

# Chemistry 301

## Organic Chemistry I

(Section 02)

Fall 2021

12:30 – 1:45 MWF (Sims 105)

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Instructor:	Dr. Aaron M. Hartel	Phone:	323-4942
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Office Hours:	MW 10:00-11:00 a.m. or by appointment		

### Description:

CHEM 301 introduces the fundamental concepts of organic chemistry. Students will demonstrate significant problem-solving skills directed at organic chemistry & synthesis.

### Objectives:

Students completing this 4-credit undergraduate course will:

- 1) Understand molecular structure
- 2) Learn to determine structure from spectroscopic and spectrometric data
- 3) Demonstrate how structure determines reactivity
- 4) Understand basic mechanistic principles of reaction
- 5) Learn organic reactions and understand the basic mechanistic principles of reaction
- 6) Apply reactions to organic synthesis
- 7) Develop significant problem solving ability

### Course Materials:

Textbook: None

Software: [Visualizing Organic Chemistry](#) (Windows 10, macOS, iPad) is recommended

Models: An organic molecular model set is highly recommended

### Attendance:

Attendance is optional, recommended and will not be recorded.

### Withdrawals:

As per university policy, any student who withdraws after October 22 will receive a grade of "F" if failing the course at that time.

### Changes to Syllabus:

Any changes to the syllabus will be announced in class or via email.

### Ethics:

The Winthrop Student Code of Conduct states: "Responsibility for good conduct rests with students as adult individuals." The policy on student academic misconduct is outlined in the "Student Conduct Code Academic Misconduct Policy" in the online *Student Handbook*.

### Students with Disabilities:

If you have a disability and require specific accommodations to complete this course, contact Services for Students with Disabilities, at 323-3290.

## Expected Schedule

Week of	Topic	Problem Set
August 23	Atomic Theory	1
August 30	Bonding and Hybridization	1
September 6	Nomenclature	2
<b>September 13</b>	<b>EXAM 1</b>	<b>1-2</b>
September 13	Free Rotation, Conformational Analysis	3
September 20	Stereochemistry, Stereoisomers	3
<b>September 27</b>	<b>EXAM 2</b>	<b>3</b>
September 27	Structural Determination (IR, UV, MS)	4
October 4	Structural Determination ( <sup>13</sup> C, <sup>1</sup> H NMR)	5
<b>October 11</b>	<b>EXAM 3</b>	<b>4-5</b>
October 11	Acids and Bases	6
October 18	Mechanisms	7
October 25	Alkene Addition Reactions	8
<b>November 1</b>	<b>EXAM 4</b>	<b>6-8</b>
November 1	Resonance, Multifunctional Molecules	9
November 8	Alkynes, Synthesis	10
<b>November 15</b>	<b>EXAM 5</b>	<b>9-10</b>
November 15	Nucleophilic Substitutions, Eliminations	11
November 22	Substitutions and Eliminations of Alcohols	11
November 29	Ethers, Epoxides and Amines	12
December 6	More Synthesis	12
<b>December 14</b>	<b>FINAL EXAM 11:30 a.m.</b>	<b>Cumulative</b>

### Exams and Final Grade:

There are five in-class exams (15% of the course grade each) and a cumulative final (25% of the course grade) scheduled at the times above. Make-ups are given only in extreme circumstances. The final course grade is based on these exams. Expect exam averages around 65%. The +/- system will be used for "A, B, and "C" grades. Roughly, a "+" will be awarded to scores in the top third of each grade range and a "-" to those in the lower third. Grades are assigned using the scheme below. Re-grades must be submitted within one week after the exam is returned. You must specify what is to be re-graded and have justification as to why the grading was incorrect.

Scores higher than 82% have been awarded "A's"  
 Scores between 70% and 81% have been awarded "B's"  
 Scores between 60% and 69% have been awarded "C's"  
 Scores between 50% and 59 have been awarded "D's"  
 Scores below 50% have been awarded "F's"

## Helpful Tips

- 1) Do the homework problem sets. We learn best doing, not by reading. Do the problems one-at-a-time, checking each answer as you go. If your answer is right, move on. If it's not, re-read the text/notes and try again.
- 2) Write down everything you do. This may seem subtle, but it is very important. Organic chemistry is a very visual and detailed subject. Most homework or exam questions will be answered by drawing structures, not words. Get used to drawing things quickly and properly.
- 3) Don't fall behind. Everything in this course (and in CHEM 302) builds on what we covered the previous day, week and month. Not understanding what we cover today makes learning what we cover tomorrow that much harder and more time-consuming.
- 4) There will be a "self evaluation" posted online a few days before each exam. Use them to gauge what you have learned and not learned. Then go back and study the material on the parts you haven't mastered.
- 5) If you're having difficulty understanding something, get help. Find me, hire a tutor, go to the free tutoring in the Sims study lounge, ask the brainy guy/gal down the hall. Do whatever it takes.

## Addendum

### **Winthrop COVID-19 Statement:**

During this pandemic period each student is expected to act in the best interest of the WU community by behaving responsibly to limit the spread of the COVID-19 virus. All students, faculty, and staff must wear masks inside buildings and classrooms, unless alone in a private office. All members of the campus community must follow campus guidance on masking. Please do not attend class if you have fever or any signs of the COVID virus; do not attend class if your roommate or someone you have close contact with acquires the virus and be respectful of others' desire to remain COVID-free. Use the Patient Portal COVID-19 Health Tracker daily. Students who violate WU guidelines will be asked to comply. Continued failure to comply may result in referral to the Dean of Students Office as a student conduct violation.

### **Winthrop Policy on COVID-Related Absence:**

Students should contact Health Services regarding a positive test, close contact, or enhanced COVID-like symptoms. Any student who has either tested positive, has COVID-like symptoms, or has close contact with someone who has COVID, must contact Health Services. Students should log in to the [Patient Portal](#) to schedule a **TELEPHONE TRIAGE** Appointment w/ **COVID** as the reason and upload the positive test result if applicable. Health Services will communicate with the student on what steps to take next, and if need be, the Dean of Students Office will get absence verification for required isolation and quarantine. Students who verify their absences through the Dean of Students Office often minimize any academic impact caused by missed class time. Health Services will only provide dates of absence, not medical information. Please note, residential students who test positive should also follow their personal COVID Quarantine and Isolation Plan.