INSTRUCTOR:
Gary Drobny  Professor of Chemistry
Telephone 206 685 2052  Mailbox 10  drobny@chem.washington.edu
Office Hours: F 1:10 pm - 2:10 pm Bagley 126 (or by special arrangements)

TEXT:

and

Engel, T., Reid, P. *Thermodynamics, Statistical Mechanics, and Kinetics*

or


CLASS TIMES:
Lecture: MWF 10:30 am – 11:20 am, Bagley 154
Tutorial: Th. 10:30 am – 11:20 am, Hek 132

The web site contains course lecture notes that correspond closely to the material being taught in class. These will be posted before each class and updated at the end of each week. You are strongly encouraged to familiarize yourselves with the material before coming to class: it will greatly help you following the lecture content. Homework assignments and solutions will also be posted. Please, do pay attention to announcements that will be posted from time to time; they may contain suggestions on homework and important administrative matters related to the course as well as answers to frequently asked questions.

LECTURES: Lectures assume the students have familiarity with algebra, differential and integral calculus. Some familiarity with differential equations is useful. Material covered in lecture will not follow the sequence used in the text. An approximate schedule, which describes the chapters to be covered each week, is given on the final page of this syllabus. Attendance to class will not be recorded, but those present are expected to pay full attention and avoid disrupting the class.

HOMEWORK: As part of the course, you will be asked to complete 9 homework sessions. Your performance on the homework problems will count for 25% of your grade. Homework assignments are posted weekly at the course web site and are due no later than 5 p.m. on the date indicated on the assignment. Completed homework assignments should be left in Professor Drobny’s mailbox (#10). Late homework is not accepted. Solutions for homework problems will be posted on the web site. High exam grades correlate with high-quality homework sets: many exam questions will be based on
the homework. There are two kinds of homework problems, text problems and ‘extra’ problems. Each text problem will be graded satisfactory (+) or unsatisfactory (-). Five points will be deducted from your course grade for every (-). In addition, 2-3 ‘extra’ problems, not taken from the text, will be posted along with the text homework problems. These problems must also be solved and turned in with the text problems. The ‘extra’ problems will be graded using the same grading criteria used in examinations. If you obtain >75% of the partial credit, you will obtain 100 course points (100%) for the homework. Not all ‘extra’ problem sets will be graded for partial credit, but at least 4-5 will be selected at unannounced times for grading. With the exception of addition errors, homework is NOT re-graded.

**HOMEWORK HELP** – Students who require help with homework problems may: 1) attend the optional Thursday tutorial, 2) attend scheduled office hours, 3) ask brief questions via email (drobny@chem.washington.edu). Email should have Chem 453 on the subject line. Email will usually be answered directly, but in many cases answers to questions will be posted at the Chemistry 453 Web site (http://faculty.washington.edu/gdrobny). There is no guarantee that email will be answered soon after you send it, so avoid this form of communication if you need or expect help immediately.

**EXAMINATIONS** (8.5”x11” blue books are required): The midterm examination will include all material covered during the first 5 weeks of the course and will be a one hour exam. The final examination is a two hours examination. The first half will emphasize material covered since the midterm, i.e. week 6-10. However, questions on material covered earlier may also be asked as chemical principles building upon what has been covered earlier. To each exam you must bring: 1) blue book; 2) a calculator of any type; 3) a straight edge; 4) pencil and pen; 5) one double-sided page of notes containing any information you find helpful. You may not enter exam notes into your calculator.

**EXAMINATION DATES**: The midterm examination will take place on Monday February 6. The final is scheduled for 8:30-10:20 a.m. Monday, 13 March. The final exam will be held in Bagley 154.

**STANDARDS**: It is required that students have passed Chemistry 452 or its equivalent and thus have a working knowledge of equilibrium thermodynamics. The mathematical level of the course assumes students are familiar with introductory integral and differential calculus. In Chemistry 453 students are required to demonstrate the ability to solve quantitative chemical/biochemical/biophysical problems and to provide satisfactory answers to text problems. To obtain partial credit on homework and examination problems and/or to obtain a satisfactory (+) mark on text homework problems, solutions/answers must be displayed in a detailed, organized and readable format. This means equations and physical relationships upon which any problem solution is based must be clearly written, mathematical manipulations required to obtain any solution must be displayed in detail, numerical substitutions must be shown in full (even if a calculator is used) and must be accompanied by proper units. Finally, graphs, diagrams and clearly-written expository composition must accompany a solution, if explicitly requested. Partial credit is usually (but not always) awarded in units not smaller than 2-3 points. *Obtaining the correct numeric solution is an important grading criterion.*
**OVERALL COURSE GRADE:** Grades will be based on an absolute standard of achievement set by the Chemistry 453 professor. This standard is directly measured by the number of course points earned. Here are some guidelines to help you understand levels of achievement required to obtain various grades. To obtain a grade of 4.0, >94% of the course points have to be earned. To obtain a grade of 3.0, >70% of the course points have to be earned. To obtain a grade of 2.0, >50% of the course points have to be earned. Students who fail to earn more than 30% of the course points will receive a grade of 0.0.

**COURSE POINTS:**
- Homework (100 points) 25%
- Midterm Exam (100 points) 25%
- Final Exam Part 1 (100 points) 25%
- Final Exam Part 2 (100 points) 25%

**REGRADING OF EXAMS OR QUESTIONS ON EXAMS:** Exam questions are graded on a partial credit basis (see standards section, above). If you wish your exam to be re-graded, the blue book must be placed in Prof.Drobny’s mailbox within 24 hours of its return to you along with a note explaining briefly (i.e. less than 100 words) what you want changed and why. Under no circumstances will verbal requests be accepted. Exams will not be re-graded if the disputed points are below a cutoff (5 points) unless there is simply an addition error.

**COLLOQUIA AND SEMINARS:** At this point in your college career, you are contemplating future jobs or graduate school. The Chemistry Department maintains graduate school files in the front office and also produces a weekly “Bagley Bulletin” listing jobs and seminars. Extra copies are found in the mailroom. I strongly encourage you to attend seminars and especially colloquia, which are more general talks. Going to seminars is the easiest way to learn about current research. Almost all talks begin with a 5-minute introduction to the field. It is perfectly acceptable to sit in the back near the door and then quietly slip out after the speaker’s introduction.

**DISABLED STUDENT SERVICES:** If you would like to request academic accommodations due to a disability, please contact Disabled Student Services (DSS), 448 Schmitz 543 8924. You must obtain a letter from DSS indicating that you have a disability that requires academic accommodations. When you have obtained the appropriate letter from DSS, the necessary arrangements will be made.
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