

CHEM 343 Modern Organic Chemistry II

Spring 2018

- Lectures:** MWF, 9:00–9:50 am in Chemistry A103 (CHEM 343-001)
MWF, 3:00–3:50 pm in Chemistry A101 (CHEM 343-002)
- Instructor:** Dr. Anna Allen
Yates 504C
Anna.Allen@colostate.edu
- Graduate TAs:** Patrick Fricke Chirag Patel
Patrick.Fricke@colostate.edu Chirag.Patel@colostate.edu
- Office Hours:** Mondays 10:00–11:00 am in Yates 414 (CLeRC)
Tuesdays 9:30–11:30 am in Yates 414 (CLeRC)
Wednesdays 4:00–5:00 pm in Yates 414 (CLeRC)
Other times by appointment in Yates 504C
- TA Office Hours:** Mondays 2:00–3:00 pm in Yates 414 (CLeRC)
Wednesdays 11:00–12:00 pm in Yates 414 (CLeRC)
Thursdays 10:00–11:00 am and 5:00–6:00 pm in Yates 414 (CLeRC)
- Topic Workshops:** Mondays 6:00–8:00 pm in STAD 1208
Tuesdays 6:00–8:00 pm in STAD 1208
- Peer-Led Group Study:** Mondays, Wednesdays 4:00 pm – 6:00 pm in STAD 1215
Tuesdays, Thursdays 5:00 pm – 7:00 pm in STAD 1215

CHEM 343 has evening exams!

Mid-term Exams:

Thursday, February 8, 7:00–8:50 pm

Thursday, March 8, 7:00–8:50 pm

Thursday, April 19, 7:00–8:50 pm

Exam Locations: 343-001 (9am) in Chemistry A103
343-002 (3pm) in Chemistry A101

Final Exams:

343-001 (9am): Thursday, May 10, 11:50am – 1:50pm in Chemistry A103

343-002 (3pm): Monday, May 7, 4:10pm – 6:10pm in Chemistry A101

Please note that there are two final exam times. You must write with your officially registered section. If you are unsure which section you are in, please check RAMWeb (NOT Canvas).

Required and Recommended Materials

- Textbook:** Organic Chemistry, 5th edition, by Maitland Jones, Jr. and Steven A. Fleming
ISBN: 978-0-393-91303-3
Textbook is required.
- Solution Manual:** Study Guide/Solutions Manual to Accompany Organic Chemistry by Maitland Jones, Jr., Henry L. Gingrich, and Steven A. Fleming
ISBN: 978-0393936599
The Solution Manual is not required, but it is *highly recommended*.
- iClickers:** Available at the Bookstore. *iClickers are required*. A portion of your grade will come from iClicker participation. *You must register your iClicker on Canvas*
- Model Set:** Available at the Bookstore. Model sets are not required, but are *recommended*. *You may use your model set during exams.*

Course Goals and Expectations

Chemistry 343 is a three-credit course emphasizing the chemistry of aromatic compounds, carbonyl compounds, amines, and some carbon-carbon bond-forming reactions. This class is taught with an emphasis on the mechanistic understanding of new organic reactions. *It is strongly recommended that you avoid depending solely on memorization to learn this material.* Instead, you should focus on understanding why molecules behave and react the way that they do. You are expected to attend class every day, arriving prepared and on time. This is a fast-paced, rigorous course. ***Do not fall behind!*** Organic chemistry is inherently cumulative and new material builds upon concepts that have been previously taught. If you are having difficulty, get help sooner rather than later. You should expect to spend a *minimum* of 2–3 hours working problems for every hour of class time if you wish to succeed in this course.

Canvas

A Canvas site has been set for Chem 343. Please check this regularly; you are responsible for all information posted here. This is where you will find your grades and course announcements as well as course notes, lecture problems, problem sets, quizzes, answer keys and any other course information. All course material can be accessed from the module section of Canvas.

Topic-Specific Workshop Series

Regularly occurring out-of-class workshops will be held to assist with more difficult course concepts. The workshops will consist of a review of the topic, a demonstration of problem-solving techniques and facilitated activities to practice with the concept. The workshop schedule will be posted on Canvas.

Peer-Led Group Study

Peer-led study groups will be held on a weekly basis for Chem 341. Students who excelled in the course in a previous semester lead this informal group study. This group is another opportunity to work with others to master the course material through problem sessions and activities as well as to gain some tips from someone who has recently taken this course and done well.

Assignments and Grading

Lecture Problems: A few problems with solutions will be posted on Canvas after each lecture. The purpose of these lecture problems is to give you a small number of problems to work on that are specifically associated with each lecture. It is recommended that you do these problems before the next class to check your understanding of the new material. If you struggle with these problems, don't wait to get help. Try and make sure that you understand things along the way.

