SYLLABUS
CHEMISTRY 345-004, INTERMEDIATE ORGANIC CHEMISTRY, SPRING 2017
LECTURE SECTION 4 (BURKE)

This course will be taught as a mix of traditional lecture, Socratic inquiry, and problem solving formats. Unifying concepts of organic chemistry and deductive reasoning skills applicable to problem solving will be pursued. **Understanding and mastery (how and why) will be emphasized; this course is best approached NOT as an exercise in memorization of facts, but as an exploration of unifying themes and development of problem solving skills**. **The facts become more meaningful and easier to remember this way.**

Lecture: Tuesday and Thursday, 9:30-10:45 am, room 1361 Chemistry Bldg.

Instructors: Professor *Steve Burke*, Room 8132 Shain Tower, Chemistry; phone 262-4941; email: burke@chem.wisc.edu
Andrew Maza, TA, Discussion Section 463, 12:05 F, room B387; email: amaza@chem.wisc.edu
Andrew Maza, TA, Discussion Sections 461, 1:20 F, room B379; e-mail: amaza@chem.wisc.edu

Optional Weekly Problem Sessions (Burke): Wednesdays, 5:30-7:00, Room 1315 [Much better than individual office appointments]
Office Hours: (Burke), by email appointment, Room 8132 Shain Tower, Chemistry.
TA Office Hours: Andrew Maza, 4:35-6:30. RF in Room B317 ; all Organic TAs office hours listed here:
https://www.chem.wisc.edu/deptfiles/OrgLab/handouts/Organic_TA_Office_Hours_Spring_2017.pdf
Web Materials: All handouts, notes, lecture videos, exams, keys etc. will be posted on Learn@UW
Required Course Materials (you probably already have these from CHEM 343):
Text: "Organic Chemistry, 6th Edition," by Loudon and Parise, ISBN 978-1-936221-34-9
Study Guide: "Study Guide and Solutions Manual to Accompany Organic Chemistry, 5th Edition," by Loudon and Stowell (accompanies Loudon text), ISBN 978-1-936221-86-8.
Molecular Models: HGS "C" Set, Darling, Proteus Framework, or equivalent. [On sale in Chem. Bldg. Lobby by 1351 during first two weeks of class.] *MODELS ARE ALLOWED (and sometimes needed) IN EXAMS.*
****Sapling On-line Problem and Review Enrollment is Required****
****Piazza On-line Question and Answer Forum in Learn@UW****
Exam Schedule: Exam 1, Wednesday, February 22, 7:30-9:15 pm (*room 1315*)
Exam 2, Wednesday, March 29, 7:30-9:15 pm (*room 1315*)
Exam 3, Wednesday, April 26, 7:30-9:15 pm (*1315*)
Final Exam, Monday, May 8, 2:45 pm-4:45 pm (*room to be announced*)
Grading: 10% (50 points) Discussion evaluation (best 5 of 6 quizzes)
10% (50 points, all or nothing) Sapling Problem Assignment On-Time Completion
60% (300 points) Exams [3 @ 100 points each]
20% (100 points) Final (cumulative)
Grade based on total earned points out of 500.
Re-grading: Unfairly graded or wrongly totaled exams can be turned in for re-grading by stating in a few words on the exam cover why a re-grade is justified. These will be carefully considered, **but will not be negotiated at the front of the classroom**.

LECTURE AND EXAM SCHEDULE
1/17, 1/19: Chapter 15, Dienes, Resonance, and Aromaticity
1/24, 1/26, 1/31: Chapter 16, Chemistry of Benzene and Derivatives
2/2, 2/7: Chapter 17, Allylic and Benzylic Reactivity
2/9, 2/14, 2/16: Chapter 18, Chemistry of Aryl and Vinylic Halides, Phenols, and Transition Metal Catalysis
Wed 2/22: EXAM I (Chapters 15, 16, 17, 18)
2/21, 2/23, 2/28: Chapter 19, Aldehyde and Ketone Carbonyl Addition Reactions
3/2, 3/7: Chapter 20, Chemistry of Carboxylic Acids
3/9, 3/14: Chapter 21, Chemistry of Carboxylic Acid Derivatives
3/21, 3/23: Spring Break
Wed 3/29: EXAM II (Chapters 19, 20, 21)
3/28, 3/30, 4/4, 4/6: Chapter 22, Chemistry of Enolates, Enols, and α,β-Unsaturated Carbonyls
4/11: Chapter 23, Chemistry of Amines
4/13, 4/18: Chapter 24, Carbohydrates
Skip Chapter 25
4/20, 4/25: Chapter 26, Aromatic Heterocycles
Wed 4/26: EXAM III (Chapters 22, 23. 24, 26)
4/27, 5/2: Chapter 27, Amino Acids, Peptides, and Proteins
5/4: Chapter 28, Pericyclic Reactions
Mon 5/8: FINAL EXAM, 2:45-4:45 pm (comprehensive)

