4:121 Organic Chemistry I Fall, 2012

**Instructor:** Professor Chris Pigge (first half except for the first week)  Office: E557 CB
Professor Len MacGillivray (first week + second half)  Office: E555 CB

**Email:** chris-pigge@uiowa.edu or len-macgillivray@uiowa.edu (please include "4:121" in the subject line)

**Teaching Assistants:** TBA

**Web Site:** Online content for the course will be managed using the ICON (Iowa Courses Online) (http://icon.uiowa.edu/index.shtml). The site will be used to post copies of the slides used in class, as well as practice exams, exam keys, lists of suggested text problems, and occasional announcements.

**Textbook:** "Organic Chemistry", 3rd Edition, 2011, by J. G. Smith, (ISBN #978-0-07-337562-5; sometimes listed as 978-0-07-735472-5 or 978-0-07-740571-7). The 2nd edition of this book can also be used for this course. If you do plan to use the 2nd edition, the problem numbering is different, so lists of suggested problem numbers for both the 2nd and 3rd editions will be posted on the course web site. Most of the changes in the 3rd edition relative to the 2nd are cosmetic, but it would probably be somewhat more convenient to use the 3rd edition, especially if you plan to take 004:122.

**Optional Materials:** An optional study guide is available which contains answers to problems from the text (ISBN # 978-0-07-729665-0). Students are also advised to obtain a set of molecular models (e.g., ISBN #978-0-7167-4822-9 or 0-9648837-1-6). The models are very useful in helping to visualize the 3D-structures of organic compounds. However, such models cannot be used during exams. No web-based homework tools will be used in the course this semester.

**Course Notes:** Copies of the Powerpoint slides used in class will be made available on the course web site as PDF files. These notes are intended to be helpful - not to alleviate the need for attending class. Efforts will be made to post these notes at least three days before each class, if not sooner. They are most useful if you look them over before class, and add highlights or further notes during lecture.

**Lectures:**  
- Section A: MWF, 8:30-9:20 AM in C20 PC  
- Section B: MWF, 9:30-10:20 AM in W290 CB

The Wednesday 6:30-8:00 PM slot is reserved in your schedule primarily for the three mid-term exam dates - no other class meetings are planned for that time period. However, if a class has to be cancelled due to some unexpected circumstance, a make-up lecture could be scheduled during one of these available 6:30 PM time slots. Advance notice will be given in class if this becomes necessary. Also, please note that lectures will not be held on mornings of exam dates.

**Office Hours:** Monday 10:30-11:30, Tuesday 11:00-12:00, Wednesday, 10:30-11:30.

Prof. Pigge will have office hours from August 27 until October 17, and Prof. MacGillivray will have office hours the first week of class and from October 22 until the end of the semester. Expanded office hours (times to be announced) will be offered during exam weeks. Questions will be answered during class, immediately after class (if permitted by time between classes), during discussions, or during office hours. If a meeting is needed outside these times, please make an appointment. TAs will announce their office hours at your first discussion section meeting.
**Student Rights and Responsibilities:** For UI policies on academic misconduct, plagiarism and cheating, forgery, student complaints concerning faculty actions, and procedures for complaints, see the Student Academic Handbook: [http://www.clas.uiowa.edu/students/academic_handbook](http://www.clas.uiowa.edu/students/academic_handbook).

**Exams:** There will be three regular mid-term exams and a final. Each regular exam will be given on a Wednesday at 6:30 PM and will last 90 minutes. The dates of these exams are listed below. The final exam will be held during the UI-scheduled time (to be announced - TBA) and will last two hours. All regular exams will be held in MH AUD and C20 PC unless announced otherwise. Room assignments and any room changes will be announced in class before the exams. Rooms for finals have not yet been assigned. *All exams will be comprehensive, since understanding of material encountered later in the course will require application of concepts learned previously.* However, each *regular* exam will focus mainly on material covered since the previous exam. Announcements will be made in class regarding the material to be covered on each exam. Generally, topics to be covered on a mid-term exam will conclude with the material presented on the Friday before the exam. The Monday class before the exam will then be used as a review session, focusing mainly on discussion of the practice exam. Coverage of new material will resume on the Friday after the exam.

