Syllabus  CHE 321 Organic Chemistry I  Fall 2013

Course Description
Organic Chemistry I is an introduction to the structure, reactivity, and properties of organic compounds is presented using modern views of chemical bonding. These fundamental ideas are applied to topics ranging from synthetic chemistry to complex functional structures such as lipid bilayers. This course has been designated as a High Demand/Controlled Access (HD/CA) course. Students registering for HD/CA courses for the first time will have priority to do so.

Prerequisites
A grade of C or better in General Chemistry II CHE 132 (or Honors Introductory Chemistry II CHE 142).

Staff and Contact Information
Professors Frank Fowler and Isaac Carrico will give the lectures and write the examinations. The workshops will be coordinated by Dr. Zachary Katsamanis and hosted by a TA group of talented chemistry graduate students assisted by a group of enthusiastic undergraduates who did well last year.

All questions about course business should be emailed to the class email account: CHE321@stonybrook.edu

Office Hours
Prof. Fowler – Tuesdays and Thursdays 1:10-2:10 pm, Chemistry 761.
Prof. Carrico – Mondays 11:00 am-1:00 pm, Chemistry 533.
Dr. Katsamanis – Wednesdays 11:00 am - 12:30 pm, Chemistry 513.

The TAs will host office hours in the Chemistry Learning Center (Chemistry 312) throughout the week (Office hours of TAs will be posted early in the semester.) We urge you to use these scheduled times to discuss the course material and work through problems with any CHE 321 staff member.

Course Materials
Textbook - Organic Chemistry, by Solomons and Fryhle. Either the 9th, 10th or 11th edition is acceptable.

“Clicker” – There will be regular quizzes during each lecture. We will use this personal response pad from Turning Technologies to record your in-class responses. It is your responsibility to acquire a clicker and to register it through Blackboard.

Molecular Model Kit (Recommended) – While it is not required to purchase models, they are very useful tools for visualizing molecular structure. Plus, you are allowed to bring them to any exam.

Lectures
There are two equivalent lectures three times a week:

Lecture 01 - Monday, Wednesday, Friday, 10:00-10:53 am, Javits 100
Lecture 02 - Monday, Wednesday, Friday, 3:30-4:23 pm, Javits 100

Workshops
Each student must attend a weekly workshop for which he/she has registered.

The workshops have two parts. The first part is an online quiz that can be found on the Blackboard site. It must be completed before the workshop meets (normally it is due at 5 am on Monday unless otherwise announced). More detailed instruction is posted on Blackboard and the course website.

The second part will be handed out at the recitation. Students will solve these problems in teams of four (4) and present answers on the board. The answers to Part II of the workshop must be handed in on an individual workshop form that must be downloaded and printed from the course web site in advance.
Attendance will be taken at the beginning of the recitation. Being late for more than ten (10) minutes will result in partial credit. More details will be provided at the first scheduled workshop.

No answer key for the workshops will be posted.

Learning Objectives in Organic Chemistry

Two fundamental learning objectives of organic chemistry are following:

1. The knowledge of organic chemistry. That is, what we currently know about the structure, dynamics and synthesis of different molecular entities and how this knowledge is interpreted in terms of modern theories. This is the stuff or facts of organic chemistry.

2. The application of the above knowledge to the solution of complex problems in organic chemistry. This is a more important learning objective because problem solving skills developed in organic chemistry can be transferred to problem solving in other fields such as medicine.

Two other learning objectives of organic chemistry introduced in the course but not explicitly evaluated on exams are the following:

3. The role organic chemistry has played in the development of our modern society.

4. The development of team skills to solve complex problems.

Exam questions for evaluating learning objectives 1 and 2.

Learning Objective 1. The knowledge of organic chemistry is often evaluated using multiple choice questions such as the following:

(a) Choose the order that has the following structures (compounds) correctly arranged with respect to some physical or chemical property such as boiling point, solubility, acidity, reactivity, etc.

(b) Choose the major product of the following reaction.

(c) Choose the reactant and reagents that would give the following compound.

(d) Choose the compound most consistent with the following data.

The knowledge of organic chemistry is also evaluated using short answer questions. An advantage of the short answer questions is that they require a written answer rather than a selection from a list. Some examples are the following:

(a) Give the major product of the following reaction.

(b) Give reactants and reagents for performing the following transformation.

(c) Give the correct name (structure) of the following structure (name).

Learning Objective 2. The application of the knowledge of organic chemistry to the solution of complex problems must be accomplished using written rather than multiple choice questions. Common questions are the following:

(a) Give the structures of compounds A-E consistent with the following observations.

(b) Using the curved arrow formalism show how the bond making and bond breaking occurs in the following transformation.

