

CHEMISTRY 1010  
INTRODUCTION TO CHEMISTRY  
3 CREDIT HOURS

UTAH STATE UNIVERSITY EASTERN  
PRICE, UT  
FALL 2021

MWF 8:30 – 9:20 PM  
RV 239

Instructor: Dr. John Weber  
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Office Hours: M - F 9:30-10:30 am  
(or by appointment, or anytime I'm there)  
Office No.: RV 250

1. Course content: For students needing to complete a general science requirement. Topics: Matter & Energy, Measurement, Atoms, Molecules & Ions, Chemical Nomenclature (Formulas & Names), Chemical and Physical Change, Chemical Composition, Modern Atomic Theory, Stoichiometry, Chemical Bonding, Solutions, Radioactivity, Molarity, Acid-Base Theory, Nuclear Chemistry, Reduction-Oxidation Reactions and Battery Technology, Plastics and Polymers, Organic Functional Groups, Manipulating Molecules, Designing Drugs, Fats, Oils, Carbohydrates, Amino Acids, Proteins.

2. Pre-requisites: None, though successful completion of MATH 0990 is most helpful (students should have a basic understanding of algebra).

3. Required Textbooks and Supplies: The text for the course is "Chemistry in Context, 6<sup>th</sup> ed." by the American Chemical Society, McGraw-Hill, 6th Edition, 2009 (ISBN 978-0-07-304876-5); Hand Calculator, Periodic Table (bookstore). The *optional* text "A Visual Analogy Guide to Chemistry" by Morton Publishing (ISBN 0895828359) is recommended for students who did not have a high school chemistry course and/or feel apprehensive about taking a science course.

4. Course Objectives and Learning Outcomes: Students will gain an understanding for the concepts listed under Course Content and be able to explain and think critically about the concepts. A host of new terminology will be experienced by the students, and they will be expected to relate these learning experiences to everyday situations. The history of chemistry will be reviewed throughout the course, and the material will be interwoven with related topics such as geology, biology, and physics.

5. Learning Objectives:

- Become familiar with basic physical quantities including mass, volume, energy, temperature, and density.
- Understand the fundamental concepts and language of chemistry including physical properties, chemical properties, elements, mixtures, compounds, and atomic structure.
- Understand how elements are organized in the periodic table.
- Understand radioactivity and half-life of a radioactive isotope.
- Explore two types (ionic and covalent) of chemical bonds.
- Given a covalent molecular formula, predict the molecular structure.
- Gain an understanding of the basics of chemical reactions.
- Explore acids and bases and the chemical reactions they undergo.
- Develop an understanding of how electron transfer processes provide energy and how batteries work.
- Appreciate the importance of plastics and polymerization reactions.
- Gain a basic understanding of organic compounds
- Gain a basic understanding of biomolecules and nutrition.

6. Classroom Accommodation For Students With Different Abilities:

USU welcomes students with disabilities. If you have, or suspect you may have, a physical, mental health, or learning disability that may require accommodations in this course, please contact the Disability Resource Center (DRC) as early in the semester as possible (435-797-2444, [drc@usu.edu](mailto:drc@usu.edu)). All disability related accommodations must be approved by the DRC. Once approved, the DRC will coordinate with faculty to provide accommodations.

7. Policies and Procedures:

- a. Attendance Policy: Attendance will not be taken nor graded, but it is highly recommended that you attend class if you expect to receive a passing grade.
- b. Hours of lecture each week: 8:30-9:20 pm M, W, F.
- c. Textbook assignments: Reading and problem assignments will be given in class. Answers to selected problems may be found in the appendix of the textbook. While similar questions will appear on the exams, you are not required to turn in the problem assignments and they will not be graded. Solutions to the problems will be provided in class or during office hours.
- d. Academic integrity is expected in all your work. The University standard for academic integrity may be found at <http://www.usu.edu/policies/PDF/Acad-Integrity.pdf>
- e. Canvas will be used to manage this course. Log on to Canvas using your eID and password at [usu.instructure.com](http://usu.instructure.com) If you are enrolled in this course, you should have access to “Fa21-CHEM1010-xxx”. Lecture notes, the syllabus, grades,

homework assignments, and resource materials will be available through Canvas.

8. Outcomes Assessment:

Students will be assessed on their working knowledge of elementary chemistry by taking written exams and quizzes as well as a comprehensive final exam.

9. Grading Procedures:

Grades will be based on your performance on four regular exams, a final exam and regular quizzes. Quizzes will be unannounced and will focus on current lecture topics. The average of your quiz scores will count equivalent to one regular exam. Exams will focus on the most recent topics but all exams including the final may be considered to be 'cumulative'. The score of the final exam may be used to replace the score from one regular exam. The final exam may not replace the quiz score. A total of 700 points are possible to be earned during the course: 400 points from exams, 100 points from the final, 100 points from quizzes, and 100 points from homework assignments through [Conceptual Academy](#). Your course ID is: WeberFa21.

No make-up exams will be given except as a result of scheduled school activities. If you have conflicts with an exam time as a result of scheduled school activities, you must inform me in writing one week prior with your advisor/instructor stating the nature of the conflict. There will be no opportunities to make up quizzes.

Grades will be assigned based on the following standard:

A	92-100%
A-	90-91%
B+	87-89%
B	82-86%
B-	80-81%
C+	77-79%
C	72-76%
C-	70-71%
D	60-69%
F	<60%

There will be no 'curve' applied to the exam results.

10. Topical Outline for the Course:

Intro. Lectures & Chapters 1-2	Exam # 1	Sep. 24
Chapters 3-5	Exam # 2	Oct. 20
Chapters 6-8	Exam # 3	Nov. 15
Chapters 9-11	Exam # 4	Part (a) on Dec. 3 Part (b) on Dec. 10

The Final Exam is comprehensive and will be available in the testing center from Dec. 13 -15th.

11. Important dates:

Sep. 6            Labor Day Holiday (no class)

Oct. 15          Fall Break (no class)

Nov. 24-26      Thanksgiving Holiday (no classes)

Dec. 13-15      Final Exam (in testing center)

12. Help options: Come to regularly scheduled office hours. I will attempt to meet at other times if you have a conflict during my office hours. Check the schedule posted on my office door. Don't wait until the day before the test to come for help. Two hours of weekly Free tutoring sessions will be available through the Chemistry Department. Tutors will be available in Reeves or the library – specific times and place will be announced during the first week of class. Avail yourself of the discussion board and chat room at the course Canvas site to discuss issues and problems with your classmates. Find a study partner if possible. While you will need to work problems on your own, collaboration is encouraged when working the textbook problems.

*The instructor reserves the right to make changes to this syllabus at any time throughout the semester. Such changes will be announced during class and posted on the course Canvas page. Students not attending class are still responsible for knowing about any and all changes to the syllabus.*