

# CHEM 211: Organic Chemistry Lecture 1

*Lectures will be held every MWF from 11:00 -11:50 am in Constant Hall, 1005*

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**Office hours:** Tuesdays 10:00 am – noon or by appointment.

**Catalog Description:** CHEM 211. Organic Chemistry Lecture. 3 Credits.

Introduction to organic compounds, isomerism and nomenclature, stereochemistry and conformational analysis, in depth mechanistic understanding of proton transfer reactions, substitution and elimination reactions, and addition to C=C bonds.

**Prerequisites:** CHEM 123N or CHEM 137N with a grade of C or better.

**Course Website:** [www.blackboard.odu.edu/webapps/login](http://www.blackboard.odu.edu/webapps/login)

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**Course objectives:** This course aims to provide students with an in-depth introduction to organic chemistry and compounds with an emphasis on IUPAC rules for naming them given the structure and vice versa, drawing organic structures using various formats, understanding their 3D geometries and interactions. They will be provided with a detailed overview of concepts such as isomerism, conformational analysis, considerations of stereochemistry and aromaticity. They will be introduced to reactions such as electrophilic addition reactions, substitution and elimination reactions and multistep organic synthesis. Upon completion of this course students should be able to understand and draw the detailed reaction mechanisms of the organic reactions listed above. They should be able to provide the starting materials, reagents and products for such organic reactions and should be able to use these individual reactions as part of multistep synthesis towards a desired target molecule.

**Course expectations:** Students are expected to attend the weekly lectures and review sessions, as attendance and participation are essential for success in this course. Typically lecture slides will be posted online the evening before and students are expected to go through them and familiarize themselves with the lecture material. Note that students are responsible for the material covered, even if they miss a lecture. Students are strongly encouraged to work through the assigned end-of-chapter problems. I believe learning is a shared responsibility. Students are expected to be proactive and stop by my office during my weekly office hours should they have any questions or need any additional clarifications in a timely manner.

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## Required materials:

**Textbook:** Organic Chemistry 8th Edition by Paula Yurkanis Bruice, ISBN 9780134581064. This book is available in multiple formats such as hard cover, paperback, loose leaf, ebook etc. and you may purchase the book in any format.

**Response Card:** A Response Card alternately called “clickers” by Turning Technologies or the TurningPoint app is required to participate in this class and answer quizzes. To receive clicker credit (5 % of your final grade), you must register your clicker in blackboard (under Tools go to “Turning Technologies Registration Tool” and complete the registration). Irrespective of which one you use (Turning point app or a clicker device) you will also have to purchase a subscription to Turning Technologies and enter that for the system to work correctly. Detailed instructions for clicker registration can be found here by accessing the link below.

<https://www.odu.edu/content/dam/odu/offices/occs/docs/turningpoint-student.pdf>

**Homework:** We will be using Pearson’s Modified Mastering Chemistry for this course. The due dates for homework assignments will be posted on Blackboard.

Instructions on how to get started on MyLab & Modified Mastering with Blackboard

Sign in to Blackboard and enter your Blackboard course.

Do one of the following:

Select any Pearson link in the Content area.

Select Tools in the left navigation and Pearson’s MyLab & Mastering on the Tools page. Next, select any course link in the top area of the Pearson’s MyLab and Mastering Tools page.

Get Access to Your Pearson Course Content:

Enter your Pearson account username and password to Link Accounts.

You have an account if you have ever used a Pearson MyLab & Mastering product, such as MyMathLab, MyITLab, MySpanishLab, MasteringBiology or MasteringPhysics.

If you don’t have a Pearson account, select Create and follow the instructions.

Select an access option:

a) Enter the access code that came with your textbook or that you purchased separately from the bookstore.

b) If available for your course,

- Buy access using a credit card or PayPal.
- Get temporary access.

From the You’re Done page, select Go to My Courses.

Note: We recommend you always enter your MyLab & Modified Mastering course through Blackboard.

Get Your Computer Ready

For the best experience, check the system requirements for your product at:

<http://www.pearsonmylabandmastering.com/system-requirements/>

Need help?

For help with MyLab & Modified Mastering with Blackboard, go to:

<http://help.pearsoncmg.com/mylabmastering/bbi/student/en/index.html>

**Optional items:** A molecular model set will greatly aid in the visualization of 3D organic structures and determination of their stereochemistry. While purchase of a molecular model set is optional, you will be allowed to use molecular models during exams provided the pieces are placed in a clear zip-loc bag and there are no instructions accompanying them.

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**Practice Problems/ Review Sessions:** In addition to homework assignments, some end-of-chapter problems from the textbook will be assigned for extra practice. They will be posted on Mastering and will not be graded. I will be holding in class review sessions before every mid-term and final exam.

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**Quizzes:** Short (1-2 min) quizzes will be given during the lectures. You will need clickers to answer them. Participation in these quizzes will determine up to 5 % of your final grade. It is your responsibility to ensure that your clicker is registered properly in blackboard and that you have selected the right channel. There will be no make-ups for missed quizzes.

**Midterm and Final Exam(s):** There will be four mid-term exams and one final exam. All exams will be held in class (Constant Hall, 1005) on the dates listed in the schedule. The Final exam will be held in class (Constant Hall, 1005) on Wednesday May 1st from 8:30-10:30 am.

The use of cell phones or any other electronic device is strictly forbidden during exams. If special items (other than pen and pencil) are required for an exam, you will be notified at least 24 hours prior to the exam regarding this.

**Policy regarding Make-up exams:** If you are forced to miss an exam due to unavoidable reasons such as illness to self or kids, or extraordinary family emergencies (such as automobile accident, death, funeral etc.) you will have to notify the Instructor via email ASAP (within 24 hours) and provide appropriate documentation. Note that make-up exams will only be offered for valid excuses at the sole discretion of the Instructor.

