

CHEMISTRY 143
Survey of Organic Chemistry
Summer 2020

Lectures begin Monday, May 11, 2020.

Recitations begin on Monday, May 11 2020.

Labs begin on Monday, May 11, 2020.

- Lecturer:** Dr. A. Azadnia (Office: Rm. 128 Chemistry), Phone 353-1125
Office Hours: Tu, Th, 10-11 AM, or by appointment.
email: azadnia@msu.edu
- Lectures:** M, W, F, 9:10-11:00 a.m., will be live Zoom streaming. We will have questions and answer sessions during the lecture time on Zoom. Attendance is worth 40 points. Every time you attend a lecture, you shall earn 2 points. You shall earn a total of 6 points for attending the first lecture. I WILL NOT record lectures. However, I shall post the power point lecture slides onto D2L.
- Laboratory:** The experiments will be recorded and posted on D2L. You will go over the experiment, and collect the experimental data, answer the questions with regards to the experiments. Then you will join the Zoom meeting and ask any questions you may have during lab—Zoom streaming on M, Tu, W, Th at 12:30-1:30 PM. You may join either of the two Zoom streamings twice a week to answer your questions with regards to lab.
- Recitations:
and Lab TA** M, W 11:30 AM-1:20 PM, Aimen Al-Hifi, alhilfia@chemistry.msu.edu
Tu, Th 11:30 AM-1:20 PM., Megan Gruenberg, gruenb10@chemistry.msu.edu
- Text:** Hart, Craine and Hart, Organic Chemistry, A Short Course, 13th Edition, 2011. Also the accompanying Study Guide and Solutions Manual is strongly recommended.
You MUST purchase OWLv2, as all homework problems, and exams will be done on the site.
- Lab Manual:** A. Azadnia, CEM 143 Survey of Organic Chemistry Laboratory Manual, 6th Ed., 2016.
- Lab Safety** ~~Approved splash proof goggles are required. Rubber gloves are strongly recommended.~~
- Equipment:** ~~Closed Toed shoes and long pants must be worn in lab.~~

This handout describes the rules by which this course will be conducted. Please read it, and keep your copy for the entire term so that you can refer to it if necessary. Any changes will be announced in class. A copy of this syllabus is available on the Chemistry Department Web pages: <http://www.cem.msu.edu/> (or http://pittising.cem.msu.edu/Chem_Main/Courses/orgcors.htm). Links from the Department home page to organic chemistry resources and course information are straightforward. Additional course information and useful study problems will also be available at this site.

Course Content: Chemistry 143 is a concise survey of the basic organic compounds and the most common organic reactions, with examples of biological and industrial processes involving organic chemistry. It will be necessary for you to learn how to name organic compounds, to draw and understand

CEM 143 Syllabus - Dr. A. Azadnia - Summer 2020

their structures in two and three dimensions, and to learn how chemical structure and chemical reactivity (reactions) are interrelated.

Recitations: The recitation sections will be held by Zoom streaming during M/W, and Tu/Th during the scheduled lab time. During the recitation, your teaching assistant will answer questions and solve problems. Your TA will also provide a brief introduction to the day's laboratory experiment.

Homework: Representative problems have been assigned from each chapter of the textbook. These problems, whose answers can be found in the Study Guide and Solutions Manual, need not be handed in.

Online Homeworks: There are online homework problems on OWLv2 that you must complete every week. There is a total of 100 points assigned for the online homeworks problems. Deadline of weekly online homework problems is on each Monday at 11:55 PM for the week, starting with Monday, May 18. These homework problems would be on the lecture material from the previous week.

Exams: There will be two hourly exam and a comprehensive final exam, and you shall take them on OWLv2.

