

CHEMISTRY 331 Organic Chemistry I Spring 2021

Section: Room:	Online lectures and in-class exams
Instructor:	Dr. George Kraus
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Office Hours:	Mondays & Thursdays 3 PM – 4 PM

Textbook: *Organic Chemistry*, 3rd Edition, by Klein. An optional Study Guide & Student Solutions Manual is also available. A molecular models kit will really help with stereochemistry topics. Optional supplemental text: *Organic Chem I for Dummies* and *Organic Chem I Workbook for Dummies*; Author: Arthur Winter.

Canvas: We will be using Canvas <https://canvas.iastate.edu/courses/23702/pages/home> for this course. Lecture notes, previous exams, grades, and class announcements will be posted in Canvas.

Online Homework: *This is not part of the grade.* I recommend the online homework system published specifically to go with the Klein text (WileyPlus). To get a better grade in this course and to understand the material, you are expected to spend at least 6 hours per week doing homework and trying previous exams.

Exams: In addition to the Final Exam (150 pts), there will be **four in-class** hourly exams (100 points each) on **Feb. 17, March 17, March 31 and April 21. Exams will be in-class exams from 7:45 am to 8:35 am.** Any re-grades on an exam **must** be requested within one week after receiving the graded exam.

Quizzes-There will be 8 nine-point quizzes. The quizzes will be on Canvas and you will have one hour in a 48-hour window to complete each quiz. The window will begin at 9 am of the first day of the quiz. Up to 72 points can be earned from the quizzes and the total number of points can be substituted for an hourly exam. **THERE WILL BE NO MAKE-UP QUIZZES.**

Grading: The course grade will be based on the **three** best 100-point exam scores (or the two best 100-point exam scores plus the total from the quizzes) plus the final exam score (maximum total = 450 points). The lowest score on a 100-point exam or a missed hour exam will be automatically 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. Your grade may be curved based on the performance of the class, but you are guaranteed the following grades: >85% A, > 75% B, > 65% C, >55% D. Plus-minus grading will be used. Thus, in principle, everyone in the class can earn an A. Since an exam will be dropped, it is not possible to tell you exactly where you stand grade-wise until all exam grades have been submitted, but I will keep you up-to-date on your APPROXIMATE standing following each exam (e.g. what your grade would be if the class ended that day). **Canvas** will be used to post grades. **Any errors in points or grades posted on the Canvas should be addressed to Dr. Kraus within a week from the date posted. It is your responsibility to monitor your score in Canvas.** 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 cause without suffering a grade penalty.

*Iowa State University supports and upholds the First Amendment protection of **freedom of speech** and the principle of **academic freedom** in order to foster a learning environment where open inquiry and the vigorous debate of a diversity of ideas are encouraged. Students will not be penalized for the content or viewpoints of*

their speech as long as student expression in a class context is germane to the subject matter of the class and conveyed in an appropriate manner.

Academic Dishonesty. [The class will follow ISU's policy on academic dishonesty. Anyone suspected of academic dishonesty will be reported to the Dean of Students Office.](http://www.dso.iastate.edu/ja/academic/misconduct.html)
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Disability Accommodation. Iowa State University is committed to assuring that all educational activities are free from discrimination and harassment based on disability status. Students requesting accommodations for a documented disability are required to work directly with staff in Student Accessibility Services (SAS) to establish eligibility and learn about related processes before accommodations will be identified. After eligibility is established, SAS staff will create and issue a Notification Letter for each course listing approved reasonable accommodations. This document will be made available to the student and instructor either electronically or in hard-copy every semester. Students and instructors are encouraged to review contents of the Notification Letters as early in the semester as possible to identify a specific, timely plan to deliver/receive the indicated accommodations. Reasonable accommodations are not retroactive in nature and are not intended to be an unfair advantage. Additional assistance is available online at www.sas.dso.iastate.edu, by contacting SAS staff by email at accessibility@iastate.edu, or by calling 515-294-7220. Student Accessibility Services is a unit in the Dean of Students Office located at 1076 Student Services Building.

Retroactive requests for accommodations will not be honored.

Prep Week. This class follows the Iowa State University Prep Week policy as noted in section 10.6.4 of the Faculty Handbook <http://www.provost.iastate.edu/resources/faculty-handbook>.

Harassment and Discrimination. Iowa State University strives to maintain our campus as a place of work and study for faculty, staff, and students that is free of all forms of prohibited discrimination and harassment based upon race, ethnicity, sex (including sexual assault), pregnancy, color, religion, national origin, physical or mental disability, age, marital status, sexual orientation, gender identity, genetic information, or status as a U.S. veteran. Any student who has concerns about such behavior should contact his/her instructor, [Student Assistance](#) at 515-294-1020 or email dso-sas@iastate.edu, or the [Office of Equal Opportunity and Compliance](#) at 515-294-7612.

Religious Accommodation. If an academic or work requirement conflicts with your religious practices and/or observances, you may request reasonable accommodations. Your request must be in writing, and your instructor or supervisor will review the request. You or your instructor may also seek assistance from the [Dean of Students Office](#) or the [Office of Equal Opportunity and Compliance](#).

Requests to change final exam day/time: The student wishing to change the day of the exam must make his/her request to the instructor no later than the last scheduled class day before the beginning of the Prep Week.

If you are experiencing a problem with any of the above issues, email academicissues@iastate.edu.

Organic Help Hours: Organic teaching assistants will be available in 1214 Hach Hall to help with questions related to lecture material.

Drops and Audits: Students taking Chem 331L will be required to drop the lab if they drop or decide to audit Chem 331 lecture course. For signing your drop slip, please see Pat Augustin in 1608 Gilman Hall.

Tentative Schedule for Chem 331

Week	Date	Chapter	Key Topics
Week-1	Jan. 25-29	Chapter 1 Chapter 2	Orbitals, hybridization, electronegativity Molecular representations, resonance
Week-2	Feb. 1-5	Chapters 3 and 4	Acid-base chemistry plus beginning of Chapter 4
Week-3	Feb. 8-12	Chapters 4 and 5	Alkanes plus beginning of Chapter 5
Week 4	Feb. 15-19	Exam 1 Feb. 17	Topics: Chapters 1-4
Week-5	Feb. 22-26	Chapter 5 Chapter 6	Stereoisomers Reaction Types (general mechanisms of organic reactions) Arrow pushing (How to show mechanisms)
Week-6	March 1-5	Chapter 7	Substitution and elimination reactions
Week-7	March 8-12	Chapters 7 and 8	
Week 8	March 15-19	Exam 2 March 17	Topics: Ch 5-7
Week-9	March 22-26	Chapter 9	alkenes
Week-10	March 29-April 2	Exam 3 March 31	Topics: Chapters 8-9
Week-11	April 5-9	Chapters 10 and 11	Radical reactions, Multistep synthesis
Week-12	April 12-16	Chapters 14 and 15	IR, mass spectrometry
Week 13	April 19-23	Exam 4 April 21	Topics: Ch 10, 11, 14, 15
Week 14	April 26-30		Review
	May 3-6	Final Exam Week	

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 more easily follow the discussion. Also, do not cut classes or you will miss the connections between lectures. Work on the WileyPlus problems for your own benefit. It is strongly advised that you work as many of the problems as you can to do well in this course.*

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 conditions.

