CHEM F103X
Basic General Chemistry
Fall 2015

CRN(s): 73988, 73989, 73990, 73991, 73992
Lecture: REIC 201 MWF 3:30pm – 4:30pm
Lab: REIC 245 Sections: W 6:00-9:00 pm, R 8:00–11:00 am, 11:30am–2:30 pm, 2:45-5:45 pm, 6:00-9:00 pm
Prerequisite: Placement in ENGL F111X or higher AND placement in DEVM F105 or higher. Other students MAY receive permission from the instructor.
Instructor: Dr. S. Ryan Oliver
Office: Reichardt 146
Office Hours: TR 10am – 12pm and by appointment
Contact: By phone: 474-5621 By email: sroliver@alaska.edu

Course Description

This introductory course covers fundamental concepts of general chemistry including formula naming, atomic structure, stoichiometry, gas laws, solutions, acid-base theory, equilibria and nuclear chemistry. This course fulfills the laboratory part of the natural science requirement and provides preparation for subsequent training in chemistry in Chem 104X and Chem 105X.

Course Materials

Required: Textbook: Introduction to General, Organic, and Biochemistry, Edition 11th
Authors: Bettelheim, Brown, Campbell, Farrell, Torres
Publisher: Cengage Learning
ISBN: 9781285869759
Online: Term subscription to OWLv2. http://www.cengage.com/OWLv2
Equipment: **NON**-programmable scientific calculator
Turning Technologies clickers or ResponseWare mobile app
Lab Materials: Available on Blackboard

Optional: Prentice Hall Molecular Model Set (or an equivalent molecular modeling kit)

Important Dates

Monday, Sept. 7	Labor Day (No Class)
Friday, Sept. 18	Last day for student and faculty initiated drops (100% refund of tuition and fees)
Friday, Oct. 2	Exam 1
Friday, Oct. 30	Exam 2
Friday, Oct. 30	Last day for student and faculty initiated withdrawals (W grade on transcript)
Nov 26-29	Thanksgiving Holiday (No class on Friday)
Wed Dec 2nd	Exam 3
Final Exam	Friday, Dec 18th 3:15pm – 5:15pm

Student Learning Outcomes

At the end of this course, students should be to:

1. Understand the basic terminology and theories of modern chemistry
2. Understand the structure of the atom and how it is related to chemical bonding.
3. Understand the behavior of matter in different states (gas, liquid, solid)
4. Know how to write chemical formulas given the name of the chemical and vice versa
5. Know how to approach and solve basic mathematical problems associated with conversions in the metric system, balancing chemical equations, pH, concentration, and chemical equilibrium
6. Understand the type of interactions that occur between compounds and how these interactions relate to their physical properties
7. Be familiar with different types of solutions
8. Know how to apply the knowledge and/or concepts learned in class in understanding aspects of everyday life

Course Information and Structure

All course information, supporting documents and exam scores for this course will be maintained on the UAF Blackboard website (www.uaf.edu/bblearn/prod/) so check the site regularly for updates. Also, all course related communication will be conducted via email through the UAF Blackboard website (i.e., your UAF email account) so it is important that you verify that your listed email address is correct. The classroom component of the course will consist of lectures augmented with PowerPoint presentations. In addition, lecture topics will be reinforced through homework assignments using the online portal OWL.

Course policies:

Cell phones and computers: The use of cell phones during class is permitted only for clicker questions. Computers may be used ONLY for taking notes.

Attendance, unforeseen emergency, and preparation: Students are expected to attend every class and actively participate. Unsatisfactory attendance may result in a failing grade. You are responsible to inform your instructor concerning any **expected absences**. In the event of an **unforeseen emergency** on an exam day, contact me as soon as possible. You may be asked to document your excuse. Acceptable unforeseen emergency include severe illness, family emergencies, or other unavoidable events including dangerous weather conditions and serious car accidents. Proper communication MAY create a possibility to make up missed homework assignments or exams; there will be no makeup laboratory sessions. Students are expected to read the assigned sections of the textbook prior to class and will be **quizzed** on the course reading.

Lab: A detailed outline of policies pertaining specifically to the lab portion of the course can be found on Blackboard. There will be 11 laboratory exercises during the semester. Your overall lab grade will be calculated on highest 10 lab scores (the lowest score will be dropped); however, know that you must complete at least 8 of the 11 offered labs to pass the course. Questions concerning the lab should be addressed to your lab TA, or to the laboratory coordinator, Emily Reiter (Reichardt Building 192; 907-474-6748; e.reiter@alaska.edu).

