

CHEM 3351| Organic Chemistry 1/CHEM & BIOCHEM Majors Fall 2010

Course Description

CHEM 3351: Organic Chemistry 1 for Majors

Credit Hours: 4

Lecture Meetings: MWF: 9 – 9:50 (CHEM 142)

Clickers: Required

Webpage: <http://www.colorado.edu/chem/yinlab/Pages/Teaching.html>

Lecture materials (slideshows, notes) and exam keys will be posted on the webpage.

Pre-requisites: CHEM 1131 or 1171 (minimum grade: C)

Co-requisites: CHEM 3361 or 3321

Recitation Sessions:

- CHEM 3351-121 (EKLC E1B75) T 8 -8:50 AM
TA: Chengkang Mai (Cheng-kang.Mai@Colorado.EDU)
- CHEM 3351-151 (EKLC M203) W 12 -12:50 PM
TA:Carolynn Chin (Carolynn.Chin@Colorado.EDU)

This course provides a systematic study of theories, principles, and techniques of organic chemistry. Topics include nomenclature, structure, properties, reactions, and mechanisms of hydrocarbons, alkyl halides, alcohols, and ethers; further topics include isomerization, stereochemistry, and spectroscopy. Upon completion, students should be able to demonstrate an understanding of the fundamental concepts of organic topics as needed in CHEM 3371. The laboratory work is designed to develop basic laboratory techniques of synthesis, purification and identification with an emphasis upon spectroscopy and chromatography. *This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural sciences/mathematics.*

Faculty Information

Professor: Hubert Yin

Office Location: Cristol 260

Office Hours: F: 1– 3 PM (Other hours available by appt.)

Telephone: 303-492-6786

Email: hubert.yin@colorado.edu

Major Course Goals

Upon successful completion of the course, the student will have done the following:

- Presented organic molecular structure with correlations between chemical behavior and structure.
- Systematically presented basic nomenclature, reactions, and reaction mechanisms.
- Developed an understanding of the significance of organic chemistry in our contemporary world with particular emphases on biological applications.
- Developed an appreciation of the techniques used in purifying, analyzing, and reacting organic compounds. There is an emphasis on modern techniques of purification and analysis.

More specific objectives for each module of study will be distributed in class.

General Education

Students who are successful will improve in the following general education areas: Reading, writing, basic use of computers, problem solving, critical thinking, and cooperating with others.

Textbooks

- **Loudon, Marc**, *Organic Chemistry, 5th Ed.*(ISBN: 978-0-9815194-3-2);
- **Loudon, Marc, Stowell, Joseph G.** *Study Guide and Solutions Manual to Accompany Organic Chemistry, 5th Ed.*(ISBN: 978-0-9815194-4-9);

Grading Policies

Grading Scale

Your final grade will be based on the following scale: A=100-90; B=89.9-80; C=79.9-70; D=69.9 - 60; F=59.9-0

Areas of Assessment

Your final course grade will be based upon the following weights for categories of assessments:

- Chapter Quizzes (7) – 15%
 - 15-minute chapter quizzes every other week. One will be dropped

- Evening Exams (3) – 35%
 - Sept 23, Thursday: 7 – 9 PM (HLMS 201)
 - Oct 21, Thursday: 7 – 9 PM (HLMS 201)
 - Nov 18, Thursday: 7 – 9 PM (HLMS 201)

- Homework – 10%

- Final Exams – 40%
 - Dec 13, Monday: 7:30 – 10 PM (CHEM 142)

Make-up Work - Make-up work on assignments and homework will be permitted if the absence is excused. Otherwise the grade will be recorded as a zero. You must have documentation verifying the absence. If you are absent, it is your responsibility to find out what work is missed. If you miss a test a make-up exam will not be given. You will be required to take a cumulative final exam. If you miss more than one test, you will be dropped from the class.

Academic Integrity

In addition to good academic performance, students should exhibit honesty and integrity. If there is any question that academic honesty and integrity are not honored, students may be required to redo assignments in the presence of an instructor-selected monitor. Proof of dishonesty, including plagiarism, will make students subject to disciplinary action. Please see the "**Syllabus Statements**" on Page 5.

Access/Disability Policy

Please consult the "**Syllabus Statements**" on Page 5.

Attendance Policies

Enrollment in a chemistry class is a commitment by the student to all your assignments, schedules and requirements of the course. Attendance at lecture sessions is required and attendance may be taken at the beginning of class sessions. Those entering afterwards are considered "tardy." **Two tardies equal one absence.**

Students are allowed a number of absences equal to the number of times the class meets each week. For lecture that will be three absences per semester. These should be used only when necessary. **There are no absences allowed for an announced exam.**

For absences beyond three, or absence from an exam, an “official” excuse must be submitted. An acceptable excuse is one due to circumstances beyond your control that prevented attendance of class and for which acceptable verification is provided--e.g., illness and a physician’s statement, traffic accident and a police report, school business and note from dean, etc. Credit can be given only for absences for which acceptable written verification is provided. Excuses for absences must be presented to the instructor upon return to class. For absences beyond six (6) a student will automatically be withdrawn from the class. Even if the absences are excused, a student must withdraw after this number of absences. It is not academically sound to allow a student to continue after this many absences.

