Chemistry 106X             General Chemistry II                                        Spring Semester 2011

Instructor: Dr. John Keller (Office: 161 NSF; Tel 474-6042, email jwkeller@alaska.edu )
Laboratory Director: Emily Reiter (Office 194A NSF; Tel 474-6748; email e.reiter@alaska.edu)
and Teaching Assistant Supervisor
Administrative Assistant: Mist D’June-Gussak. Office 194 NSF; Tel 474-5510; email mist@alaska.edu)
Class Meeting: TR, 6:30-8:00 PM  201 Reichardt
JK Office Hours: TR 8-9 PM; others by appointment

Resources

Required Materials:
3) OWL access card for Chemistry and Chemical Reactivity 7th Ed (1-semester or 2-semester)
4) A Turning Technologies ResponseCard RF radio frequency clicker. (new or used OK)
5) Experiments in General Chemistry 106X: A Laboratory Manual (Free! available on Blackboard website.)
6) American Chemical Society (ACS) General Chemistry Study Guide
7) A non-programmable non-graphing scientific calculator is required for each exam. N.B. The Department of Chemistry and Biochemistry does not provide calculators in exams. You must provide your own. Please do not bring a graphing and/or programmable calculator such as a TI-83 to Chem 106X exams.

Optional Texts:
Chemistry & Chemical Reactivity - Student Solutions Manual. Kotz
Chemistry & Chemical Reactivity - Study Guide. Kotz
Essential Algebra for Chemistry Students, 2nd Ed. David W. Ball.

Email communication. All messages will be sent to student UAF email address (like alincoln44@alaska.edu). According to UAF policy, it is the student’s responsibility to read or monitor this email account.

Course Overview: Chemistry 106X is the 2nd semester of a two-semester series in general chemistry, which deals with a variety of microscopic and macroscopic chemical phenomena. These courses emphasize the quantitative, mathematical (but mostly non-calculus based) chemistry. Chem 106X covers chapters 10, 12-20, 22-23 of the text. A schedule of lecture topics and assignments is provided on another sheet. Chem 106X satisfies UAF’s Core Curriculum in science (that is what the "X" refers to).

Course Goals and Student Learning Outcomes: The goals for this course are to enhance your skills in critical reading, problem-solving, laboratory experimentation, communication of information, self-confidence, and self-reliance.

Chem 106X Homepage: http://chem.uaf.edu/keller/Courses/106Sp11/ The homepage includes links to the syllabus, lecture schedule, practice exams and solutions, copy of lecture notes, and others. There may also be materials, information, and grades available at the Blackboard site for this course (http://classes.uaf.edu/)

Online Web Learning (OWL): Homework problems will be done using the OWL system. The link to the OWL registration page is shown below or can be found on the course homepage. You must obtain an OWL card at the bookstore or online. 1/7 of your grade is based on OWL homework.

OWL: Make sure you register for “Chem106X Spr 2011 EVE”. More instructions in the use of OWL will be given in class. OWL questions will be due 1-to-3 days after the chapter has been discussed in class, generally twice weekly. Students will have 6 chances to solve assignment questions. At the end of the semester, your total OWL points on required questions will be scaled to 80 points and added to the semester total.
"Active learning" means DOING something with your hands and brain to put into practice a concept you have just read or heard about. Do a problem related to the reading you have just done. You will learn a lot more, a lot faster, if you DO something after you read or think about it. In class, TAKE NOTES! During the weekly lectures, we will do occasional “clicker questions”, which are multiple-choice questions that you answer with your clicker. If you have been following the lecture, and doing some pre-study, these should not be too hard. Some will be easy, and some will be challenging. Other avenues for active learning are doing OWL, in-chapter Exercises, or end-of-chapter Study Questions. The answers to the odd-numbered end-of-the-chapter questions may be found in Appendix O of the text. The stepwise solutions to the odd-numbered questions are in the Student Solutions Manual.

Policies

Prerequisites: (UAF Catalogue): “C grade or better in Chem 105X; placement in Eng 111X or higher; placement in Math 107X or higher; or permission of instructor and department chair.”

