Syllabus

Chemistry 2321-003: Organic Chemistry I

Fall, 2013

Course Webpage

Blackboard (course materials and quizzes): https://elearn.uta.edu

Syllabus and course description: http://www.uta.edu/faculty/jjeon/Site/Courses.html

Sampling Learning (problem sets): http://www.saplinglearning.com

Instructor

Dr. Junha Jeon CRB 203 817-272-0262 jjeon@uta.edu

Research group web page: http://www.uta.edu/faculty/jjeon

Lectures

Tu/Th; 9:30am–10:50 am Chemistry Research Building (CRB) 114

Office Hours

Tu/Th, 1:00-2:30pm (unless announced otherwise). Other times can be scheduled by appointment.

Important Dates

Sep 2, Labor day;

Sep 9, Census Day;

Oct 30, Last day to drop a class;

Nov 28, Thanksgiving Holidays;

Dec 4, Last day of class;

Dec 11 (Wed 5:30-8:00 pm), Final exam.

Textbooks:

required:

Organic Chemistry, 1st Edition by David Klein, Wiley, 2012, ISBN-13: 978-0471756149.

Sapling learning online homework: http://saplinglearning.com (UT Arlington – Chem 2321 – Fall13 – JEON). For details, see the problem set section (page 4-5).

auxiliary:

Organic Chemistry, Student Study Guide and Solutions Manual 1st Edition, David Klein, Wiley, ISBN-13: 978-0471757399. (recommended)

Molecular model set (recommended).

Simple calculator (not cell phones or related communication devices).

Course Description:

The first part of a comprehensive survey of the chemistry of carbon compounds: their structure, properties, bonding, stereochemistry, reactions, and reaction mechanisms. Successful completion of the two semester general chemistry sequence, with a grade of C or higher, is a pre-requisite for this class.

Position of the Course in the College Curriculum:

CHEM-2321 is intended for students who are majoring in chemistry or biology, or who plan to enter a health profession such as medicine, dentistry, pharmacy, or allied health. It is the first half of a one-year course designed to survey the structure, reactivity and synthesis of carbon compounds. This course is a prerequisite for CHEM-2322 Organic Chemistry II.

Learning Objectives:

As a result of participating in this course, you should be able to:

Correctly *name* any organic compound using IUPAC nomenclature, or, given an IUPAC name, depict the molecular structure.

Accurately *represent* the structure of any organic compounds, both on paper and also in three-dimensional space using models or drawings.

Account for the physical properties and chemical reactivity of any organic compound on the basis of molecular structure.

Predict the outcome of an organic reaction, given the identities of the reactants, or provide the reagents given the starting materials and products.

Recognize important substances and chemical processes, which have practical applications in household, laboratory, industry, and medicine.

Use the theoretical concepts of reactive intermediates, molecular orbitals, hybridization, resonance, tautomerism, and polarity in discussing the structure, reactivity and mechanisms of organic compounds.

Departmental Goals Promoted by the Course:

Train chemists for graduate research and industry.

Prepare instructors to teach chemistry in secondary schools.

Prepare students to enter medicine and other health professions.

Assist students to integrate knowledge of chemistry with their major discipline and to make useful applications of chemistry in their field of specialization.

Promote a greater appreciation of the natural world, an understanding of the scientific method of investigation, and a heightened awareness of the accomplishments, the potential and the limitations of science.

Topics to be Covered:

I. A Review of General Chemistry – Chapter 1 (Review)

II. Molecular Representations – Chapter 2 (Review)

III. Acids and Bases – Chapter 3 (Review)

Note I will not cover everything in these first three chapters, however, you are responsible for all of this material, much of which comes from general chemistry. If you choose not to review it, then you are responsible for the consequences.

