1. **Course content:** This course is designed for pre-medical/dental, pre-engineering, chemistry majors, and other allied health sciences needing an organic chemistry course containing more detail than CHEM 1210. Concepts include structure, bonding, and reactivity of organic molecules, cyclic compounds, stereochemistry, nucleophilic substitution and elimination reactions, electrophilic and free radical substitution reactions, saturated and unsaturated hydrocarbons, haloalkanes, reactions of alcohols, and ethers, NMR and IR spectroscopy.

2. **Pre-requisites:** Successful completion of CHEM 1210 with a grade of “C” or better.


4. **Course Objectives:** At the successful completion of this course students should understand the concepts listed under ‘course concepts’ as well as be able to think critically about and solve problems related to the concepts.

   • Be able to describe atomic and molecular structure and bonding, and properly represent organic molecules.
   • Be able to classify organic compounds by structure, use the IUPAC nomenclature, and identify conformational effects in organic compounds.
   • Be able to write the mechanisms for reactions of alkenes and be able to predict the products of reactions of alkenes.
   • Be able to draw and interpret reaction coordinate diagrams, and be able to relate the energetic changes associated with chemical reactions to equilibrium constants and rate; be able to differentiate kinetic versus thermodynamic control of reactions.
   • Be able to identify the types of isomerism in organic compounds, to identify and classify chiral centers, and explain the physical and chemical consequences of chirality.
• Be able to correctly represent the structures and bonding of alkynes, and be able to write the mechanisms for reactions of alkynes and predict the products of such reactions.
• Be able to identify compounds in which resonance is important, to predict the effect of resonance on the stability of compounds and reactive intermediates, and be able to draw resonance structures.
• Be able to identify conjugated pi systems and to explain the effect of conjugation on molecular structure and reactivity; be able to predict the products of reactions of dienes.
• Be able to write the mechanism for radical reactions of alkanes, and to predict the products of such reactions.
• Be able to write mechanisms for substitution and elimination reactions, and to predict the effect of nucleophile, leaving group, and solvent on the relative rates of SN1 versus SN2 reactions, and E1 versus E2 reactions, as well as on the relative rates of substitution versus elimination.

5. **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). All disability related accommodations must be approved by the DRC. Once approved, the DRC will coordinate with faculty to provide accommodations.

6. **Policies and Procedures:**

   a. **Attendance Policy:** Attendance will not be taken nor graded, but it is highly recommended that you attend class.

   b. **Hours of lecture each week:** 50 minutes on MTWR from 8:30-9:20 am. Lab meets on Thursday (RV 225) for 3 hours from 1:30 – 4:20 PM.

   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. Similar questions will appear on the exams.

   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](http://www.usu.edu/policies/PDF/Acad-Integrity.pdf)

   e. **Canvas will be used to manage this course.** Lecture notes, the syllabus, grades, homework assignments, and resource materials will be available through Canvas.
7. Laboratory (CHEM 2315): The laboratory section is a separate course. You will receive separate grades for CHEM 2310 and CHEM 2315.

8. 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 lowest score on a 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.

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 on school letterhead 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:

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<thead>
<tr>
<th>Grade</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>A</td>
<td>92-100%</td>
</tr>
<tr>
<td>A-</td>
<td>90-91%</td>
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<tr>
<td>B+</td>
<td>87-89%</td>
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<tr>
<td>B</td>
<td>82-86%</td>
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<tr>
<td>B-</td>
<td>80-81%</td>
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<td>C+</td>
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<td>C</td>
<td>72-76%</td>
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<td>C-</td>
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<td>D</td>
<td>60-69%</td>
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<td>F</td>
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There will be no ‘curve’ applied to the exam results.

9. Topical Outline for the Course:

Chapters 1-3 will be discussed, upon completion the 1st exam will be given.

Chapters 4-5 will be discussed, upon completion the 2nd exam will be given.

Chapters 6-7 will be discussed, upon completion the 3rd exam will be given.
Chapters 8-9 will be discussed, upon completion the 4th exam will be given.

The Final Exam will be comprehensive and it will contain Chapter 10.

Important dates:

Sep. 7    Labor Day Holiday (no class)

Nov. 20    Last day of face to face instruction

Dec. 14-18    Finals Week

10. 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. 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 be able 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.