The properties of gasses
Ch 20 Molecules in motion: molecular motion in gasses
Ch 17 Molecular interactions: interactions between molecules

The Laws of Thermodynamics
Ch 2 The First Law
Ch 3 The Second Law

Pure Substances, Mixtures, and Equilibrium
Ch 4 Physical transformations of pure substances
Ch 5 Simple mixtures
Ch 6 Chemical equilibrium

Surface adsorption and electrochemistry
Ch 22 Processes at solid surfaces

For each semester hour credit in the course, students should expect to spend at least two hours per week preparing for class sessions (averaged over the entire semester).
Policies:

1. Academic Fraud
   All forms of plagiarism and any other activities that result in a student presenting work that is not his or her own are academic fraud. All academic fraud is reported first to the departmental DEO and then to the Associate Dean for Academic Programs and Services.

2. Accommodations for Disabilities
   Under the Americans with Disabilities Act and Section 504 of the Rehabilitation Act of 1973, instructors must provide reasonable academic accommodations for qualified students with disabilities. Students seeking academic accommodations first register with Student Disability Services and meet with a counselor in that office who reviews documentation and determines eligibility for services. I need to hear from anyone who has a disability, which may require some modification of seating, testing or other class requirements so that appropriate arrangements may be made. Please contact me during my office hours.

3. Making a Suggestion or a Complaint
   Students have the right to make suggestions or complaints and should first visit with the instructor, then with the course supervisor if necessary and next with the departmental DEO. All complaints must be made as soon as possible.

4. Understanding Sexual Harassment
   Sexual harassment is reprehensible and will not be tolerated by the University. It subverts the mission of the University and threatens the well-being of students, faculty, and staff. Visit http://www.sexualharassment.uiowa.edu for definitions, assistance, and the full University policy.

5. Reacting Safely to Severe Weather
   In severe weather, class members should seek appropriate shelter immediately, leaving the classroom if necessary. The class will continue if possible when the event is over.