(c) Show how the following compound could be prepared from reactants and reagents containing four carbon atoms or less. This problem develops skills of working a problem backwards.
<table>
<thead>
<tr>
<th>Week of</th>
<th>Lecture</th>
<th>Workshop</th>
<th>Exam</th>
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</thead>
<tbody>
<tr>
<td>Aug. 26-30</td>
<td>Chapter 1-3</td>
<td>WS1 – Bonding and Structure</td>
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<tr>
<td>Sep. 2-6</td>
<td>No lecture on Monday, Sep. 3 (Labor Day).</td>
<td>No workshops this week (no classes on Sep. 3-4)</td>
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<tr>
<td>Sep. 9-13</td>
<td>Chapters 1-3</td>
<td>WS2 – Functional Groups and IR</td>
<td>Midterm exam 1 on Wednesday, Sep. 11 8:45-10:15 pm.</td>
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<td>Sep. 16-20</td>
<td>Chapters 4</td>
<td>WS3 – Acids and Bases</td>
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<tr>
<td>Sep. 23-27</td>
<td>Chapters 4-5</td>
<td>WS4 – Nomenclature and Conformations</td>
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<td>Sep. 30-Oct. 4</td>
<td>Chapters 5-6</td>
<td>WS5 – Stereochemistry</td>
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<td>Oct. 7-11</td>
<td>Chapters 6-7</td>
<td>WS6 – Alkyl Halides</td>
<td>Midterm exam 2 on Wednesday, Oct. 9 8:45-10:15 pm.</td>
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<td>Oct. 14-18</td>
<td>Chapter 7</td>
<td>WS7 – Alkenes and Alkynes 1</td>
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<td>Oct. 21-25</td>
<td>Chapter 8</td>
<td>WS8 – Alkenes and Alkynes 2</td>
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<td>Oct. 28-Nov. 1</td>
<td>Chapter 8-9</td>
<td>WS9 – Alkenes and Alkynes 3</td>
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<tr>
<td>Nov. 4-8</td>
<td>Chapter 9-10</td>
<td>WS10 – NMR</td>
<td>Midterm exam 3 on Wednesday, Nov. 6 8:45-10:15 pm.</td>
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<td>Nov. 11-15</td>
<td>Chapters 10-11</td>
<td>WS11 – Radicals</td>
<td></td>
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<td>Nov. 18-22</td>
<td>Chapter 11</td>
<td>WS12 – Alcohols</td>
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<td>Nov. 25-29</td>
<td>Chapters 11-12</td>
<td>WS13 – Alcohols from Carbonyl Compounds</td>
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<td>Dec. 2-6</td>
<td>Chapter 12</td>
<td>WS14 – Review</td>
<td>Final exam on Thursday, Dec. 12 8:00-10:30 am</td>
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<td>Dec. 10-14</td>
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Homework Assignments

Organic Chemistry is relentlessly cumulative. You will best survive this course if you regularly work problems. Some sources of problems are the textbook and old exams. The answers to old exams are posted on the Course Web site and the answers to the problems in the textbook can be found on the Class Blackboard site.

The Oserfolio

An exciting part of the CHE 321 course is active learning in a group environment. This means that as you progress through the course you will be constantly engaging the faculty, the TAs and most importantly your fellow students. Organic chemistry is all about problem solving and learning how to solve problems is our primary goal. Solving problems together is efficient, easier and simply more fun. Learning how to solve problems will help you immediately by preparing you for your exams, but also for the long term as you prepare for the problems you will need to solve in your chosen career.

The Oserfolio is designed to facilitate active learning in a group environment. It is a combination of Twitter, Tumblr and Facebook, combined with a quiz engine. Every student in the class will have their own personal Oserfolio page.

The Howler is our version of Twitter. You can post short messages to the class and attach a photo taken with your cell phone. You can use the Howler to post solutions to problems or to ask a question.

My Blog is for longer posts. If you have constructed a nice mechanism or synthesis, post in your Blog. Challenge your fellow students with your own problem. If you find a nice reference on the web, use My Blog to share it with the class.

The Quiz Taker is for the lecture quizzes. There will be a quiz of every lecture. The questions are not just multiple choice. Usually you will be asked for an answer and a short explanation. Some of these explanations may be shown in the lecture.

To find your personal Oserfolio page go to: https://organic.cc.stonybrook.edu/che321/oscerfolio/

To log-in you use your Net-ID plus a PIN number. You can find your PIN number by logging into Blackboard and going to the grade book. There you will find your four digit PIN number. Before each lecture Class Concepts and Problems will be posted on the Course Web site. You need to study the Class Concepts and work the Class Problems.

Quizzes

There will be regular daily quizzes in the lecture. We will use Turning Point clickers to record your in class responses. It is your responsibility to acquire a clicker and to register it through Blackboard. Your responses using your clicker will be used for your final grade calculation. It is an act of academic dishonesty if anyone else alters your academic record using your clicker.

Exams

There will be 3 midterm exams and one final exam (the dates are given in the schedule). Exams will be based on the content of lectures and the textbook chapters, and modeled after the problems at the end of the chapters, workshops, and quizzes. The questions will be a mix of multiple choice and short answers.

You will be allowed to bring to each midterm and final exam one 5” x 8” note card. All of the material on this card must be hand written. No Xeroxed cards will be allowed. The cards will be collected at the end of the exam. Any student who violates this privilege will be charged with academic dishonesty. Model sets will be allowed at the exams. Calculators will not be allowed.