- **Adding and Dropping Courses:** A student may add a course with permission of the advisor through the second day of the semester. After that point, permission of the advisor and the instructor is needed in order to add a course. A student may drop a course at any time during the first eight weeks (or halfway through a summer session) of the semester by completing an official drop form, obtaining the signatures of the advisor and the instructor, and filing the form with the registrar. Students who stop attending class without officially dropping the course may receive a failing grade in the course.
- **Withdrawal from a Course, Program, or the College:** Emergency situations may arise after the no-penalty drop period whereby students must leave involuntarily. In this case, the student may withdraw from the course by completing a withdrawal form. The student must secure the instructor's signature on the withdrawal form. This form must be completed and filed with the registrar. Students who are passing at the time of withdrawal may receive a grade of WP. Students who are failing at the time of withdrawal may receive a grade of FW. Students who stop attending class without officially withdrawing from the course may receive a failing grade in the course.
- **Instructor-Initiated Drop or Withdrawal:** An instructor may drop or withdraw a student from a course if the student stops attending class or the student exceeds the maximum number of allowed absences.

Course Schedule

This is an overview of the plan of study for this semester. More specific details for each section of study will be distributed in class.

- **Module 1:** Chemical Bonding and Chemical Structure; Alkanes (*Weeks 1- 2*)
- **Module 2:** Acids and Bases (*Weeks 3 – 4*)

- **Module 3:** Introduction to Alkenes; Addition Reactions of Alkenes (*Weeks 5 – 6*)
- **Module 4:** Principles of Stereochemistry; Cyclic Compounds (*Weeks 7 – 8*)
- **Module 5:** Introduction to Spectroscopy, IR, Mass-Spec, NMR (*Weeks 9 – 10*)
- **Module 6:** Alkyl Halide; Chemistry of Alkyl Halides (*Weeks 11 – 12*)
- **Module 7:** Alcohols, Ethers, Thiols, and Sulfides; Chemistry of Ethers, Epoxides, Glycols, and Sulfides (*Weeks 13 – 14*)

Homework

We will be using Sapling Learning for our online homework.

1. Go to <http://saplinglearning.com>
2. If you already have a Sapling Learning account, log in, click "View Available Courses", then skip to step 6.
3. Otherwise, click "Sign up for new account" located under the Login box.
4. Choose a new username and password, and supply the other requested information. Click "Create my new account".
5. Check your email (and spam filter) for a message from Sapling Learning and click on the link provided in that email.
6. Find your course in the list (listed by school and instructor) and click the link.
7. Enter the enrollment key: **FGyHt53564**
8. Click the button that says "Send payment via Paypal or Credit Card" and follow the remaining instructions.
9. Once you have registered and enrolled, you can log in at any time to complete or review your homework assignments.

If you have any problems, send an email to support@saplinglearning.com explaining the issue.

Syllabus Statements

Disability Accommodations

If you qualify for accommodations because of a disability, please submit to me a letter from Disability Services in a timely manner so that your needs may be addressed. Disability Services determines accommodations based on documented disabilities. Contact: 303-492-8671, Willard 322, or <<http://www.colorado.edu/disabilityservices/>>.

Religious Observances

Campus policy regarding religious observances requires that faculty make every effort to reasonably and fairly deal with all students who, because of religious obligations, have conflicts with scheduled exams, assignments or required attendance. In this class, please send me e-mail or visit me in office hours to notify me of such a situation at least two weeks in advance of the event. See full details at <http://www.colorado.edu/policies/fac_relig.html>.

Classroom Behavior

Students and faculty each have responsibility for maintaining an appropriate learning environment. Students who fail to adhere to such behavioral standards may be subject to discipline. Faculty have the professional responsibility to treat all students with understanding, dignity and respect, to guide classroom discussion and to set reasonable limits on the manner in which they and their students express opinions. Professional courtesy and sensitivity are especially important with respect to individuals and topics dealing with differences of race, culture, religion, politics, sexual orientation, gender variance, and nationalities. Class rosters are provided to the instructor with the student's legal name. I will gladly honor your request to address you by an alternate name or gender pronoun. Please advise me of this preference early in the semester so that I may make appropriate changes to my records. See policies at <<http://www.colorado.edu/policies/classbehavior.html>> and at <http://www.colorado.edu/studentaffairs/judicialaffairs/code.html#student_code>.

Discrimination and Harassment

The University of Colorado at Boulder policy on Discrimination and Harassment (<<http://www.colorado.edu/policies/discrimination.html>>), the University of Colorado policy on Sexual Harassment and the University of Colorado policy on Amorous Relationships applies to all students, staff and faculty. Any student, staff or faculty member who believes s/he has been the subject of discrimination or harassment based upon race, color, national origin, sex, age, disability, religion, sexual orientation, or veteran status should contact the Office of Discrimination and Harassment (ODH) at 303-492-2127 or the Office of Judicial Affairs at 303-492-5550. Information about the ODH and the campus resources available to assist individuals regarding discrimination or harassment can be obtained at <<http://www.colorado.edu/odh>>.

Honor Code

All students of the University of Colorado at Boulder are responsible for knowing and adhering to the academic integrity policy of this institution. Violations of this policy may include: cheating, plagiarism, aid of academic dishonesty, fabrication, lying, bribery, and threatening behavior. All incidents of academic misconduct shall be reported to the Honor Code Council (<honor@colorado.edu>; 303-725-2273). Students who are found to be in violation of the academic integrity policy will be subject to both academic sanctions from the faculty member and non-academic sanctions (including but not limited to university probation, suspension, or expulsion). Other information on the Honor Code can be found at <<http://www.colorado.edu/policies/honor.html>> and at <<http://www.colorado.edu/academics/honorcode/>>.