

Organic Chemistry II (CHEM 314) Fall 2018

*Note – this is a working syllabus and is subject to change if necessary

Please note the honor code for GMU:

I pledge not to cheat, plagiarize, steal, and/or lie in matters related to academic work.

For further information and explanation visit: <http://oai.gmu.edu/honor-code/masons-honor-code>

Course:	82134-Chem 314-001 (Fall 2018)
Required textook:	Organic Chemistry, 11th Edition , by T. W. Graham Solomons, Craig B. Fryhle, and Scott A. Snyder
Instructor:	Michael Girgis, Ph.D. Email: myassagi@gmu.edu
Learning Assistant:	Elias Khayat Email: ekhayat@gmu.edu
Contact info.:	myassagi@gmu.edu
Class time:	7:30 - 8:45 am, Tuesday & Thursday (Aug. 27 th – Dec. 19 th)
Class place:	Planetary Hall 129
Office hours:	T & R from 9:00 am to 10:15 am W from 12:30 pm to 2:00 pm F from 1:00 pm to 3:00 pm In EXPL L-506 or by contacting me for an appointment.
Course Pre-requisite:	Prerequisite enforced by registration system: CHEM 211/213 and CHEM 212/214, CHEM 313/315 with a grade of C or higher. Corequisite(s): CHEM 318

Schedule:	Chapter	Material Covered
Day 1 (8/28)	12	Alcohols from Carbonyl Compounds:
Day 2 (8/30)	12	Oxidation–Reduction
Day 3 (9/4)	12	Organometallic Compounds
Day 4 (9/6)	13	Conjugated Unsaturated Systems
Day 5 (9/11)	13	Conjugated Unsaturated Systems Con't
Day 6 (9/13)	14	Aromatic Compounds
Day 7 (9/18)	15	Reactions of Aromatic Compounds
Day 8 (9/20)	15	Reactions of Aromatic Compounds Con't
Day 9 (9/25)	12, 13, 14 & 15	Midterm 1
Day 10 (9/27)	16	Aldehydes and Ketones: Nucleophilic Addition to the Carbonyl Group
Day 11 (10/2)	16	Aldehydes and Ketones: Nucleophilic Addition to the Carbonyl Group Con't

Day 12 (10/4)	17	Carboxylic Acids and Their Derivatives: Nucleophilic Addition–Elimination at the Acyl Carbon
Note – Columbus Day –Tuesday Oct. 9th class schedule is cancelled		
Day 13 (10/11)	17	Carboxylic Acids and Their Derivatives: Nucleophilic Addition–Elimination at the Acyl Carbon Con't
Day 14 (10/16)	18	Reactions at the α Carbon of Carbonyl Compounds: Enols and Enolates
Day 15 (10/18)	18	Reactions at the α Carbon of Carbonyl Compounds: Enols and Enolates Con't
Day 16 (10/23)	19	Condensation and Conjugate Addition Reactions of Carbonyl Compounds
Day 17 (10/25)	19	Condensation and Conjugate Addition Reactions of Carbonyl Compounds Con't
Day 18 (10/30)	16, 17, 18 & 19	Midterm 2
Day 19 (11/6)	20	Amines
Day 20 (11/8)	20	Amines & Reactions
Day 21 (11/13)	20	Amines & Reactions Con't
Day 22 (11/15)	21	Phenols and Aryl Halides: Nucleophilic Aromatic Substitution
Day 23 (11/20)	21	Phenols and Aryl Halides: Nucleophilic Aromatic Substitution Con't
Note – Thanksgiving Day –Thursday Nov. 22nd class schedule is cancelled		
Day 24 (11/27)	20 & 21	Midterm 3
Day 25 (11/29)	22	Carbohydrates & Reactions
Day 26 (12/4)	22	Carbohydrates & Reactions Con't
Day 27 (12/6)	23	Lipids
Day 28 (12/11)	24	Amino Acids & Proteins
Day 29 (12/13)	Review	
Day 30 (12/18)	Final Exam	Comprehensive Final Exam

Examinations

1. A photo ID is required to take the exam.
2. Molecular models are permitted in all exams.
3. EXAMS will be administered on paper and a scantron is required. Any special accommodation can be provided upon submitting the proper documentation obtained from ODS at the beginning of the semester.
4. All personal items including cell phones are to be **TURNED OFF** and kept away during the lecture or while taking an exam.
5. The exam can only be taken once. See **General Course Policies** regarding missed exams.