If a student is unable to follow the above procedure of taking all of the exams then an alternate procedure will be used to evaluate a student's knowledge of the course material. There are no make-up exams for the three midterm exams. If one of the exams is missed a zero will be assigned. Exceptions to this policy will only be granted if the student immediately submits an acceptable excuse. If an excuse is accepted then the performance on the final will be substituted for the missed exam.
All students must take a final exam. If a student misses the final exam and has an acceptable excuse then the student will be allowed to take the make-up final exam. Any student missing the final exam must notify the instructor within 48 hours in order to be eligible for the make-up exam. The make-up final exam is all essay questions and, depending upon circumstances, may have oral questions. The make-up exam is primarily used to determine whether or not the student deserves the grade indicated by the three exams. The make-up final cannot be used to raise a student’s grade above that indicated by the midterm exams.

Although extraordinary care is taken to assure an error free process, errors may occur. For errors in exam grading, please file the regrade request form which can be obtained from the chemistry main office and email the class email account with the subject “Exam Error Check – Student’s Name and Course ID”. If you believe there are any errors in your record, email the class email account immediately. It is important that we have a written record of your request.

Grades

There are a total of 600 points possible in the course:

- Each midterm exam will be worth 100 points.
- The final exam will be worth 180 points.
- There will be many class quizzes. These can earn you 60 quiz points towards your final grade.
- There are 14 workshops: (5 points per workshop). These can earn you 60 workshop points. There will be no make-up quizzes or workshops.

Your grade will be determined from the 600 points you earned using the following scheme.

<table>
<thead>
<tr>
<th>Points</th>
<th>0</th>
<th>240</th>
<th>276</th>
<th>300</th>
<th>372</th>
<th>390</th>
<th>444</th>
<th>480</th>
<th>504</th>
<th>540</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grade</td>
<td>F</td>
<td>D</td>
<td>D+</td>
<td>C</td>
<td>C+</td>
<td>B-</td>
<td>B</td>
<td>B+</td>
<td>A-</td>
<td>A</td>
</tr>
</tbody>
</table>

For example, if you earned 301 points (>50%) your final grade would be a "C".

Extra Help

We provide considerable help to all students taking the course. You should attend all three lectures each week and your assigned workshop. You should also take full advantage of the office hours held in the Chemistry Learning center. Before each exam the special review sessions will be offered. If you take advantage of all of these opportunities and if you complete all the reading and homework assignments you should do fine on the exams. Nothing is a substitute for hard work.

Course Web Site

The course web site (http://www.ic.sunysb.edu/Class/orgchem/che321/) should be checked on a regular basis. Reading and homework assignments, course announcements, lecture notes and various other course materials can be found there. Old exams will be posted. Using the University ID number the student can print individual workshop forms. After each exam the exam results will be posted there, too.

Responsibilities

Each student is responsible for knowing all procedures and course expectations detailed in this document, in other handouts, on the course web site or those announced in lecture. Failure to attend a lecture is not an excuse for not knowing what was presented or announced. If you miss a lecture it is your responsibility to find out what transpired from a fellow student, or from your lecturer.

Academic Integrity

Each student must pursue his or her academic goals honestly and be personally accountable for all submitted work. Representing another person’s work as your own is always wrong. Faculty are required to report any suspected instances of academic dishonesty to the Academic Judiciary. Faculty in the Health Sciences Center (School of Health Technology & Management, Nursing, Social Welfare, Dental Medicine) and School of Medicine are required to follow their school-specific procedures. For more comprehensive information on academic integrity, including categories of academic dishonesty, please refer to the academic judiciary website at http://www.stonybrook.edu/uaa/academicjudiciary/
Each student must take each exam independently with no assistance from any other student and without the aid of any unauthorized materials or electronic devices. Each student is expected to read and follow the rules set in the exam-taking procedures under Exam Information (posted on the course website). Deviations from this standard will result in a report to the Academic Judiciary.

Each student must use their own clicker device. Submitting an answer from another student’s clicker device or allowing another student to use your clicker device is considered academic dishonesty.

**Disability Support Services (DSS)**

If you have a physical, psychological, medical or learning disability that may impact your course work, please contact Disability Support Services, ECC (Educational Communications Center) Building, room 128, (631) 632-6748. They will determine with you what accommodations, if any, are necessary and appropriate. All information and documentation is confidential.

Students who require assistance during emergency evacuation are encouraged to discuss their needs with their professors and Disability Support Services. For procedures and information go to the following website: [http://www.stonybrook.edu/ehs/fire/disabilities](http://www.stonybrook.edu/ehs/fire/disabilities)

**Critical Incident Management**

Stony Brook University expects students to respect the rights, privileges, and property of other people. Faculty are required to report to the Office of Judicial Affairs any disruptive behavior that interrupts their ability to teach, compromises the safety of the learning environment, or inhibits students’ ability to learn. Faculty in the HSC Schools and the School of Medicine are required to follow their school-specific procedures.