Fall 2015

CHEM 2217

Sean P. Hickey
University of New Orleans

Course Syllabus
Organic Chemistry—CHEM 2217—601-604

Instructor: Sean P. Hickey **College:** University of New Orleans

Semester: Fall 2015 **Credit Hours:** 3

Class Time: Lecture—Tuesday/Thursday 6:00 - 7:15, CSB 103

Recitation Time:
601—Recitation—T 7:30 - 8:20, CSB 103, Tré Gildersleeve
602—Recitation—Th 5:00 - 5:50, CSB 103, Cammi LaRosee
603—Recitation—Th 5:00 - 5:50, CSB 103, Tré Gildersleeve
604—Recitation—Th 7:30 - 8:20, CSB 103, Tré Gildersleeve

Texts: Organic Chemistry by Solomons & Fryhle, 11th Ed.

Office: UNO CSB 112

Office Phone: 280-1273 (or email at sphickey@uno.edu)

Office Hours: TTh, 4-530; and by appointment

Prerequisite: Completion of General Chemistry II (CHEM 1018)

Class websites:
https://www.wileyplus.com/class/463090
https://itunes.apple.com/us/course/organic-chemistry-1-lecture/id561733804
https://www.facebook.com/Organic.Chem
https://www.facebook.com/UNO.Chemistry
http://www.facebook.com/sean.hickey
http://www.uno.edu/moodle/iTunesU.aspx
http://www.wiley.com/WileyCDA/Section/id-818107.html

Course Materials:

Organic Chemistry by Solomons & Fryhle, 11th Ed. (REQUIRED)

- Can be Volume I Binder-Ready Version (BRV), Student Study Guide and Solution Manual (SSG/SM), Course Pack, Molecular Model Kit and Wiley Plus Code
- Can be Volume I/II eBook, with SSG/SM, Study Guide (all access pack)
- Can be Hardback Book and separately purchased Wiley Plus Code
- Can be Wiley Plus Code with eBook
- There is a 2-week free trial period for Wiley Plus available
- Custom book can only be bought at bookstore or at Wiley website:
- http://www.wiley.com/WileyCDA/Section/id-818107.html

i>clicker 2 or Web Clicker (REQUIRED)

- http://www1.iclicker.com/
- http://www1.iclicker.com/purchase-response-devices

Organic Chemistry as a Second Language by David Klein, 3rd Edition (OPTIONAL)

Course Description:

This is the first semester of Organic Chemistry. This course completes most chemistry requirements for pre-professional degree programs. This course will cover the introduction of basic fundamental topics of organic chemistry. Specifically the structure-activity relationship and spectroscopy of organic functional groups will be investigated. Starting with simple organic models, we will cover structures of organic chemicals from basic connectivity to three- dimensional spatial alignments. Nomenclature and spectroscopy of the different groups will be covered along with reactivity of those groups.

Study Methods:

There will graded "problems of the day (POD)" taken via i>clicker many days in lecture. Clickers will be used each day for attendance and class feedback. Make sure to bring your clicker to class each day. i>clicker 2 is required to complete all questions (if you don't have an i>clicker 2, a code can be purchased to use your laptop/tablet/smartphone as an i>clicker 2). An original i>clicker can answer about 75-80% of the questions we will do. But some will require entry only available on i>clicker 2. Each chapter will have online homework that you will have to complete from the Wiley Plus website.

Additionally, a standing homework assignment will be to read the chapters before coming to lecture. By reading the chapter you will be better prepared to ask questions on the material and will be better able to understand the material being lectured.

Grading and Classroom Procedures:

The drop date is September 8th for nothing to appear on transcript and October 15th for W to appear. A missed test or assignment will be a zero unless there is an excused, documented absence. If you must miss test, attempt to let me know ahead of time. There will be no make-up tests except under extreme circumstances. Any makeup test must be arranged at least 48 hours before the test date except for extreme circumstances. Late homework will result in a lowering of grade. You are on your honor to do your own work. Cheating will result in a zero or failure for the term.

There will be five lecture tests and a final exam. The lowest test grade will be dropped. If you miss a test, that test will be your drop grade. The four exams that count will be worth a total of approx. 600 points. The final exam is cumulative and worth 250 points. Problems of the Day/Clicker Quizzes (30), online homework (80) and recitation (40) will be worth 150 points. Maximum points for the course is 1000 points.

Final grades will be based on total points earned during the semester:

A is 900-1000; B is 800-899; C is 700-799; D is 600-699: F is < 600

Students with a 95% OVERALL AVERAGE (this includes the top 4 test scores, POD, Wiley Plus, Attendance, Recitations, Clickers) AND at least an 85% on all tests with no missing tests will be exempt from taking the final exam.

Cell Phone Utilization Policy:

Cell Phone usage is prohibited in class. Cell phones must be silenced upon entering the classroom. Cell phones may not be used as calculators or for note taking. Any type of cell phone utilization can be cause for dismissal from class. Any exceptions to this regulation must be cleared with the instructor prior to the beginning of class.

Academic Integrity:

Students are expected to conduct themselves according to the principles of academic integrity as defined in the statement on Academic Dishonesty in the UNO Student Code of Conduct. Any student or group found to have committed an act of academic dishonesty shall have their case turned over to the Office of Student Accountability and Advocacy for disciplinary action, which may result in penalties as severe as indefinite suspension from the University. Academic dishonesty includes, but is not limited to: cheating, plagiarism, fabrication, or misrepresentation, and being an accessory to an act of academic dishonesty. The Code is available online at http://www.uno.edu/~stlf/policy%20Manual/judicial_code_pt2.htm.