Homework: Ten homework assignments will be given during the course of the semester utilizing the OWLv2 online system.

Exams: Four, one-hour exams will be given (three midterms and a final). Each midterm exam will cover mostly material from textbook chapters for the particular segment of the course as well as associated concepts

from the laboratory, but knowledge of previously covered material may be necessary. The final will cover the whole course, but the major component of the exam will focus on the material covered since the third exam. All exams are closed book. Makeup exams will be allowed only with preapproval of the instructor or for an acceptable reason and its format may be different from the original exam. Final exam has been scheduled for Friday, Dec 18th, 2015, from 3:15 pm to 5:15 pm, www.uaf.edu/register/finals/ and select Fall 2015.

Evaluation and Grade Assignment

Point Breakdown:

HW and Pre-lecture assignments: 210 points (20 assignments @ 10.5 points each)	
In class quizzes/clickers	40 points
EXAM 1:	100 points
EXAM 2:	100 points
EXAM 3:	100 points
Final Examination:	100 points
Total Lecture Points:	650 points
Total Lab Points:	150 points
Total Course Points:	**800 points**

Grading:

A = 90 – 100% (720-800 points)
B = 80 – 89% (640-719 points)
C = 70 – 79% (560-639 points)
D = 60 – 69% (480-559 points)
F = < 59% (< 480 points)

OWL Registration. If you do not already have an account, go to http://www.cengage.com/OWLv2 and create an account. **Registration with OWL must occur by Mon, Sept 14, 03:30 PM**. This is also the due date of the first homework assignment, so it is advised to register *before* then in order to allow sufficient time to complete the first assignment.

Clicker Registration. It is the student's responsibility to bring the clicker to each class, replace it if lost, verify that it is registered correctly on the instructor's database, and keep it supplied with fresh batteries. Either the "LCD" version of the clicker or the smartphone application give feedback that the response was registered and thus help students to know their result was counted. **Clicker IDs must be registered through Blackboard** (http://classes.uaf.edu) **by Monday, Sept 14, 03:30 PM.** To register your clicker, click "Tools" on the left panel once in the blackboard site for this class, and then onto Turning Technologies.

Notes and Policies

Attendance. A university classroom is an adult environment and, therefore, attendance at lectures is entirely up to you. However, it is unlikely that you will perform well in this class without attending course sessions. It is strongly recommended that you attend all labs and lectures.

Exams. No electronic devices are to be used during exams other than a non-programmable scientific calculator. You must turn in your exam before leaving the room. You may not leave the room and then come back and continue to work on the exam.

Make-up exams are only allowed in the event of a legitimate excuse as determined by the instructor. If you anticipate an absence from an exam, bring it to my attention *before* the exam date, or in the case of unexpected absences, as soon as possible. Exams must be made up as soon as possible. These make-up **exams** will be scheduled at later date so that all who missed the exam can attend.

Late assignments are not accepted. Students are given a full week to complete assignments, which are scheduled in order to coordinate with lectures and the exam schedule.

Mobile Devices. Mobile devices must be turned to silent or "vibrate" mode during class. Mobile devices are not allowed during exams.

Honor Code. Chemistry Department policy states that any student caught cheating on graded work will be assigned a course grade of F. Course drop forms will not be signed in these cases.

Instructor-Initiated Withdrawals. Up until Friday, Oct 30th, the instructor has the right to withdraw a student who has not participated substantially in the course.

Tips for Success in General Chemistry.

The course will move quickly and material is cumulative – i.e., new concepts build upon previous ones. Thus, it is important to keep up with the course on a daily basis. Some strategies for success:

- Come to class!
- Read before class. Readings are listed in the syllabus.
- Read actively, not passively – after each page, look away and recall main concepts.
- Take notes. Slides are provided after class, and are numbered to aid in-class note taking.
- Ask questions – don't understand something? Ask! Others likely have the same question.
- **Start homework early**. Write out homework on paper. While OWLv2 is online and often requires just clicking the right answer, tests in class are on paper.
- Practice every day –chemistry is not merely about memorization of facts, but synthesizing and applying concepts. Cramming is not a great idea.
- Work out a variety of problems – use OWLv2, textbook, supplemental workbooks, etc. Seeing differently worded problems helps solidify concepts.
- Study together – practice explaining concepts to others and how to work through problems.
- Contact me. Send me an email, stop by for office hours, or make an appointment to see me.

