

CHEMISTRY 332 Organic Chemistry II Spring 2022

Sections:	4 - Online.
Exam Room:	Our exams will be held <u>online, proctored via WebEx</u> from 6:45-7:45 PM. More detailed information will come later.
Instructor:	
Office:	Mason Koeritz
Phone:	3236 Hach Hall
E-Mail:	507-848-1353 mkoeritz@iastate.edu [Write " Chem 332 " on the subject]
Office Hours:	Held via WebEx. Tuesdays: 4:00 – 5:00 PM, Fridays: 9:30 – 10:30 AM, or available by appointment.

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

Canvas: We will be using Canvas for this course. Lecture videos, previous exams, grades, homework assignments, and class announcements will be posted there.

Online Homework: We will use the online homework system called WileyPlus, which is integrated into Canvas. Details on how to sign up for access to the digital course content will be available in Canvas. There are two WileyPlus assignments per chapter. One set of problems are questions that derive from the end-of-chapter problems from the book. These homework sets are worth 10% of your overall grade. A second **extra credit** assignment is an adaptive learning environment that tailors questions to the individual. The questions are multiple choice, but can be useful to gauge which topics you may be struggling with. The adaptive assignments are worth up to 5% extra credit towards your overall grade. The extra credit will not be applied until after the final exam due to the way Canvas processes extra credit.

Grading: There will be four mid-semester exams (60% of total grade) and a cumulative final exam (25% of total grade). The course grade will be based on the three best mid-semester exam scores plus the final exam score (which cannot be dropped), the online homework (10%), and any midweek quizzes (5%). The lowest score on a mid-semester 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. You are guaranteed the following grades: >89% A, > 85% A-, >82% B+, >79% B, > 74% B-, >70% C+, >60% C, >49% D; <49% F. 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. ***Any errors in points or grades posted on Canvas should be addressed to Mr. Koeritz within a week from the date posted. It is your responsibility to monitor your score in Canvas.***

Exams: All exams are currently scheduled to held ONLINE. More details about the exam format will be communicated the week before the exam. Due to the nature of the online class, the exams will be open book/notes. You may not use Chegg or related sites to complete your exams. Use of these online sites constitutes cheating on an exam and will result in a grade of zero for the exam that cannot be dropped. In addition to the Final Exam (125 pts), there will be four online exams (100 pts each). **THERE WILL BE NO MAKE-UP EXAMS.** Any regrades on an exam must be requested within one week after receiving the graded exam. 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 cause without suffering a grade penalty.

Exam Dates: 6:45-7:45 PM on February 6th, February 27th, March 27th, and April 24th. The final exam will be offered only at the time set by the registrar. **Do no make any travel plans before knowing the final exam schedule!**

Relationship to in-person sections (taught by Prof. Joseph Awino): The course content/text will be the same. The WileyPlus assignments are the same, but I've added the weekly quizzes. The exams for this online section will differ from the in-person sections. They will be written to account for the open note nature of the exam.

Co-requisite: Chem 332 is a CO-REQUISITE for Chem 332L.

Drops and Audits: Students taking Chem 332L will be required to drop the lab if they drop or decided to audit Chem 332 lecture course. Auditing does not count towards full-time student status.

Schedule for Chem 332 (Spring 2023)