IV. Alkanes and Cycloalkanes – Chapter 4

V. Stereoisomerism – Chapter 5

Midterm Exam I on CHAPTERS 1-5 (Sep 26, Thursday, ca. 8 lectures)

VI. Chemical Reactivity – Chapter 6

VII. Substitution Reactions – Chapter 7

VIII. Alkenes: Structure and Preparation via Elimination Reactions – Chapter 8

Midterm Exam II on CHAPTERS 5-8 (Oct 24, Thursday, ca. 8 lectures)

IX. Addition Reactions of Alkenes – Chapter 9

X. Alkynes – Chapter 10

XI. Radical Reactions – Chapter 11

XII. Synthesis –Chapter 12

Midterm Exam III on CHAPTERS 9-12 (Nov 26, Tuesday, ca. 9 lectures)

XIII. Alcohols and Phenols – Chapter 13

XIV. Ethers and Epoxides; Thiols and Sulfides-Chapter 14

ca. 2 lectures for Chapter XIII and XIV

FINAL EXAM (Dec 11, Wednesday 5:30-8:00 pm)

Course Requirements and Policies:

1. Lectures:

Faithful *attendance* is necessary (excessive absences will lower the final grade), but attendance alone is not sufficient. Active participation is essential for success. Participation includes advance preparation of reading assignments, coming to class prepared with *molecular models* and calculators, and involvement with classroom discussions. Questions are always welcomed, I will be happy to re-explain concepts. Successful participation in the classroom will frequently stimulate continuing discussion outside the classroom, both with fellow students and with the instructor. These ongoing interactions will prove valuable and they are to be encouraged. A point to note is that class time is limited and I will not have time to cover all of the material given as reading assignments (see above). *You are also expected to be completely familiar with the material that was covered in CHEM 2321, this knowledge will be assumed, including all of the reactions.*

2. Supplemental Instruction:

We provide "supplemental instruction" during the semester. Supplemental Instruction (SI) is a series of peer-assisted weekly study sessions designed to help students succeed in traditionally difficult courses. SI sessions are regularly scheduled sessions in which students compare notes, discuss readings and course lectures, and work together to master the course material. In SI, students learn how to use specific study skills for the course while mastering the content. SI sessions provide an excellent opportunity for you to

Meet with classmates and your SI leader to compare lecture notes.

Develop strategies for studying and learning the course material.

Prepare effectively for exams.

SI is free and open to all students in the supported course. All students are encouraged to attend SI, though the program is voluntary. It has been proven that regular participation in SI can help you raise your course grades by one-half to a full letter grade. SI helps you succeed and meet your goals!

For details, please visit the following website.
http://www.uta.edu/universitycollege/current/academic-support/university-tutorial/si/index.php

3. Chemistry Clinic

In addition to lectures, the Chemistry Clinic located in Science Hall, room 219 is an excellent source of further information, and is run by chemistry/biochemistry majors.

4. Preparation:

It is essential that you schedule adequate study time for this course! YOU MUST KEEP UP. Use this study time for reading, reviewing class notes, doing the assigned exercises, and preparing for examinations. IF YOU DO NOT ADEQUATELY STUDY FOR THIS CLASS YOU WILL NOT RECEIVE A GOOD GRADE. In other words, studying for the

first time the night before an exam will not prepare you adequately for the exam.

5. Examinations:

Examinations, both mid terms (1.2 hour) and the final (2.5 hours) will consist of mainly multiple-choice and a few short-answer questions. Each mid term will emphasize the material discussed since the previous test. However, you should realize that chemistry is a cumulative subject in which new material builds on previous material. Therefore, if you simply memorize the indicated chapters for a test, you will not do well. Some knowledge from previous chapters will normally be necessary. Examinations have been *tentatively* scheduled on the following dates February 19, March 28 and April 25 and will be given at class time, lasting 80 min. Only exams that are missed due to **prior excused absences for genuine, documented emergencies** may be made up. If you otherwise miss an exam you will receive zero.

Examinations will be graded within 2-3 days after they are administered. Please refrain from requesting test scores the same day the test is given. No grades will be reported over the telephone. Results of exams will be distributed at a regularly scheduled class meeting as soon as they are available.

An explanatory answer key for each exam will be posted on the course web page or delivered via an email attachment. It will be your responsibility to review the answer key, and to re-work questions which you have missed, until you understand the material thoroughly. Seek guidance from me if you still have difficulty answering a question after the key is posted and you have attempted to rework the problem. I will not assist you if I do not see evidence that you have re-worked the problem. *Any item that is missed by a significant number of students may be re-tested on a subsequent examination*.

From time to time errors are made during the grading process either in arithmetic or in the number of points awarded for a particular question. It is your responsibility to ensure that your points have been totaled accurately. In the event that this has not occurred, please bring this to my attention. This should be done after the class during which the tests are returned, but prior to the next scheduled class meeting. In the event that you perceive that insufficient credit has been awarded for a question then you have until the next scheduled class to bring it to my attention. However, there are rules regarding regrades.