Classroom Expectations of Students: JK expects you to attend class, and will check your attendance using clicker scores (see below). Each day BEFORE class, the student should read the portion of the textbook that is assigned on the schedule, and begin to work with the assigned OWL questions (see assignment sheet). With this preparation, you will better be able to understand the discussion, ask questions, and answer “clicker questions” (see below). Please conduct yourself in a business-like and professional manner. Be respectful of the rights other students to a quiet and uninterrupted learning experience. If you arrive late, please enter at the back of the auditorium (2nd floor level). Turn off your cell phone ringer. Put away your laptop. Be quiet. Listen.

“Clickers”: Student clicker responses are recorded electronically by the TurningPoint receiver and software on JK’s laptop. Questions will be graded 1 point for an answer, 0 points for no answer. The percent maximum score at the end of the semester will be multiplied by 70 pts and included in the semester total. About 50 questions will be asked this semester. You will be allowed 5 to 10 zero clicker scores without penalty, to take into account the (hopefully few) days you miss class due to travel on University business, sickness, or your clicker batteries ran down, or other legitimate causes. No “makeup clicker questions” will be given. No answers on paper can be accepted.

It is the student’s responsibility to bring the clicker to each class, take care of it, replace it if lost, and keep it supplied with fresh batteries (they should last the whole semester with normal usage).

“Clicker by proxy” is a no-no. Click only you own clicker!

Register your clicker ID on the OWL website. Go “Clicker Registration” in the Support & Miscellaneous panel on the left had side. To gain credit on the very first clicker question, your clicker ID must be registered by MONDAY, Jan. 31, 6:00 PM. If you miss that deadline, then send your clicker ID to JK as soon as possible.

Laboratory: The purpose of the lab is to do hands-on investigation. We expect you to gain skills in scientific reasoning, experimental design, and use of chemicals and laboratory apparatus. The labs are conducted by graduate and upper division undergraduate teaching assistants. Lab reports will be handed in each week, to be graded and returned by the teaching assistant. 11 experiments are scheduled for the semester. The laboratory portion of your grade (100 points) will be based upon the average of your best 10 out of 11 lab grades. You can miss one lab with no impact on your lab grade. If you miss 2 or 3 labs, then 1 or 2 zeros respectively will be included in the average. Do not miss 4 labs: this results in a COURSE F!

All students enrolled in Chem 106X (even those who have taken the course before) must attend laboratory. Students must hand in 8 or more reports to earn a passing grade in this course. In other words, if you hand in only 7 (or fewer) lab reports, an F grade in the course is assigned, even if all your other grades are passing. This stiff requirement is based on the American Chemical Society stipulation that students must spend a certain number of hours in lab for courses such as Chem 106X (and of course you must attend lab in order to write a lab report!) There are no makeup labs scheduled during the semester. If you have special scheduling problems or if you miss more than one lab for an acceptable reason, please discuss alternative plans with Emily.
Reiter, Laboratory Director. Laboratory reports are due one week after a lab is completed. Late reports will be accepted, but the score will be reduced significantly. The last report of the semester cannot be accepted late.

**Exams:** The student is responsible for all information from text, lecture, OWL, and assigned study questions. Questions from any of these sources may appear on exams. Three 90-minute exams and a cumulative final exam will be given; see the weekly schedule for dates and coverage. Each exam will include a table containing all necessary constants, and a simple periodic table.

**Final Exam.** The final exam will be a 120-min, 70-item multiple choice exam provided by the American Chemical Society Examinations Institute. This covers the 2nd half of the text plus organic chemistry. The required review text is an excellent source of information and will help you practice and prepare for this exam, which should be no more difficult than the other exams during the semester. **The time (Tues, May 10, 8-10 PM) and place (201 Reichardt) of the final exam have been set by the UAF Registrar, not your professor. No early or late exams can be scheduled. If you miss the scheduled exam due to travel, then the University policy on Incomplete (I) grades will be invoked.**

**Make-up exams** will be allowed for good reasons, which you MUST DISCUSS with the professor. “I slept in” is not a good reason. (But: if you are late, or even very late, to the exam, make the effort to come in: we can accommodate you.) An unexplained absence from an exam results in a zero. If you anticipate an absence (intercollegiate sports, travel on military or University business), talk to your professor before the exam to make arrangements. If the absence is unexpected (illness, family or personal calamity, cold weather transportation difficulty), talk with the professor at the earliest possible opportunity. Come prepared to document your particular calamity. In any case, you must take the makeup exam within 1 week of your return to health. **If you are to take a makeup exam, we expect that you have no knowledge of the original exam.**

**Ethical Considerations: As a UAF student, you are subject to the UA Honor Code, which says in part:**

“Students will not collaborate on any quizzes, in-class exams, or take-home exams that will contribute to their grade in a course, unless permission is granted by the instructor of the course. Only those materials permitted by the instructor may be used to assist in quizzes and examinations.

