Chemistry 220

Instructor: John Congleton
Section: 31987
Office Hours: MW 10:00-10:25 in Chem233, and T/R 7:15-7:50 in Chem115
Friday 1:30-3:30, electronic O.H.
E-mail jcongleton@occ.cccd.edu
WebSite http://faculty.orangecoastcollege.edu/jconglet/

Course Objectives
The Student Learning Outcomes for Chemistry 220 are:

1. Apply the principles of electron configurations, Lewis structural theory, VSEPR theory, molecular orbital theory, and valence bond theory to predict the structure, bonding, and three-dimensional shape of simple inorganic and organic species from the chemical formula.
2. Use IUPAC nomenclature rules to provide a systematic name for a chemical structure or a chemical structure from a systematic name for alkanes, alkyl halides, alkenes, alkynes, alcohols, and ethers.
3. Predict the products, including stereoisomers and regioisomers, and provide the appropriate reagents for common reactions including nucleophilic substitution, elimination, and for reactions of alkenes, alkynes, alcohols, ethers, epoxides, and dienes.
4. Generate a reaction mechanism that explains the regiochemistry and stereochemistry for reactions including nucleophilic substitution, elimination, alkene additions, alkyne additions, and free-radical halogenations.

Class Policies and Philosophy on Learning and Teaching

Students with Disabilities: A student with a verified disability may be entitled to appropriate academic accommodations. Please contact your instructor or the Disabled Students’ Center for further information.

Classroom Conduct and the Right to Education: All students have the right to fair and equal education without bias or discrimination. Inappropriate behavior towards other students or the instructor will not be tolerated. Please observe the following courtesy at all times:

- Please turn off your cell phones while in class (no text messaging either!)*.
- Do not use cameras to take pictures of overheads or to video the lectures.
- When your instructor is speaking, please refrain from talking to your neighbors--the noise is distracting and disruptive to your instructor and your classmates.
- Please do not gather your books in preparation for leaving the class until your instructor has concluded class--again the noise is distracting and disruptive to others.
- When working with other class members, please be encouraging, positive, and helpful. Be sensitive to the feelings of others. Please avoid criticism and teasing or joking that might be hurtful to others.

* Notify the instructor before class if you must leave your cell phone on.

Attendance and Dropping: Attendance is absolutely critical to understanding the material to be covered in chemistry. In addition, there will be in-class activities and participation in these is crucial to your grade. If you are absent, please obtain information about the class and any notes from another student. Missing four or more class hours may result in you being dropped from the class. It is your responsibility to formally withdraw from the class through Admissions and Records should you decide you no longer wish to be enrolled.
**Academic Honesty:** I fully support Orange Coast College's belief that academic honesty is a cornerstone of the educational community. To that end, I expect academic honesty of my students. Students who bring unauthorized material to a test or copy from another's test will receive a zero on that test. Removal of reserve materials from the LRC is considered an act of academic dishonesty. Doing your homework in groups is encouraged, however copying someone else's homework or allowing someone else to copy your homework is considered an act of academic dishonesty.

**Succeeding in Chemistry:** Chemistry is a subject that requires active learning to master. You must come to class and then apply the principles you have learned by working through many problems. Often, it will take multiple attempts at a problem to solve it. Remember, a good rule is to set aside twelve hours per week to do your homework assignments and to complete other study and learning tasks. **Do not allow yourself to fall behind in your work because catching up before a test is an essentially impossible in organic chemistry.**

It will help you understand the lectures if you come to class prepared- read the sections to be covered before you come to that lecture. I have assigned homework problems for you to do, but be aware that you may need to spend time solving extra problems to master certain topics. In summary, you should:

1. Read all material before coming to class.
2. Come to all classes.
3. Do not fall behind.
4. Complete all homework problems punctually.
5. Complete all handouts and review exercises.
7. Learn definitions and understand concepts.

**Getting Help:**
1. Tutoring is available.
2. Extra practice and review: Use the reviews and chapter tests at the end of each chapter for extra practice and review.
3. Study groups: Get together with other class members and form a study group which meets regularly to do homework and study.
4. Your instructor: E-mail and office hours.

**Class Meetings**
M, W 11:10AM-12:35 PM

**Required Materials:**
Organic Chemistry, L.G. Wade, Jr.
Solutions Manual to accompany text, by J. W. Simek
Molecular Model Set of your choice

**Optional Supplement**
Organic Chemistry as a Second Language, by David R. Klein

**Website**
Important information will be posted on the website for this class. If you do not have access to a computer at home, you can use the computer lab that is on campus to access the web-page.

**Prerequisite**
Chemistry 185 (second semester general chemistry) with grade of 'C' or better.

**Exams (93%)**
Three exams will be given during the semester and will account for 66% of your final grade. In addition, there will be a final exam at the end of the semester that will be worth 27% of your final grade. Please be aware of the following tentative exam dates. Mark them in your calendar, and be sure that you don't schedule any conflicting event. Exams may be given early to students if the circumstances warrant. Please see me at least one week before the scheduled exam date if you wish to take an exam early.
Homework, Worksheets, and In-Class Assignments (7 % of your grade)

*Homework:* Homework assignments will be collected in class at the announced times during the semester (usually Monday). Late homework is not accepted. To receive full credit you must clearly show your work. You will receive no credit for homework if it is not absolutely clear that you did the work rather than copy it from the solution manual. **NO CREDIT IS GIVEN FOR ANSWERS ONLY.**

The completion of every homework assignment is essential to your success in this class. Chemistry is a "learn by doing" subject. Do not allow yourself to fall behind in your work. Catching up before a test is an extremely difficult task and is essentially impossible in organic chemistry.

