

CHEM 2310 – Organic Chemistry I

Syllabus

Instructor: Dr. Shawn M. Miller

Fall Term, 2018

Email: shawn.miller@usu.edu

Office Hours: M/W 9:00 AM – 10:00 AM
Widtsoe 339

Course Lecture Times & Locations:

Section (CRN)	Time	Day(s)	Location
Lecture 001 (40987)	10:30 AM to 11:20 AM	M/W/F	Eccles Business Building 215
	3:30 PM to 4:20 PM	R	Biology/Natural Resources 102

Prerequisite:

Chem 1220

Required Materials:

e-Text: Smith and Vollmer-Snarr *Organic Chemistry with Biological Topics*, 5th ed.; McGraw-Hill Education, Inc. (ISBN: 978-1-259-92001-1). Access granted through the Auto Access USU system described below.

Online Homework: Connect Chemistry through McGraw-Hill accessible through the link in the sidebar on the Canvas course. Access granted through the Auto Access USU system described below.

Optional Materials:

iclicker: iclicker 2s are used during the Lecture period and extra credit is awarded through the use of iclickers. iclickers must be registered by the beginning of class. To register an iclicker, use the link in the navigation bar on Canvas.

Model Kit: A useful tool to study 3-dimensional molecular structure. Kits are available in Chem Stores (Widtsoe 1st floor), but any organic modeling kit is acceptable.

Calculator: A calculator may be used in Lecture and on Exams. Programmable (graphing) calculators are permitted during Exams only if their memory is cleared by the Testing Center. Other electronic devices are not permitted during Exams.

Canvas Auto Access: Connect for Organic Chemistry w/Biological Topics, 5e by Smith

This course requires all-inclusive digital materials that are provided to you at a significantly lower price than traditional printed materials. These materials are paid for through your student tuition/fee account and are accessed through the Canvas course site. You may choose to opt-out of the all-inclusive materials and associated charges, but you will lose access to the required materials, which will have a negative effect on your performance in the course. Opt-out requests must be submitted by Sept. 17, 2018 at 11:59 pm eastern time, after which you will also be responsible for obtaining the required materials through your own means. For more information, or to opt out, visit: <https://portal.verba.io/usu/login>.

Supplemental Course Assistance:

SI Information: Tyler Perkes (contact: tperkes@aggiemail.usu.edu or Canvas)
Session Times: TBA

UTF Information: Caleb Gardner (contact: caleb.gardner@aggiemail.usu.edu or Canvas)
Session Times: TBA

Jeffrey Wight (contact: jeff.a.wight@gmail.com or Canvas)
Session Times: TBA

Course Overview

CHEM 2310 is the first in a two-semester series of organic chemistry courses that is targeted towards science and engineering students and builds upon the lessons learned in Chem 1210/Chem 1220 and meets four times a week. There will be assigned online McGraw-Hill Connect homework sets. There will be an online Post-Week Quiz on Canvas at the end of each week designed to help prepare students for the Exams. There will be three 60-minute Midterm Exams in addition to a 120-minute Final exam all of which will be proctored on Canvas via the Testing Center.

Course Learning Objectives

CHEM 2310 is a Lecture course designed to introduce you to the fundamentals of organic chemistry. In this course, you will name organic molecules (**nomenclature**) and draw and interpret the **structure** of organic molecules and then, with that knowledge, predict the reactants, reaction conditions, and outcomes of chemical **reactions**, draw the **mechanism** by which those reactions occur, and use those reactions to create a **synthesis** for simple organic molecules. By reading the textbook prior to the Lecture period, you will obtain a basic understanding of the upcoming Lectures' topics. By attending, taking notes during, and asking questions during Lecture periods, you will expand and refine your understanding of the course material. You will demonstrate proficiency of the course material through weekly in-Lecture clicker questions, online Canvas Quizzes, and online McGraw-Hill Connect homework problem sets. You will demonstrate mastery of the course material through Midterm Exams and a Final Exam.

More specifically, by the end of this course, you will be able to...

- ...describe atomic and molecular structure and bonding, organic acids and bases, and properly represent organic molecules.
- ...classify organic compounds by structure, use the IUPAC nomenclature system, and identify conformational effects in organic compounds.
- ...identify the types of isomerism in organic compounds, identify and classify chiral centers, and explain the physical and chemical consequences of chirality.
- ...identify compounds in which resonance is important, predict the effect of resonance on the stability of compounds and reactive intermediates, and draw resonance structures.
- ...write the mechanisms for substitution and elimination reactions and predict the effect of nucleophile, leaving group, and solvent on the relative rates of S_N1 versus S_N2 reactions, $E1$ versus $E2$ reactions, and substitution reactions versus elimination reactions.