*All exams will be closed-book.* Prior to the start of each exam, all extraneous materials (e.g., models, notebooks, papers, backpacks, etc.) should be left at home or brought to the front of the room. Calculators will not be needed. *The use of any other electronic devices during exams is strictly prohibited.* The exams will include some short-answer type questions wherein you will need to write out answers and/or draw appropriate chemical structures in spaces provided on the exam itself. *All exams must be written in ink, but not red ink.* Exams written in pencil or in red or erasable ink, or those on which “white-out” has been used, cannot be regraded. Exams will be graded and returned (through the Chemistry Center, E225 CB) as soon as possible. Exam results and answers will be posted on the course web site via ICON.

**Exam Schedule:**

<table>
<thead>
<tr>
<th>Exam 1: Wednesday, Sept. 26 at 6:30 PM</th>
<th>Exam 3: Wednesday, Nov. 14 at 6:30 PM</th>
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<td>Exam 2: Wednesday, Oct. 17 at 6:30 PM</td>
<td>Final Exam: TBA</td>
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**Regrades:** Occasional grading mistakes are unavoidable in a class of this size. If you feel that a mistake has been made in grading your exam, you may turn it in at the Chemistry Center (E225 CB) for regrading. Write on the front of the exam the number of the question to be checked and an explanation (in one sentence or less) of what you believe was done incorrectly. *The entire exam will be reviewed by your instructor - if points were incorrectly awarded, the corresponding score change will also be made.* Regrade requests must be submitted within one week of the time the graded exams are made available to you (within 24 hours for the final exam). No regrades will be possible after that time. Please note that this procedure is intended to apply to situations where your answer matches the answer posted on the key, but was misgraded. If you disagree with an answer on the key, please discuss the issue with your instructor during office hours.

**Make-up Exams:** Permission to take a make-up exam will require a valid, written excuse (e.g., from student health services). If you miss a regular exam, you must take the make-up, which will be given on the Friday nine days after the regular exam at 5:30-7:00 PM in room W290 CB. You must register for the make-up (in the Chemistry Center) and provide an acceptable reason before the scheduled time of the regular exam that you miss. Under no circumstances will a make-up be given in place of a regular exam taken earlier. Please approach the instructor regarding such registration only if the Chemistry Center has rejected your request.
Course Grades: Grades will be based on performance on the three regular exams (300 points) and the final exam (150 points). Total points possible = 450. No scores will be dropped in calculating the final grade for the course, and everyone must take the final exam. No letter grades (A, B, C grades) will be assigned for midterm exams, but an approximate curve for each exam will be provided during class so that students will know where they stand grade-wise. At the end of the semester, exam scores of each student will be totaled, and the resulting sum will be fitted to a standard curve in order to assign final grades. The grading curve will be based strictly on the class performance of this semester. College guidelines will be followed as closely as possible in establishing the final grade distribution, and +/- grading will be used for final grades.

Drop-Add Slips: Drop/add signatures for this course must be obtained from staff in the Chemistry Center (E225 CB), not from your instructor. Please note that the deadline this semester for undergraduate students to drop a course is Monday, October 29. The last day to drop without receiving a “W” is Friday, August 31.

Discussion Sections: There will be 16 discussion sections per week conducted by chemistry TAs. Times and places are listed on ISIS. Since 004:121 is only a three-credit course, attendance at these sessions is not required, however, they are intended for your benefit. These are essentially "help sessions" that provide opportunities to ask questions about lecture material, problems from the text, practice exam questions, etc. in a smaller group setting. You may attend more than one if you like, although section 016 is open only to students taking the course as part of the honors program (i.e., students registered for that section). Discussion sessions will begin on Monday, August 27.