Grading: The final grade in the course (lecture and lab) will be based on the following:

OWLv2 homework problems = 100
Hourly Exams (2 x 100 points) = 200
Laboratory (10 x 20 points) = 200
Attendance = 40
Final Exam = 200

Total Points = 740

Total Points Earned	Course Grade
740 - 650	4.0
649 - 590	3.5
589 - 540	3.0
539 - 500	2.5
499 - 430	2.0
429 - 350	1.5
349 - 300	1.0
299 - 0	0.0

Policy on Missed Exams: There will be **no make-up exams** in this course. If you miss an exam for **any reason** (medical, social, academic, etc.) your course grade will be calculated by adding the point value (100 points) of the missed exam to the final exam. Thus, if you miss a exam, your final exam will count for 300 points.

Final Exam: The final exam, which is all-inclusive, will be given on **Wednesday, June 24, 2020 from 9:00 AM-1:00 PM**. University rules stipulate that you will receive a 0.0 for the course if you do not take the final exam. The scheduling of a make up for the final exam and the issuing of Incompletes will follow university rules.

Study Hints: It is near impossible to "cram" for exams in organic chemistry. The course content begins with facts and continuously builds upon them. You should try to work steadily and assimilate material as it is presented. A useful way to study for the course is to read the assigned chapter, both before and after the lecture, then to refer back to your text and lecture notes as often as necessary in working problems. Working and understanding the problems is the key to a good grade in the course. Keep up-to-date!

1. Organic chemistry in many ways resembles a new language for you, and you cannot avoid quite a bit of memorizing (vocabulary).
2. To do well, you have to do a lot of writing — write formulas, write equations, write, write, write so that you can dash off complex structures quickly. You cannot learn organic chemistry just by reading about it; it won't stick that way.
3. The best way to do well is to work problems, as many as you possibly can. We will assign some, but try to do as many others as you possibly can. You may consult other chemistry texts in the library for additional problems.
4. While attendance at lectures is not required, experience has shown that most people who do not attend regularly will not do well. Remember, you have paid more for each lecture than you would for a two-hour movie, so don't throw your money away. We will do our best to make the lectures, recitations and office hours useful to you.
5. Organic chemistry is a cumulative subject. If you get behind at the beginning, you will get hopelessly lost because every new topic depends on previous understanding. So keep up-to-date — don't get behind.

Tentative Lecture and Examination Schedule

May 11, 13	Chapter 1	Bonding and Isomerization
May 15, 18	Chapter 2	Alkanes and Cycloalkanes
May 20, 22	Chapter 3	Alkenes and Alkynes
May 22, 27	Chapter 4	Aromatic Compounds
May 29, June 1	Chapter 5	Stereoisomerism
June 3 (Wednesday)	1st Exam	Chapters 1, 2, 3, 4 and 5
June 5	Chapter 6	Organic Halogen Compounds
June 8	Chapter 7	Alcohols and Phenols
June 10	Chapter 8	Ethers and Epoxides
June 12	Chapter 9	Aldhydes and Ketones
June 15, 17	Chapter 10	Carboxylic Acids & Derivatives
June 19 (Friday)	2nd Exam	Chapters 6, 7, 8, 9 and 10

CEM 143 Syllabus - Dr. A. Azadnia - Summer 2020

June 22	Chapter 11	Amines and Nitrogen Compounds
June 22	Chapter 14	Synthetic Polymers

June 24 (Wednesday)	Final Exam 9:00-1:00 PM	The Final Exam will be comprehensive over all the material covered during the term. (2 Hour-exam)
----------------------------	-----------------------------------	---

NOTE: There will be no lecture on Monday, May 25 (**Memorial Day**).

Problems: The following are suggested problems from your textbook. These are similar to the type of questions that will appear on exams. **Answers to these problems can be found in the Study Guide.** You will find other problems on the chemistry web page.

Chapter 1: Problems:1.15, 1.16, 1.18, 1.19, 1.20-1.22, 1.28, 1.31, 1.32, 1.35, 1.42, 1.44, 1.45, 1.48, 1.52-1.55

Chapter 2: Problems:2.1-2.12, 2.15-2.20, 2.24, 2.26,-2.29, 2.31, 2.35-2.38, 2.42, 2.43

Chapter 3: Problems:3.1-3.4, 3.6, 3.8-3.15, 3.19, 3.21, 3.23, 3.25-3.27, 3.33, 3.34, 3.36, 3.38, 3.53, 3.54, 3.57.

