Master Course Syllabus

For additional course information, including prerequisites, corequisites, and course fees, please refer to the Catalog: https://catalog.uvu.edu/

Semester: Spring
Year: 2025
Course Prefix: CHEM
Course and Section #: 2310-001
Course Title: Organic Chemistry I
Credits: 4

Course Description

The first in a series of two semester Organic chemistry classes. Chemical bonds and molecular structure, conformation and configuration, functional classes, reactions and mechanisms, synthesis.

Course Attributes

This course has the following attributes:
☐ General Education Requirements
☐ Global/Intercultural Graduation Requirements
☐ Writing Enriched Graduation Requirements
☒ Discipline Core Requirements in Program
☒ Elective Core Requirements in Program
☐ Open Elective
Other: *Click here to enter text.*

Instructor Information

Instructor Name: Dr. Young Wan Ham

Student Learning Outcomes

Upon successful completion, students should be able to:

- Recognize functional group classes commonly encountered in organic chemistry and name representative molecules from each class using IUPAC rules for organic nomenclature.
- Predict structure and reactivity of alkanes, alkenes, alkynes, aromatic hydrocarbons, alcohols, ethers, epoxides, and alkylhalides based on such factors as carbon atom hybridization, bond length, bond strength, and bond polarity.
- Recognize and provide curved arrow mechanisms for the following types of organic reactions: additions, substitutions, and eliminations.
- Predict the energetically preferred conformation for straight-chain and branched alkanes, and for substituted cycloalkanes.
- Determine R and S configurations for chiral molecules and distinguish between enantiomers, diastereomers, meso compounds, and conformational isomers.
- Predict the relative energies of reactive intermediates such as radicals, carbocations, and carbanions, based on structural considerations such as orbital hybridization, hyperconjugation, and resonance stabilization.

Course Materials and Texts

- *Organic Chemistry*, 4th ed. by David R. Klein (Inclusive access through WileyPlus)
- Computer with internet connection **(*laptop computers with webcam are available for you to check out free of charge until the end of the semester. Please visit 1st floor desk at UVU Fulton library*)**
- Course lecture videos and blank lecture note outline are available in Canvas.

Course Requirements

Course Assignments, Assessments, and Grading Policy

Course Requirements	**Raw Score**
A. Lecture Note Outline (14 x 5 pts each)	70
B. Weekly Practice Questions (14 x 5 pts each)	70
C. Weekly Quizzes (10 x 10 pts). Four (4) lowest scored quizzes will be dropped.	100
D. In-Class Quizzes (14 x 10 pts) (Sum to be converted to 100 point basis)	100
E. Midterm exams (3 x 100 pts)	300
F. Final exam (2 x100 pts)	200
G. Drop the lowest among C-F	-100
H. Organic Chemistry in Real Life	25
Total Possible Points	**765**

The following grading standards will be used in this class: ***This scale represents total points after curve.***

Grade	***Total Point (out of 765)***
A	*720 - 765*
A-	*695 - 719*
B+	*670 - 694*
B	*645 - 669*
B-	*620 - 644*
C+	*595 - 619*
C	*570 - 594*
C-	*545 - 569*
D	*520 - 544*
E	*<520*

*At the discretion of the instructor, grades for the course may be curved higher. One overall curve will be applied at the **end** of the semester when students have completed all requirements. Therefore, the overall grade percentage you will see in canvas grade is approximation, since one lowest scored exam is yet to drop and the curve has yet to be applied as well. Please see the Grading Scale located at the end of the syllabus for letter grade distribution.*

Required or Recommended Reading Assignments
Klein book chapters 1-13

General Description of the Subject Matter of Each Lecture or Discussion

- WEEK 1. A Review of General Chemistry: Electrons, Bonds, and Molecular Properties (Chapter 1)
- WEEK 2. Molecular Representations, Conjugation and Resonance (Chapter 2)
- WEEK 3. Acids and Bases (Chapter 3)
- WEEK 4. Alkanes and Cycloalkanes (Chapter 4 1/2)
- WEEK 5. Alkanes and Cycloalkanes (Chapter 4 2/2)
- WEEK 6. Stereoisomerism (Chapter 5)
- WEEK 7. Chemical Reactivity and Mechanisms (Chapter 6)
- WEEK 8. Alkyl halides: Nucleophilic Substitution and Elimination Reactions (Chapter 7)
- WEEK 9. Addition Reactions of Alkenes (Chapter 8)
- WEEK 10. Alkynes (Chapter 9)
- WEEK 11. Radical Reactions (Chapter 10)
- WEEK 12. Alcohols and Phenols (Chapter 12)
- WEEK 13. Ethers and Epoxides (Chapter 13)
- WEEK 14. Synthesis (Chapter 11)
- Final comprehensive Exam

