

General Chemistry CHEM 111
Fall 2011

Professor: Christl Zaccagnino
Office: 301 Jepson
Contact: czaccagn@umw.edu, (540)-654-1448
Lecture: MW 6:00-7:15 pm, Jepson 100
Lab: M/W 7:30 – 10:15 pm, Jepson 214
Section 9 – Monday
Section 10 - Wednesday

Office
Hours: MW 5:00-5:45 pm
Other times by appointment

Required
Materials: *Chemistry: The Molecular Nature of Matter and Change 6e*, Silberberg

- Coursepack for Sections 9 & 10
- Lab Notebook with carbonless duplicate pages
- Laboratory goggles and lab coat
- Calculator with scientific notation and exponential functions

Web Site: This course will make use of the Canvas course management system. Please check here frequently as materials posted will include course announcements, assignments, lecture slides and other course materials as necessary.

Content: This course is designed to develop each student's ability to understand the macroscopic world – what can be seen, touched and measured directly – in terms of the particles and events that compose the microscopic world which cannot be experienced without technology and imagination. After completing the course, a student should

- Understand the basis for chemical bonding and reactivity
- Be able to solve problems related to chemical principles
- Understand the models used by scientists to explain observed phenomena
- Have gained hands-on experience in the lab and learned how to conduct scientific experiments

This course in part satisfies the Natural Science General Education requirement. After completing the course sequence, a student should

- Be able to describe the scientific methods that lead to scientific knowledge
- Be able to report and display data collected, interpret experimental observations and construct explanatory scientific hypotheses
- Be able to use theories and models as unifying principles that help us understand the natural world
- Be able to identify current issues in which scientific progress may challenge traditional social ideas or present moral or ethical dilemmas

| Grading: | Points | Total |
|------------------------|---------------|--------------|
| Practice Problems (10) | 5 | 50 |
| Quizzes (best 8 of 10) | 25 | 200 |
| Laboratory | 250 | 250 |
| In-Class Exams (4) | 75 | 300 |
| Final Exam | 200 | <u>200</u> |
| | | 1000 |

Students with a C average or lower on **10/20** will receive a Mid-Semester Deficiency Report.

In-Class Behavior: Please act respectfully in class of other students and myself. This includes turning your cell phone, etc. off during class time, using laptops only for note taking purposes, and arriving to class on time. You are expected to participate in all activities and discussions.

Quizzes: A total of ten 10-15 minute quizzes will be given throughout the term during class. Quiz questions will be similar to problems in the text or come from the assigned reading or lecture material. The lowest two quiz grades will be dropped. *There will be no make-up quizzes without prior arrangements with me.*

Exams: There will be four one hour in-class exams during the semester that will emphasize material introduced since the last exam. *There will be no make-up exams without prior arrangements with me.* The final exam will be comprehensive and must be taken at the time scheduled by the University: **December 12th, 7:00-9:30 pm**. According to University policy, any student who does not take the final exam will fail the course.

Exam Policies: No cell phones, PDAs, or other personal electronic communication devices will be permitted in the classroom during exams. A calculator may be used, but no formulas or information may be stored in the memory.

If you feel a mistake has been made in the grading of your exam, you must write out what you wish to be re-graded and why (your reasoning is critical) on a separate sheet of paper. This must be turned in to me with the exam no later than one week after the graded exam is returned. Please note that the *entire* exam will be re-graded, and the new score (higher or lower) will be recorded. Exam answers must be in non-erasable ink if you wish to retain the right to request a re-grade.

If you feel there has been a numerical error in calculating your exam score, please bring this to my attention no later than one week after the graded exam is returned.

Laboratory: Detailed information regarding the laboratory component of this course can be found in the lab coursepack. It is important to note that due to the hands-on nature of the laboratory, **if a student misses three (3) lab periods, they will fail the course.**

Group work in the laboratory may require a team effort to gather data, but not the calculations. *You are responsible for your own lab reports.* Be sure you can personally justify anything you turn in.

Attendance: Attendance in lab is mandatory.

Attendance in lecture is highly recommended. Occasionally, material will be presented in lecture that is beyond the scope of your textbook or with a different emphasis than that of the text, and you will be responsible for learning this material even if you are absent.

Regardless of attendance, all assignments are due on the scheduled date. **No late assignments will be accepted without my prior consent.**

Absences: You should notify me of an expected absence as early as possible.

Make-up exams will not be given except in the event of EXTREMELY extenuating circumstances.

If you must miss a quiz, see me as soon as possible prior to the quiz to arrange a time for a make-up quiz.

If you must miss a lab, a make-up session is usually possible if you can attend one of the other lab sections in the same week as your missed lab.

