Chemistry 301

Organic Chemistry I (Section 02)

Fall 2019

12:30 – 1:45 MWF (Sims 105)

Instructor: Dr. Aaron M. Hartel Phone: 323-4942 Email: hartela@winthrop.edu Office: 314B Sims

Office Hours: MW 11:00-12:00 or by appointment.

Course Web: chem.winthrop.edu

Textbook: None

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

Models: An organic molecular model set is <u>highly recommended</u>

Goals and Objectives:

The major objectives of this 4-credit course are to:

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

Expected Schedule:

| Week Of | <u>Topic</u> | Problem Set |
|--------------|---|--------------------|
| August 19 | Atomic Theory | 1 |
| August 26 | Bonding and Hybridization | 1 |
| September 2 | Nomenclature | 2 |
| September 9 | EXAM 1 | 1-2 |
| September 9 | Free Rotation, Conformational Analysis | 3 |
| September 16 | Stereochemistry, Stereoisomers | 3 |
| September 23 | EXAM 2 | 3 |
| September 23 | Structural Determination (IR, UV, MS) | 4 |
| September 30 | Structural Determination (¹³ C, ¹ H NMR) | 5 |
| October 7 | EXAM 3 | 4-5 |
| October 7 | Acids and Bases | 6 |
| October 14 | Mechanisms | 7 |
| October 21 | Alkene Addition Reactions | 8 |
| October 28 | EXAM 4 | 6-8 |
| October 28 | Resonance, Multifunctional Molecules | 9 |
| November 4 | Alkynes, Synthesis | 10 |
| November 11 | EXAM 5 | 9-10 |
| November 11 | Nucleophilic Substitutions, Eliminations | 11 |
| November 18 | Substitutions and Eliminations of Alcohols | 11 |
| November 25 | Ethers, Epoxides and Amines | 12 |
| December 2 | More Synthesis | 12 |
| December 10 | FINAL EXAM 11:30 a.m. | Cumulative |

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Exams and Final Grade:

There are five in-class exams (15% of the course grade each) and a cumulative final exam (25% of the course grade) scheduled at the times above. Make-ups are given only in extreme circumstances. The final grade for the class will be based on these exams. Expect the average score in the course to be 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 typically assigned loosely following the scheme below.

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"

Re-grades:

A re-grade must be submitted within one week after the exam is returned. You must be specific in what is to be re-graded and have justification as to why the grading was incorrect.

Withdrawals:

As per university policy, any student who withdraws after October 18 will receive a grade of "F" if failing the course at that time.

Attendance:

Attendance is optional, recommended and will not be recorded.

Ethics:

As noted in the Student Conduct Code: "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.

Changes to Syllabus:

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

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Helpful Tips

- 1) <u>Do the homework problem sets.</u> 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) <u>Write down everything you do</u>. 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) <u>Don't fall behind.</u> 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.