Required Course Syllabus Statements

Generative AI
This course requires you to complete assignments that assess your understanding, application, and problem-solving ability applied to chemistry. You are expected to do your own work. Problem solving and scientific thinking are tools that are necessary for students to learn in this course. The use of artificial intelligence (AI) tools, such as chatbots, text generators, paraphrasers, summarizers, or solvers, is strictly prohibited for any part of your assignments. Using these tools will be considered academic dishonesty and will be handled according to the university's academic honesty policy. If you have questions about acceptable use of AI tools, please consult the instructor before submitting your work.

Using Remote Testing Software
☐ This course does not use remote testing software.

☒ This course uses remote testing software. Remote test-takers may choose their remote testing locations. Please note, however, that the testing software used for this may conduct a brief scan of remote test-takers' immediate surroundings, may require use of a webcam while taking an exam, may require the microphone be on while taking an exam, or may require other practices to confirm academic

honesty. Test-takers therefore shall have no expectation of privacy in their test-taking location during, or immediately preceding, remote testing. If a student strongly objects to using test-taking software, the student should contact the instructor at the beginning of the semester to determine whether alternative testing arrangements are feasible. Alternatives are not guaranteed.

Required University Syllabus Statements

Accommodations/Students with Disabilities
Students needing accommodations due to a permanent or temporary disability, pregnancy or pregnancy-related conditions may contact UVU Accessibility Services at accessibilityservices@uvu.edu or 801-863-8747.

Accessibility Services is located on the Orem Campus in BA 110.

Deaf/Hard of Hearing students requesting ASL interpreters or transcribers can contact Accessibility Services to set up accommodations. Deaf/Hard of Hearing services can be contacted at DHHservices@uvu.edu

DHH is located on the Orem Campus in BA 112.

Academic Integrity
At Utah Valley University, faculty and students operate in an atmosphere of mutual trust. Maintaining an atmosphere of academic integrity allows for free exchange of ideas and enables all members of the community to achieve their highest potential. Our goal is to foster an intellectual atmosphere that produces scholars of integrity and imaginative thought. In all academic work, the ideas and contributions of others must be appropriately acknowledged and UVU students are expected to produce their own original academic work.

Faculty and students share the responsibility of ensuring the honesty and fairness of the intellectual environment at UVU. Students have a responsibility to promote academic integrity at the university by not participating in or facilitating others' participation in any act of academic dishonesty. As members of the academic community, students must become familiar with their rights and responsibilities. In each course, they are responsible for knowing the requirements and restrictions regarding research and writing, assessments, collaborative work, the use of study aids, the appropriateness of assistance, and other issues. Likewise, instructors are responsible to clearly state expectations and model best practices.

Further information on what constitutes academic dishonesty is detailed in UVU Policy 541: *Student Code of Conduct*.

Equity and Title IX
Utah Valley University does not discriminate on the basis of race, color, religion, national origin, sex, sexual orientation, gender identity, gender expression, age (40 and over), disability, veteran status, pregnancy, childbirth, or pregnancy-related conditions, citizenship, genetic information, or other basis protected by applicable law, including Title IX and 34 C.F.R. Part 106, in employment, treatment, admission, access to educational programs and activities, or other University benefits or services. Inquiries about nondiscrimination at UVU may be directed to the U.S. Department of Education's Office for Civil Rights or UVU's Title IX Coordinator at 801-863-7999 – TitleIX@uvu.edu – 800 W University Pkwy, Orem, 84058, Suite BA 203.

Religious Accommodation
UVU values and acknowledges the array of worldviews, faiths, and religions represented in our student body, and as such provides supportive accommodations for students. Religious belief or conscience broadly includes religious, non-religious, theistic, or non-theistic moral or ethical beliefs as well as participation in religious holidays, observances, or activities. Accommodations may include scheduling or due-date modifications or make-up assignments for missed class work.
To seek a religious accommodation, a student must provide written notice to the instructor and the Director of Accessibility Services at accessibilityservices@uvu.edu. If the accommodation relates to a scheduling conflict, the notice should include the date, time, and brief description of the difficulty posed by the conflict. Such requests should be made as soon as the student is aware of the prospective scheduling conflict.

While religious expression is welcome throughout campus, UVU also has a specially dedicated space for meditation, prayer, reflection, or other forms of religious expression.