

Course Schedule

DATE	LECTURE ¹	LABORATORY ²
M 8/31	Course Introduction Ch. 1: Structure and Bonding in Organic Molecules	
Tu 9/1	Ch. 1 cont'd	HO ³ : ECC Safety Rules for Chemistry Laboratories HO: The Laboratory Notebook
W 9/2	Ch. 2: Structure and Reactivity (Alkanes)	
Th 9/3	Ch. 2 cont'd	Introduction to the Laboratory (pp. 2-5; Tech. 1, 2) HO: Guidelines for Making a Graph Laboratory Check-In
M 9/7	Holiday	
Tu 9/8		Exp. 1, 1A–1D: Solubility ^I Tech. 4, 5, 10 p. 14: prob. 1–3
W 9/9	Ch. 2 cont'd	
Th 9/10		Exp 2, 2B: Crystallization ^I Tech. 6.2, 6.3, 7.4, 8.3, 11 (omit 11.4) p. 697: prob. 1, 7
M 9/14	Ch. 3: Reactions of Alkanes	
Tu 9/15	QUIZ 1 (50 pts; Chapters 1, 2)	Exp 2, 2C: Mixture Melting Points ^I Tech. 9 (omit 9.6, 9.9) p. 669: prob. 4
W 9/16	Ch. 3 cont'd	
Th 9/17		Exp 3, 3D: Extraction ^I (omit optional exercise) Tech. 12.1–12.4, 12.8–12.11 p. 722: prob. 2, 9
M 9/21	Ch. 4: Cyclic Alkanes	
Tu 9/22	EXAM 1 (150 points; Chapters 1–3)	Extraction cont'd

¹ Chapter and sections numbers are from the lecture textbook.

² Page, technique, and experiment numbers are from the lab textbook.

³ HO = Handout.

^I Denotes an investigative type experiment. ^P Denotes a preparative type experiment. Those not marked are exercises (not experiments) with report forms to complete; they should not be written up in your lab notebook.

W 9/23	Ch. 4 cont'd	
Th 9/24	Ch. 4 cont'd Ch. 5: Stereoisomers HO: Classification of Isomers	HO: Column Chromatography: Separation of Dyes ^I Tech. 19 (omit 19.8, 19.15, 19.16) prob. on HO and p. 818: prob. 1, 3, 5
M 9/28	Ch. 5 cont'd	
Tu 9/29	Ch. 5 cont'd HO: Relationships Between Conformations of Disubstituted Cyclohexanes	HO: Stereochemistry Exercise I: Molecular Models
W 9/30	Ch. 5 cont'd	
Th 10/1	Ch. 6: Properties and Reactions of Haloalkanes	HO: Stereochemistry Exercise II: Molecular Models
M 10/5	QUIZ 2 (50 pts; Chapters 4, 5) Ch. 6 cont'd	
Tu 10/6		Essay: pp. 385-389 Exp. 47, 47A, 47C: Paper and Thin Layer Chromatography of Food Colors ^I Tech. 20 (omit 20.3) p. 831: prob. 1, 4, 6
W 10/7	Ch. 6 cont'd	
Th 10/8	Ch. 7: Further Reactions of Haloalkanes	Chromatography cont'd
M 10/12	EXAM 2 (150 pts; Chapters 4–6)	
Tu 10/13		Exp 5: Simple and Fractional Distillation ^I Tech. 3, 6.1, 7.1A, 13.1, 13.2, 14.1–14.3, 15.1–15.6 p. 741: prob. 1, 4 p. 763: prob. 2
W 10/14	Ch. 7 cont'd	
Th 10/15	Ch. 7 cont'd	Distillation (Analysis by GC) cont'd Tech. 22.1–22.9, 22.11 p. 856: prob. 1, 2, 4
M 10/19	Ch. 8: Hydroxy Functional Group (Alcohols)	
Tu 10/20		Essay: pp. 240-244 Exp. 30, 30A: Chromic Acid Oxidation of Alcohols ^I p. 253: prob. 1
W 10/21	Ch. 8 cont'd	
Th 10/22		Exp. 36, 36A: Grignard Synthesis of Triphenyl- methanol ^P Tech. 7.2, 7.3, 7.5, 7.6 p. 314: prob. 1, 5d