Week	Date	Recommended Reading	Key Topics
Week-1	January 17	Chapter 12	Alcohols and Phenols
Week-2	January 23	Chapter 12/ Chapter 13	Alcohols and Phenols Ethers and Epoxides; Thiols and Sulfides
Week-3	January 30	Chapter 13/ Chapter 16	Ethers and Epoxides; Thiols and Sulfides Conjugated Pi Systems and Pericyclic Reactions
Week-4	Mon, February 6 Tues-Fri	EXAM 1 Chapter 16	Topics: Chapter 12, 13 Conjugated Pi Systems and Pericyclic Reactions
Week-5	February 13	Chapter 17	Aromatic Compounds
Week-6	February 20	Chapter 18	Aromatic Substitution Reactions
Week-7	Mon, February 27 Tues-Fri	EXAM 2 Chapter 19	Topics: Chapters 16, 17, and 18 Aldehydes and Ketones
Week-8	March 6	Chapter 19/ Chapter 20	Aldehydes and Ketones Carboxylic Acids and Their Derivatives
Week-9	March 13	SPRING BREAK	SPRING BREAK
Week-10	March 20	Chapter 20	Carboxylic Acids and Their Derivatives
Week-11	Mon, March 27 Tues-Fri	EXAM 3 Chapter 21	Topics: Chapters 19, 20 Alpha Carbon Chemistry
Week-12	April 3	Chapter 21/ Chapter 22	Alpha Carbon Chemistry Amines
Week-13	April 10	Chapter 22	Amines
Week 14	April 17	Chapter 24	Carbohydrates
Week 15	Mon, April 24 Tues-Fri	EXAM 4 Chapter 25	Topics: Chapters 21, 22, 24 Amino Acids, Peptides, and Proteins
Week 16	May 1	Prep Week. Final exam review	
	May 8-12	FINAL EXAM WEEK	Comprehensive Final Exam including Chapter 25 (To Be Scheduled)

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 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 three most important tips for doing well in this class:

1. Read the book chapter and work the in-chapter problems **prior** to watching the lecture videos. This is an effective use of your time because you will get more out of the videos if you have read ahead.
2. Work all of the online homework after watching the lecture videos.
3. Don't fall behind, as it is nearly impossible to catch up!

Learning Objectives:

Organic Chemistry II will be a demanding course. You will be asked to digest a large amount of material in a relatively short time. In addition, you will be asked to master the basic language and fundamental concepts (such as reactivity trends, steric and electronic effects, and basic kinetic and thermodynamic effects) that are the required foundation to solve problems in organic chemistry. The sheer volume of information to be covered is such that rote memorization becomes impractical as a singular learning strategy. Thus, it is critical that you are able to connect to and build upon new and existing knowledge of fundamental principles and concepts in organic chemistry. The most successful students in organic chemistry are often those who understand basic reactivity (nucleophile or electrophile, acid or base) of common functional groups and reagents and are able to apply trends to new problems.

At the end of Chem 332, you will have been through as much organic chemistry as most beginning Ph.D. students in chemistry! That said, most of you have long-term learning and career goals in which chemistry is just a part. The following is a summary of what we want you to know or be able to do upon completion of the year sequence of organic chemistry.

1. You should have a good understanding of molecular structure. This includes sigma and pi bonding, strain, aromaticity, and stereochemistry. You should have a good grasp of three-dimensional structure of molecules and should understand that intermolecular interactions depend on structural relationships.
2. You should be able to recognize the reactive parts of molecules. In particular, you should be able to identify nucleophilic and electrophilic centers. You should understand how to make certain centers more nucleophilic or electrophilic, e.g., by deprotonating or protonating them.
3. You should be able to recognize types of reactions that you see in different contexts. For example, you should recognize substitutions, additions, oxidations, and reductions, no matter whether you see them in organic chemistry or in a biochemistry class.
4. You will have a good fundamental understanding on the chemical reactivity of several common classes of reactive intermediates, especially cationic and anionic centers.
5. You should be able to understand complex reaction mechanisms if they are presented to you. You should be able to suggest reasonable reaction mechanisms for almost every reaction you know, and – based on knowing something about the reactive parts of molecules and reactive intermediates – make a good guess about the mechanism of a new reaction presented to you.
6. You should have a reasonable repertoire of reactions that you can call upon to imagine how to synthesize a molecule of modest complexity or follow its synthesis or biosynthesis as presented to you. In practice, many of you will find this most useful in biological and biochemical contexts.
7. From Chemistry 332 in particular, you should develop a thorough understanding of carbonyl chemistry, including addition, reduction, and oxidation. You will learn several ways in which carbonyl compounds can be used to construct new carbon-carbon bonds. Yes, there are many other functionalities covered in 332, but this is the heart of the reactivity we examine.

Mandatory Syllabus Statements:

Academic Dishonesty

The class will follow Iowa State University'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>

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 (instructor name) to set up a meeting within the first two weeks of the semester or as soon as you become aware of your need. Retroactive requests for accommodations will not be honored.

Prep Week

This class follows the Iowa State University Dead 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](#).

Free Expression.

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.

Contact Information

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