Honor Code Violations

Mason is an Honor Code university; please see the Office for Academic Integrity (<http://oai.gmu.edu/>) for a full description of the code and the honor committee process. The principle of academic integrity is taken very seriously, and violations are treated gravely. What does academic integrity mean in this course? Academic integrity is grounded in honesty. It is important to project truthfulness. Any attempts to deceive or otherwise gain unfair advantage in the course is a violation of the Honor Code. Essentially, when you are responsible for a task, you will perform that task. When you rely on someone else's work in an aspect of the performance of that task, you will give full credit in the proper and accepted form (please note, you may not rely on someone else's work for any graded components of this course). Another aspect of academic integrity is the free play of ideas. Vigorous discussion and debate are encouraged in this course, with the firm expectation that all aspects of the class will be conducted with civility and respect for differing ideas, perspectives, and traditions. When in doubt (of any kind) please ask for guidance and clarification.

Honor Code Violations will be referred to the Office of Academic Integrity (<http://oai.gmu.edu/>) with the recommendation for suspension/expulsion from George Mason University.

Grading and Course Requirements

The course grade will be assigned on the basis of student performance on the exams that will be administered throughout the semester. The FINAL will be cumulative including all covered material throughout the semester. Each midterm will count 20% of your overall grade. The final exam will count 40% of the overall class grade.

General Course Policies

If you cannot make it to an exam, you must notify the instructor of the class prior to the exam (via email) or as soon as the emergency is over. A valid physician's note or legitimate documentations will be required in order to issue a makeup exam. Forged physician notes or any reason for suspicion that a student is trying to gain any unfair advantage on an exam will be considered an Honor Code Violation.

Student privacy is governed by the Family Educational Rights and Privacy Act (FERPA) and is an essential aspect of any course. Student privacy is an important consideration for this course. Therefore, the preferred method of contact with the instructor is through e-mail. Any email correspondence must be through the student's MasonLive email account.

Regarding electronic devices (such as laptops, tablets, cell phones, etc.), please be respectful of your peers and your instructor and do not engage in activities that are unrelated to class during class sessions. Such disruptions show a lack of professionalism and should be avoided.

Student Support Resources

A tutor has been assigned to this course. You are encouraged to work with the tutor in learning the subject matter. The tutor is a student who recently completed the course and displayed excellent knowledge of the material. The tutor position is designed to provide help to students from the perspective of a student. The times of availability and meeting locations will be posted on BlackBoard.

If you have a learning or physical difference that may affect your academic work, you will need to furnish appropriate documentation to the Office of Disability Services (ODS). If you qualify for accommodation, the ODS staff will issue you a form detailing appropriate accommodations to be turned to your instructor. In addition to providing your instructor with the appropriate form, please take the initiative to discuss accommodations at the beginning of the semester and as needed during the semester. If you have contacted the Office of Disability Services and are waiting to hear from a counselor, please inform me in person as soon as possible.

George Mason University has a number of academic support and other resources to facilitate student success. Please make use of the available resources if needed to maximize performance in the course. Available resources include the Counseling and Psychological Services (<http://caps.gmu.edu/>), Learning Services (<http://caps.gmu.edu/learning-services/>), University Career Services (<http://careers.gmu.edu/>), etc. In addition, the Chemistry Tutoring Center (<http://ttc.gmu.edu/tutoring.hours.html>) is available through the GMU Department of Chemistry and Biochemistry.

Course Description, Goals and Objectives

Organic Chemistry is a course that covers the nomenclature, properties, synthesis and reactions of organic chemicals. Learning organic chemistry involves developing strategies for solving complex problems. Students must commit to memorizing chemical transformations, gain understanding of the mechanisms for the transformations, be able to predict chemical reactivity, and apply these concepts for the synthesis of new organic molecules. Details are extremely important in organic chemistry. Just as a single word can change the meaning of a sentence, a single reaction condition can lead to the synthesis of a different molecule.

Students are expected to gain fluency in the material such that the student can do the following:

- a) Understand the written and spoken acronyms and abbreviations of the discipline;
- b) Think multi-dimensionally by considering the multiple conditions and properties of a chemical reaction;
- c) Be creative in synthesizing compounds using the chemical reactions covered in the course.

Organic chemistry is an intellectually rewarding discipline. Organic chemists find jobs in the pharmaceutical industry, chemical companies, or even in law firms specializing in patent law. Problem solving, and creativity are highly prized skills in organic chemistry that enable many of the modern conveniences we enjoy today. Overall, the course is designed to encourage students

to consider organic chemistry for further study, develop an appreciation for the advancements in society contributed to organic chemistry, and to provide strategies for multi-dimensional thinking that can be applied to solving complex problems in any discipline.

This course involves two lectures per week covering the material in the textbook. Tutoring services are available through the Chemistry Tutoring Center. A Learning Assistant is available to assist in strategies for learning the material. However, these services can only provide aid in affording preliminary understanding of the material. To exhibit satisfactory knowledge of the material on the four closed-book examinations, students will need to spend a majority of the course independently studying the material.