CHEMISTRY 127- GENERAL CHEMISTRY I
COURSE SYLLABUS
FALL 2008

INSTRUCTOR:

Dr. Mark Jensen
Office: Ivers 334J
Phone: 299-3571 (office), 236-0532 (home)
E-mail: jensen@cord.edu
Web Page: www4.cord.edu/chemistry/jensen/

OFFICE HOURS:

M 8:45-9:45
T 8:45-9:45
W 8:45-9:45
(or whenever I'm around)

LECTURE: MWF 1:20-2:30pm, Ivers 386

COURSE WEB PAGE: www4.cord.edu/chemistry/jensen/chem127/ - This page is directly accessible from my homepage. It contains links to the course syllabus, PowerPoint slides, assignment schedule, and old exams, as well as other pertinent information relating to the course. Every attempt will be made to keep this page as up-to-date as possible.

REQUIREMENTS:

Required Textbook: *Chemistry*, by Whitten, Davis, Peck, and Stanley (8th Edition), Thomson, 2007.

Optional: *Chemistry Student Solution Manual* and *Chemistry Study Guide* to accompany the text.

Web Access Card: General Chemistry OWL Online Access Card

Calculator: A scientific calculator (with ln x, e^x, log x, 10^x, y^x functions) is essential. No programmable calculators will be allowed on exams, and no sharing of calculators will be allowed on exams or quizzes. I will make some simple scientific calculators available for exams.

STUDY GROUPS: Sometime during the first two weeks of class each of you will be assigned to a study group, and I ask that each study group sit together during class lectures. In-class group problems will periodically be assigned and group quizzes will be given on most Fridays. To encourage you to help each other stay up-to-speed on the course material, I will add three percentage points to each group member's score on an exam (excluding the final exam) if each member of the group scores 75% or above on the exam.

GRADES: The course grade will be based on the total points accumulated from the three regular exams, the final exam, quizzes, homework assignments, and lab work. Each of these is weighted as follows:

Exams 1-3	45% (15% each)
Final Exam	15
Lab	15
Quizzes	15
Homework	10
TOTAL	100%

The "guaranteed" grading scale is as follows: A- : 91% B- : 81% C- : 71% D- : 61%
The guarantee is that while these cutoffs MAY go down, they WILL NOT go up.

EXAMINATIONS: There will be three regular examinations plus a final exam. The dates for the three regular exams are **September 26, October 24, and November 24.** The exams will be given during the

regular class time. **These dates are firm.** Make-up exams will be allowed only for documented illnesses or absences approved in advance! Excuses must be presented in writing. Exam times **will not** be moved because of exams in other courses. Plan ahead!

FINAL EXAM: The final exam will be given at the time set by the college final exam schedule: **Monday, Dec. 15, from 8:30am-10:30am**. The multiple choice exam will be comprehensive, with approximately 50% of the questions coming from the material covered in the first three regular exams, and the remainder coming from material covered since the third exam.

LABORATORY: Laboratory experiments are an essential element of any introductory course in chemistry. You will receive a separate laboratory syllabus during the first meeting of your lab section.

QUIZZES: At the end of **each** class period a short 5-point quiz will be given. Each quiz will consist of 1-2 questions based on the assigned problem set for that day. Each Friday's quiz will be a group quiz to be completed by your study group as a whole.

I will allow you to take a quiz early, with my approval, but no late quizzes will be given. At the end of the semester the lowest *five* quiz scores will be thrown out. These throw-outs are intended to make up for illnesses, emergencies, and/or absences due to scheduled Concordia events. They are not intended to allow you to perform poorly on five quizzes.

HOMEWORK: Following each class period I will give both a reading assignment and a problem set assignment to be completed for the next class period. These assignments will be posted on the course web site.

Reading: The reading assignment will be based on the material to be covered in the *next* lecture.

Problem Sets: Approximately 10-15 questions from the textbook will be assigned, and they are due in my office by 4:30pm on the due date. Generally these questions will be taken from the even-numbered problems at the end of the chapters. Realize that the answers to these problems are in the back of your textbook. Still you will be expected to show a properly worked out solution to receive full credit. These assignments will generally be worth ten points each, and they will account for 50% of your homework grade. I will allow five assignments to be completed up to one week past the due date at no penalty. After these, no further late assignments will be accepted.

OWL: This semester we'll be making use of OWL: Online Web-based Learning System, and OWL assignments will make up the other 50% of your homework grade. OWL is the most widely used chemistry mastery system in the world. OWL also allows for class communication and grade reporting. More information will be provided as the semester progresses.

Seminar Attendance: The Chemistry Department has instituted a seminar attendance policy in each of its courses. Each student in a chemistry course will be required to attend a certain number of chemistry seminars, the exact number of which is determined by the course instructor. I am asking that you attend one (1) chemistry seminar this semester. Make sure your attendance is properly recorded. This seminar will count as approximately twenty points toward your homework grade (two assignments).

EXTRA CREDIT: For every two seminars you attend beyond the one required, your lowest quiz score will be converted to a 5 (full credit). Be sure your name is recorded on the sign-in sheet at the seminar(s) you attend.

TUTORING: Chemistry tutoring is available in the Academic Enhancement and Writing Center (AEWC) located in the lower level of Fjelstad Hall. This is a service you must sign up for if you are interested. Tutoring is a two hour per week commitment for the duration of the semester to promote continuous learning and is available on a first-come, first-served basis. Contact Tayt Rinehardt in the AEWC (rinehard@cord.edu, 299-4551) for more information.

