

## Course Outline for Chemistry 8C

Spring 2023

- Instructor:** Professor Christopher Switzer  
e-mail: switzer@ucr.edu
- Lecture Times:** MWF 10:00-10:50 PM, Life Sciences 1500
- Office Hours:** W 1:00-2:00 PM, F 2:00-3:00 PM, Chemical Sciences 436
- Textbook:** Organic Chemistry, Solomons, Fryhle and Snyder, Twelfth Edition, Wiley.
- Homework Problems.** A list of suggested homework problems for each chapter will be posted under Course Materials on iLearn.

Approx. Course Schedule:	<u>Week</u>	<u>Chapters</u>	<u>Week</u>	<u>Chapters</u>
	1	18	6	20/review
	2	19	7	<b>MT2/23</b>
	3	18/19 review	8	23/24
	4	<b>MT1/22</b>	9	24/25
	5	22/20	10	25/review
			finals week	<b>final exam</b>

**Examinations:** There are no make up examinations. It is expected that students will take exams at the time scheduled. If you miss an exam, a zero score will result unless the exam is missed due to illness as verified by a doctor's note.

**Cheating:** Any form of cheating is unacceptable. A student suspected of cheating will be reported to the UCR Student Conduct and Academic Integrity Programs Office. Students found responsible for any form of cheating will fail the course.

**Grading:** Grades are based on performance on the two midterms and final. The class average on the midterms and final defines the middle of a B- grade unless the class average on a midterm is less than 40 (or less than 80 on the final). If the class average on a midterm is less than 40 (or less than 80 on the final), then the average on which the curve is based will be set as 40 (or 80). The class standard deviation when added to, or subtracted from, the average defines the remainder of the grading scale. Average + standard deviation = the middle of an A- grade. Average - standard deviation = middle of a C- grade. Average - (2 x standard deviation) = middle of a D- grade. All the "+" and "-" grades are defined by equal division of the points in between. Note: there is no plan to drop a midterm score.

**Regrades:** Exams may be submitted for regrading only if the exam was taken only using an unerasable black or blue ink pen, and has not been altered in any way after it was returned (except the face page as indicated below). Exams are returned in lab; they are yours to keep upon return. Any exam to be regraded must be given directly to Dr. Switzer (not to your TA). You only need to indicate on the exam front page the question or questions that you want to have regraded. Regrades for a given exam are accepted until the date of subsequent exam (i.e., midterm 1 regrades are accepted until the date of midterm 2; midterm 2 regrades are accepted until the final). You or your TA cannot modify these policies.

### Point breakdown and exam dates:

Midterm 1	100 pts, Mon, April 24th, Chapters 18, 19
Midterm 2	100 pts, Mon, May 15th, Chapters 20, 22 (skip 21)
<u>Final Exam</u>	<u>200 pts, Thurs, June 15th, 8:00-11:00AM, Chapters 18-25 (omitting Chapter 21)</u>
Total	400 pts

# Brief Contents

8A

- 1 The Basics** Bonding and Molecular Structure 1
- 2 Families of Carbon Compounds** Functional Groups, Intermolecular Forces, and Infrared (IR) Spectroscopy 55
- 3 Acids and Bases** An Introduction to Organic Reactions and Their Mechanisms 104
- 4 Nomenclature and Conformations of Alkanes and Cycloalkanes** 144
- 5 Stereochemistry** Chiral Molecules 193
- 6 Nucleophilic Reactions** Properties and Substitution Reactions of Alkyl Halides 240
- 7 Alkenes and Alkynes I** Properties and Synthesis. Elimination Reactions of Alkyl Halides 282
- 8 Alkenes and Alkynes II** Addition Reactions 337

8B

- 9 Nuclear Magnetic Resonance and Mass Spectrometry** Tools for Structure Determination 395
- 10 Radical Reactions** 448
- 11 Alcohols and Ethers** Synthesis and Reactions 489
- 12 Alcohols from Carbonyl Compounds** Oxidation–Reduction and Organometallic Compounds 534
- 13 Conjugated Unsaturated Systems** 572
- 14 Aromatic Compounds** 617
- 15 Reactions of Aromatic Compounds** 660
- 16 Aldehydes and Ketones** Nucleophilic Addition to the Carbonyl Group 711
- 17 Carboxylic Acids and Their Derivatives** Nucleophilic Addition–Elimination at the Acyl Carbon 761

8C

- 18 Reactions at the  $\alpha$  Carbon of Carbonyl Compounds** Enols and Enolates 811
- 19 Condensation and Conjugate Addition Reactions of Carbonyl Compounds** More Chemistry of Enolates 849
- 20 Amines** 890
- 21 Transition Metal Complexes** Promoters of Key Bond-Forming Reactions 938
- 22 Carbohydrates** 965
- 23 Lipids** 1011
- 24 Amino Acids and Proteins** 1045
- 25 Nucleic Acids and Protein Synthesis** 1090

GLOSSARY GL-1

INDEX I-1

ANSWERS TO SELECTED PROBLEMS can be found at [www.wiley.com/college/solomons](http://www.wiley.com/college/solomons)