Other Course Information: Inquiries about exam times and places, times and places of discussion sessions, TA office hours, etc. should be taken to the Chemistry Center (E225 CB; 335-1341). This course is being offered by the College of Liberal Arts and Sciences. Thus, class policies on matters such as requirements, grading, and sanctions for academic dishonesty are governed by the College. These policies are summarized on the last page of this syllabus and can be found at: http://www.clas.uiowa.edu/faculty/teaching/policies.shtml. Students wishing to add or drop this course after the official deadline must receive the approval of the Dean of the College of Liberal Arts and Sciences. Details of the University policy on cross-college enrollments may be found at: http://www.uiowa.edu/~provost/deos/crossenroll.doc.

Public health authorities recommend that people with flu-like illnesses stay home and not return to public spaces until 24 hours after they have no fever. In order to prevent the spread of disease, please do not come to class, meet with other groups of students, attend office hours, or contact offices in person while you are ill with a fever.

Special Needs: The instructors need to hear from anyone who has a disability that may require some modification of seating or other class requirements so that appropriate arrangements may be made. Students who require alternative testing arrangements should see Jessica Alberhasky in the Chemistry Center (E225 CB, 5-1341) to schedule their exams. The Student Disability Services (SDS) office is located in 3101 Burge Hall (335-1462).

Supplemental Instruction (SI) is a series of free, informal, weekly group study sessions for students in Principles of Chemistry I & II, Principles of Biology I & II, and Organic Chemistry I. The SI program is supervised by staff in the Center for Diversity & Enrichment, and not by the Department of Chemistry. Attendance at SI sessions is voluntary and open to anyone enrolled in these courses. Sessions are facilitated by leaders who have demonstrated proficiency in the course content. SI is provided for all students who want to improve their understanding of course material, discuss important concepts, develop study strategies, and prepare for exams. The SI schedule for Chem. 121 is MWF.
10:30 – 11:20 am in 134 BHC. The schedule is also posted at http://fye.uiowa.edu/swat. If you have questions about SI, please contact them at 335-3555.

**Course Outline:** The material to be covered this semester is summarized in the table below. Any changes will be announced in class. Note that we will directly follow the sequence in the textbook, except that we will skip the spectroscopy chapters 13 and 14 near the end of the semester. The chapters will be covered together at the beginning of 4.122.

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<tr>
<th>Chapter</th>
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<td>6-53</td>
<td>Structure and Bonding</td>
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<td>2</td>
<td>54-80</td>
<td>Acids and Bases</td>
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<td>3</td>
<td>81-112</td>
<td>Introduction to Organic Molecules and Functional Groups</td>
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<td>6</td>
<td>196-227</td>
<td>Understanding Organic Reactions</td>
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<td>7</td>
<td>228-277</td>
<td>Alkyl Halides and Nucleophilic Substitution</td>
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<td>8</td>
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<td>11</td>
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<tr>
<td>12</td>
<td>426-462</td>
<td>Oxidation and Reduction</td>
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<tr>
<td>15</td>
<td>538-570</td>
<td>Radical Reactions</td>
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Some Study Suggestions for Organic Chemistry

A major difference between organic and general chemistry is that there is little or no math involved in introductory organic chemistry courses - topics tend to be presented in a very qualitative way. Thus, you will be most successful in this course if you strive to understand the concepts presented, how they relate to one another, and how they can be applied to new situations that you encounter.

Another difference is that the exams in organic chemistry are only partially constructed in a multiple choice format - some problems will require you to draw chemical structures, to show details of a process, to write correct terms, etc. To prepare for exams, it is important to become proficient in applying the principles covered, and in understanding and drawing chemical structures. Practice with questions in the textbook, and check your answers in the study guide. Practice writing the answers to problems, especially those that ask you to draw structures. Even if you understand the material, you may find yourself short on time in exams if you have not become proficient in drawing and visualizing chemical structures. Finally, be sure to take the practice exams that will be provided for you before each regular exam. These exams will look much like the regular exams and will be of similar length, so if you take them seriously and impose a time limit on yourself, you can get a feel for the time it will take you to finish the actual exam. Check your answers with the key, and investigate the ones you get wrong.

We are required to cover a lot of new material in this course, so it is critical to keep up with the chapter reading and problems. Unfortunately, if you fall behind, it will be very difficult to catch up. This is not the type of course in which you can cram the night before an exam and expect to do well - ask anyone you know who has taken organic chemistry.

