Team Tsoi - Organic Chemistry I
Syllabus for Yellow Team

**Course Information:**
- Class Time: M, F: 11:00 – 12:15 PM
- Class Location: A1680
- Lab Time: W: 2:00 – 4:45 PM
- Lab Location: Rm A1290

**Contact Information:**
- Instructor Name: Dr. Mai Yin Tsoi
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- Office phone: 678-407-5735
- Cell phone: 678-524-7992
- E-mail: mtsoi@ggc.usg.edu

**Why Organic Chemistry?**

“A scientific revolution is under way—a revolution that will give us safer and more effective medicines, cure our genetic diseases, increase our life span, and improve our quality of life. The revolution is based in biotechnology and the manipulation of the approximately 30,000 genes in the human body, but it relies on organic chemistry as the enabling science. It is our fundamental chemical understanding of biological processes at the molecular level that has made the revolution possible and that continues to drive it. Anyone who wants to understand or be part of the remarkable advances now occurring in medicine and the biological sciences must first understand organic chemistry.” *John McMurray, your course text author.*

**Course Description.** Organic Chemistry I is the first semester of a two semester classroom and laboratory sequence. The course focus is the fundamental principles, nomenclature, reactions and their mechanisms, preparative techniques, and spectroscopic tools of organic chemistry. Specific emphasis is on topics that support the GGC Biology and GGC Cell Biology and Biotechnology Program Outcome Goals. In addition, topics are chosen to satisfy the general ACS guidelines for introductory organic chemistry.

**Course prerequisite/corequisite:** Students must pass CHEM 1212-1212L (Principles of Chemistry II) with a grade of C or better, or receive official transcript credit of C or better for the same.

**Course Outcome Goals for CHEM 2211/2211L and CHEM 2212/2212L.** Students who have successfully completed the two semester organic chemistry sequence will:

1. Understand and apply principles of chemistry, math, and information technology to the study of the organic chemistry.
2. Understand the bonding, stereochemistry, and 3-dimensional arrangement of atoms in molecules, their resulting influence on molecular properties, and apply them to determine why and how molecules react.
3. Understand and apply spectroscopy to provide evidence for the structure and reactions of molecules.
4. Understand and apply the four general kinds of organic reactions (addition, elimination, substitution, rearrangement) and two general mechanisms (polar, radical) of how organic reactions occur.
5. Understand and apply techniques to synthesize organic molecules.
6. Understand, describe, and apply the fundamental chemistry; to include nomenclature, reactions, preparative synthesis, and reaction mechanisms, of key organic functional groups:
a. Alkanes  
b. Alkenes  
c. Alkynes  
d. Aromatic compounds, aromaticity, and in particular benzene.  
e. Alkyl Halides  
f. Compounds with sp³-hybridized oxygen and their sulfur analogs:  
   i. Alcohols.  
   ii. Phenols.  
   iii. Thiols.  
   iv. Ethers.  
   v. Sulfides.  
g. Carboxyl compounds, to include a thorough understanding of:  
   i. Nucleophilic addition reactions.  
   ii. Nucleophilic acyl substitution reactions.  
   iii. Carboxyl α-substitution reactions.  
   iv. Carboxyl condensation reactions.  
h. Amines  

7. Understand and apply concepts of organic chemistry to the structures, functions, reactions, mechanisms, and synthesis of biomolecules to include:  
b. Amino Acid Metabolism.  
c. Carbohydrates.  
d. Carbohydrate Metabolism.  
e. Lipids and Their Metabolism.  
f. Nucleic Acids and Their Metabolism.  

8. Effectively and clearly communicate scientific information in written and oral form.  
9. Use library and Internet resources to gather, organize, and understand scientific information.  
10. Collect, present, and analyze scientific data gathered through experiment.  
11. Understand and apply standard microscale laboratory equipment and techniques.  
12. Understand and apply fundamental organic chemistry characterization techniques.  
14. Perform a series of experiments, analyze data, and present results for a series of organic chemistry techniques and reactions.  
15. Conduct organic qualitative analysis.  

**Required Text and Supplies**  
- Organic Chemistry Molecular Model Kit.  
- Lab notebook comprised of “carbonless” duplicate pages.  
- Safety goggles/glasses.
**Grading Policy:** Quizzes and exams are designed to gauge student understanding of lesson/laboratory objectives and course outcome goals. General letter grade categories are defined in the table below.

