Meetings: MWF, 1-2pm
Location: Faraday Hall 143
Instructor: Dr. Douglas A. Klumpp
Office: FR 356
Office Hours: TuTr, 1-2 pm
and by appointment.
dklumpp@niu.edu
Textbooks: Organic Chemistry, 10th Ed
by Carey and Giuliano
McGrawHill Publishers
Study Guide to Accompany Organic Chemistry
By Francis Carey and Robert Atkins

Grades:
The course grade will be assigned based on your point totals from the four exams and final. No exams may be dropped, and no make up exams will be given. If an exam or quiz is missed, a score of zero will be assigned. NOTE: by enrolling in this class, you are agreeing to take the exams on the scheduled dates. The point total is as follows:

- Exams (four at 100 pts each) 400 points
- Final exam (200 pts) 200 Points
- Total Points 600 Points

Approximate Scale:

Average grade: A (100-85%), B (84-65%), C (64-50%), D (49-40%)
<table>
<thead>
<tr>
<th>Lecture Dates</th>
<th>Chapters</th>
<th>Subject</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/18-25</td>
<td>13</td>
<td>Electrophilic aromatic substitution, mechanisms and reactions (nitration, sulfonation, halogenation, alkylation, acylation); substituent effects; nucleophilic aromatic substitution</td>
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<tr>
<td>1/27-2/3</td>
<td>15</td>
<td>Organometallic reagents and reactions (Grignard and organolithiums with carbonyls, acetylides, Simmons-Smith, and organocopper)</td>
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<tr>
<td>2/10</td>
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<td>EXAM 1</td>
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<tr>
<td>2/6-2/15</td>
<td>16/23</td>
<td>Alcohol structure; preparation of alcohols (organometallic routes, reduction of carbonyl compounds, ring opening of epoxides); the chemistry of alcohols (formation of ethers, esters, and carbonyl compounds); phenols</td>
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<tr>
<td>2/17-24</td>
<td>16</td>
<td>Ethers (preparation and reactions), epoxides (preparation and reactions), and sulfides (preparation and reactions)</td>
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<tr>
<td>3/3</td>
<td></td>
<td>EXAM 2</td>
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<tr>
<td>2/27-3/8</td>
<td>18</td>
<td>Aldehydes and Ketones: reactions with weaker nucleophiles (alcohols, cyanide, amines, ylids)</td>
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<tr>
<td>3/10-22</td>
<td>21</td>
<td>Enol and enolate chemistry; Aldol and related reactions; conjugate addition; ester enolates (Claisen Condensation, β-ketoesters, other reactions)</td>
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<td>3/12-3/19</td>
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<td>Spring Break</td>
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<td>3/31</td>
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<td>EXAM 3</td>
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<tr>
<td>3/27-4/3</td>
<td>22</td>
<td>Amine chemistry, preparations (Gabriel synthesis, reductive amination) and reactions (alkylation, Hofmann elimination, nitrosation, diazo salts)</td>
</tr>
<tr>
<td>4/5-10</td>
<td>19</td>
<td>Chemistry of carboxylic acids; structural effects on acidity; preparations (Grignard reaction, nitrile hydrolysis; reactions (ester formation and decarboxylation of β-keto-acids)</td>
</tr>
<tr>
<td>4/12-21</td>
<td>20</td>
<td>Chemistry of carboxylic acid derivatives and acyl transfer chemistry; substitution reactions of acid chlorides, esters, anhydrides, thioesters, and amides</td>
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<tr>
<td>4/28</td>
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<td>EXAM 4</td>
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<tr>
<td>4/24-26</td>
<td>23</td>
<td>Sugar chemistry</td>
</tr>
<tr>
<td>5/10</td>
<td>12 noon-1:50 pm</td>
<td>Final Exam</td>
</tr>
</tbody>
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Organic Chemistry
Carey and Giuliano, 10th Ed
Suggested Homework Problems:

Chap 13: 33; 49a,b,k; 40; 48
Chap 15: 22; 24a-d; 27a; 29
Chap 18: 27a-l; 32; 36a,b
Chap 16: 21; 23a,b,e; 20; 26a,f; 29c
Chap 17: 26a-j; 39; 29
Chap 21: 29b,d; 36a-f; 40a-d; 43; 52; 46a-d; 57a,b
Chap 22: 41a; 42a-b, g; 43a,b; 35a-h; 38a-d; 40a; 51
Chap 19: 20a,d; 15a,b,d; 25a,c; 24; 28
Chap 20: 31a-i; 32; 37a-d,f,g; 46a

Organic Chemistry
Carey and Giuliano, 9th Ed
Suggested Homework Problems:

Chap 12: 33; 34; 46a,b,k; 48; 54
Chap 14: 22a-g; 26; 27a; 28;
Chap 17: 26a-l; 31; 35a,b
Chap 15: 16; 19; 20; 24a,b,e; 26a,f,; 28c
Chap 16: 25a-j; 28; 36
Chap 20: 29b,d; 37a-f; 41a-d; 44; 45; 52a-d; 57a,b
Chap 21: 33a; 34a-b, g; 35a,b; 36a-h; 39a-d; 42a; 50
Chap 18: 16a,d; 17a,b,d; 21a,c; 25; 27
Chap 19: 29a-i; 30; 33a-d,f,g; 42a