Textbook Problems: Selected textbook problems for chapter are posted on the Chem 343 Canvas site under each chapter module. These problems will not be handed in or graded. It is highly recommended that you try these problems to check your understanding of the material. Organic Chemistry is ultimately an exercise in problem solving – there is no substitute for practicing. If you do not have a solutions manual, there is a copy on reserve in the library.

iClicker Questions: iClicker questions will be posed during each class. You must get an iClicker and register it on Canvas to participate. One or two iClicker questions will be recorded for credit in class. A correct answer earns 1 point and all other answers are awarded 0.5 points for participation. There will be at least 40 iClicker questions asked throughout the course and the accumulation of 35 points will earn full credit towards your final grade. *You may earn up to 5 points of extra credit from iClicker questions.* iClicker points will be updated on Canvas with exam scores.

If you forget your iClicker, you may borrow one for a single class period. *You must come and see me before class to borrow an iClicker.* If you find you do not have your iClicker after the lecture has started, you will not be able to borrow one. *You must return the iClicker when the class has finished.* If you do not return a borrowed iClicker you will forfeit the points you earned during that class and not accrue additional points until it is returned. *Clickers are loaned on a first come first serve basis.*

Note: If you borrow an iClicker from a friend who is enrolled in this class you must see me before using it. If you do not come and see me, the points earned might not be assigned to you and may be lost.

Problem Sets: There will be four problem sets given during the semester worth 15 points each for a total of 65 points. The problem set assignment will be broken up into two parts: (1) completing the problems (worth 10 points); and (2) analyzing your work (worth 5 points). Each problem set will contain 5 multi-part questions. In the first part of the problem set assignment, each fully completed question will earn 2 points. *A question does not have to be correct to earn the points, but must be **complete**.* A partial attempt of a question may receive no credit. The problem set will be handed in (due dates are listed below) and graded according to your effort and handed back. The second part of the problem set will involve checking your work against the key and analyzing your incorrect answers. Instructions for this analysis will be posted on Canvas. This analysis is worth 5 points. *You must complete the first part of the problem set and earn at least 5/10 to be eligible to complete the analysis portion and earn the final 5 points.*

Problem sets will be available on Canvas: Fri Jan 26, Fri Feb 23, Fri Apr 6 and Mon Apr 23.
Problem sets will be due in class: Fri Feb 2, Fri Mar 2, Fri Apr 13 and Mon Apr 30.
Problem set analyses are due at each exam.

Late work is not accepted and will receive a grade of 0.
Any problem sets handed in after 5 pm on the day they are due are considered late.

Do not hand work into the General Chemistry drop box in the CLeRC. Problem sets submitted this way will be late and will receive a grade of 0.

Quizzes: There will be 11 regular weekly online quizzes throughout the semester, which focus on the current course material. The quizzes can be found on the Chem 343 Canvas site. Each quiz is worth 10 points and the 10 highest scores will be combined for a total out of 100 points. Quizzes will open at 5:00 pm on Fridays and close at 8:30 am on Mondays. **Quizzes will open at 5pm on: Jan 19, Jan 26, Feb 2, Feb 16, Feb 23, Mar 2, Mar 23, Mar 30, Apr 6, Apr 13, Apr 27.**

Make-up quizzes will not be given.

There will be two *optional cumulative* quizzes during the semester that can be used to replace two lower scores of regular quizzes, assuming this is to your advantage. These quizzes will be available over spring break, as well as at the end of the semester. The first optional quiz will open at 5:00 pm on **Friday Mar 9th** and close at 8:30 am on **Monday Mar 19th**. The second optional quiz will open at 5:00 pm on **Wednesday May 2nd** and close at 11:59 pm on **Saturday May 5th**.

Tests: There will be three midterm exams and a cumulative final exam. Each midterm exam is worth 125 points and the final exam is worth 150 points. Your lowest midterm score will be dropped.

Any requests for re-grading, including addition errors, must be submitted within one week from the time a test, quiz or assignment is returned and the answer key is made available. Requests submitted after that time will not be granted.

Make-up exams will not be given. If you miss an exam, you will receive a zero

If you are going to miss an exam due to a University sanctioned event, you must notify me in writing (e.g. by email) at least one week prior to the exam so that arrangements can be made for you to write the exam early. If you do not contact me at least one week beforehand, no arrangement will be made and you will receive a zero on the exam.

If you miss an exam due to illness, injury or personal emergency, you must submit appropriate documentation when you return to class. No makeup exam will be given; instead you will be given a score for that exam that equals 125 times your percentage score on the final exam, normalized to the average of the exam that you missed. Failure to submit documentation will result in zero on the exam.

