CHEMISTRY 3310 Organic Chemistry I Fall 2025

Sections: Room:	Monday, Wednesday, Friday 7:45 am - 8:35 am 1002 Gilman Hall
Instructor: Office: Phone: E-Mail:	**Dr. Yan Zhao** **3101D Hach Hall** (515) 294-5845 zhaoy@iastate.edu **[Write "Chem 3310" on the subject]**
Office Hours:	Immediately after lectures and by appointment
Head TA:	**Ms. Dash Wallace** (*dashw@iastate.edu*) will handle logistics related to this class such as the On-line homework, exam rearrangements, and exam regrades.

Co-requisite: Chem 331 is a CO-REQUISITE for Chem 331L.

Textbook: *Organic Chemistry*, 4th Edition, by David Klein (available as E-book and physical book).

Canvas: Lecture notes, previous exams, grades, and class announcements will be posted on Canvas.

Online Homework: We will use the online homework system called Wiley Plus that is integrated with Canvas. You will see a list of homework assignments on the course homepage under Table of Contents with the available and due dates. The Wiley+ scores will be converted on a scale of 0–50 at the end in the grade calculation (i.e., perfect score on Wiley + is worth 10% of the final grade). For homework policies, please refer to Online Homework (Wiley+): Organic Chemistry I (Spring 2025) on the course homepage.

Exams: In addition to the Final Exam (150 pts), there will be **four exams** (100 pts each) scheduled throughout the semester. **All exams take place in the same classroom at the indicated times in the class schedule (next page). You need to show your ISU ID to the TA when you turn in your exams. THERE WILL BE NO MAKE-UP EXAMS.**

Any re-grades on an exam **must** be requested within one week after receiving the graded exam. Mark the questions you request regrade on the cover page and briefly explain the issue. Turn the exam to **Ms. Deanna Powell (1605 Gilman Hall)** and she will pass it on to the head TA. The head TA generally looks over the entire exam to correct any mistakes in grading. **Missing an exam for any reason will result in that exam being dropped**. The reason that I drop an exam is that it allows you to miss an exam for a personal or family emergency (such as an illness, a death in the family, car troubles, etc), or for other legitimate causes without suffering a grade penalty.

Grading: All exams including the final will be curved based on a class average of 70% unless the class average is higher (e.g., all students who have taken a particular exam will get 15% added to the earned score if the class average is 55%; students who have chosen to skip an exam will get a zero). The lowest score on a 100-point exam or a missed hour exam will be dropped. Missing an exam for any reason will result in that exam being dropped. Cheating on an exam will earn a zero for that exam, which **cannot** be dropped. The course grade will be based on the three best 100-point exam scores plus the final exam score and homework (maximum total = 500 points). The final course grade will be based on the following scale:

A ≥ 88%; 88% > **A-** ≥ 85%; 85% > **B+** ≥ 82%; 82% > **B** ≥ 78%; 78% > **B-** ≥ 75%; 75% > **C+** ≥ 70%;
70% > **C** ≥ 65%; 65% > **C-** ≥ 60%; 60% > **D+** ≥ 57%; 57% > **D** ≥ 53%; 53% > **D-** ≥ 50%; **F** < 50%

Other resources to learn chemistry: Khan academy (https://www.khanacademy.org/science/organic-chemistry) and YouTube videos (e.g., https://www.youtube.com/channel/UCEWpbFLzoYGPfuWUMFPSaoA)

