

CHE 1800 General Chemistry I

Fall 2015

Monday & Wednesday 12:00-1:50pm, Room 3001

Instructor: Dr. Megan E. Filbin-Wong

Office Hours: M-W 10-11a, Th 9:30-11:30a or by appointment

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(please put CHE 1800 in e-mail subject line)

Why Study Chemistry?

Chemistry is the study of matter – how atoms interact, combine with other atoms and how new substances are formed. By studying chemistry, you will gain a better understanding of the world around you – whether it's the contents of the foods you put in your body or what makes the sky blue. This course is designed to lay the groundwork for comprehending fundamental principles that you'll see repeated in other chemistry and biology courses as well as in medicine and medical technology.

Prerequisites

High school chemistry and either: three years high school math, MTH 1110, or equivalent (with a grade of C or better). Alternatively, grade of C or better in CHE 1100, Principles of Chemistry, is acceptable.

What Is Expected of You?

Learning chemistry is complex and can be difficult. In order to learn and succeed, there are expectations you must take away:

- 1) *Studying & Practice* – Lectures are an important part of learning chemistry. Sure, the book does a pretty good job at explaining topics, but nothing takes away from open discussion during the biweekly lectures. While you are not required to attend lecture, it certainly cannot hurt! Also, you will likely not grasp everything after listening to my lectures and you certainly need to practice the vocabulary and problem sets outside of lecture. Daily practice by reading the assigned chapters and doing the practice problems will help you not only pass the course, but also master the topics presented that you will need for future careers.
- 2) *Schedule Your Time Accordingly* – Please plan your schedule around the assigned homework sets, quizzes, tri-weekly exams and final exam. I expect *at least* two weeks notification for any exam you may miss and there will *not* be any flexibility on the date and time of the Final Exam. Review the schedule now and make sure you have set aside the time necessary to complete this course.
- 3) *Apply Yourself & Work Through Problems* – Showing up to lectures, nodding your head without paying much attention and quickly going over practice problems (e.g. reading the problem and the answer without working through the problem) is an easy trap to fall into. When the tri-weekly exams and final exam roll around, you will likely find yourself struggling to answer questions. However, if you actively take notes and participate during lecture and challenge yourself to complete the practice problems, you will succeed. If you find that you are truly struggling, plan on coming to my office hours for additional help (see below).

What Can You Expect from the Instructor?

I will give clear and on-time lectures, define your learning objectives for each topic and encourage class participation throughout the course. Your assignments will cover the material you are expected to understand and I will grade homework sets and quizzes fairly as outlined below. If you are unable to see me during my office hours, I will be flexible with my time to ensure your questions are answered and your concerns are addressed. Lastly, I hope that through my own excitement you all will learn just how amazing chemistry can be!!

Course Materials

- 1) *Principles of Chemistry*, 2nd or 3rd ed. N.J. Tro (Available at the Auraria Bookstore or you can order online. First edition is acceptable!) While this textbook is not strictly required for the course, it will supplement lectures and provide additional practice problems for you to practice for tri-weekly exams and the Final Exam.
- 2) Scientific Calculator for practice problems, homework and quizzes (no cell phones, laptops, tablets, graphing calculators or other tech-savvy devices are allowed during quizzes and exams).

- 3) Materials for note taking (either a notebook or printed PowerPoint Slides). **PowerPoint slides for each lecture will be posted on Blackboard every Sunday by 4pm.**

Reading

The textbook is fun to read and is a great resource for this course and potentially your future career. Lectures are based on the content of this book – so it is important that you supplement what you learn in class by reading the assigned chapters. I also encourage you to spend the time going through the example and practice problems throughout the chapters, as they will help you complete the homework and do well on the quizzes. Chemistry takes a lot of practice!

Homework (Sapling Online Learning)

There is no way to get around practicing and solving problems when learning chemistry. While doing the assigned homework is important for your grade, completing the suggested problems in each chapter will give you more practice at solving important chemical problems/questions, so you are best prepared for quizzes and the final exam. **Sapling homework is due by the day and time of each exam it precedes (see schedule below).** Assigned homework problems on Sapling constitute 10% of your overall grade. There is no opportunity for extra credit, however the lowest homework grades will be dropped.

Weekly Quizzes

Weekly quizzes consisting of 5 questions will be given at the beginning of lecture each Monday, and will cover the material from the previous week. The purpose of each quiz is to ensure you understand the material before we move on to the next section. If the majority of people are struggling with a concept, I will take time to review and clarify. Quizzes are worth ~6.6% of your grade (more than half a letter grade). Your *two* lowest quiz scores will be dropped (everyone has a few bad days or may need to miss lecture every once in a while).

Exams

Exams will be given approximately tri-weekly (see schedule below). Reviews with study questions will be provided before each exam. A total of four exams will consist of approximately 25 short answer / calculation and/or multiple-choice questions. You are encouraged to study together, however there is no tolerance for cheating. *If you are caught looking at someone's paper, using any devices besides a scientific calculator, or in any way cheating, you will receive an F on the assignment.* Exams will cover the material stated on the schedule. You will have the full two hours of scheduled class meeting to complete each exam. Make-up exams will not be given on a routine basis and are strictly the decision of the instructor. Exams are worth ~66% of your overall grade.

