

CHEM 211
Organic Chemistry I (with Lab)
Fall 2019
Section 1 - Honors

Instructor: Dr. Davis Oldham

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Office hours: M, W, F 9 – 10 am, M, W 12 – 1 pm

Course Information:

Lecture: 10:00-10:50 am MWF Jepson 451

Lab: 12:30 pm – 3:15 pm, Jepson 213

Textbooks and Supplies

Required:

- Klein, D.K.; Organic Chemistry. *3rd ed.* John Wiley and Sons Inc, New York.
- WileyPlus (available with the textbook or purchased separately)
- Mohrig, J.R.; Hammond, C.N.; Schatz, P.F. Techniques in Organic Chemistry 4nd Edition. W.H. Freeman Company, New York. 2010
- Access to a printer
- Additional lab supplies outlined in the lab syllabus below
- Model kit

Recommended:

- Klein, D.; Organic Chemistry I as a Second Language: Translating the Basic Concepts. Wiley, New York. 2007

Prerequisite: A C or better in CHEM 112

Continuation to CHEM 212: You must earn a grade of C or better in this course (CHEM 211) in order to proceed to CHEM 212.

Course website: I use Canvas frequently to email the class important announcements. You are responsible for the content of any message that is send from Canvas. Please make sure you are aware of how Canvas sends you notifications, as there are many different options for delivery mode (e.g. e-mail, text message) and frequency.

Course Description: This course will focus on the structure and reactivity of the alkanes, alkenes and alkynes. We will develop the key concepts of molecular structure and reaction mechanism, and then apply them to a wide variety of organic chemistry problems. The laboratory course will focus on the development of laboratory techniques for the preparation and analysis of organic compounds, including spectroscopic methods. Where appropriate we will consider the connections of organic chemistry to current events, environmental and biological sciences.

Course Objectives

After completing the course, a student should

- Know the molecular structure, including the stereochemistry, and nomenclature of several classes of organic compounds
- Understand the basic concepts of reaction mechanisms
- Have developed laboratory techniques for the preparation and analysis of organic compounds, including spectroscopic methods

Attendance: This classroom is a flipped classroom, which relies on the principle that you often learn best by doing, and by communicating your work to your peers. Attendance (including allowances for missed days) will be a part of your grade as outlined below. You do not need to notify me in advance of absences.

Academic Dishonesty:

The honor system, as outlined on the UMW Fredericksburg Honor Council Website will be strictly enforced in this course. Students are reminded of their obligation to abide by the code, including reporting observed violations to the Honor Council. The honor pledge will be written on all graded work. Books, notes, cell phones, PDAs and other electronic devices are not allowed during exams. A calculator may be used, but it must not contain any chemical information that could be used during an exam. All written work is to be prepared "in your own words". Guidelines for source use must be followed.

<http://www.umw.edu/honor/fredericksburg/default.php>

ADA:

Students requiring accommodation for disabilities must discuss their needs with the Director of Disability Services (654-1266), and provide appropriate documentation. In order for me to best meet your need, I must receive documentation and discuss your needs by September 7th, 2015. I will hold any information you share with me in the strictest confidence unless you give me permission to do otherwise. The University's disability policy is outlined at <http://www.umw.edu/disability/>.

Policy on Recording: Please notify me if you need to record class. See <https://tinyurl.com/yc4mtx8x> for the UMW course recording policy.

Grading:

Your final grade will be based on the following categories:

Team activities	75 points (top 28 of 35 activities)
Individual activities	25 points (top 8 of 10 activities)
Individual readiness	50 points (top 28 of 35 activities)
In-class exams:	400 points (4 exams)
Laboratory exercises:	250 points (outlined in the lab policies)
Final exam:	200 points
Total	1000 points

Your percentage at any point in the class is defined by total points earned / total points possible * 100. Letter grades will be assigned based on the following scale. The values are expressed as percentages. Grades are rounded to the nearest integer. No exceptions will be made!

A: > 93% A-: 90-92%
B+: 87-89% B: 83-86% B-: 80-82%
C+: 77-79% C: 73-76% C-: 70-72%
D+: 67-69% D: 60-66%
F: < 60%

Students with a course grade of 75% or less will receive a mid-semester unsatisfactory report.

Team activities: This class is a “flipped classroom”, which means that you will watch lectures outside of class and do most of your “homework” in class in groups. Your in-class grade will include performance on team activities. At the end of each class period, one person at random will submit a copy of the team activity to be graded and returned. The top 80% of assignments will be weighted to 75 points.

Individual activities: Each chapter will have a short, individual homework assignment that will be due at the beginning of the first class period after a chapter is finished. The top 80% of assignments will be weighted to 25 points.

Individual assessment: To make sure that you have watched the video, you will complete a readiness check consisting of clicker-style questions at the beginning of each class. Each assignment will be graded on 50% attendance and 50% answering the questions. The top 80% of assignments will be weighted to 50 points

In class exams: There are four 100 point exams. These exams will cover all material since the most recent exam. One exam can be rescheduled in case of emergency, as long as sufficient justification (at the instructor’s discretion) is given no later than the class period before the exam.