- ...draw and interpret reaction coordinate diagrams, relate the energetic changes associated with chemical reactions to equilibrium constants and rate and differentiate kinetic versus thermodynamic control of reactions.
- ...write the mechanisms for common reactions of alkenes and predict the products of such reactions.
- ...write the mechanisms and predict the products for reactions of alkynes.
- ...write the mechanism for the oxidation and reduction of hydrocarbons and the oxidation of alcohols and predict the products of such reactions.

You will prepare for and practice achieving these objectives by...

- ...reading the textbook while taking notes and completing LearnSmart assignments.
- ...attending and taking notes during Lecture periods.
- ...completing online McGraw-Hill Connect homework sets.
- ... taking weekly graded online Post-Week Quizzes on Canvas.
- ...asking for help via Office Hours, Piazza, or direct message (Canvas and/or email).
- ...optionally attending UTF and/or SI sessions for problem solving and further assistance.

You will be assessed on how you have achieved these objectives using...

- ... one Getting Started Quiz on Canvas.
- ...the aforementioned LearnSmart assignments.
- ...the aforementioned online McGraw-Hill Connect homework sets.
- ... the aforementioned Quizzes on Canvas.
- ...three Midterm Exams.
- ...one Final Exam.

Course Communication

Piazza is the recommended venue for asking academic questions about the course and experiments. Piazza is a free online system designed for students to have access to rapid and efficient help from classmates, TAs, and the instructor simultaneously. **Piazza is not to be used to convey personal information.** Contact the instructor directly if you need to discuss personal information such as grades.

When you post a question on Piazza, the instructor, TAs, and your fellow students can all answer the question, making it more likely for you to receive a rapid response compared to emailing one person and hoping they read it soon. Maybe you'll even get lucky and someone will have already asked the question you were going to ask and got it answered! Students are not to provide complete

answers or explanations for homework or Quiz questions, but are encouraged to guide their fellow students to complete answers or explanations. You have the option of posting anonymously to each other, but the instructor will always be able to see your identity. Enroll in the course by creating a Piazza account by going to <https://piazza.com/signup> or by clicking on the “Piazza” link in the sidebar on Canvas, searching for “Chem 2310” and enrolling as a student. 3 extra credit points will be awarded to all students who enroll in Piazza regardless of their use of the service provided they enroll by 8:00 PM on the Friday in Week 1 of the semester.

You are always welcome to message the instructor with questions. Canvas messages are preferred, but email is fine as well. Please include your full name, A-Number, and the course name in your message. I will attempt to respond to your messages in a timely manner, but I have responsibilities outside of the course that may prevent me from doing so, and I ask you to exercise patience after sending your message.

The instructor will hold regular office hours as listed in this syllabus as well as by request.

Course announcements will be made using Canvas. You can set Canvas to send you an email when a course Announcement is made, but the instructor will not send regular mass reminder emails. You are expected to check Canvas at least once a day and are responsible for any information in the announcements. “But I did not know” is not an acceptable excuse for being unaware of information in course announcements.

Getting Started

Read the course syllabus. Once that is done, your first assessment is a “Getting Started” online quiz located on Canvas that will cover course policy as discussed in the syllabus. This Quiz is due at 8:00 PM on the Friday in Week 1 of the semester. The Getting Started quiz will be graded immediately upon completion and may be attempted an unlimited number of times. Correct answers will not be shown upon completion of the Getting Started Quiz, but you will be able to view your responses. If multiple attempts are made, the **latest** score will be accepted. **If you see no score in your Grades, no attempt was submitted.** The Getting Started Quiz score cannot be dropped.

USU welcomes students with disabilities. If you have, or suspect you may have, a physical, mental health, or learning disability that may require accommodations in this course, please contact the Disability Resource Center (DRC) as early in the semester as possible (University Inn #101, 435-797-2444, drc@usu.edu). All disability related accommodations must be approved by the DRC. Once approved, the DRC will coordinate with faculty to provide accommodations.

Textbook and LearnSmart

LearnSmart is an automated adaptive system designed to reinforce concepts you are reading in the textbook as you are reading it. Each chapter in the textbook will have an associated required LearnSmart assignment worth 10 points. These assignments will contain a series of short questions tied to important topics within the text. LearnSmart assignments are due at 8:30 AM on the first day of the Exam their chapters are associated with. The lowest LearnSmart score will be dropped at the end of the course.