Students will not represent the work of others as their own. A student will attribute the source of information not original with himself or herself (direct quotes or paraphrases) in compositions, theses, and other reports. No work submitted for one course may be submitted for credit in another course without the explicit approval of both instructors. Violations of the Honor Code will result in a failing grade for the assignment and, ordinarily, for the course in which the violation occurred. Moreover, violation of the Honor Code may result in suspension or expulsion.”

**Other banned activities:** Using another student’s clicker; copying answers on lab reports or exams.

The Chemistry “Department Policy on Cheating” is the following: “Any student caught cheating will be assigned a course grade of F. The student’s academic advisor will be notified of this failing grade and the student will not be allowed to drop the course.”

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**During hour and final exams** programmable and/or graphing calculators, cell phones, beepers, PDAs, and other electronic devices are NOT allowed on your person. Power-off any such item, and place it inside your closed briefcase, purse, or pack at the back of the room, or on the floor.
### Grading

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<tr>
<th>Item</th>
<th>Maximum Pts</th>
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<tbody>
<tr>
<td>Exam 1</td>
<td>100</td>
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<tr>
<td>Exam 2</td>
<td>100</td>
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<tr>
<td>Exam 3</td>
<td>100</td>
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<tr>
<td>Final Exam</td>
<td>100</td>
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<tr>
<td>OWL Homework</td>
<td>80</td>
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<td>Clicker score</td>
<td>70</td>
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<tr>
<td>Lab</td>
<td>100</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>650</strong></td>
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### Estimated Grade Scale (as % of 650 pts).
(Subject to change):

<table>
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<tr>
<th>%</th>
<th>Letter Grade</th>
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<tbody>
<tr>
<td>88-99%</td>
<td>A</td>
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<tr>
<td>77-88%</td>
<td>B</td>
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<tr>
<td>66-77%</td>
<td>C</td>
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<tr>
<td>55-66%</td>
<td>D</td>
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<tr>
<td>Less than 55%</td>
<td>F</td>
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**Grades.** Letter grades (A-F, no +/- grades) are assigned based on the total out of 650 points accrued in the semester. The approximate cut-offs for letter grades are shown above. These are *estimates only* based on prior semester results, and are subject to change up or down at the time final grades are assigned. The final cut-offs may differ from other C 106 sections because the exams, OWL and clicker questions are different.

**Instructor-Initiated Withdrawals:** Any time up to and including Friday, March 28, the professor has the right to withdraw a student from Chem 106X for any of the following reasons: (1) Exam I and II are missed without an excused absence, or (2) two or more labs are missed, or (3) the student shows poor class attendance, or (4) is missing a lot of OWL homework. This is our definition of “...has not participated substantially in the course. (See p. 44 in the Catalog.)

**Disabilities:** Students with physical or learning disabilities are required to identify themselves to Mary Matthews in the Disability Services office, located in the Center for Health and Counseling (474-7043). The student must provide documentation of the disability. Disability Services will then notify Prof. Keller of special arrangements for taking tests, working homework assignments, and doing lab work.

**Incomplete (I) grade:** A grade of “I” is assigned only when a student misses the final exam or multiple laboratory classes for a documentable reason, such as a medical problem, a death in the family, etc.

**Important Dates:** Please keep the following dates in mind.
- Last day to drop class and get 100% refund: Friday, Jan. 28
- Last day to drop class w 50% refund (course not on academic record): Friday, Feb. 4
- Freshmen progress reports due: Friday, Feb. 25
- Last day for student- or instructor- withdrawal (“W” on academic record): Friday, Mar. 25
- UAF SpringFest (no classes): Friday, April 29
- Last of instruction: Friday, May 6