



CHEM 1210

Principles of Chemistry

MWF, 8:30 am - 9:20 am, ESLC 053

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This syllabus is subject to revision.

Course Description: Chemistry 1220 is the second of a two semester sequence of general chemistry for chemistry majors. The course will cover topics presented in chapters 12-20 of the text.

Prerequisite(s): Previous or concurrent enrollment in Math 1050 or higher.

Recitation: All students must register for, and attend, the recitation section(s) listed in the USU Schedule of Classes. The recitation is designed to help to develop problem solving skills needed for the examinations, and also to reinforce your understanding of concepts covered in class. Recitation sections will begin the second week of classes.

Credit Hours: 4

Text: *Principles of Modern Chemistry*, by D. W. Oxtoby, H. P. Gillis and A. Campion, 6th edn. recommended, ISBN 978-0-534-49366-0

Course Learning Objectives: These are listed in the modules on the course webpage.

Learning Management System (LMS): Canvas Instructure will be used for the management of Chem. 1210. Importantly, you will take Quizzes AND Exams online using Canvas. Quizzes are open book and may be taken on any computer. Exams can only be taken in the USU Testing Center. To log on to Canvas, go to the web address: canvas.usu.edu. Your USERNAME is your BANNER login and your default PASSWORD is your BANNER password. Canvas has many useful features (your assignment scores, a chat room, discussion page, email, etc.) and you should take the time to explore them from within the course webpages.

Online Quizzes: There will be 9 graded online quizzes. Each quiz counts 10 points and is open book. You will take the quizzes online through Canvas. Quizzes will start the second week of classes and will have deadlines. You have an unlimited number of attempts and your highest score will be kept. Note that each time you take a quiz you will receive a slightly different version, covering the

same concepts but with different questions.

Homework: There will be 5 homework sets assigned. These will (usually) consist of 5 - 10 problems which are longer and harder than a typical quiz problem. You are encouraged to work with other students to solve these problems and we will spend some class and recitation time discussing them. I will select, at random and in class, one of the 10 problems to be handed in for grading. Your homework should be legible and should show all of the important steps as well as notes explaining your reasoning. Each problem should be done on a separate sheet or sheets. A correct answer that does not follow these rules may score ZERO whereas an ultimately incorrect answer that does abide by these rules may score some, possibly maximum, points depending on how well you show your steps and logic. Each homework will be worth 20 points. The Midterm Exams and the Final exam will contain some questions based DIRECTLY on homework problems and so you must make sure that you actually understand how to solve every problem, even though only 1 problem will be graded from each homework set.

Midterm Exams: TWO 90-minute exams (150 points each) consisting of 40 multiple choice questions will be available during specified time windows – see schedule below. The exams are based on material covered in class, quizzes and homework sets. They will closely match the difficulty level and content of the practice exams. You are strongly urged to take the online practice exams several times. Practice exams are graded as quizzes (but worth 15 points each) and your highest score will be retained. Midterm exams should be taken in the USU Testing Center. Note that each student will receive a slightly different midterm exam, both in terms of question order and content. Questions will be drawn randomly from a test bank. YOU ARE RESPONSIBLE FOR FINDING AN OPEN TIME IN THE TESTING CENTER TO TAKE THE EXAM. If you leave it to the last minute and cannot find a spot in the Testing Center you will receive a ZERO for that exam.

Final Exam: The two-hour Final Exam will be comprehensive and will follow the same procedures as for the Midterms. However, it will consist of 50 questions and is worth 200 points. It will be available throughout Finals week and should be taken in the USU Testing Center. The questions will be similar to those on the practice exams and quizzes **and Homeworks**. YOU ARE RESPONSIBLE FOR FINDING AN OPEN TIME IN THE TESTING CENTER TO TAKE THE EXAM. If you leave it to the last minute and cannot find a spot in the Testing Center you will receive a ZERO.

Missed Exams: Because midterm exams are available during one-week time windows it is unlikely that you will be unable to take an exam. However, if you do miss one of the in-class midterms exam due to illness or emergency, I will offer you the opportunity to take the exam at another time. If at all possible you should notify me of the reason for missing the midterm in advance. Missed midterms may require written documentation from a doctor or other authority at my discretion.

Grading:

Homework Problems	100 pts
Quizzes and Practice Midterms (30 points each)	150 pts
Midterm Exams	300 pts
Completion of Course Evaluation	50 pts
Final Exam	200 pts
TOTAL	800 pts

Letter Grade Distribution:

≥ 93.00	A	73.00 - 76.99	C
90.00 - 92.99	A-	70.00 - 72.99	C-
87.00 - 89.99	B+	67.00 - 69.99	D+
83.00 - 86.99	B	60.00 - 66.99	D
80.00 - 82.99	B-	≤ 59.99	F
77.00 - 79.99	C+		

Based on the overall class average, the percentage cuts for the various grades may shift *lower* than the above cuts. In other words, a better grade may be assigned for lower percentages than those indicated above, a scenario that is in your favor. The percentages will never shift higher than the above, so you are assured of the above indicated, or higher grade.

