

## Schedule: Which Lecture Videos and Practice-Set Videos Go with Each Test

Chemistry 350, Jasperse, Spring 2016 Wade 7 (43 class days, 39 lectures)		Reading Assignment
Video	Topic	
<b>TEST 1 LECTURES. Alcohol Chemistry. Synthesis, Reactions, Retrosynthesis</b>		
1	Intro; Structure, Nomenclature, Properties, Weak Acidity of Alcohols	10.1-10.6
2	Synthesis of Alcohols; Organometallic Reactions.	10.7-10.9
3	Synthesis of Alcohols; Organometallic Reactions.	10.7-10.9
4	Side Reactions; Reduction of Carbonyl Compounds	10.10-10.11
5	Oxidation of Alcohols	11.1-11.3
6	Conversion of Alcohols to Tosylates or Halides; Uses of Tosylates and Halides	11.5-11.9
7	Miscellaneous; Chemical Tests; Multistep Synthesis	11.10, 11.14
8	Retrosynthetic Analysis	
9	Catchup, Multistep Synthesis Problems	Catchup
10	Review for Test 1 <b>Additional Practice Sets/Videos:</b> Retrosynthesis Problems; Acid-Base Practice; Mechanisms Problems <b>Test 1 Practice Tests:</b> V1, V2, V3, V4	---
<b>TEST 2 LECTURES. NMR and Spectroscopy</b>		
11	<sup>1</sup> H NMR Overview: Chemical Shift, Integration, and Splitting; <sup>1</sup> H NMR Problem Solving	13.5-8
12	<sup>1</sup> H-NMR Interpretation and Problem Solving	13.5-8
13	Overlap, Symmetry, Integration, Splitting, Spectrum Prediction	13.5-8
14	More Problem Solving; Complex Splitting; Stereochemical Nonequivalence of Protons	13.9-10
15	<sup>13</sup> C NMR; Infrared Spectroscopy	5.11-5.16
16	Spectroscopy Catchup, Integrated Problems <b>Additional Practice Sets/Videos:</b> Jasperse NMR Problems (>40 pages) <b>Test 2 Practice Tests:</b> V1, V2, V3, V4	catchup
<b>TEST 3 LECTURES. Carbonyls Chemistry; Enolates.</b>		
17	Ketones/Aldehydes. Nomenclature, Properties, Intro.	18.1-7
18	Synthesis of Ketones/Aldehydes.	18.7-11
19	Reactions of Ketones/Aldehydes	18.12-19
20	Reactions of Ketones/Aldehydes	18.20-21
21	Catchup; Enols and Enolates Intro. Acid/Base Considerations; Proton as Electrophile	22.1-2, 22.15
22	Enols and Enolates Intro. Acid/Base Considerations; Proton as Electrophile	22.1-2, 22.15
23	Halogenation; Alkylation; Double Activation; Ester Hydrolysis; Decarboxylation	22.3, 5, 15-17
24	The Aldol Reaction (Aldehyde/Ketone as Electrophile)	22.7-11
25	Claisen Reaction (Ester as Electrophile)	22.12-17
26	Catchup	
27	The Wittig Reaction and Alkene Synthesis; Catchup	18.13
28	Catchup, Integrated Practice Problems. <b>Additional Practice Sets/Videos:</b> Mechanism Practice (Many); Retrosynthesis Practice <b>Test 3 Practice Tests:</b> V1, V2, V3	Catchup
<b>TEST 4 LECTURES</b>		
29	Amines. Intro, Nomenclature, Properties; Basicity of Amines; Structural Factors; Salts	19.1-7
30	Reactions of Amines	19.10-13, 17-18
31	Diazonium Chemistry; Amine Synthesis by Reductive Amination of Carbonyls	19.17-19
32	More Synthesis of Amines	19.19
33	Carboxylic Acids: Nomenclature; Properties; *ACIDITY*; Salts; Soap; SYNTHESIS	20.1-5
34	Acid Synthesis; Reactions	20.8-11
35	Reactions of Acids: Nucleophilic Acyl Substitution; Carboxylic Acid Derivatives	20.13-15; 21.1-3
36	Interconversions Among Acids and Derivatives; Synthesis and Mechanism; Catchup	21.5-7
37	Interconversions Among Acids and Derivatives; Synthesis and Mechanism; Catchup	21.5-7
38	Practice Problems	-
39	Significant Special Topics; Preview of ACS Final Exam <b>Additional Practice Sets/Videos:</b> Acid-Base Practice (Easy); Acid-Base Practice (Less Easy); Mechanisms, Retrosynthesis + Synthesis Design <b>Test 4 Practice Tests:</b> V1, V2, V3	Practice
Final Exam, Cumulative.		Final Exam