Lectures

It is assumed that you read textbook chapters, as outlined in the schedule at the end of this syllabus, prior to discussing them in Lecture. You are strongly encouraged to take notes while reading the textbook and then supplement those notes with Lecture. You are not expected to understand the material simply by reading the textbook, but reading the chapter will build a foundation that we can expand and refine through our discussions in Lecture. PDF copies of blank Lecture PowerPoint slides will be available on Canvas that can be printed ahead of each Lecture if you wish. Each Lecture will be recorded and available on Canvas for viewing at your pleasure.

iClicker Questions

iClicker questions will be asked through the Lecture period and will be used as a way to assess class understanding of topics by providing immediate feedback to both the instructor and you. These questions must be answered individually, but consulting your notes and discussing with your classmates is allowed. It is your responsibility to register your iClicker either through the iClicker service on Canvas or at iclicker.com and to remember to bring your iClicker, in working order, to class each day. iClicker questions will be utilized on Day 1, but student performance will not be recorded until the third Lecture period.

To encourage you to attend, prepare for, and be attentive during lectures, you may earn up to 10 points extra credit via iClicker questions. 5 of those points are allocated to participating in iClicker questions, and the remaining 5 points are allocated to answering iClicker questions correctly. The amount of extra credit awarded will be based on the percentage of iClicker questions answered by each student based on the total number of questions asked and the percentage of correct answers to iClicker questions based on the total number of questions asked.

Homework

There will be 11 on-line homework sets, administered through McGraw-Hill Connect and must be completed on your own time. Each homework set, worth 10 points, will open on the day the topic of the first question is discussed in lecture and will close at 8:30 AM on the day of the Exam they are associated with. The homework sets will involve a variety of question types. You may use your textbook and notes, but it is suggested you attempt the problems alone at first. The lowest homework score will be dropped at the end of the course. There are a number of ungraded Orientation assignments assigned in Connect to teach you how to use the system. It is strongly recommended you complete those assignments. Ensure that you submit completed assignments by clicking the "Submit" button for that assignment. Assignments that are saved, but not submitted, cannot be graded and will not be awarded points.

Quizzes

There are 13 graded Post-Week Quizzes in the course that are administered on Canvas. Each week, the Quiz will open at 1:00 PM every Friday and will be due the following Monday at 11:00 AM. These Quizzes contain 10 questions each worth 1 point about material covered in the previous week. You will have 30 minutes to complete the Post-week Quiz and you may use your textbook and notes, but you must work alone. You should treat Post-Week Quizzes as practice for the Exam in terms of both format and content. You may take each Post-Week Quiz twice to account for any technical difficulties you encounter, such as losing power or logging out accidentally. After successfully completing the Quiz, you may choose to retake the Quiz to try and maximize your

score, but note that only the **last** attempt will be accepted. Therefore, if your second attempt at the Quiz has a lower score than the first attempt, the second attempt's score is still what will be counted as your score for the Quiz. The lowest two Post-Week Quiz scores will be dropped at the end of the course.

Examinations

There will be three 60-minute Exams, worth 100 points each, that will be administered on Canvas in the Testing Center over three days according to the following schedule. Depending on course pace, either the Lecture on Monday or Wednesday of an Exam week will be cancelled.

First Exam:	Week 5
Second Exam:	Week 10
Third Exam:	Week 14

These Examinations will consist of 25 multiple-choice questions worth 3 points each and an additional written section worth 25 points.

Make-up Exams for missed Exams may be granted upon petitioning the instructor only in the following situations: 1) documented and acceptable excuses for illness when verified by a doctor's note; 2) a family emergency when verified by a note from your academic advisor; 3) a regularly scheduled university-sanctioned conflict, such as a sports competition the student is participating in, but only when the instructor is notified well in advance of the conflict and verified with a note from the person in charge of the activity containing the specific reasons for the absence. Absences due to reasons not considered by the university to be excused absences, such as weddings, are not eligible for make-up Exams.

The only materials permitted in the Testing Center will be writing utensils and calculators (scientific preferred, graphing only if the Testing Center clears the memory). The Testing Center will provide laptops and provided auxiliary materials as well as scratch paper upon request. Reservations for the Testing Center are made through their website at <http://testing.usu.edu/>. Ensure you bring a form of ID with you in order to Check-in for your Testing Center appointment.