Course Policies:

• General

- Quizzes are open book, open notes but should be done independently.
- Homeworks are open book, open notes and may be done in collaboration with other students. However, final written-up solutions should be done independently.
- Exams are closed book, closed notes.
- **Makeup quizzes and exams will be permitted only in exceptional circumstances (illness, emergency, etc.). Discretionary events (e.g., vacations) do not qualify.**

• Grades

- Grades will be maintained in the LMS course shell. Students are responsible for tracking their progress by referring to the online grade book.
- **VERY IMPORTANT NOTE: the Canvas grade book assigns a percentage based ONLY on quizzes/exams taken. For example, if someone took only 1 quiz during the class and scored 100% the Canvas grade book would show the overall percentage as 100% and your grade as an A. Obviously, when I grade the course all missed assignments will score ZERO and the person who took only 1 quiz would get an F.**

Academic Honesty Policy Summary:

In addition to skills and knowledge, USU aims to teach students appropriate Ethical and Professional Standards of Conduct. The Academic Honesty Policy exists to inform students and Faculty of their obligations in upholding the highest standards of professional and ethical integrity. All student work is subject to the Academic Honesty Policy. Professional and Academic practice provides guidance about how to properly cite, reference, and attribute the intellectual property of others. The administration of Chem 1210 will adhere strictly to the academic policies outlined in the current USU General Catalog.

Course Assessment: Students in this class are expected to develop proficiency in the principles listed on the class web page and the attached list of Learning Objectives. Embedded questions on midterms, quizzes, and homework sets will be used to assess your understanding of these principles. The formats to be used for assessment will include instructor-designed questions. Please note that assessment is a tool used by the Department of Chemistry and Biochemistry to improve the quality of instruction and proficiency of our students. Your grade will be based on your performance on the assignments indicated above, some of which will also be used for course assessment.

Americans with Disabilities Act: In accordance with the Americans with Disabilities Act, reasonable accommodations will be provided for all persons with disabilities in order to ensure equal participation in Chem 1210. In cooperation with the Disability Resource Center, reasonable accommodation will be provided for students with disabilities. Please meet with the instructor during the first week of class to make arrangements. Alternative format print materials, large print, audio, diskette or Braille, will be available through the Disability Resource Center.

Tentative Course Outline:

The weekly coverage might change as it depends on the progress of the class.

Week	Material
Week 1 (Jan. 8)	<ul style="list-style-type: none"> • Chap. 12: Thermochemistry
Week 2 (Jan. 15)	<ul style="list-style-type: none"> • (Monday Holiday) Chap. 12 contd. • Chap. 13: Entropy and Second Law
Week 3 (Jan. 22)	<ul style="list-style-type: none"> • Chap. 13: contd.
Week 4 (Jan. 29)	<ul style="list-style-type: none"> • Chap. 14: Chemical Equilibrium
Week 5 (Feb. 5)	<ul style="list-style-type: none"> • Chap. 14: contd.
Week 6 (Feb. 12)	<ul style="list-style-type: none"> • Chap. 15: Acid-Base equilibria.
Week 7 (Feb. 19)	<ul style="list-style-type: none"> • (Monday – holiday) Chap. 15: contd. • Chap. 16: Solubility and Precipitation Equilibria
Week 8 (Feb. 26)	<ul style="list-style-type: none"> • Chap. 16: contd. • Spring Break: Mar. 5 - 9
Week 10 (Mar. 12) EXAM 1 OPEN	<ul style="list-style-type: none"> • EXAM 1 WINDOW OPEN ALL WEEK: CHAPS. 12 - 16 • Chap. 6: contd.
Week 11 (Mar. 20)	<ul style="list-style-type: none"> • Chap. 17: Electrochemistry
Week 11 (Mar. 26)	<ul style="list-style-type: none"> • Chap. 17: contd. • Chap. 18: Chemical Kinetics
Week 12 (Apr. 2)	<ul style="list-style-type: none"> • Chap. 18: contd.
Week 13 (Apr. 9)	<ul style="list-style-type: none"> • Chap. 19: Nuclear Chemistry
Week 14 (Apr. 16) EXAM 2 OPEN	<ul style="list-style-type: none"> • EXAM 2 WINDOW OPEN ALL WEEK: CHAPS. 17 - 19 • Chap. 20: Interaction of Molecules with Light
Week 15 (Apr. 23)	<ul style="list-style-type: none"> • Chap. 20: contd. • Catch-up and review
Week 16 (April 30)	<ul style="list-style-type: none"> • FINAL EXAM (CHAPS. 12 - 20)