<table>
<thead>
<tr>
<th>Grade</th>
<th>Percent</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>≥ 90</td>
<td>Exceptionally good performance, demonstrating a superior understanding of the lesson objectives and course goals, a foundation of extensive knowledge, and a skillful use of concepts and/or materials.</td>
</tr>
<tr>
<td>B</td>
<td>≥ 80</td>
<td>Good performance, demonstrating capacity to use the appropriate concepts, a good understanding of the lesson objectives and course goals, and an ability to handle problems and materials encountered in the subject.</td>
</tr>
<tr>
<td>C</td>
<td>≥ 70</td>
<td>Adequate performance, demonstrating an adequate understanding of the lesson objectives and course goals, an ability to handle relatively simple problems, and adequate preparation for moving on to more advanced work in the field.</td>
</tr>
<tr>
<td>D</td>
<td>≥ 60</td>
<td>Minimally acceptable performance, demonstrating at least partial familiarity with the lesson objectives and course goals and some capacity to deal with relatively simple problems, but also demonstrating deficiencies serious enough to make it inadvisable to proceed further in the field without additional work.</td>
</tr>
<tr>
<td>F</td>
<td>&lt; 60</td>
<td>Failed. This grade signifies that the student failed to attain the minimally acceptable familiarity of the lesson objectives and course goals must repeat the subject to receive credit.</td>
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**Grading Basis:**

1. **Classroom course (CHEM 2211).** The assessment plan for the lecture course is summarized in the table below. The instructor grade of 100 points is determined by the instructor (class participation, attendance, special assignments, etc). Chapter quizzes are 15 minute quizzes focused on one or two chapters. These quizzes will average one (1) per week. The midterm exam will cover the material in the first half of the course. The final exam is comprehensive. Graded events are a combination of definition, multiple choice, matching, short answer, sketches, diagrams, reactions, mechanisms, synthesis, and long answer. Complexity ranges from simple recitation of key word definitions to synthesis of information from multiple lessons/chapters to creatively solve novel problems.

<table>
<thead>
<tr>
<th>Class Graded Events</th>
<th>Per semester</th>
<th>Number</th>
<th>Points</th>
<th>Total Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Instructor</td>
<td>1</td>
<td>50</td>
<td>50</td>
<td></td>
</tr>
<tr>
<td>Chapter Quizzes</td>
<td>11 (best 10)</td>
<td>50</td>
<td>500</td>
<td></td>
</tr>
<tr>
<td>Midterm Exam</td>
<td>1</td>
<td>200</td>
<td>200</td>
<td></td>
</tr>
<tr>
<td>Final Exam</td>
<td>1</td>
<td>250</td>
<td>250</td>
<td></td>
</tr>
<tr>
<td>Total Points</td>
<td></td>
<td></td>
<td>1000</td>
<td></td>
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</table>
2. Laboratory course (CHEM 2211L). Students will complete 7 graded experiments. Each experiment is 2 lab periods for a total of 6 hours. Each experiment begins with an in class quiz worth 10 points. Students will submit an individual, written report for each experiment that is worth 40 points. There is no separate final exam for the lab.

<table>
<thead>
<tr>
<th>Lab Graded Events</th>
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</thead>
<tbody>
<tr>
<td>Per semester</td>
</tr>
<tr>
<td>Instructor Points</td>
</tr>
<tr>
<td>Quiz</td>
</tr>
<tr>
<td>Reports</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Total Points</td>
</tr>
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</table>

**Academic Enhancement Center**
The Academic Enhancement Center provides free drop-in tutoring for GGC students. Tutoring is available in many subjects including reading college texts, writing assignments, grammar focus, research and citation, college algebra, calculus, chemistry, and physics. The Academic Enhancement Center is located on the 2nd floor of building B in B 2400 and B 2450. The hours for the AEC can be found in Jovo (jovo.ggc.usg.edu) under the Support tab.

**College Policies:**

**Health and Safety Policy:**

Certain laboratories include use of strong acids, solvents and preservatives. Any pregnant women, hypersensitive individuals, or immunocompromised would report their condition to the instructor and to their physician, preferably before contact with the materials (see lab exercises). Additional instructions for lab will be presented during the first lab. Students are required to follow all instructions. Students failing to conform to lab rules and safety precautions will be first warned by removal from the lab. On second offense students will be removed from both lecture and lab.

**Americans with Disabilities Act Statement**

If you are a student who is disabled as defined under the Americans with Disabilities Act and require assistance or support services, Please seek assistance through the Center for Disability Services. A CDS Counselor will coordinate those services.

**Equal Opportunity Statement**

No person shall, on the grounds of race, color, sex, religion, creed, national origin, age or disability, be excluded from employment or participation in, be denied the benefits of, or otherwise be subjected to discrimination under any program or activity conducted by Georgia Gwinnett College.
Affirmative Action Statement

Georgia Gwinnett College adheres to affirmative action policies designed to promote diversity and equal opportunity for all faculty and students.

Academic Respect

The college exists to foster educational excellence. To this end, a classroom atmosphere that supports learning must be maintained. Students are expected to be active, attentive participants in the class. Students are also expected to abide by class policies and procedures and to treat faculty and other students in a professional, respectful manner. Students are expected to be familiar with the student conduct code published in the Student Handbook.

Academic Integrity

Student Honor Statement: We will not lie, steal, or cheat, nor tolerate the actions of those who do.