Chapter 4: Problems:4.1-4.8, 4.19, 4.20, 4.21 (a, b, d, e, f, g, h, i).

Chapter 5: Problems:5.1-5.6, 5.8, 5.10, 5.11, 5.15, 5.16, 5.18, 5.21-5.24, 5.28-5.30, 5.33, 5.36-5.38, 5.43-5.46, 5.50, 5.52

Chapter 6: Problems:6.1, 6.2, 6.3-6.5, 6.8-6.14, 6.18, 6.21

Chapter 7: Problems: 7.1-7.4, 7.7, 7.8, 7.13-7.15, 7.17, 7.19, 7.24-7.27, 7.33, 7.35, 7.36, 7.42

Chapter 8: Problems:8.1-8.4, 8.9, 8.11, 8.13, 8.15, 8.16, 8.18, 8.22, 8.26, 8.29

Chapter 9: Problems:9.1, 9.2, 9.4-9.6, 9.11, 9.13-9.17, 9.19, 9.21, 9.23, 9.25, 9.28,9.30-9.32, 9.35, 9.40, 9.41, 9.42, 9.43, 9.44

Chapter 10: Problems:10.1-10.4, 10.8, 10.12-10.16, 10.21, 10.28, 10.31, 10.32-10.34, 10.37, 10.38, 10.41, 10.43, 10.45, 10.49, 10.52, 10.55, 10.59

Chapter 11: Problems:11.1, 11.3, 11.4, 11.6, 11.8, 11.10, 11.12, 11.15-11.17, 11.22, 11.25, 11.26, 11.36, 11.44

Chapter 14: Problems:14.4, 14.5, 14.18, 14.31

CEM 143 Syllabus - Dr. A. Azadnia - Summer 2020

Policy on Cheating: Cheating will not be tolerated. Persons cheating on exams or in lab will be given a zero grade for that exam or lab. In addition, letters summarizing this action will be sent to the Chairperson of their major area and to the Dean of their college.

Chemistry 143 - Laboratory

Laboratory Coordinator: Dr. A. Azadnia
Office: Room 128 Chemistry Bldg., Phone 353-1125

Laboratory Sections: The laboratory experiments are an integral part of this course. They are designed to illustrate some of the principles and reactions that are presented in lecture with the hope that the chemistry will thus become more concrete and less abstract.

Your performance in laboratory will be reflected in your course grade. You must pass the lab section to receive a passing grade in this course. Each lab is worth a maximum of 20 points, and the **best 10** will be counted toward your grade. **Lab totals below 150 points will result in a course grade of 0.0.**

Attendance in laboratory is mandatory. Everyone will work in pairs. Partners will be chosen or assigned during check-in. Partners should split the actual work, but each must fill out and turn in his/her own lab report. All data collected by both partners must be entered on the report sheets during the lab period in which the experiment is done. Report sheets are to be completed, including the answers to the assigned problems, and are to be turned in to your lab instructor at the conclusion of each lab period.

Missed Labs: Missed labs may be made up during same week only. Make up arrangements are to be made with Dr. Azadnia.

Safety Regulations:

1. Splash resistant goggles must be worn at all times while you are in lab. That is the law.
2. Closed-toed shoes must be worn in laboratory.
3. Long pants (to cover ankles) must be worn in laboratory.

Lab report are due on Saturday of each week at 11:55 PM. For instance, the lab reports for experiments 1 and 2 are due on Saturday, May 16 at 11:55 PM on D2L.

All video recordings for lab experiments will be placed onto D2L. All lab, quiz, and exam grades will be kept on D2L.

Laboratory Schedule:

Date	Experiment Number	Title
May 11-12	1	Paper Chromatography
May 13-14	2	Melting Point
May 18-19	3	Distillation
May 20-21	4	Extraction
		No Labs on May 25, and 26 (Memorial Day)
May 27, 28	5	Molecular Models
June 1-2	6	Isolation of an Active Drug
June 3-4	7	Preparation of Methyl 3-Nitrobenzoate
June 8-9	8	Azo Dyes Synthesis
June 10-11	9	Synthesis of Aspirin/Preparation of Soap
June 15-16	10	Identification of an Unknown by Derivatization
June 17-18	13	Structure and Carbohydrates

Additional Class Policies

Diversity and Inclusion Policy

Inclusion and diversity are core values of MSU and the College of Natural Science. As Spartans, we are dedicated to respecting people of all backgrounds, beliefs, identity status, and political beliefs. The college is committed to creating a safe, supportive, and welcoming environment where all students, faculty, and staff can pursue academic and professional success. All members of the MSU community deserve each other's respect, support, recognition, and protection. It is essential that we all work together to foster an inclusive community where Spartans of all backgrounds can study, work, and thrive.

Americans with Disabilities Act Accommodations:

Michigan State University is committed to providing equal opportunity for participation in all programs, services, and activities. Requests for accommodations by persons with disabilities may be made by contacting the Resource Center for Persons with Disabilities by phone at 517-884-RCPD or through the web at rcpd.msu.edu. Once your eligibility for an accommodation has been determined, you will be issued a verified individual services accommodation ("VISA") form.

Please email this form at the beginning of the semester and/or at least two weeks prior to the accommodation date. Requests received after this date will be honored whenever possible.

Policy Regarding Academic Dishonesty

Academic dishonesty of any kind will not be tolerated in this course. Please see the following website for information regarding Michigan State University's policy regarding academic dishonesty:

<https://www.msu.edu/~ombud/academic-integrity/index.html>

Name and Pronoun Preference

All people have the right to be addressed and referred to in accordance with their personal identity. Please advise me of preferences early in the semester so that I may make appropriate changes to my records. Information on MSU's preferred name policy:

<http://lbgrc.msu.edu/trans-msu/msu-preferred-name-policy/>

Policy on Religious Observance

It is an MSU policy to permit students to observe holidays set aside by their chosen religious faith.

<https://reg.msu.edu/ROInfo/Notices/ReligiousPolicy.aspx>

If you absent yourself from class on your religious holiday, please make arrangements with me in advance.

Grief Absence Policy

Please visit MSU Grief Absence Policy:

<https://reg.msu.edu/ROInfo/Notices/GriefAbsence.aspx>

Please speak directly to me to let me know what has happened.

MSU - Mandatory Reporting Policy

As a professor, one of my responsibilities is to help create a safe learning environment for my students and for the campus as a whole. As a member of the university community, I have the responsibility to report any instances of sexual harassment, sexual violence and/or other forms of prohibited discrimination that I hear about.

If you would rather share information about sexual harassment, sexual violence or discrimination with a confidential employee who does not have this reporting responsibility, you can find a list of those individuals here:

<https://caps.msu.edu/>

COVID-19 Note

We all recognize that these are trying times and taking exclusively online classes is not something that we were all counting on or prepared for. On line classes and assessments can be even more stressful than in-person ones. If at any point doing this class you feel you need help, academic or mental, please reach out to all your available resources.

- The TAs and I will be your academic resources and feel free to contact us by email whenever you need help. We will do our best to get back to you as soon as possible. Due to large number of emails received daily, it is possible that an email can be missed, unintentionally. If you have emailed us and you do not get an answer in 24 h it is safer to send the email again.
- There is a number of resources available to MSU students for mental help you might be requiring, and you can find a list of them at the CAPS website below. Remember,

CEM 143 Syllabus - Dr. A. Azadnia - Summer 2020

conversations you have with CAPS are confidential and you should not hesitate reaching out for help.

<https://caps.msu.edu/>