Final Exam

Your final exam will be written by the instructor in a style similar to the American Chemical Society standardized General Chemistry Exam. The final is required for all students and will be given during finals week in December (12/07-12/12, TBA). It is worth ~16% of your overall grade.

Grade Calculation

Your overall course grade will be based on your percentage. You can get your percentage by adding up all the points you have earned, dividing by the total number of points possible at that time, and multiplying by 100. If you have at least 92% you have earned an A. The cutoffs for the other scores are: 90-91.9% (A-), 88-89.9% (B+), 82-87.9% (B), 80-81.9% (B-), 78-79.9% (C+), 72-77.9% (C), 70-71.9% (C-), 68-69.9% (D+), 62-67.9% (D), 60-61.9% (D-), and less than 60% will be an F.

Weekly Quizzes (best 8/10, 5 points each)	40 points (6.6%)
Homework (best 12/13, 5 points each)	60 points (10%)
4 Exams (100 points each)	400 points (66.6%)
Final Exam	100 points (16.6%)

Total 600 points (100%)

Points are tentative and subject to change by the instructor.

Please keep track of your total points to determine your grade at any particular time during the semester. If for any reason you cannot figure out your current grade, please come to office hours or schedule an appointment to see me in person. Final grades will be available by web and kiosk on December 19th at <http://connectu.msudenver.edu>. ***The Family Educational Rights and Privacy Act prohibit me from releasing your grades via phone or email unless you register with the Registrar's office and obtain a non-identifying security code.***

Drop Dates

You are expected to know and observe the MSU Denver regulations regarding class drop dates (for more information, please see <http://www.msudenver.edu/advising/student/academicpolicies/>). It is your responsibility to withdraw from a course (see <http://www.msudenver.edu/registrar/student/dropandwithdrawaldeadlines/>).

For other policies, including Administrative Withdraw and Incomplete notation, please see: <http://www.msudenver.edu/handbook/academicpoliciesforstudents/>.

Academic Dishonesty

Academic dishonesty is a serious offense. Any occurrence diminishes the quality of scholarship and the learning experience for everyone on campus. An act of academic dishonesty will lead to sanctions including a reduction in grade (up to and including a permanent F for the course), probation, suspension or expulsion. Academic dishonesty includes cheating, fabrication, plagiarism, submitting the same paper or work for more than one class and facilitating academic dishonesty (don't help others cheat!). Most importantly, academic dishonesty hurts you the most – you are here to learn, so do just that. Getting a degree means nothing if you can't use the knowledge you learn at MSU Denver and apply it to a career. For definitions and more information, see the Student Engagement and Wellness website: <http://www.msudenver.edu/studentengagementandwellness/studentconductandconflictresolutionsservices/studentconductservices/academicintegrity/academicdishonesty/>.

Harassment & Discrimination, Disability Accommodation, Religious Holiday Class Attendance

The Metropolitan State University of Denver does not discriminate on the basis of race, color, creed, national origin, sex, age, sexual orientation or disability in admission or access to, or treatment in, its educational programs or activities. Inquiries concerning Title IX should be reported to the Deputy Title IX Coordinator/Assistant Dean & Student Conduct Officer by calling 303.556.3559 or by going to Tivoli 311.

If the alleged perpetrator is an MSU Denver employee, visitor to campus or a non-student, please report the incident to the Title IX Coordinator/Executive Director of Equal Opportunity & Assistant to the President, by calling 303.556.4746 or by visiting the Student Success Building, #440.

The Metropolitan State University of Denver is committed to making reasonable accommodations to assist individuals with disabilities in reaching their academic potential. If you have a disability that may impact your performance, attendance or grades in this class and are requesting accommodations, then you must first register with the Access Center located in the Auraria Library, Suit 116, (call 303.556.8387). I cannot provide accommodations prior to my receipt of a faculty notification letter from the Access Center. Please note that accommodations are never provided retroactively (i.e. prior to the receipt of your faculty notification letter). Once I receive your official Access Center faculty notification letter, I would be happy to meet with you to discuss your accommodations. All discussions will remain confidential. More information is available by visiting the Access Center website (<http://www.msudenver.edu/access/>).

Students at MSU Denver who, because of their sincerely held religious beliefs, are unable to attend classes, take examinations, participate in graded activities or submit graded assignments on particular days shall, without penalty, be excused from such classes and be given a meaningful opportunity to make up such examinations and graded activities or assignments provided that advance written notice that the student will be absent for religious reasons is given to the faculty members during the first two weeks of the semester.

Nothing in the paragraph above shall require MSU Denver faculty members to reschedule classes, repeat lectures or other ungraded activities or provide ungraded individualized instruction solely for the benefit of students who, for religious reasons, are unable to attend regularly scheduled classes or activities. However, presentations, critiques, conferences and similar activities involving individual students shall be scheduled to avoid conflicts with such students' religious observances or holidays provided that reasonable advance notice of scheduling conflicts is given to faculty members. Because classroom attendance and participation is an important aspect of learning, MSU Denver students should not register for courses if regularly scheduled classes or activities routinely conflict with their religious observances or holidays (e.g., conflicts resulting in weekly absences for an entire semester). Any MSU Denver student who believes that an MSU Denver faculty member has violated this policy is entitled to seek relief under Section V of the MSU Denver Equal Opportunity Grievance Procedure.