Final Grades:

A summary of the point breakdown is below:

Midterm Exams:	250 (42%)
Final Exam:	150 (25%)
Canvas Quizzes:	100 (17%)
Problem Sets:	60 (10%)
iClicker Questions:	35 (6%)
<i>Total Points:</i>	<i>595</i>

Final grades will be assigned as follows:

≥ 535 ($\geq 90\%$)	= at least A
476–534.9 (80–89%)	= at least B
386–475.9 (65–79%)	= at least C
297–385.9 (50–65%)	= at least D
< 297 ($< 50\%$)	= F

*Please note: letter grade cut offs are always approximate until final grades are calculated
Adjustments to the grade cut offs may be made after the final exam.
Plus and minus designations are used at the instructors discretion*

Academic Dishonesty

Chem 343 adheres to the University academic integrity policy and student conduct code, detailed in the CSU General Catalog (<http://www.catalog.colostate.edu/>). Academic dishonesty will not be tolerated. Examples of academic dishonesty include, but are not limited to: cheating on tests or quizzes, plagiarism, unauthorized possession of academic materials, falsification, and facilitation of cases of academic dishonesty (helping someone else cheat). Suspected cases of academic dishonesty will be investigated and forwarded to the Office of Conflict Resolution and Student Conduct Services. Penalties for academic dishonesty can range from the obtaining a zero on a test or assignment to failure in the course.

Note Taking Websites (StudySoup, CouresHero, GradeBuddy, etc):

The Chemistry Department recognizes that there are online websites that allow students to sell their notes for courses. We neither endorse nor actively oppose these services, as long as they abide by the following regulations. All material must be *entirely your own work*. No materials that were created by instructors or teaching assistants may be used, either in part or full. This includes, but is not limited to: course notes, practice problems and keys, exams and practice exams, quizzes and iClicker questions. *You cannot use university resources* to advertise for your participation with these sites. This includes, but is not limited to: university email, Canvas messages or discussions, and flyers in class.

Wed	Jan 17	Syllabus and Chapter 14		Fri	Mar 16	Spring Break	
Fri	Jan 19	Chapter 14	Quiz 1	Mon	Mar 19	Chapter 19	
Mon	Jan 22	Chapter 14		Wed	Mar 21	Chapter 19	
Wed	Jan 24	Chapter 14		Fri	Mar 23	Chapter 19	Quiz 8
Fri	Jan 26	Chapter 15	Quiz 2	Mon	Mar 26	Chapter 19	
Mon	Jan 29	Chapter 15		Wed	Mar 28	Chapter 19	
Wed	Jan 31	Chapter 15		Fri	Mar 30	Chapter 19	Quiz 9
Fri	Feb 2	Chapter 15	Quiz 3	Mon	Apr 2	Chapter 20	
Mon	Feb 5	Chapter 15		Wed	Apr 4	Chapter 20	
Wed	Feb 7	Chapter 16		Fri	Apr 6	Chapter 20	Quiz 10
Thurs	Feb 8	Exam 1		Mon	Apr 9	Chapter 22	
Fri	Feb 9	No Class		Wed	Apr 11	Chapter 22	
Mon	Feb 12	Chapter 16		Fri	Apr 13	Chapter 22	Quiz 11
Wed	Feb 14	Chapter 16		Mon	Apr 16	Chapter 23	
Fri	Feb 16	Chapter 16	Quiz 4	Wed	Apr 18	Chapter 23	
Mon	Feb 19	Chapter 16		Thurs	Apr 19	Exam 3	
Wed	Feb 21	Chapter 17		Fri	Apr 20	No Class	
Fri	Feb 23	Chapter 17	Quiz 5	Mon	Apr 23	Chapter 23	
Mon	Feb 26	Chapter 17		Wed	Apr 25	Chapter 23	
Wed	Feb 28	Chapter 18		Fri	Apr 27	Chapter 23	Quiz 12
Fri	Mar 2	Chapter 18	Quiz 6	Mon	Apr 30	Chapter 23	
Mon	Mar 5	Chapter 18		Wed	May 2	Chapter 23	Quiz 13
Wed	Mar 7	Chapter 18		Fri	May 4	Course wrap-up (optional)	
Thurs	Mar 8	Exam 2					
Fri	Mar 9	No Class					
Mon	Mar 12	Spring Break	Quiz 7	Mon	May 7	343-002 Final Exam	
Wed	Mar 14	Spring Break (optional)		Thurs	May 10	343-001 Final Exam	

Notes: This lecture schedule is **tentative** and actual progress will vary. *You will be responsible for all material presented up until the **Monday** before a test, regardless of where it occurs on the tentative schedule. While the material covered since the last test will be the primary focus of each exam, the subject of organic chemistry is inherently cumulative, and you will be held responsible for any material from past exams.*

There is no class the Friday following a test.

Quiz 7 and Quiz 13 are cumulative quizzes and are optional. One quiz score will be dropped after each quiz ends.

List of Chapter Topics:

Chapter 14: Aromaticity

Chapter 15: Substitution Reactions of Aromatic Compounds

Chapter 16: Carbonyl Chemistry 1: Addition Reactions

- Chapter 17: Carboxylic Acids
- Chapter 18: Derivatives of Carboxylic Acids: Acyl Compounds
- Chapter 19: Carbonyl Chemistry 2: Reactions at the α -Position
- Chapter 20: Carbohydrates
- Chapter 21: Bioorganic Chemistry (*not covered this semester*)
- Chapter 22: Amino Acids and Polyamino Acids
- Chapter 23: Reactions Controlled by Orbital Symmetry
- Chapter 24: Intramolecular Reactions and Neighboring Group Participation