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**Grading:** The grade for this course will be determined by

- (a) Homework assignments – 15 %
- (b) Classroom participation and quizzes – 5 %
- (c) Midterm exams – 55 % and
- (d) The final exam – 25 %

Grades will be based on the following scale: A = > 93 %, A- = 92 – 90 %, B+ = 89 – 87 %, B = 86 – 83 %, B- = 82 – 80 %, C+ = 79 – 77 %, C = 76 – 73 %, C- = 72 – 70 %, D+ = 69 – 67 %, D = 66 – 63 %, D- = 62 – 60 % and F = < 60 %.

If the class average is significantly below 80 % in exams, the class will be graded on a curve.

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**Honor code and Academic Integrity:** All aspects of Old Dominion University's code of student conduct apply to this course. Any violation in this regard will be referred to the Office of Student Conduct & Academic Integrity for further action.

Additionally, no collaboration is allowed on online homework or assignments that are graded, though you are encouraged to study together with friends or as a group.

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**Accommodation Statement:** "Students are encouraged to self-disclose disabilities that have been verified by the Office of Educational Accessibility by providing Accommodation Letters to their instructors early in the semester in order to start receiving accommodations. Accommodations will not be made until the Accommodation Letters are provided to Instructors each semester."

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**Tentative schedule\*:** See below a tentative schedule, which is subject to change at the discretion of the Instructor.

**Jan 14, 2018 – April 29, 2019**

Date	Day	Chapter	Topic
1/14	M	1	Introduction and Electronic Structure and Bonding
1/16	W		Electronic Structure and Bonding
1/18	F		Electronic Structure and Bonding
<b>1/21</b>	<b>M</b>		<b><i>Martin Luther King Jr. Holiday</i></b>
1/23	W	2	Acids and Bases
1/25	F		Acids and Bases
1/28	M		Acids and Bases
1/30	W	3	An Introduction to Organic Compounds: Nomenclature, Physical Properties and Structure.
2/1	F		An Introduction to Organic Compounds: Nomenclature, Physical Properties and Structure.
2/4	M		An Introduction to Organic Compounds: Nomenclature, Physical Properties and Structure.
2/6	W		Mid-Term Review
<b>2/8</b>	<b>F</b>		<b>Mid-Term Exam 1 [Chapters 1, 2 &amp; 3 (specific sections TBA)]</b>
2/11	M	4	Isomers - The Arrangement of Atoms in Space
2/13	W		Isomers - The Arrangement of Atoms in Space
2/15	F		Isomers - The Arrangement of Atoms in Space
2/18	M	5	Alkenes - Structure, Nomenclature and an Introduction to Reactivity
2/20	W		Alkenes - Structure, Nomenclature and an Introduction to Reactivity
2/22	F		Alkenes - Structure, Nomenclature and an Introduction to Reactivity
2/25	M	8.1 – 8.10	Delocalized electrons - Their effect on Stability and pKa
2/27	W		Mid-Term Review
<b>3/1</b>	<b>F</b>		<b>Mid-Term Exam 2 [Chapters 3 (specific sections TBA) 4 and 5]</b>
			Delocalized electrons - Their effect on Stability and pKa
3/4	M	6	Reactions of Alkenes - Stereochemistry of Addition reactions
3/6	W		Reactions of Alkenes - Stereochemistry of Addition reactions

3/8	F		Reactions of Alkenes - Stereochemistry of Addition reactions
<b>3/11 – 3/16</b>			<b><i>Spring Break – No classes</i></b>
3/18	M	7	Reactions of Alkynes - An Introduction to Multi-step Synthesis
3/20	W		Reactions of Alkynes - An Introduction to Multi-step Synthesis
3/22	F		Reactions of Alkynes - An Introduction to Multi-step Synthesis
3/25	M	8.11 – 8.15	Reactions of Dienes and the Diels-Alder Reaction.
3/27	W		Mid-Term Review
<b>3/29</b>	<b>F</b>		<b>Mid-Term Exam 3 [Chapters 6, 7 and 8 (8.1 – 8.10)]</b>
4/1	M		Reactions of Dienes and the Diels-Alder Reaction.
<b>4/2</b>	<b>T</b>		<b><i>Last day to withdraw from Session 1 classes without instructor's signature (grade "W" assigned)</i></b>
4/3	W	9	Substitution and Elimination Reactions of Alkyl Halides.
4/5	F		Substitution and Elimination Reactions of Alkyl Halides.
4/8	M		Substitution and Elimination Reactions of Alkyl Halides
4/10	W		Substitution and Elimination Reactions of Alkyl Halides
4/12	F	10	Reactions of Alcohols, Ethers, Epoxides, Amines and Sulfur-Containing Compounds
4/15	M		Reactions of Alcohols, Ethers, Epoxides, Amines and Sulfur-Containing Compounds
4/17	W		Mid-Term Review
<b>4/19</b>	<b>F</b>		<b>Mid-Term Exam 4 [Chapters 8 (8.11 – 8.15) and 9]</b>
4/22	M		Reactions of Alcohols, Ethers, Epoxides, Amines and Sulfur-Containing Compounds
4/24	W		Reactions of Alcohols, Ethers, Epoxides, Amines and Sulfur-Containing Compounds
4/26	F		Final Review 1
4/29	M		Final Review 2
<b>5/1</b>	<b>W</b>		<b>Final Exam [Cumulative Exam] 8.30 – 10.30 am</b>

\*While the material to be covered in the above list is tentative, exams will be held on the dates stated without any change.

*The instructor reserves the right to make changes to the dates and policies stated in this syllabus.*