Syllabus Changes & Policy

Any changes in this syllabus I may deem necessary during the semester will be announced in class and made available in writing. I reserve the right to revise the syllabus and grading policies at any time.

CHE 1800 Schedule (subject to change)

Fall 2015

Week	Dates	Lecture Topics	Chapters to Read	Quiz	Practice Problems	Homework (due date)
1	08/17	Course Intro & Matter	1.1-1.5		Chap 1: 5, 9, 11, 13, 17, 19, 23, 31, 35, 37, 39, 41, 45, 47, 53, 59, 65	HW 1 (09/16)
	08/19	Measurement	1.6-1.8			
2	08/24	Atoms & Elements	2.2, 2.5-2.7	Quiz 1	Chap 2: 5, 23, 27, 29, 33, 37, 39, 41, 45, 47, 49, 51	HW 2 (09/16)
	08/26	The Mole Concept	2.8			
3	08/31	Quantum Mechanics & Atomic Orbitals	7.2-7.6	Quiz 2	Chap 7: 1, 3, 5, 7, 9, 15, 19, 21, 23, 27, 29, 33, 37, 39, 71	HW 3 (09/16)
	09/02	Electron Configuration	8.2-8.5			
4	09/07	No Class – Labor Day			Chap 8: 1, 3, 5, 7, 9, 11, 17, 21, 23, 25, 27, 29, 35, 43, 49, 51, 81,	HW 4 (09/16)
	09/09	Periodic Trends	8.6-8.8	Quiz 3		
5	09/14	Exam 1	1,2,7,8		Chap 9: 1, 3, 13, 15, 17, 21, 23, 25, 27, 31, 33, 35, 45,	HW 5 (10/09)
	09/16	Chemical Bonding I: The Lewis Model	9.1-9.9			
6	09/21	Chemical Bonding I: Bond Length & Energy	9.10	Quiz 4	Chap 9: 39, 63, 73 Chap 10: 1, 3, 7, 13, 17, 21,	HW 6 (10/09)
	09/23	Chemical Bonding II: VSEPR Theory	10.2-10.6			
7	09/28	Chemical Bonding II: Valence Bond Theory	10.7	Quiz 5	Chap 10: 23, 25, 27, 29, 37, 55, 57 Chap 3: 1, 3, 5, 7, 9, 11, 15, 17, 19, 23, 27, 29, 31, 33,	HW 7 (10/09)
	09/30	Molecules & Compounds: Naming	3.3-3.6			
8	10/05	Molecules & Compounds: Mole Concept and Chemical Equations	3.7-3.10	Quiz 6	Chap 3: 35, 37, 39, 41, 45, 49, 53, 55, 59, 61, 63, 65, 67, 73, 77, 79, 83	HW 8 (11/04)
	10/07	Exam 2	3.3-3.6,9,10			
9	10/12	Chemical Quantities	4.1-4.3		Chap 4: 1, 3, 7, 9, 11, 13, 15, 17, 19 Chap 6: 1, 5, 7, 9, 11, 13, 15, 19	HW 9 (11/04)
	10/14	Energy & Heat Capacity	6.1-6.5			
10	10/19	Enthalpy	6.6-6.9	Quiz 7	Chap 6: 23, 25, 27, 29, 33, 41, 43, 47, 49, 53, 57 Chap 11: 1, 3, 7, 9, 13, 15, 17, 19, 21, 29, 31, 69, 99	HW 10 (11/04)
	10/21	Intermolecular Forces	11.1-11.6			
11	10/26	Phases	11.8-11.11	Quiz 8	Chap 11: 33, 37, 39, 45, 57, 59 Chap 12: 1, 7, 11, 21, 23, 25, 31, 35, 37	HW 11 (11/04)
	10/28	Solubility	12.1-12.5			
12	11/02	Exam 3	3.7-3.10, 4.1-4.3,6,11		Chap 4: 25, 27, 33, 35, 39, 41, 43, 45, 47, 49, 51, 55, 57, 59, 63, 65, 67	HW 12 (11/20)
	11/04	Aqueous Reactions	4.4-4.9			
13	11/09	Colligative Properties	12.6-12.7	Quiz 9	Chap 12: 41, 43, 47, 49, 53, 57, 77, 79 Chap 5: 1, 3, 5, 7, 9, 11, 15, 19, 21, 23, 25, 27, 31, 35, 41, 43, 47	HW 13 (11/20)
	11/11	Gas Laws	5.1-5.7			
14	11/16	Kinetic Molecular Theory	5.8, 5.10	Quiz 10	Chap 5: 51, 53, 57, 59	
	11/18	Exam 4	4.4-4.9,5,12			
15	FALL BREAK					

16	11/30	Special Topics & Catch-up	n/a		--	--
	12/02	Review of Course	1-12			
FINAL	TBA	Final Examination	n/a		--	--