KEYS TO SUCCESS

- Keep up with reading and practice problem working. Don't let things slide. Study organic chemistry every day.
- Study text intently--it is your **primary source** of factual information (it is your map on this journey, Burke is your guide).
- Practice, Practice, Practice--working problems develops and tests your knowledge and prepares you for exams.
- Make a stack of note cards as we go through the semester. You can study them in the many short periods of time each day that might otherwise be wasted. Many more new reactions will be covered in CHEM 345 than in CHEM 343.
- **Use the Sapling program to full advantage**. This is not available to many other 345 students.
- Form study groups, and participate. Rarely is everyone in a group stumped, whereas individuals often are.
- Most of your learning needs to occur outside of class—developing your problem solving (O-Chem test taking) skills requires practice.

READING ASSIGNMENTS and RECOMMENDED END OF CHAPTER PROBLEMS [Do all of problems in chapter body as you read assigned sections, to test your understanding before going further]

Chapter 15 Reading: Whole chapter. **Recommended problems:** 42, 43, 44, 46, 47, 48, 57, 61, 62, 65, 68, 69, 71, 73, 79, 80, 84

Chapter 16 Reading: 16.1-16.6. You can skip 16.2. **Recommended problems:** 35-37, 39-41, 43, 44, 45, 46, 47, 53, 54, 58, 61, 63, 67

Chapter 17 Reading: Whole chapter. **Recommended Problems:** 22, 23, 24, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 46, 49, 56

Chapter 18 Reading: Skip 18.6C,D. **Recommended Problems:** 46, 47, 49, 50, 52, 53, 54, 56, 57, 58, 62, 67, 69, 70, 74, 76, 78, 83, 84, 92

Chapter 19 Reading: Skip 19.15. **The next four chapters build on the concepts introduced here; this is a really key chapter to master before we move on. **Recommended Problems:** 40, 41, 42, 44, 45, 46, 47, 48, 50, 51, 52, 53, 54, 55, 56, 63, 64

Chapter 20 Reading: Whole chapter. **Recommended Problems:** 27, 28, 29, 31, 32, 33, 34, 37, 38, 39, 42, 46, 48, 49, 50, 52, 59, 60

Chapter 21 Reading: Skip 21.3, 21.12. **Recommended Problems:** 33, 34, 35, 38, 40, 44, 48, 49, 53, 54, 55, 56, 57, 58

Chapter 22 Reading: Skip 22.7. **Recommended Problems**: 55, 56, 58, 60, 62, 64, 66, 69, 70, 73, 74, 77, 78, 82, 83, 84, 87, 88, 90, 91, 92

Chapter 23 Reading: Whole chapter. **Recommended Problems:** 44, 45, 46, 50, 52, 53, 55, 59, 61, 65, 66, 68, 71, 74, 75, 78, 79, 80, 81

Chapter 24 Reading: Skip 24.10. **Recommended Problems:** 34, 39, 43, 44, 47, 51, 58, 60, 62

Skip Chapter 25

Chapter 26 Reading: Skip 26.5, 26.6. **Recommended Problems:** 27, 29, 32, 34, 36, 40, 46, 50

Chapter 27 Reading: Skip 27.8, 27.9. **Recommended Problems:** 43, 44, 56, 61, 62, 68, 74, 78, 80

Chapter 28 Reading: Skip 28.5, 28.6. **Recommended Problems:** 29, 30, 31, 33, 34, 35, 38, 41, 42, 44, 46, 49

Sapling On-line Homework Site: Almost all of you should already be registered for Sapling. Below are the direct link for our course and a link with instructions for registering.

University of Wisconsin, Madison - CHEM 345-004H - Spring17 - BURKE

http://bit.do/studentinstructions