Only answers written **in ink** will be considered for re-grading (multiple choice excepted)

If a regrade is requested, then all of the exam will be re-graded. This could result in your grade going up or down.

All of the multiple choice and random write-outs will be photocopied.

The final examination is an exception to some of the foregoing policies. No answer key will be published, and no exam booklets or student responses will be returned, although they can be examined in my office. The final examination will be given on Wednesday, May 8, 5:30-8:00 pm (note change of time); it will be comprehensive in nature. You should also be aware that this is a departmental final, meaning that all instructors teaching CHEM 2322 will put together the final.

6. Quizzes:

During the course of the semester short quizzes will be administered *via Sapling Learning or Blackboard or in class*. No make-up quizzes will be given.

7. Problems:

Problems will be assigned for each chapter [12 problem sets (11/12 will count), 10% towards grade] via online ***Sapling Learning Homework*** that requires the purchase of a registration.

Similar problems will appear on exams, therefore if you do the assigned problems you are going to be better prepared for the exam problems. I will be happy to assist you with any difficulties that may arise during office hours. Please note, assistance will only be given if you provide evidence that you have attempted these problems, I am not going to do them for you!

Please notice the following information for students to register:

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Sapling Learning - Organic Chemistry Question Sets
Sapling's chemistry questions are delivered in a web browser to provide real-time grading, response-specific coaching, improvement of problem-solving skills, and detailed answer explanations. Dynamic answer modules enable one to interact with 3D models and figures, utilize drag-and-drop synthetic routes, and draw chemical structures - including stereochemistry and curved arrows. Altogether, Sapling is cheaper than a tutor, provides more value than a solutions manual, and goes beyond a mere assessment exercise to give a learning experience.

Students:
1. Go to http://saplinglearning.com
2a. If you already have a Sapling Learning account, log in then skip to step 3.
2b. If you have Facebook account, you can use it to quickly create a SaplingLearning account. Click the blue button with the Facebook symbol on it (just to the left of the username field). The form will auto-fill with information from your Facebook account (you may need to log into Facebook in the popup window first). Choose a password and timezone, accept the site policy agreement, and click "Create my new account". You can then skip to step 3.
2c. Otherwise, click "Register here". Supply the requested information and click "Create my new account". Check your email (and spam filter) for a message from Sapling Learning and click on the link provided in that email.
3. Find your course in the list (you may need to expand the subject and term categories) and click the link.
4. Select a payment option and follow the remaining instructions.

Once you have registered and enrolled, you can log in at any time to complete or review your homework assignments. During sign up - and throughout the term - if you have any technical problems or grading issues, send an email to support@saplinglearning.com explaining the issue. The Sapling support team is almost always more able (and faster) to resolve issues than your instructor.

To optimize your Sapling Learning experience, please keep your internet browser and Flash player up to date and minimize the use of RAM-intensive programs/websites while using Sapling Learning.

NOTE: I encourage you to work on Sapling Learning's training materials. The training activities and grading information are accessible to you in your Sapling Learning course.
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Course Grades:

Each examination will receive a numerical grade expressed as a fraction of the maximum grade. Numerical grades cannot be easily translated to letter grades. Due to popular demand, we often provide a “curve” for examination scores; ***however, letter grades on a curve are estimates only, and they do not guarantee that you will receive the same final grade***.

Individual grades will contribute to the final total as follows:

Sapling online homework	10%
Midterm Exams (3)	60%
Final comprehensive	30%

The grade in the final exam, if greater than one of the midterms, will replace that grade.

Final letter grades will be awarded on the following basis:

Final Total	Letter Grade
ca. 88% or higher	A
ca. 75% or higher	B
ca. 63% or higher	C
ca. 50% or higher	D

Any individual whose final total is borderline between two letter grades will receive the higher grade if his/her *attendance record* is excellent.

Supplemental Instruction:

SI leader: Hiep Nguyen

Supplemental Instruction (SI) is an academic support program that targets historically difficult courses. SI offers regularly scheduled, out-of-class review sessions to all students enrolled in a targeted course. SI study sessions are informal seminars in which students review notes, discuss readings, develop organizational tools and prepare for examinations. In SI, students work with each other to learn how to integrate course content with reasoning and study skills. SI is designed to organize and improve the ways in which students prepare for class outside of class. SI is attached to a subject to provide students with a systematic and disciplined approach for processing the subject material assigned by the professor.

