
General Comments

In Chemistry 142 we continue to explore the basic principles of Organic Chemistry with a greater emphasis on the chemical reactivity of various functional groups (i.e. more similar to the last 1/3 of the first semester course). You will also learn about the analytical instrumentation used on a daily basis by chemists to determine the structure and composition of organic molecules.

By now you have probably noticed that Organic Chemistry involves many new concepts and a very large number of reaction mechanisms. However, as the course progresses and your organic “intuition” develops, you will discover that a relatively small subset of first principles nicely tie together the seemingly vast amount of information contained in the text. A special effort made at the beginning of the course to review and master important concepts from the first semester will pay off as the course progresses. Topics that are especially important to review include:

Arrow Pushing: Arrow pushing may be the most important tactic of organic chemistry because it allows you to show a pictorial representation of a reaction mechanism. When

-

Tentative Outline of Course

Chapter 15. Infrared Spectroscopy and Mass Spectrometry
Sections 15.1–15.7, 15.8–15.9, 15.16

Chapter 16. Using Nuclear Magnetic Resonance Spectroscopy to Deduce Structure
Sections 16.1–16.12

Chapter 13. Alcohols
Sections 13.2–13.4; 13.6; 13.9–13.10

Chapter 14. Ethers and Epoxides (very brief!)
Sections 14.1; 14.3; 14.5; 14.8; 14.10; 14.12

Chapter 17. Conjugated Pi Systems and the Diels–Alder Reaction
Sections 17.1; 17.2; 17.4; 17.7

Chapter 18. Aromatic Compounds
Sections: 18.1–18.3; selected portions of 18.4 and 18.5, 18.6

Chapter 19. Aromatic Substitution Reactions
All Sections except 19.13–19.15

Chapter 20. Aldehydes and Ketones
All Sections except 20.2; 20.8; and 20.13

Chapter 21. Carboxylic Acids and Derivatives
All Sections except 20.2; 20.8; and 20.13

CHEM 142 Lab Schedule – Spring 2015

Date	Expt #	Title	Page
1/26–1/29		CHECK IN	3–8
2/2–2/5	1	Reduction of Vanillin	9
2/9–2/12	2	Oxidation	12
2/16–2/19		NO LAB/PRESIDENT'S DAY HOLIDAY	
2/23–2/26	3	Generation and Reaction of an Organometallic Compound Part 1	15
3/2–3/5		NO LAB/ SPRING RECESS	
3/9–3/12	4	Generation and Reaction of an Organometallic Compound Part 2	15
3/16–3/19	5	Diels-Alder Cycloaddition	18
3/23–3/26	6	Nitration of Methyl Benzoate	21
3/30–4/2	7	The Wittig Reaction	24
4/6–4/9	8	Production of Biodiesel	27
4/13–4/16	9	Synthesis of Aspirin	29
4/20–4/23	10	Solventless Aldol and CHECKOUT	31

On-line resources that may be useful to you

<http://bcs.whfreeman.com/organic6e>

Publisher's website has:
Online quizzes
Animated Reaction Mechanisms
Animated Orbital Images
Nomenclature Exercises
Videos of lectures given by author of our textbook

<http://www.aceorganicchem.com/resources.html>

"Organic Chemistry Best of the Web 2010" – compilation of websites

<http://www.chemtube3d.com/Main%20Page.html>

High quality videos of organic reaction mechanisms.

<http://ochem.jsd.claremont.edu/intro.htm>

On-line flash cards
Video Tutorials
Practice Problems