Final exam: The final exam for this course is the First Term Organic Exam from the American Chemical Society. It is a 70 question, 120 minute multiple course exam, including spectroscopy. The final exam for this course will be held in accordance with the schedule posted by UMW Academic Services. It is University policy that missing a final exam will result in a grade of F for the course. A review sheet and further information will be provided. A study guide for the ACS exams is available at the ACS exams website for \$23.00 at <http://shopping.na1.netsuite.com/examsinstitute>. This study guide also contains material for the second semester, so it (like your textbook) is a year-long investment. **Final exam time: Final exam: Monday, December 9th, 8:30 am – 11:00 am**

From the Undergraduate Catalog: “*Students who have more than two examinations scheduled within a 24-hour period may reschedule until there are only two exams within that 24-hour period. The student shall decide which examination would best be moved and then should consult with the instructor who teaches that course. It is the responsibility of the student to start this process early enough in the semester so that it will be completed by the Friday preceding the last week of classes.”*

Title IX Statement: University of Mary Washington faculty are committed to supporting students and upholding the University's *Policy on Sexual and Gender Based Harassment and Other Forms of Interpersonal Violence*. Under Title IX and this Policy, discrimination based upon sex or gender is prohibited. If you experience an incident of sex or gender based discrimination, we encourage you to report it. ***While you may talk to me, understand that as a "Responsible Employee" of the University, I MUST report to UMW's Title IX Coordinator what you share.*** Please visit <http://diversity.umw.edu/title-ix/> to view UMW's *Policy on Sexual and Gender Based Harassment and Other Forms of Interpersonal Violence* and to find further information on support and resources.

Suggestions for success:

Many people often find organic chemistry intimidating, in part because it is different from general chemistry. This is somewhat true, and you will find yourself needing to develop and use new methods to study and learn this material. Most students attempt to memorize the large quantities of information given in organic chemistry. For some this may be effective. For others, I recommend seeing this class the way you saw general chemistry, or see any class: each chapter builds on the previous chapter. By spending the time to learn each early chapter, you are better prepared for the later chapters.

The most important piece of advice I can give to you is to devote enough time to the course. We will be covering one chapter per week in class. Most students will require at least 12 hours per week outside of class to sufficiently grasp the material and receive a grade of B. Take a very honest look at your class and work schedules and personal obligations, and make any necessary adjustments. How you spend your 12 hours is another very important factor. I find organic chemistry to be most like learning a foreign language. To become fluent, there are things you need to memorize and things you need to learn.

Recommended strategies

1. Read (or at least scan) the chapter before class.
2. Be attentive and participate in class. Don't be afraid to ask questions, or to offer an answer.
3. Re-read your notes within 24 hours of lecture. Re-work all reactions and examples covered in class. Use your book to fill in any gaps.
4. Work the skill builders as you work on each section. Work the end of chapter problems. Work 2 or 3, then check them using the solutions manual. If you don't get it write, rework the problem so that you are actively writing down the correct answer.
5. Study both individually and in groups. Working in groups forces you to explain your thinking to others, which is one of the best methods of learning.
6. As the exam comes closer, re-work problems that gave you difficulty.
7. Come to office hours as soon as you realize that you are not understanding, falling behind or getting confused.
8. Index cards are useful for learning organic chemistry, but are not as effective without working practice problems.

Course schedule: Below is the tentative calendar for class. For a given exam, the topics covered will include material since the last exam. As mentioned above, I strongly recommend that you read the chapter before lecture. You should also try a few of the problems in the chapter.

Week	Monday	Wednesday	Friday
1	8/26 Introduction	8/28 Chapter 1	8/30 Chapter 1
2	9/2 NO CLASS LABOR DAY	9/4 Chapter 1	9/6 Chapter 2
3	9/9 Chapter 2	9/11 Chapter 2	9/13 Chapter 3 DROP DATE
4	9/16 Chapter 3	9/18 Chapter 3	9/20 EXAM 1
5	9/23 Chapter 4	9/25 Chapter 4	9/27 Chapter 4
6	9/30 Chapter 4	10/2 Chapter 4	10/4 Chapter 5
7	10/7 Chapter 5	10/9 Chapter 5	10/11 EXAM 2
8	10/14 FALL BREAK	10/16 Chapter 6	10/18 Chapter 6
9	10/21 Chapter 6	10/23 Chapter 7	10/25 Chapter 7 W DEADLINE
10	10/28 Chapter 7	10/30 Chapter 7	11/1 Chapter 7
11	11/4 EXAM 3	11/6 Chapter 8	11/8 Chapter 8
12	11/11 Chapter 8	11/13 Chapter 8	11/15 Chapter 9
13	11/18 Chapter 9	11/20 Chapter 9	11/21 Chapter 10
14	11/25 EXAM 4	11/27 THANKSGIVING BREAK	11/29 THANKSGIVING BREAK
15	12/3 Chapter 10	12/5 Chapter 10	12/7 Catch up/review

Final exam: Monday, December 9th, 8:30 am – 11:00 am

Tentative Chem 211 Lab Schedule

The order of labs may change at instructor's discretion

Week 1	8/29	Introduction to lab, safety
Week 2	9/5	Infrared Spectroscopy
Week 3	9/12	Kd of methyl violet
Week 4	9/19	Synthesis of an analgesic
Week 5	9/26	Separation of analgesics by extraction
Week 6	10/3	Distillation
Week 7	10/10	Separation of enantiomers
Week 8	10/17	Enthalpy of vaporization + TLC prep for next week
Week 9	10/24	Column chromatography
Week 10	10/31	NMR
Week 11	11/7	Nucleophilic substitution
Week 12	11/1	Integrated spectroscopy
Week 13	11/21	Elimination reaction
Week 14	11/28	THANKSGIVING
Week 15	12/5	Lab final, clean lab, checkout