A Final Examination will be held in the Testing Center from Wednesday, December 12 to Friday, December 14.

Academic Integrity

All Utah State University academic integrity policies are strictly enforced. All students at Utah State University agree to be bound by the following Honor Pledge "I pledge, on my honor, to conduct myself with the foremost level of academic integrity." See the following for further information: <https://studentconduct.usu.edu/studentcode/article5>. Students found guilty of academic misconduct on any assignment will, **at minimum, be given a zero for the assignment and have the full value of that assignment deducted from their final course grade.** Actions up to and including a failing grade for the course are options available to the instructor.

Course Assessment

After the first Exam, the instructor will solicit feedback through optional midterm evaluations on Canvas. The purpose of these surveys will be to determine student opinions of the course up to that point and ask for suggestions on what could be done to improve the course for the rest of the semester and in subsequent semesters. The instructor will know who completed the survey, but will be unable to match survey responses to students. Each student who responds to the midterm evaluation will be granted extra credit points. At the end of the course, end-of-term IDEA evaluations administered through University will be sent to students via email. The instructor will know who completed the survey, but will be unable to match survey responses to students. Each student who responds to the end-of-term evaluation will be granted extra credit points.

Grading

The total score for each type of assignment represent totals after appropriate lowest scores have been dropped.

		Percentage of Points Earned	Grade
Getting Started Quiz	20		
LearnSmart Assignments	110	89 – 100	A-, A
Chapter Homework Problems	100	78 – 88	B-, B, B+
Post-Week Quizzes	110	66 – 77	C-, C, C+
First Exam	100	53 – 565	D, D+
Second Exam	100	< 53	F
Third Exam	100		
Final Exam	200		
Total points	740		

Letter grades are assigned by taking the total numerical score, rounding to the nearest whole number, finding the percentage of total points earned, and then assigning a letter grade according to the table above. The grade thresholds may be lowered depending on course performance, but will never be increased. The administration of Chem 2310, including the issuing of grades of Incomplete, will adhere to the outlines in the USU General Catalog.

Fall 2018 Schedule

Please look carefully at the following schedule for the correct order of Lectures. Note that this schedule is approximate and may adjust slightly depending on course pace.

Red text denotes the weeks Exams will be proctored. **Blue text** denotes holidays where Lecture will not be held.

Week	Days	Dates	Chapters	Assignments Due	Notes	Week	Days	Dates	Chapters	Assignments Due	Notes
1	M/W/R/F	8/27 – 8/31	Intro and Ch 1	Getting Started Quiz on Friday		9	M/W/R/F	10/22 – 10/26	Ch 8	P-Quiz 8 on Mon.	
2	W/R/F	9/3 – 9/7	Ch 2	P-Quiz 1 on Mon. Pre-test on Mon.	Labor Day on Monday – No Lecture	10	M/W/R/F	10/30 – 11/2	Exam 2 and Ch 9	P-Quiz 9 on Mon. HW 5–8 on Exam Day	Exam 3
3	M/W/R/F	9/10 – 9/14	Ch 3 and Ch 4	P-Quiz 2 on Mon.		11	M/W/R/F	11/5 – 11/9	Ch 9 and Ch 10	P-Quiz 10 on Mon.	
4	M/W/R/F	9/17 – 9/21	Ch 4	P-Quiz 3 on Mon.		12	M/W/R/F	11/12 – 11/16	Ch 10 and Ch 11	P-Quiz 11 on Mon.	
5	M/W/R/F	9/24 – 9/28	Exam 1 then Ch 5	P-Quiz 4 on Mon. HW 1–4 on Exam Day	Exam 1	13	M	11/19 – 11/23	Ch 11	P-Quiz 12 on Mon.	Thanksgiving Break Wednesday through Friday – No Lecture
6	M/W/R/F	10/1 – 10/5	Ch 5 and Ch 6	P-Quiz 5 on Mon.		14	M/W/R/F	11/26 – 11/30	Exam 3 and Ch 12	HW 9–11 on Exam Day	Exam 3
7	M/W/R/F	10/8 – 10/12	Ch 6 and Ch 7	P-Quiz 6 on Mon.		15	M/W/R/F	12/3 – 12/7	Ch 12	P-Quiz 13 on Mon.	
8	M/W/R	10/15 – 10/19	Ch 7 and Ch 8	P-Quiz 7 on Mon.	Fall Break on Friday – No Lecture	16		4/23–4/27	Final Exam Wednesday Dec. 12 – Friday Dec. 14		