Georgia Gwinnett College students are expected to adhere to the highest standards of academic integrity and are expected to encourage others to do the same. Further, students are expected to take responsible action when there is reason to suspect dishonesty on the part of others.

Academic dishonesty carries severe penalties ranging from a grade of “0” on the affected assignment to dismissal from Georgia Gwinnett College. Each faculty member at Georgia Gwinnett College bears the responsibility for assigning penalties for cases of academic dishonesty. Students may appeal a penalty as outlined in the Student Handbook.

School of Science and Technology Policies:

Attendance Policy

You are expected to attend every class. Failure to attend class will affect your grade.

Special arrangements to take a regular quiz or midterm exam early must be made in advance in writing. Early quizzes or midterm exam are available only at the instructor’s discretion and only under extreme circumstances.

IF an emergency arises and you miss a quiz or midterm exam, then you MUST notify your instructor on the same DAY as the exam. Notification by email, text or phone message is acceptable. At the instructor’s discretion, make-up work may have a different format or different content from the regular assignment. Make-up work should be completed within two days of the original due date. Work missed due to unexcused absences will be given a grade of zero.

If you feel that you are unable to complete your courses due to illness or family emergency, contact the Registrar’s Office to attempt to withdraw from your courses without penalty.
Course Changes

This course syllabus provides a general plan for this course. The instructor reserves the right to make changes to the syllabus, including changes to assignments, projects, examinations, etc., in order to accommodate the needs of the class as a whole and fulfill the goals of the course.

Technology Covenant

Technology will be used to deliver content, provide resources, assess learning, and facilitate interaction, both within the classroom and in the larger learning community.

Course materials and Grading

You can expect to access the course materials and grades via WebCT and/or my wiki page. Students should check WebCT AND my wiki webpage regularly, as course changes will always be announced and recorded on the course WebCT site and my wiki webpage (http://wiki.ggc.usg.edu).

Communication

- I want to have face-to-face conversations with you, when possible. However, we may need to establish a time and place via email or by phone.
- I prefer email or text messaging for most situations. Monday through Friday expect me to respond within 24 hours. Communications received after 5:00 pm EST will be returned the next day. On the weekend or when I am away from campus (i.e., at a conference), my response is irregular.
- When corresponding by email, I will communicate with you using only your GGC email. You should check your GGC email every day. Emails from other domains (yahoo.com, gmail.com, hotmail.com, etc.) will not receive replies due to the Family Educational Rights and Privacy Act (FERPA).

Expectations of Students

- All students at GGC need to have access to a computer. If you do not have one, computer labs are available on campus.
- I expect students to access course or individual communications within 1-2 days excluding weekends.

Technology Changes

This covenant provides a general guideline for the course. I reserve the right to make periodic and/or necessary changes to the covenant, including: technology use and communication channels, in order to accommodate the needs of the class as a whole and fulfill the goals of the course.

Instructor/Course Policies

Contact lenses are not permitted in the organic lab. Students must wear long pants and closed toed shoes in the lab. Additional safety instructions for lab will be presented during the first lab meeting.
Students are required to follow all instructions. Students failing to conform to lab rules and safety precautions will be first warned by removal from the lab. On second offense students will be removed from both lecture and lab.

**Course Changes.** This course syllabus provides a general plan for this course. The professor reserves the right to make changes to the syllabus, including changes to assignments, projects, examinations, etc., in order to accommodate the needs of the class as a whole and fulfill the goals of the course. The course WebCT page and/or my wiki page contain all downloadable course documents. Students should check WebCT and/or my wiki page regularly, as course changes will always be announced and recorded on the course WebCT site and/or my wiki page.

**How to study.** You are expected to attend class and lab and participate in all activities. You will receive daily assignments to complete BEFORE lecture and AFTER lecture; these assignments will reinforce class learning and introduce you to the next lecture’s concepts. These assignments may include reading, writing, vocabulary and homework problems. You are expected to spend approximately 2 hours of study for every 1 hour of class time and 1 hour of study for every 3 hour lab period. You will have frequent graded events and you must keep up with the coursework to succeed in this class! The texts are very good and organized to help you remember key concepts, terminology and computational skills. Use it and its supplemental resources. The course is text based; graded events are text based.

- Read the textbook before coming to lecture
- Attend lectures and take clear notes. Ask lots of questions!
- After lecture, go over notes and textbook.
- Do the assigned problems as soon after lecture as possible, while material is still fresh.
- Ask for help from me or other students immediately if you are confused. Do not skip over problems that do not make sense.
- Only look at the solution manual AFTER completing all problems assigned for that lecture. Do not work problems with solution manual open.

**Important Dates.** See the Course Calendar on WebCT or my wiki page for the specific lesson, lab, and test schedule. Note that since the classroom and lab course are integrated, all course postings will be only on the CHEM2211 site, not on the CHEM2211L site.

Students who do not attend class during the first two weeks of the course will be reported for non-attendance.