Practice Problems: Problems from the textbook will be assigned and posted on

Canvas. These assignments **must** be completed on the Connect website:

(<http://connect.mcgraw-hill.com>)

In order to receive credit for the assignment, you must receive at least 60% of the possible points for the assignment. The assignment **must be completed by the specified due date**. These assignments are for your benefit as they will help you master the course material and prepare you for quizzes and exams; doing problems beyond those assigned should also be useful, especially if you find you are having difficulty with the assigned problems.

You are allowed to work on these problems with other students, but you may not copy or plagiarize. Remember that you must work alone on quizzes and exams, so it is in your best interest to be sure **you** understand the material.

Reading: Reading of the appropriate sections of the textbook should be done *before* coming to class. You will be responsible for this material, *even if it is not covered in lecture*.

Academic Dishonesty: In accordance with the University's Honor Code, all work submitted for grading must be your own and be pledged as such by signing the complete honor pledge at the top of the assignment. Academic dishonesty in any shape or form will not be tolerated. Suspected violations of the Honor Code will be addressed according to the policy established by the Honor Council. Please familiarize yourself with the University's policies of academic dishonesty: ignorance is not an excuse!

Disability Services: The Office of Disability Services has been designated by the University as the primary office to guide, counsel, and assist students with disabilities. You will need to request appropriate accommodations through this office as soon as possible, and then make an appointment with me to discuss your approved accommodation needs. I will hold any information you share with me in the strictest confidence unless you give me permission otherwise.

If you have allergies to any chemicals or other emergency medical information, please notify me as soon as possible.

How to Succeed in Chem 111:

- Spend about one hour per day on chemistry (reading, reviewing notes, doing problems)
- Attend lecture regularly, sit near the front, and take careful notes
- Review the appropriate sections of the text before coming to class
- Review the appropriate sections of the text after coming to class and organize your notes
- Do the practice problems alone and in groups
- Use the computer and web aids provided with your book
- Come to review sessions prepared with questions
- Seek the instructor's help when needed (office hours, before/after class, email)
- In the event that you require additional help beyond the instructor, you are highly advised to seek peer-tutoring through Academic Services (<http://www.umw.edu/acsv/Services/index.htm>).

Course

Schedule: The tentative schedule that follows is how I see the course arranged. It is not set in stone; if there is material that is confusing to the class, we will spend more time on it. The quiz and exam dates will remain as scheduled. If all of the "scheduled" material has not been presented prior to the quiz/exam, the quiz/exam will include only what has been covered.

| Lecture | | Lecture | Assignments | Lab |
|--|--|---|-------------|---|
| 8/29 Introduction Matter & Measurement (1) | | 8/31 Matter & Measurement (1) | PS1 | Lab Check-in, Safety |
| 9/5 Atoms, Molecules & Ions (2) Quiz #1 | | 9/7 Atoms, Molecules & Ions (2) | PS2 | Volumetric Measurements |
| 9/12 Stoichiometry (3) Quiz #2 | | 9/14 Stoichiometry (3) | PS3 | Formula of a Hydrate |
| 9/19 Stoichiometry (3) Quiz #3 | | 9/21 Exam #1 (Chapters 1-3) | | Mass Percent NaHCO ₃ in Alka-Seltzer |
| 9/26 Aqueous Reactions & Solutions (4) | | 9/28 Aqueous Reactions & Solutions (4) | PS4 | Project 1 |
| 10/3 Thermochemistry (6) Quiz #4 | | 10/5 Thermochemistry (6) | PS5 | Project 1 |
| 10/10 Thermochemistry (6) Quiz #5 | | 10/12 Electronic Structure of Atoms (7) | | Thermochemistry: Energy of Fuels |
| 10/17 FALL BREAK | | 10/19 Exam #2 (Chapters 4 & 6) | | Spectroscopy |
| 10/24 Electronic Structure of Atoms (7) | | 10/26 Elec. Structure of Atoms (7)/Periodic Properties of the Elements (8) | PS6 | Project 2 |
| 10/31 Chemical Bonding (9) Quiz #6 | | 11/2 Chemical Bonding (9) /Molecular Geometry (10) | PS7 | Project 2 |
| 11/7 Molecular Geometry (10) Quiz #7 | | 11/9 Covalent Bonding (11) | | Modeling: Lewis Structures and Molecular Geometry |
| 11/14 Exam #3 (Chapters 7-11) | | 11/16 Gases (5) | PS8 | Reaction of Metal with Acid to Form H ₂ |
| 11/21 Gases (5) Quiz #8 | | 11/23 Thanksgiving BREAK | | Thanksgiving BREAK |
| 11/28 Intermolecular Forces, Solids & Liquids (12) | | 11/30 Intermolecular Forces, Solids & Liquids (12) Quiz #9 | PS9 | Intermolecular Forces and Surface Tension |
| 12/5 Exam #4 (Chapters 5 & 12) | | 12/7 Course Review Quiz #10 | PS10 | Laboratory Final Check-out |

Cumulative Final Exam: Friday, December 12th ; 7:00 p.m. – 9:30 p.m.