FERPA: Concordia's statement of compliance with the 1974 Federal Family Educational Rights and Privacy Act (FERPA or the Buckley Amendment) states: "Grades should not be distributed or posted in any fashion that permits identification of the student by anyone other than the student." In this class I may give you the option of accessing your grades from the course's web site. Realize that this site is available to anyone with access to the web. However, no names will be included on this grade sheet. Instead, I will use a personal identification number, which will simply be the last four (4) digits of your Concordia student ID number. While this is not a violation of Concordia's policy, I will still ask each of you to sign a form either granting or denying permission to post grades in this manner.

Also, to facilitate the distribution of graded homework and quizzes, I will ask that each of you sign a form either granting or denying permission to hand homework and quizzes back in a group manner where other students might see your scores. Exams are generally more private, so I will always hand these out individually.

ACADEMIC INTEGRITY: Each student is expected to adhere to the policies outlined in the college's academic integrity handbook. Cheating of any kind will not be tolerated. Students will be asked to consider an integrity pledge on each quiz/examination. This pledge reads as follows:

> "I affirm that I have neither committed nor witnessed a violation of academic integrity in the completion of this quiz/examination."

Any student found to have violated academic integrity will receive no credit for the particular quiz/exam in question. A second offense will lead to automatic removal from the course. For any violation of academic integrity a report outlining the nature of the violation, as well as the consequences levied, will be sent to the Academic Dean.

CONCORDIA'S GOALS FOR LIBERAL LEARNING:

1. Instill a love for learning
2. Develop foundational skills and transferable intellectual capacities
3. Develop an understanding of disciplinary, interdisciplinary, and intercultural perspectives, and their connections
4. Cultivate an examined cultural, ethical, physical, and spiritual self-understanding
5. Encourage responsible participation in the world

DEPARTMENT GOALS: The Chemistry Department faculty has agreed upon the following list of goals that graduating seniors are to develop by the time they complete the chemistry major. Goals directly addressed in Chem 127 are indicated by italics.

A chemistry major should:

1. *Have a firm understanding of the core principles of chemistry as they apply to each of the major subdivisions of the discipline.*
2. Be able to effectively communicate their knowledge of the field, both through writing and speaking.

3. *Be comfortable and competent in the use of modern technology for the acquisition, analysis, and presentation of chemical data and information.*
4. *Possess good problem-solving skills, and be able to apply these skills both independently and collaboratively.*
5. *Be able to gather experimental data safely and accurately using a wide variety of laboratory instruments and methods.*
6. Be able to apply their knowledge of chemistry to the explanation and interpretation of new or unfamiliar chemical information.
7. Be able to select, interpret, and utilize relevant scientific literature from a variety of sources including libraries, electronic databases, and the Internet.
8. Understand and honor the ethical issues related to the use and misuse of chemical information and materials.
9. Be able to apply their knowledge and skills to professional experiences such as teaching, conducting research, and participating in internships.
10. *Gain an understanding of the relationship of chemistry to other sciences and to the needs of society as a whole.*

COURSE SCHEDULE:

Aug	29	Course Introduction		
Sept	1	Chapter 1	Foundations of Chemistry	Lab #1: Laboratory Equipment and Notebooks
	3			
	5			
	8	Chapter 2	Formulas and Stoichiometry	Lab #2: Densities of Water/Propanol Mixtures
	10			
	12			
	15	Chapter 3	Equations and Stoichiometry	
	17	**NO CLASS**	**Faith, Reason, and World Affairs Symposium**	**NO LABS**
	19			
	22			Lab #3: Isotopic Abundances and the GC-MS
	24			
	26	**EXAM #1**	**Chapters 1-3**	
	29	Chapter 4	Chemical Reactions	Lab #4: Spectroscopy of Aqueous Solutions
Oct	1			
	3			
	6	Chapter 5	Atomic Structure	Lab #6: Extraction and Derivatization of Caffeine
	8			
	10			
	13			Lab #8: Basics of Titration (Mon/Tue only)
	15	Chapter 6	Periodicity	
	17			
	20	**NO CLASS**	**Mid-semester break**	Lab #8: Basics of Titration (Wed/Thur only)
	22			
	24	**EXAM #2**	**Chapters 4-6**	
	27	Chapter 7	Chemical Bonding	Lab #9: Laboratory Practical on Titrations
	29			
	31			
Nov	3	Chapter 8	Molecular Structure	Lab #5: VSEPR, Symmetry, and Molecular Modeling
	5			
	7	Chapter 13	Liquids and Solids	
	10			Lab #7: Chemical Reactions of Copper
	12	Chapter 10	Reactions in Water	
	14			
	17			Planning the Final Experiment
	19	Chapter 11	Reactions in Water II	
	21			
	24	**EXAM #3**	**Chapters 7,8,13,10,11**	
	26	**NO CLASS**	**Thanksgiving Break**	**NO LABS**
	28	**NO CLASS**	**Thanksgiving Break**	
Dec	1	Chapter 12	Gases and their Properties	Lab #10: Determination of the Gas Constant; *Written Lab Final Exam*
	3			
	5			
	8	Chapter 14	Solutions	Lab #11: The Final Experiment!!! Check Out
	10			
	12	Review for Final Exam		
	15	**FINAL EXAM (8:30am-10:30am)**		