Many students use the course notes as a core resource for learning the material, with the textbook serving as a supplement/reference that offers additional detail and provides relevant problems to work. Molecular models can be very useful in helping to learn and understand structural organic chemistry concepts. However, building models can be time consuming, and you cannot use them during tests.

Come to class. The availability of course notes leads to a natural temptation to skip class. The notes are intended to help you learn, and to enable you to listen in class and make a few extra notes of your own, rather than focus on frantically copying everything. However, they are incomplete without the explanations, emphasis, model demonstrations, and highlighting that will be provided during class. There are many concepts in this course that are truly new to most people, and it is unlikely that you can simply read the notes or the book and understand everything (or be sure what your instructor considers most important…). Most students find that more explanation of this material is needed - not less.

Take advantage of discussion sections. Because this is a three-semester-hour course, discussion sections in this course are optional, and no graded materials will arise from them. These discussions are essentially weekly help sessions for you. Attendance in discussion sections tends to rise considerably right before exams, but, unfortunately, they cannot magically catch you up in one sitting. On the other hand, for those who attend regularly, these sessions offer an opportunity for getting additional help and concept reinforcement in a smaller, less formal class setting. They may also facilitate formation of study groups with other class members.

Take advantage of office hours offered by your instructors and your TA. 004:121 is a very large class, so things do sometimes get a bit crowded, especially as exams loom. Extra office hours will be added before exams in an effort to accommodate everyone. However, as with discussion sections, please remember that office hours are held throughout the semester...
Collegiate Policies & Procedures

The following policy and procedural statements have been summarized from the web pages of the College of Liberal Arts and Sciences and The University of Iowa Operations Manual.

Administrative Home. The College of Liberal Arts and Sciences (CLAS) is the administrative home of this course and governs matters such as the add/drop deadlines, the second-grade-only option, and other related issues. Different colleges may have different policies. Questions may be addressed to 120 Schaeffer Hall, or see the CLAS Student Academic Handbook.

Electronic Communication. University policy specifies that students are responsible for all official correspondence sent to their University of Iowa e-mail address (@uiowa.edu). Faculty and students should use this account for correspondence. (Operations Manual, III.15.2. Scroll down to k.11.)

Accommodations for Disabilities. A student seeking academic accommodations should first register with Student Disability Services and then meet privately with the course instructor to make particular arrangements. See www.uiowa.edu/~sds/ for more information.

Academic Fraud. Plagiarism and any other activities when students present work that is not their own are academic fraud. Academic fraud is a serious matter and is reported to the departmental executive officer (DEO) and to the Associate Dean for Undergraduate Programs and Curriculum. Instructors and DEOs decide on appropriate consequences at the departmental level while the Associate Dean enforces additional consequences at the collegiate level. See the CLAS Academic Fraud section of the Student Academic Handbook.

CLAS Final Examination Policies. Final exams may be offered only during finals week. No exams of any kind are allowed during the last week of classes. Students should not ask their instructor to reschedule a final exam because the College does not permit rescheduling of a final exam once the semester has begun. Questions should be addressed to the Associate Dean for Undergraduate Programs and Curriculum.

Suggestions or Complaints. Students with a suggestion or complaint about this course should first visit the instructor, then the DEO. (The Chemistry DEO can be contacted by calling the Chemistry Department front office at 335-0200). Complaints must be made within six months of the incident—please refer to the CLAS Student Academic Handbook.

Understanding Sexual Harassment. Sexual harassment subverts the mission of the University and threatens the well-being of students, faculty, and staff. All members of the UI community have a responsibility to uphold this mission and to contribute to a safe environment that enhances learning. Incidents of sexual harassment should be reported immediately. See the UI Comprehensive Guide on Sexual Harassment for assistance, definitions, and the full University policy.

Reacting Safely to Severe Weather. In severe weather, class members should seek appropriate shelter immediately, leaving the classroom if necessary. The class will continue, if possible, when the event is over. For more information on Hawk Alert and the siren warning system, visit the Public Safety web site.