1. Lecture and Exam Schedule

Week	Date	Recommended Reading	Key Topics
Week-1	January 20 (MLK) January 22 January 24	(no class) Chapter 1 Chapter 1	Review of General Chemistry
Week-2	January 27 January 29 January 31	Chapter 1/2 Chapter 2 Chapter 3	Molecular Representation Acids and Bases
Week-3	February 3 February 5 February 7	Chapter 3 Chapter 4 Review	 Alkanes Review and Problem Solving
Week-4	**February 10 (Monday)** February 12 February 14	**Exam 1** Chapter 4 Chapter 4	**Topics: Chapters 1–3** Alkanes and Cycloalkanes
Week-5	February 17 February 19 February 21	Chapter 5 Chapter 5 Chapter 5/6	Stereoisomerism Chemical reactivity and mechanisms
Week-6	February 24 February 26 February 28	Chapter 6 Chapter 6 Review	 Review and Problem Solving
Week-7	**March 3 (Monday)** March 5 March 7	**Exam 2** Chapter 7 Chapter 7	**Topics: Chapters 4–6** Substitution and Elimination Reactions
Week-8	March 10 March 12 March 14	Chapter 7 Chapter 7 Chapter 8	 Addition Reactions of Alkenes
Week-9	Spring Break	(no class)	(no class)
Week-10	March 24 March 26 March 28	Chapter 8 Chapter 8 Chapter 8	
Week-11	March 31 **April 2 (Wednesday)** April 4	Review **Exam 3** Chapter 9	Review and Problem Solving **Topics: Chapters 7–8** Alkynes
Week-12	April 7 April 9 April 11	Chapter 9 Chapter 9 Chapter 10	 Radicals
Week-13	April 14 April 16 April 18	Chapter 10 Chapter 11 Chapter 11	 Synthesis (problem solving)
Week-14	April 21 April 23 **April 25 (Friday)**	Chapter 14 Review **Exam 4**	Infrared spectroscopy and Mass spectrometry Review and Problem Solving **Topics: Chapters 9–11**
Week-15	April 28 April 30 May 2	Chapter 15 Chapter 15 Chapter 15	^{1}H and ^{13}C NMR spectroscopy
Week-16	May 5 May 7 May 9	Chapter 15 Review Review	 Review and Problem Solving Review and Problem Solving
Week 17	**See the finals schedule at the Registrar office's website**	**Final Exam**	**Comprehensive final including spectroscopy**

2. Learning Objectives

Learning Objectives:
Organic chemistry is a challenging subject. You will be expected not only to learn factual information, but also to apply your newfound understanding to open-ended problems. You should not aim simply to memorize the material. Rather, you should try to make sense of trends so that you can make predictions in unfamiliar situations. Problems fall into Five major categories:
Naming of Organic Compounds: You will learn about naming compounds which are cyclic or acyclic, alkanes, alkenes and alkynes with or without specifying stereochemical information such as R, S, E, Z, cis or trans.
Structure and properties: Major topics in this area include the properties of functional groups (the key parts of organic molecules), conformational analysis (the study of how molecules fold in three dimensions), and stereochemistry (the study of molecules possessing mirror-imaged partners).
Reactions and mechanisms: You will learn to predict the products of reactions, propose reagents for effecting desired reactions, and explain why reactions proceed the way they do.
Organic synthesis: Using your understanding of reactions, you will propose methods for preparing target molecules through multi-step reaction sequences.
Structure determination: Using your understanding of organic chemistry, you will deduce the structures of unknown compounds by analyzing their properties under a variety of condition
Course Expectations: *A large amount of new material will be covered in this course and it is extremely important that you keep up. You should read the appropriate chapter before the lecture covering that material in order to follow the discussion more easily. Also, do not cut classes and you will miss the connections between lectures. Work on the end-of-chapter problems for your own benefit. The answers to those problems are available in the Study Guide & Solutions Manual. It is strongly advised that you work as many problems as you can to do well in this course.*
The four most important tips for doing well in this class:

1. Read the book chapter and work the in-chapter problems **prior** to coming to class. This is an effective use of your time because you will get more out of lecture if you have read ahead.
2. Study the posted lecture notes and the corresponding materials in the textbook.
3. Work on the online homework after the chapter is finished (the homework is generally due a week after the chapter is done).
4. Don't fall behind, as it is nearly impossible to catch up!

3. Other Information

Disability Accommodation
Iowa State University complies with the Americans with Disabilities Act and Sect 504 of the Rehabilitation Act. If you have a disability and anticipate needing accommodations in this course, please contact Dr. Zhao to set up a meeting **within the first two weeks of the semester** or as soon as you become aware of your need. Before the meeting, you will need to obtain a SAAR form with recommendations for accommodations from the Disability Resources Office, located in Room 1076 on the main floor of the Student Services Building. Their telephone number is 515-294-7220 or email disabilityresources@iastate.edu . Retroactive requests for accommodations will not be honored. For any special exam accommodations, turn the SAAR form to Ms. Deanna Powell (1605 Gilman Hall) to set it up.

Drops and Audits: Students taking Chem 231L will be required to drop the lab if they drop or decided to audit Chem 231 lecture course. Auditing does not count towards full-time student status. For signing your drop slip, please see Ms. Deanna Powell in 1605 Gilman Hall.

Organic Help Hours (1761 Gilman): Organic teaching assistants will be available to help with questions related to lab and lecture material: (https://www.chem.iastate.edu/chemistry-help-room)