Accommodations for Students with Disabilities:

It is University policy to provide, on a flexible and individualized basis, reasonable accommodations to students who have disabilities that may affect their ability to participate in course activities or to meet course requirements. Students who seek accommodations for disabilities must contact the Office of Disability Services prior to discussing their individual needs for accommodation with their instructors.

Student Learning Outcomes:

After successful completion of this course, Students should:

1) Have a general understanding of Drawing, Naming, Identifying and Assigning Stereochemistry and the Conformational Analysis of Organic Structures; IR, NMR and MS; Substitution, Elimination and Addition Reactions and Mechanisms; Radical Reactions; Synthesis and Reactions of Alcohols and Ether; Basic Organic Oxidation-Reduction Reactions and Organometallic Compounds and Reactions.
2) Have a specific understanding of the following:
   - **a) Chapter 1**
     - i) Basic General Chemistry Principles that Apply to Organic Chemistry
     - ii) Drawing Organic Structures in Condensed and Bond Line Formulas
     - iii) Drawing Resonance Structures and Resonance Theory
     - iv) Hybridization of Organic Molecules
   - **b) Chapter 2**
     - i) Alkanes, Alkenes, Alkynes
     - ii) Identification of Functional Groups
     - iii) IR Spectroscopy and Identifying IR Spectra
   - **c) Chapter 3**
     - i) General Acid-Base Chemistry
     - ii) Using Curved Arrows to Understand Mechanisms
     - iii) Determining Acid-Base Strength by pKa and Other Factors

d) Chapter 4
- i) Basic Nomenclature of Organic Molecules
- ii) Conformational Analysis of Noncyclic Structures (Newman Conformations)
- iii) Stability, Ring Strain and Cis-Trans Isomerism of Cyclic Structures
- iv) Index of Hydrogen Deficiency

e) Chapter 5
- i) Basic Properties of Chirality and Stereochemistry
- ii) CIP System of Naming Stereochemistry (R,S)
- iii) Properties of Enantiomers and Identifying Enantiomers and Diastereomers
- iv) Stereoisomerism of Cyclic Compounds

f) Chapter 6
- i) S_N1, S_N2, E1 and E2 Energy Diagrams, Reactions and Mechanisms
- ii) Factors that Affect the Rates of S_N1, S_N2, E1 and E2

g) Chapter 7
- i) E/Z Nomenclature and Stability of Alkenes
- ii) Synthesis of Alkenes via Eliminations, and Dehydration Reactions
- iii) Synthesis of Alkynes and Reactions of Terminal Alkynes
- iv) Hydrogenation of Alkenes and Alkynes

h) Chapter 8
- i) Properties of Electrophilic Addition Reactions
- ii) Electrophilic Addition Reactions and Mechanisms

i) Chapter 9
- i) Introduction, Theory of NMR Spectroscopy
- ii) Interpreting and Drawing NMR Spectra
- iii) Introduction, Theory of Mass Spectrometry
- iv) Interpreting and Drawing Mass Spectra

j) Chapter 10
- i) Properties of Radical Reactions
- ii) Radical Halogenation of Alkane Reactions and Mechanisms
- iii) Allylic Radical Reactions and Mechanisms
- iv) Anti-Markovnikov Addition of HBr Reaction and Mechanism

k) Chapter 11
- i) Nomenclature, Structure and Properties of Alcohols
- ii) Synthesis of Alcohols from Alkene
- iii) Reactions of Alcohols
- iv) Converting Alcohols to Good Leaving Groups
- v) Synthesis and Reactions of Ethers
- vi) Synthesis and Reactions of Epoxides

l) Chapter 12
- i) Properties of Carbonyls and Oxidation-Reduction Reactions
- ii) Reduction of Carbonyls to Alcohol Reactions and Mechanisms
- iii) Oxidation of Alcohol Reactions and Mechanisms
- iv) Formation and Reactions of Organometallic Reagents
- v) Formation and Reactions of Protecting Groups

Attendance Policy:

Attendance is mandatory and will be taken daily in this course. An excessive number of absences will be reported to the Provost's Office and may result in termination of federal financial aid as well as negatively effect the student's grade.

Any student with excessive absences will forfeit all bonus points and may not be eligible to benefit from any curve for the class.

Schedule:

Week #1, August	**20**	**Introduction; Syllabus; Wiley Plus; Chapter 1**
Week #2, August	**25, 27**	**Chapters 1 and 2**
Week #3, September	**1**	**Chapters 2 and 3**
Week #3, September	**3**	**Test #1 (Chapters 1, 2, 3)**
Week #4, September	**8**	**Chapter 4**
Week #4, September	**10**	**Chapter 4**
Week #5, September	**15, 17**	**Chapter 5**
Week #6, September	**22**	**Test #2 (Chapters 4 and 5)**
Week #6, September	**24**	**Chapter 6**
Week #7, September	**29**	**Chapter 6**
Week #7, October	**1**	**Chapter 7**
Week #8, October	**6, 8**	**Chapters 7 and 8**
Week #9, October	**13**	**Test #3 (Chapters 6, 7 and 8)**
Week #9, October	**15**	**FALL BREAK HOLIDAY**
Week #10, October	**20, 22**	**Chapters 8 and 9**
Week #11, October	**27, 29**	**Chapters 9 and 10**
Week #12, November	**3**	**Chapter 10**
Week #12, November	**5**	**Test #4 (Chapters 8, 9 and 10)**
Week #13, November	**10**	**Chapter 11**
Week #13, November	**12**	**Chapter 11**
Week #14, November	**17, 19**	**Chapters 12**
Week #15, November	**24**	**Test #5 (Chapters 11 and 12)**
Week #15, November	**26**	**THANKSGIVING HOLIDAY**
Week #16, December	**1**	**Final Review**
Week #16, December	**3**	**Final Exam, (5:30 - 7:30 PM)**