CHEM 3064 Section 010
Organic Chemistry I

Prof: Robyn Biggs
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Web Site: http://canvas.ou.edu/ under CHEM 3064 Sec 010

Office Hours: Mondays 1:30pm-3:00pm in PHSC 308A
Wednesdays 1:30pm-3:00pm in PHSC 308A
(If you can’t make it during these hours, please make an appointment by e-mail)

Lectures: Mondays: 12:30pm-1:20pm PHSC 201
Wednesdays: 12:30pm-1:20pm PHSC 201
Fridays: 12:30pm-1:20pm PHSC 201

Action Center Meeting:
Thursdays: 6:30pm-8:30pm Wagner 135

Assessment:
Quiz 1: Friday, Sept. 2. (In Class) 2.5%
Quiz 2: Friday Oct. 28 (In Class) 2.5%
Quiz 3: Friday, Dec. 2. (In Class) 2.5%
Tophat: Chapter Homework (Online) 2.5%
Mid Term 1: Friday Sept. 16. (In Class) 10%
Mid Term 2: Friday Oct. 14. (In Class) 10%
Mid Term 3: Friday Nov. 11. (In Class) 10%
Lab Reports: Weekly 20%
Lab Quizzes: Weekly 5%
Final Exam: Monday Dec. 12. (1:30pm-3:30pm) 35%

Total: 100%

In-Class Tophat Bonus + 2.5%
Free Bonus + 1%

Missing a quiz or midterm:

No make-up quizzes will be given. A grade of 0 will be assigned to missed quizzes without documentation of a reasonable excuse for the absence. A missed quiz with documentation of a reasonable excuse will be dropped from the final grade, and the other quiz values will be increased to make a total of 7.5% for the quiz component of the course. Make-up midterms will be allowed only upon providing documentation of a reasonable excuse for the absence. If no documentation is provided, a grade of 0 will be assigned. Make up midterms take place in PHSC 308A on the Tuesday morning following the midterm. You are responsible for setting a time to take your make-up midterm by sending an email to robynbiggs@ou.edu.
Errors in grading/points total on a midterm:

Re-grade requests will be allowed for potential errors in grading, according to the marking scheme for that midterm. In order to submit such a request, you must write the question(s) you would like to be re-considered for points on the top right hand corner of the first page of the midterm. If there is an addition error, simply write “addition error” in the top right hand corner of the first page of the midterm. Re-grade requests are due in class no later than one week after the midterm is handed back. When submitting a re-grade request, you must not alter the way you answered the question during the midterm in any way. Altering answers for a re-grade request is considered as academic misconduct, and if found guilty, is punishable by a grade of F in the course.

Tophat Instructions:

-We will be using the Top Hat (www.tophat.com) classroom response system in class. You will be able to submit answers to in-class questions using Apple or Android smartphones and tablets, laptops, or through text message. Additionally, we will be using the interactive textbook "Organic Chemistry" for this class.

-An email invitation will be sent to you by email, but if you don’t receive this email, you can register by simply visiting our course website: https://app.tophat.com/e/600456

-Top Hat will require a paid subscription, and a full breakdown of all subscription options available can be found here: www.tophat.com/pricing.

-After you pick your subscription, your course pack/textbook will be applied at checkout for an additional $65. Don’t worry if you don’t see any content in the course right away, I will make it available to you as we progress through the semester. 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 18886635491.

Tophat Bonus:

Correct responses to in-class Tophat questions will count as 1 point for each question. The bonus percentage will be calculated by taking the best 80% of your responses. This way, if you have to miss a few lectures for valid reasons, you will not be at a disadvantage for the in-class Tophat bonus.

Laboratory Instructions:

Material:

-Required lab textbook: Morvant, M. C.; Halterman, R. L., Organic Chemistry Laboratory Manual. The manual is available free of charge as either a PDF version on the Canvas page or as an interactive iBook (downloaded from iTunes).

-Safety goggles are required at all times in the lab!

-Nitrile safety gloves are required for all labs.

-A lab safety coat is strongly recommended.

Grading:

The lowest lab report and quiz grade will be dropped from the average. If a student misses a lab section or does not complete an on-line quiz for any reason, excused or unexcused, that lab report grade will be considered the lowest grade and dropped from the grade average. A second laboratory/laboratory report can only be missed with an allowed, officially excused absence to be provided in writing within one week of the missed laboratory.

This syllabus is subject to change at any point throughout the semester. Reasonable notice will be given for any changes made.
Molecular models are **recommended**. Darling Molecular Models are best. These are available at the bookstore.

**Course Outline**

**Nomenclature**: You are responsible for naming chains up to 12 carbons long for all classes of compound covered (alkanes, alkenes, alkynes, alcohols, thiols, halides, amines, aldehydes, ketones).

**Part A: Structure**

1) Organic Molecular structure
   a. “Organic” periodic table
   b. Electronegativity and periodic trends
   c. Covalent bonds
   d. Molecular Representations: Lewis Structures
   e. Molecular Orbital Theory
   f. Molecular Structure and Bulk Properties
   g. Molecular Representations: Line Structures
   h. Resonance

2) Molecules in 3-Dimensions
   a. Conformational Analysis-Acyclic Alkanes
   b. Conformational Analysis-Cyclic Alkanes
   c. Stereochemistry
   d. Fischer projections
   e. Resolution of enantiomers

3) Structure Determination
   a. IR
   b. NMR
   c. Mass Spectrometry

**Part B: σ-Electrophiles**

1) Simple Mechanisms and electron pushing formalism
   a. Acid/base reactions
   b. Reaction co-ordinate diagrams
   c. $S_{N}2$ reactions

**Part C: π-Electrophiles**

2) π-Electrophiles containing no leaving group in tetrahedral intermediate
   a. Nucleophilic additions
   b. Synthesis

3) π-Electrophiles containing a leaving group in the tetrahedral intermediate
   a. Carboxylic acids and derivatives
   b. Mechanisms under acidic conditions
   c. Mechanisms under neutral conditions
   d. Mechanisms under basic conditions
   e. Mechanisms involving two π-electrophiles
3) \( \pi \)-Electrophiles containing a hidden leaving group in the tetrahedral intermediate
   a. Acetals and Thioacetals
   b. Imines
   c. Enamines

**Part D: Indirect Attack on \( \sigma \)-Electrophiles**

1) E2 Reactions
   a. Mechanism
   b. Stereochemistry
   c. E2 vs S\( _N^2 \)

2) Oxidation Reactions
   a. Mechanism
   b. Synthesis

**Additional Information**

**Academic Misconduct:** Information on the University of Oklahoma’s policies toward academic misconduct can be found at [http://integrity.ou.edu/students_guide.html](http://integrity.ou.edu/students_guide.html).

**Special Accommodations:** Students requiring accommodations in this course are to be registered with the Disability Resource Center prior to receiving accommodations. Information for the Disability Resource Center can be found at: [https://www.ou.edu/content/drc/home/students/accommodations.html](https://www.ou.edu/content/drc/home/students/accommodations.html).

**Behavior:** Information on the University of Oklahoma’s policies toward student conduct can be found at [http://judicial.ou.edu/](http://judicial.ou.edu/).