**Grading**

1. Course grades will be determined by the percentage of total points earned on exams and assignments according to the following scale:

<table>
<thead>
<tr>
<th>Percentage</th>
<th>Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>90 - 100%</td>
<td>A</td>
</tr>
<tr>
<td>76 – 89%</td>
<td>B</td>
</tr>
<tr>
<td>63 – 75%</td>
<td>C</td>
</tr>
<tr>
<td>52 – 62%</td>
<td>D</td>
</tr>
<tr>
<td>0 – 51%</td>
<td>F</td>
</tr>
</tbody>
</table>

2. The instructor reserves the right to modify the grading schedule if necessary.

3. The student must receive a minimum of average exam score of 63% in order to receive a passing grade ("C" or higher) in the course.

**MAKE-UP EXAMINATIONS**

1. Students will only be permitted to make up one missed midterm examination.

2. No Exams will be dropped at the end of the semester.

3. Students will only be permitted to make up examinations missed in cases of doctor-verified illnesses on the day of the exam.

4. To be eligible to make up a missed examination, the student must complete all of the following requirements:
   - The student must notify Mr. Congleton prior to the start of the examination. Notification should either be in writing, by a telephone message on his voice mail (714-432-0202), or by e-mail (jcongleton@occ.cccd.edu).
   - The student must present written verification of the illness by a doctor.

5. The instructor reserves the right to substitute different examinations in place of the original exams when make-up exams are administered. No accounting will be made for differences in levels of difficulty between substitute and original exams.

6. Make-up exams will not be administered for exams missed because of exams in other classes.
## Tentative Schedule:

<table>
<thead>
<tr>
<th>Week</th>
<th>Date</th>
<th>Monday</th>
<th>Wednesday</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2/1</td>
<td>CH 01: Structure of Organic Molecules</td>
<td>2/3 CH 01: Structure of Organic Molecules CH 02: Bonding and Properties of Organic Molecules</td>
</tr>
<tr>
<td>2</td>
<td>2/8</td>
<td>CH 02: Bonding and Properties of Organic Molecules</td>
<td>2/10 CH 02: Bonding and Properties of Organic Molecules CH 03: Naming and Structure of Alkanes</td>
</tr>
<tr>
<td>3</td>
<td>2/15</td>
<td>SCHOOL HOLIDAY</td>
<td>2/17 CH 03: Naming and Structure of Alkanes</td>
</tr>
<tr>
<td>4</td>
<td>2/22</td>
<td>CH 03: Naming and Structure of Alkanes</td>
<td>2/24 CH 04: Study of Chemical Reactions</td>
</tr>
<tr>
<td>5</td>
<td>2/29</td>
<td><strong>Exam #1: CHAP 1, 2, 3</strong></td>
<td>3/2 CH 04: Study of Chemical Reactions</td>
</tr>
<tr>
<td>6</td>
<td>3/7</td>
<td>CH 05: Stereochemistry</td>
<td>3/9 CH 05: Stereochemistry CH 06: Nucleophilic Substitution and Elimination</td>
</tr>
<tr>
<td>7</td>
<td>3/14</td>
<td>CH 06: Nucleophilic Substitution and Elimination</td>
<td>3/16 CH 06: Nucleophilic Substitution and Elimination</td>
</tr>
<tr>
<td>8</td>
<td>3/21</td>
<td>CH 06: Nucleophilic Substitution and Elimination</td>
<td>3/23 CH: 13 Nuclear Magnetic Resonance</td>
</tr>
<tr>
<td></td>
<td>3/28</td>
<td><strong>SPRING BREAK</strong></td>
<td>4/1 <strong>SPRING BREAK</strong></td>
</tr>
<tr>
<td>9</td>
<td>4/4</td>
<td>CH 07: Structure and Synthesis of Alkenes</td>
<td>4/6 <strong>Exam #2: CHAP 4, 5, 6</strong></td>
</tr>
<tr>
<td>10</td>
<td>4/11</td>
<td>CH 08: Reactions of Alkenes</td>
<td>4/13 CH 08: Reactions of Alkenes</td>
</tr>
<tr>
<td>11</td>
<td>4/18</td>
<td>CH 08: Reactions of Alkenes</td>
<td>4/20 CH 09: Alkynes</td>
</tr>
<tr>
<td>12</td>
<td>4/25</td>
<td>CH 10: Structure and Synthesis of Alcohols</td>
<td>4/27 <strong>Exam # 3: CHAP 7, 8, 9</strong></td>
</tr>
<tr>
<td>13</td>
<td>5/2</td>
<td>CH 10: Structure and Synthesis of Alcohols</td>
<td>5/4 CH 10: Structure and Synthesis of Alcohols</td>
</tr>
<tr>
<td>15</td>
<td>5/16</td>
<td>CH 11: Reactions of Alcohols</td>
<td>5/28 CH 14: Ethers and Epoxides</td>
</tr>
<tr>
<td>16</td>
<td>5/23</td>
<td>Lab Written Final Exam</td>
<td>5/25 <strong>Lecture Final Exam (Cumulative)</strong></td>
</tr>
</tbody>
</table>