Support & Accommodations

Disabilities Services. The Office of Disability Services implements the Americans with Disabilities Act (ADA), and ensures that UAF students have equal access to the campus and course materials. Students with documented disabilities who may need reasonable academic accommodations should discuss these with me during the first two weeks of class. I will work with the Office of Disabilities Services (*208 WHIT, 474-5655) to provide reasonable accommodation to students with disabilities. You will need to provide documentation of your disability to Disability Services.

Veteran Support Services.
Walter Crary is the Veterans Service Officer at the Veterans Resource Center, 111 Eielson Building. 474-2475. (wecrary@alaska.edu)
Fairbanks Vet Center 456-4238. VA Community Based Outpatient Clinic at Ft. Wainwright is 361-6370.

Tentative Lecture Schedule

Week	Date	Ch.	Lesson	Assignments	Topic	Lab Experiment
-	Sept 4	1	1.1-1.2	HW1 Open	*Introduction*	-
1	Sept 7 Sept 9 Sept 11	- 1 1	- No class - 1.1-1.5 1.6-1.9		*Matter, Energy, and Measurement*	No Lab
2	Sept 14 Sept 16 Sept 18	2 2 2	2.1-2.4 2.4-2.6 2.6-2.8	**HW1 Due,** HW2 Open	*Atoms*	Lab Safety
3	Sept 21 Sept 23 Sept 25	3 3 3	3.1-3.3 3.3-3.5 3.5-3.7	**HW2 Due**, HW3 Open	*Chemical Bonds*	Density, Measurement
4	Sept 28 Sept 30 Oct 2	3 - -	3.8-3.11 Review **Exam 1**	**HW3 Due**	*Chemical Bonds,* ***Exam 1***	Intermolecular Forces
5	Oct 5 Oct 7 Oct 9	4 4 4	4.1-4.3 4.4-4.6 4.7-4.8	HW4 Open	*Chemical Reactions*	Empirical Formula
6	Oct 12 Oct 14 Oct 16	5 5 5	5.1-5.3 5.3-5.6 5.7-5.8	**HW4 Due**, HW5 Open	*Gases, Liquids, and Solids*	Gas Law and Stoichiometry
7	Oct 19 Oct 21 Oct 23	5 6 6	5.8-5.10 6.1-6.3 6.3-6.5	**HW5 Due**, HW6 Open	*Liquids and Solids, Solutions and Colloids*	Moles and Formulas
8	Oct 26 Oct 28 Oct 30	6 - -	6.6-6.8 Review **Exam 2**	**HW6 Due**	*Solutions and Colloids,* ***Exam 2***	Aqueous Chemistry (Double replacement)
9	Nov 2 Nov 4 Nov 6	7 7 7	7.1-7.3 7.3-7.5 7.5-7.6	HW7 Open	*Reaction Rates and Chemical Equilibrium*	Kinetics
10	Nov 9 Nov 11 Nov 13	7 8 8	7.6-7.7 8.1-8.3 8.3-8.6	**HW7 Due**, HW8 Open	*Equilibrium, Acids and Bases*	Le Chatelier
11	Nov 16 Nov 18 Nov 20	8 8 8	8.6-8.8 8.9 8.10-8.12		Acids and Bases, Titrations, buffers	pH and buffers
12	Nov 23 Nov 25 Nov 27	9 9 -	9.1-9.3 9.4-9.6 -No Class-	**HW8 Due**, HW9 Open	Nuclear Chemistry	No Lab Thanksgiving
13	Nov 30 Dec 2 Dec 4	9 - -	9.7-9.9 Review **Exam 3**	**HW9 Due**	Nuclear Chemistry **Exam 3**	Half Life; Alpha, Beta and Gamma
14	Dec 7 Dec 9 Dec 11	10 10 -	10.1-10.2 10.3-10.4 Review	HW10 Open	Organic Chemistry	Review
-	Dec 14 Dec 18	- -	Review **Comprehensive Final Exam**	**HW10 Due**	3:15-5:15 pm	Final

UAF CHEM F103X Syllabus
Fall 2015
Oliver

Print Name:_____ Signature:_____

Why are you taking this class?

What do you hope to learn?

What are you most looking forward to in this class?

What do you perceive as your greatest challenge with this course?