Each session is led by an SI leader, an experienced student who has demonstrated proficiency in a targeted subject and has been trained by the SI staff. The SI leader attends the course to keep up with the subject content being presented and to model effective student practices and attitudes. The SI leader schedules and conducts three hours of group meetings a week at times convenient to members of the class.

Americans with Disabilities Act:

The University of Texas at Arlington is on record as being committed to both the spirit and letter of all federal equal opportunity legislation, including the *Americans with Disabilities Act (ADA)*. All instructors at UT Arlington are required by law to provide "reasonable accommodations" to students with disabilities, so as not to discriminate on the basis of that disability. Any student requiring an accommodation for this course must provide the instructor with official documentation in the form of a letter certified by the staff in the Office for Students with Disabilities, University Hall 102. Only those students who have officially documented a need for an accommodation will have their request honored. Information regarding diagnostic criteria and policies for obtaining disability-based academic accommodations can be found at www.uta.edu/disability or by calling the Office for Students with Disabilities at (817) 272-3364.

Academic Integrity:

All students enrolled in this course are expected to adhere to the UT Arlington Honor Code:

I pledge, on my honor, to uphold UT Arlington's tradition of academic integrity, a tradition that values hard work and honest effort in the pursuit of academic excellence.

I promise that I will submit only work that I personally create or contribute to group collaborations, and I will appropriately reference any work from other sources. I will follow

the highest standards of integrity and uphold the spirit of the Honor Code.

Instructors may employ the Honor Code as they see fit in their courses, including (but not limited to) having students acknowledge the honor code as part of an examination or requiring students to incorporate the honor code into any work submitted. Per UT System Regents' Rule 50101, §2.2, suspected violations of university's standards for academic integrity (including the Honor Code) will be referred to the Office of Student Conduct. Violators will be disciplined in accordance with University policy, which may result in the student's suspension or expulsion from the University.

Academic Honesty:

First of all, let us remind ourselves that the real purpose of this course is to help you acquire problem-solving skills, and a detailed knowledge of organic chemistry. Presumably, you would also like to acquire good scores in quizzes, examinations and laboratory exercises. However, please remember that grades are not the goal; grades are merely evidence of your progress toward the goal. Your grades cannot be a valid measure of your learning unless the papers you submit represent your own work.

The following practices are honest and acceptable:

1) Using published information to help solve homework or laboratory problems, provided that you acknowledge the source of the information and the extent to which the information has been used. (Note that we said help solve. This does not mean copy the answers from a study guide or answer book.)
2) Discussing possible solutions to homework or laboratory exercises with an instructor, laboratory assistant, tutor, or classmate.

The following are examples of questionable practices which should be avoided:

1) Giving a copy of your written work to another person.
2) Accepting a copy of another person's work.
3) Possession of written assignments prepared by someone who has already taken this course (or a similar course at another school).
4) Possession of an instructor manual for any book used in this course.
5) Submitting work for grade credit, which you have previously submitted for credit in another course, without the knowledge and approval of the instructor.

The following are examples of dishonest practices which may result in grade penalties or other disciplinary action:

1) Quoting published material without acknowledgment.
2) Submitting a written assignment that was prepared by another student as your own work.
3) Submitting a laboratory report of an experiment performed by someone else.
4) Submitting a report of an experiment that was not performed at all.
5) Misrepresentation, or "fudging" of laboratory data.
6) Submitting an assignment copied from an answer key or answer book.
7) Unauthorized possession of an examination or answer key.
8) Unauthorized use of memory aids (e.g. notes, textbooks, recording devices, paging devices, cellular telephones, and data or programs stored in the memory of a calculator) during an examination. During an examination, you will only be

permitted to have at your desk pens and pencils, a calculator and an eraser. No other devices will be permitted. There will be no exceptions to this rule.

9) Giving assistance to any student, or receiving assistance from any student, during an examination.

10) Looking at, or attempting to look at, another person's work during an examination.

11) Discussing an exam that you have not yet taken, with any person who has already taken that exam.

All students are expected to pursue their scholastic careers with honesty and integrity. Academic dishonesty will not be tolerated by the Department of Chemistry and Biochemistry. Academic dishonesty includes (but is not limited to) cheating, falsification of data, plagiarism, and contracting/collusion with others to do your test or do your work. