

CEM 252: SECTION 730 – ORGANIC CHEMISTRY II
M, W 6:00 – 10:00 PM, SUMMER II – 2020

Instructor: Dr. Benjamin Appiagyei
Email: appiagy2@chemistry.msu.edu
Lecture: Monday and Wednesday 6:00 – 10:00 pm
Zoom link: <https://msu.zoom.us/j/5849457446>

Office hours: Monday and Wednesday 5:00 – 6:00 pm
Zoom link: <https://msu.zoom.us/j/5849457446>

Webpage: https://www2.chemistry.msu.edu/courses/cem252E/SUM20_APPIAGYEI/index.htm

Class Coordinator: Nancy Lavrik
Email: lavrik@chemistry.msu.edu

Text: W. H. Brown, B. L. Iverson, E. V. Anslyn, C. S. Foote
Organic Chemistry, 8th Edition, Cengage Learning

W. H. Brown, B. L. Iverson, E. V. Anslyn, C. S. Foote
Organic Chemistry, 8th Edition, Study Guide and Student Solutions Manual,
Cengage Learning

Supplementary Materials: Problem sets would be made available on D2L, Top Hat and the webpage throughout the course of the term. The questions in these problem sets are designed to give an idea of how quizzes and exams would be formulated.

Course Content: The second part, summer semester of organic chemistry (CEM 252) builds directly on CEM 251. This class would cover most important organic compounds and reactions with examples of biological and industrial processes involving organic chemistry. You are therefore encouraged to review the content of CEM 251 and refresh your mind and on the tools and ideas — drawing, naming, analyzing and formulating organic compounds in two and three dimensions; counting electron, bonds and charges; writing reaction mechanisms using arrows to show reaction movements; analyzing potential energy plot to describe reaction steps and energy changes; analyzing NMR, IR and mass spec data to assign chemical structures; etc. In CEM 252 we will begin with introducing conjugated systems, aromaticity and reactions of aromatic systems. We will then gradually introduce the various functional groups commonly found in organic chemistry. We will spend a large portion of the time studying carbonyl compounds, their reactions and chemical properties. We will finish the functional group studies with amines. We will then look at carbohydrates. At the end of the class

you are expected to be able to propose the syntheses of organic molecules based on tools of reactions acquired.

Online-examination and Grading

Mid-Term Examinations: There would be **one**, 1.5 hours online mid-term exam worth 100 pts. Note that there would be **no make-up for mid-term exam**. The schedule to administer this online exam is:

Midterm Exam	July 20	Chapters 20-22, 10, 11 & 16
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Quizzes: Four 25 pts **online** quizzes will be given during the course of the term. These quizzes would be open for a limited and a one-time access. I will communicate with more details before each quiz is taken. *Note that there will be **no make-up for quizzes**.*

Quiz 1	July 6	Chapters 20 & 21
Quiz 2	July 8	Chapters 22 & 11
Quiz 3	July 29	Chapters 17 & 18
Quiz 4	August 5	Chapters 19 & 23

Final Examination: A 200 pts **online** final exams will be given on the last day of class, **August 12 from 6:00 – 8:00 pm**. It is the university requirement that you receive a 0.0 for the course if you do not take the final exam. If a mid-term exam is missed due to a well-documented extenuating circumstance, the final examination will be prorated to 300 pts. While this portion is available it is not recommended.

Grades: your grade in this course would be calculated based on the sum of the scores of the mid-term exam (100 pts), your four quizzes (100 pts total), OWL-mastery (50 pts), OWL End of Chapter problems (100 pts) and your 200-pts comprehensive final exam. Therefore, your grade in this course will be calculated out of 550 possible points.

Midterm Exam	100 pts
4 Quizzes	100 pts
Owl-Mastery problems	50 pts
Owl-End of Chapter (EOC) problems	100 pts
Final Exams	200 pts
Overall	550 pts

The following grade scale will be used (Total Points = 550)

Total points	Percent	Final Grade
495	90	4.0
440	80	3.5
385	70	3.0
330	60	2.5
275	50	2.0
245	45	1.5
220	40	1.0
<200	<40	0.0

There would be additional **extra points** through Top Hat “Clicker” type questions during the synchronous lecture sessions.

Policy on Missed Exams: Ordinarily, there will be **no make-ups for scheduled exams!**

Policy on Returning Exams and Re-grading: Exams will be returned to your Top Hat account in a timely fashion. **Any regrading requests must be made to the me (your lecturer). Note that regrading requests require review/regrading of the full exam, not just the point of contention.**

Policy on Academic Dishonesty: Any form of (or attempt at) academic dishonesty (examples: use of online resources, collaborating with others during quizzes and exams) is considered a violation of academic integrity and a violation of class policy. Any student found violating these policies will receive a **0 in the course--NO exceptions**. It is the responsibility of all students to ensure that they are familiar with these policies. If such misconduct is found, an Academic Dishonesty Report will be submitted to the Chair of the Chemistry Department and to the Dean of the student's college. For more details on the University's academic integrity policy, please see: <https://www.msu.edu/~ombud/academic-integrity/index.html>

Special Assistance: Any students requiring special assistance must identify themselves to the instructor at the beginning of the semester.

ZOOM CLASS POLICIES AND LEARNING MANAGEMENT SYSTEMS

Zoom Classroom: As much as possible find a quiet place for all our class meetings and discussions. Try to avoid interruptions during the progress of the class as it's very easy to lose concentration during online lectures. In our first lecture, as you know this is a 4-hour class period so we will discuss if you would like to have a break (say 10-15 mins) in the middle of the class or not.

Asking Questions: As much as possible I would like you to unmute your microphones to ask questions verbally. Feel free to interrupt with questions anytime during the progress of the class. You may also use the chat option to write out your questions which I will address during the second half of the class (after the 10-15 mins break).

Classroom and Exams Response System

Aside D2L, we would be using two learning management systems (LMS) to run this class: 1) **Top Hat** would be used for submitting answers to in-class questions, quizzes and exams; so you should log in to your **Top Hat** account during lectures to answer in-class questions which may worth points 2) **Cengage** would be used for your learning and acquiring proficiency with the tools and knowledge as we progress through the course. Cengage comes with the course textbook when you purchase your subscription. You would be assigned mastery and end of chapter (EOC) questions that would worth points. You are required to purchase these LMSs if you don't have a subscription already (i.e. if you have already used these LMSs in a previous class you don't need to repurchase it, the same login info would work for this class). Also, these LMSs are incorporated into your D2L platform where you can access with your login info.

Top Hat (www.tophat.com)

You will be able to submit answers to in-class questions using Apple or Android smartphones and tablets, laptops, or through text message. You can visit the Top Hat Overview (<https://success.tophat.com/s/article/Student-Top-Hat-Overview-and-Getting-Started-Guide>) within the Top Hat Success Center which outlines how you will register for a Top Hat account, as well as providing a brief overview to get you up and running on the system.

An email invitation will be sent to you, but if you don't receive this email, you can register by simply visiting our course website: **Unique Course URL:** <https://app.tophat.com/e/738695/>

Note: our Course Join Code is **738695**

Top Hat may require a paid subscription, and a full breakdown of all subscription options available can be found here: www.tophat.com/pricing. You would purchase it for \$26. Should you require assistance with Top Hat at any time, due to the fact that they require specific user information to troubleshoot these issues, please contact their Support Team directly by way of email (support@tophat.com), the in app support button, or by calling 1-888-663-5491.

Cengage (www.cengage.com)

The materials required for this class—and any other classes using Cengage products—are included in ONE Cengage Unlimited subscription. For \$119.99 per semester, you get access to ALL your Cengage online textbooks and access codes in ONE place. Four FREE hardcopy textbook rentals are also available for select titles for just \$7.99 S&H each.

Download the free ***Cengage Mobile App*** to get your Cengage online textbooks and study tools on your phone. Ask for Cengage Unlimited in the bookstore or visit <http://www.cengagebrain.com/course/4465380> to purchase or try it for free for a limited period. With Cengage Unlimited, you only need to purchase one subscription. Add the item(s) below (and any other Cengage ebook or access code for other classes) to your dashboard at no additional cost.

- Title: Organic Chemistry, 8th Edition
- Author: William H. Brown; Brent L. Iverson; Eric Anslyn; Christopher S. Foote

- ISBN: 1-305-58035-4

Course Link: <https://www.cengage.com/dashboard/#/course-confirmation/E-26R6Y2RGTS72/initial-course-confirmation>

- Course key: E-26R6Y2RGTS72

Registering

To access your course materials and explore Cengage Unlimited create your Cengage account or sign in to an existing one and follow the instructions to complete the registration process.

Need help? Visit [cengage.com/start-strong](https://www.cengage.com/start-strong) for step-by-step registration instructions and videos.

Tentative Lecture and Exams Schedules:

Date	Topics	Chapters
June 29	Dienes, Conjugated π -system and Pericyclic reactions	20
July 1	Benzene and Concept of Aromaticity	21
July 6	Quiz 1 Reactions of Benzene and its Derivatives	22
July 8	Ethers, Epoxides, and Sulfides	11
July 13	Quiz 2 Alcohols	10
July 15	Aldehyde, Ketones	16
July 20	Midterm Exam (Ch. 20-22, 10, 11 and 16)	---
July 22	Carboxylic Acids	17
July 27	Functional Derivatives of Carboxylic acids	18
July 29	Quiz 3 Enolate Anions and Enamines	19
August 3	Amines	23
August 5	Quiz 4 Carbohydrates	25
August 10	Review session (including synthesis and problem solving)	---
August 12	Final Exams (6:00 – 8:00 pm.; Comprehensive)	

SUGGESTED PRACTICE PROBLEMS FROM THE BOOK:

Please pay extra attention to the **study guide and the problems** at the end of each chapter. It is an **excellent** summary of the ideas, skills and/or reactions you need to know from each chapter. As you may know **learning organic chemistry is best achieved through working problems**. So, work through the **in-chapter problem** as you read, and work as many from chapter end problems as you can from the book, but at least the ones listed below. I will supplement these problem with extra handouts (problem sets) which would be made available on Top Hat, D2L and the webpage. The handouts problem sets and the book problems and are the best indication of how

exam questions will be formulated. Here is a list of suggested problems from the end of each chapter.

Chapter 20: 20.14-20.22; 20.28; 20.29; 20.33-20.36; 20.42; 20.56

Chapter 21: 21.8-21.10; 21.14; 21.16; 21.27; 21.35-21.40; 21.42-21.46, 21.55.

Chapter 22: 3.14; 3.16-3.18; 3.20; 3.25; 3.26-3.28; 3.30-3.31.

Chapter 11: 11.10; 11.11; 11.15-11.17; 11.24; 11.26; 11.33; 11.34; 11.43; 11.46.

Chapter 10: 10.14-10.17; 10.25; 10.29-10.31; 10.35; 10.37; 10.45.

Chapter 16: 16.14-16.16; 16.19; 16.21; 16.24; 16.31-16.33; 16.42-16.46; 16.49; 16-73.

Chapter 17: 17.7-17.13; 17.18; 17.19; 17.32-17.35; 17.47-17.50.

Chapter 18: 18.12; 18.13; 18.25-18.27; 18.32; 18.39.

Chapter 19: 19.18-19.22; 19.39; 19.40; 19.47; 19.53; 19.61.

Chapter 23: 23.16; 23.17; 25; 23.36; 23.44.

Chapter 25: 25.20; 25.21; 25.29.