

Organic Chemistry II READING, using NDSU Textbook

These are reading sections taken from the Organic Chemistry Textbook used at NDSU (McMurry, 7th edition), that are appropriate for the topics covered by Jasperse in Organic Chemistry II at MSUM.

Chemistry 342, Jasperse, Summer 2009 (38 days)		Reading Assignment
Date	Topic	
June 15	No Class	
June 16	Intro; Conjugation, Molecular Orbitals, Dienes, Allylic Cations, Additions to Dienes	14.1-2
June 17	More allylic cations/radicals/conjugation and Applications; Diels-Alder Reaction	14.3-4
June 18	Diels-Alder Reaction, Aromaticity	14.4-5
June 19	Aromaticity; Huckel's Rule, Complex Aromaticity, Application, Nomenclature Skip: 14.6-10	15.1-8
June 22	Electrophilic Aromatic Substitution: Intro, Mechanisms	16.1-5
June 23	Reactions in Detail: Halogenation, Nitration, Sulfonation, Alkylation, Acylation	16.1-5
June 24	Catchup; Addition to Disubstituted Benzenes; Synthetic Applications	16.6,9-11
June 25	Synthetic Applications; Practice	Practice
TEST 1		
July 29	¹ H NMR Overview: Chemical Shift, Integration, and Splitting; ¹ H NMR Problem Solving	13.1-3, 8-11
July 30	¹ H NMR Problem Solving	13.8-11
Aug 3	¹ H NMR Problem Solving	13.8-11
Aug 4	¹³ C NMR	13.4-5
Aug 5	Infrared Spectroscopy	12.6-8
Aug 6	Integrated Practice Problems	Practice
TEST 2		
July 10	Ketones/Aldehydes. Nomenclature, Properties, Intro, Synthesis	19.1-2
July 13	Synthesis and Reactions of Ketones/Aldehydes.	19.2, 4-7
July 14	Test #2 Covering Chapters 17 and 10.	Test 2
July 15	Reactions of Ketones/Aldehydes	19.4-10
July 16	Reactions of Ketones/Aldehydes	19.4-10
July 17	Enols and Enolates Intro. Acid/Base Considerations; Proton as Electrophile	22.1, 5-6
July 20	Halogenation; Alkylation; Ester Hydrolysis; Decarboxylation	22.5,7
July 21	The Aldol Reaction (Aldehyde/Ketone as Electrophile)	23.1-6
July 22	Claisen Reaction (Ester as Electrophile);	23.7-9
July 23	The Wittig Reaction; Catchup.	19.11
July 24	Catchup, Integrated Practice Problems. Skip: 22.4, 23.10-13	Catchup
TEST 3		
July 27	Amines, Nomenclature, Properties, Basicity	24.1-4
July 28	Amines, Basicity	24.3-4
July 30	Reactions of Amines	24.7-8
July 31	Synthesis of Amines Skip: 24.5, 9-10	24.6
Aug 3	Carboxylic Acid Nomenclature and Acidity	20.1,2,4
Aug 4	Reactions and Synthesis of Acids	20.5, 21.1-7
Aug 5	Interconversions Among Acids and Derivatives	21.1-7
Aug 6	Practice Problems Skip: 20:3, 9-10, ch 21: 8-10	-
TEST 4		

Organic Chemistry II PROBLEMS, using NDSU Textbook

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Chapter	Recommended Book Problems
14	2, 3, 5-9, 22, 24, 26 (major), 32, 33 (ignore stereo of phenyl group), 34, 36 (predict major), 37, 39
15	1, 2a,c,d, 3, 8, 9, 12, 18b-d,f, 19c-e, 37a
16	1, 6, 9, 10, 13, 15, 23, 24b, 29, 30a,c-f, 31a,b, 32, 33a,c,d, 34b-d, 35 (just rank), 37, 46, 48-50, 51a,d, 52b,d, 53a, 54a
13 NMR	3, 6 (assume decoupled C-13 spectra for all C-13 problems), 7, 14, 16a-e, 17, 19, 21, 33, 38, 40-44, 50-52, 54, 56-58
12 IR	7a,c, 7a,c
19	1a,b,d-f, 2a,b,e,f, 3a,b, 4, 5, 10 (ethylamine part), 11, 14, 16a-e, 30a-h, 32a,c-e, 34a-e,h, 37, 39, 40
22	1, 7a-c, 10, 13, 16a,c,f, 20, 21, 22a,b, 23a,b,d, 26, 27, 28a-c, 35
23	1, 3, 5, 8, 11, 14, 28a-c, 29, 35, 37, 39 (major)
24	2, 4, 5 (stronger), 6, 8, 11, 18c, 30, 31, 32a-d, 35a-c, 40a-c,e,f
20	1a-d, 2a,b,d, 3, 9, 10, 21b,d,f,g, 21a-d, 25b,c, 26a,c, 27a-c, 28, 39, 43a-b
21	1c,f, 2a, 3, 4, 5, 7, 9, 11, 12, 14, 15, 32d,g, 33d, 36a,c-e,g,h, 37-39 (parts e-g for each)

What's Covered in Organic I versus Organic II differs between NDSU and MSUM

The following are reading sections and problems associated with **one chapter that was covered at MSUM in Organic I but is covered at NDSU in Organic II**. Thus, if you are an NDSU student taking Organic II at MSUM, you will end up never getting this material in either semester.

Topics center around the chemistry of alcohols, and include Grignard reactions and the use of organometallics; some oxidation/reduction chemistry; synthetic design strategy; and retrosynthesis.

The reading sections and suggested problems are listed for the NDSU textbook McMurry 7th Edition.

Topic	Reading Assignment
Structure, Nomenclature, Properties, Acidity of Alcohols, Synthesis Review	17.1-3
Synthesis of Alcohols; Grignard Reactions	10.7, 17.5
Synthesis of Alcohols; Grignard Reactions	17.5
Grignard Reactions; Reduction Reactions	17.5, 17.4
Oxidation of Alcohols	17.6
Halogenation of Alcohols	10.6, 17.6

Chapter 17 2, 3, 5, 6-10, 13 (or H₂SO₄, heat), 14, 15, 25a-e, 30, 33, 34, 36, 40, 41

If you were interested in trying to study some of this material on your own, here are the **Jasperse class notes** from Organic Chemistry I at MSUM:

<http://www.mnstate.edu/jasperse/Chem350/Handouts/Notes%20Test%204%20Ch%2010-11.pdf>

Here are roughly similar **notes with answers** included:

[http://www.mnstate.edu/jasperse/Chem350/Handouts/Ch%2010%20Answers%20to%20Handouts%20\(all\).pdf](http://www.mnstate.edu/jasperse/Chem350/Handouts/Ch%2010%20Answers%20to%20Handouts%20(all).pdf)

[http://www.mnstate.edu/jasperse/Chem350/Handouts/Ch%2011%20Answers%20to%20Handouts%20\(all\).pdf](http://www.mnstate.edu/jasperse/Chem350/Handouts/Ch%2011%20Answers%20to%20Handouts%20(all).pdf)

Here is **a quiz on the Grignard reactions**:

<http://www.mnstate.edu/jasperse/Chem350/Quizzes/Quiz%2010-350.pdf>

Here is a link to **practice tests** from Jasperse's Organic Chemistry I (MSUM) course; Test 4 is the test dealing with the material covered in MSUM Organic I but NDSU Organic II. .

<http://www.mnstate.edu/jasperse/Chem350/Practice%20Tests/Chem350PracticeTests.html>