Syllabus for Organic Chemistry CHEM 220, Summer 2017

**Important Notice Regarding O-Chem Lab:**
At Yale, O-Chem Lab is a separate course, with its own unique course summer, syllabus and cost. Please see summer session course, CHEM 222L, for more information.

**Lectures:**  M, T, W, T, F: 9:30-10:45 a.m.  
**Room:** 160 Sterling Chemistry Lab

**Discussion Sections:**  M, W, F: 11:00 a.m. - noon  
**Room:** 160 SCL  
*Subject to change to accommodate exam review sessions*

**Instructor:**  Session A: Christine DiMeglio, Ph.D., christine.dimeglio@yale.edu  
**Office:** 213 Sterling Chemistry Lab

**TAs:**  Julie Guthrie (julie.guthrie@yale.edu); Rob Brunstad (charles.brunstad@yale.edu)

**Required Materials:**  
B) Corresponding Solutions Manual  
The ninth edition just came out, but I recommend buying the 8th edition used on AMAZON! Cheaper! The books store also has about 30 copies.

**Suggested Materials:**  Organic molecular modeling kits at amazon.com for inexpensive options (by Mega Molecules as an example); *Organic Chemistry as a Second Language*; David Klein, ISBN-13: 978-1118010402

**Lecture Schedule**

<table>
<thead>
<tr>
<th>Date</th>
<th>Topics</th>
<th>Textbook Chapters</th>
</tr>
</thead>
</table>
| May 29***, 30 | Communicating as Chemists  
Review of General Chemistry Concepts:  
Lewis Structures, Electronegativity,  
Bond Polarity, Acids/Bases | 1, 2 (**double lecture, no discussion**)
| May 31     | Resonance  
Theories of Chemical Bonding |                  |
| June 1     | Alkanes, Cycloalkanes | 3                  |
| June 2     | Studying Chemical Reactions | 4A                |
| June 5     | Studying Chemical Reactions | 4B                |
| June 6     | Stereochemistry-Enantiomers | 5A                |
| June 7     | Stereochemistry-Diastereomers | 5B                |
| June 8     | **Exam 1: CH 1-5A** |                  |
| June 9     | Alkyl Halides: Properties | 6A                |
| June 12, 13| Alkyl Halides: Properties, Reactions Mechanisms | 6B, C             |
| June 14    | Alkenes: Structure, Properties, Preparation | 7A                |
| June 15, 16| Alkenes: Reactions | 8A, B              |
| June 19    | Alkenes: Reactions | 8C                |
| June 20    | **Exam 2: CH 5B -8B** |                  |
**June 21**  
Alkynes  

**June 22, 23**  
Alcohols: Structure, Properties, Preparation  
10A, B  

**June 26, 27**  
Alcohols: Reactions  
11A, B  

**June 28**  
Ethers, Epoxides  
Discussion section review  

**June 29**  
Exam 3 Comprehensive: CH8C-11 and 14  
And CH 1-8B  

**July 30**  
Exams Returned Review  

**Exam 1 (25%) and Exam 2 (25%)** will each be 1 hour in length, beginning at 9:30 a.m. on their scheduled lab day. The lowest of the first two exams may be dropped. **Exam 3 (40%) will be 2 hours long beginning at 9:30 am.**

**Letter Grades:**  
Exam 1 (25%) + Exam 2 (25%) + Exam 3 (40%) + Participation (10%)

Participation points are based on attendance and problem solving journal entries. During each lecture session, and occasionally as homework, students record problem solving efforts in a class journal, which are collected and evaluated to provide feedback.

**Example scoring**

<table>
<thead>
<tr>
<th>Exam 1</th>
<th>Exam 2</th>
<th>Exam 3</th>
<th>Attendance/Participation</th>
<th>Letter Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>85x0.3</td>
<td>85x0.3</td>
<td>85x0.3</td>
<td>100x0.1</td>
<td>86% B+</td>
</tr>
<tr>
<td>85x0.3</td>
<td>85x0.3</td>
<td>85x0.3</td>
<td>50x0.1</td>
<td>82% B-</td>
</tr>
<tr>
<td>85x0.3</td>
<td>85x0.3</td>
<td>85x0.3</td>
<td>0x0.1</td>
<td>77% C+</td>
</tr>
</tbody>
</table>

**After scale (as necessary)**

93+ = A  
89+ = A-  
86+ = B+  
83+ = B  
80+ = B-  
77+ = C+  
74+ = C

**Useful websites:**

- [http://www.chem.wisc.edu/areas/organic/index-chem.htm](http://www.chem.wisc.edu/areas/organic/index-chem.htm)  
- [http://www2.chemistry.msu.edu/faculty/reusch/VirtTxtJml/intro1.htm](http://www2.chemistry.msu.edu/faculty/reusch/VirtTxtJml/intro1.htm) (some practice problems with answers)  
- [http://www.departments.bucknell.edu/chemistry/courses/chem211/problem_sets/](http://www.departments.bucknell.edu/chemistry/courses/chem211/problem_sets/) (practice problems with answers for org. chem I)  
- [https://legacyweb.chemistry.ohio-state.edu/flashcards/](https://legacyweb.chemistry.ohio-state.edu/flashcards/) (organic chemistry flash cards)  
- [http://evans.harvard.edu/cgi-bin/problems/search2a_selectKeywords.cgi](http://evans.harvard.edu/cgi-bin/problems/search2a_selectKeywords.cgi) (challenging problems in organic chemistry)