M 10/26	Ch. 8 cont'd Ch. 9: Further Reactions of Alcohols and the Chemistry of Ethers	
Tu 10/27	QUIZ 3 (50 pts; Chapters 7, 8)	Grignard Synthesis cont'd
W 10/28	Ch. 9 cont'd	
Th 10/29		Exp. 23, 23A: Synthesis of <i>n</i> -Butyl Bromide from <i>n</i> -Butyl Alcohol ^P p. 193: prob. 3, 4
M 11/2	Ch. 9 cont'd	
Tu 11/3	Ch. 11 (omit sec. 4–8): Alkenes	Synthesis of <i>n</i> -Butyl Bromide cont'd
W 11/4	Ch. 11 cont'd Ch. 12: Reactions of Alkenes	
Th 11/5		Exp. 24: Dehydration of an Alcohol: Preparation of 4-Methylcyclohexene ^P p. 197: prob. 1, 2a-d
M 11/9	Ch. 12 cont'd	
Tu 11/10	EXAM 3 (150 pts; Chapters 7–9, 11)	Dehydration of an Alcohol (Analysis by GC) cont'd
W 11/11	Ch. 12 cont'd	
Th 11/12	Ch. 12 cont'd Spectroscopy: Nuclear Magnetic Resonance Spectroscopy (NMR), Infrared Spectroscopy (IR), Ultraviolet Spectroscopy (UV), Mass Spectrometry (MS): NMR: Ch. 10, Ch. 11 (sec. 4) Tech. 26 in lab text Tech. 27 in lab text	
M 11/16	NMR cont'd	
Tu 11/17	NMR cont'd	HO: NMR Spectroscopy Exercise p. 942: prob. 5–10
W 11/18	NMR cont'd IR: Ch. 11 (sec. 5) [and sec. 8] HO: Examples of IR Spectra Tech. 25 (Intro and part B) in lab text	
Th 11/19	IR cont'd	NMR Spectroscopy Exercise cont'd IR Spectrum of 4-methylcyclohexene Tech. 25.1, 25.2, 25.7, 25.8 p. 908: prob. 2cehijkl

M 11/23	UV: Ch. 14 (sec. 11) HO: Examples of UV Spectra MS: Ch. 11 (sections 6 and 7) HO: Examples of Mass Spectra Additional Text Sections on Spectroscopy: 13.3, 15.4, 17.3, 19.3, 21.3	
Tu 11/24		Spectral Interpretation Computer Lab
W 11/25	QUIZ 4 (50 pts; Ch. 12, NMR & IR Spec) MS cont'd	
Th 11/26	Holiday	
M 11/30	Ch. 13: Alkynes	
Tu 12/1		Essay: pp. 101-104 Exp. 58, 58A: Isolation of Essential Oils by Steam Distillation ^I Tech. 18.1, 18.3
W 12/2	Ch. 13 cont'd	
Th 12/3	Ch. 13 cont'd Ch. 14: Delocalized Pi Systems (omit sections 4 and 10)	Steam Distillation (IR Spectrum) cont'd
M 12/7	EXAM 4 (150 pts; all Spectroscopy, Ch. 12, 13)	
Tu 12/8		Essay: pp. 78-81 Exp. 11, 11A: Isolation of Caffeine from Tea Leaves ^I (omit sublimation and derivative) Tech. 8.1
W 12/9	Ch. 14 cont'd	
Th 12/10	Ch. 14 cont'd	Essay: pp. 412-417 Exp. 49: The Diels-Alder Reaction of Cyclopentadiene with Maleic Anhydride ^P
M 12/14	Ch. 14 cont'd	
Tu 12/15		Laboratory Check-Out
W 12/16	Review	
Th 12/17	FINAL EXAM (250 pts; Comprehensive)	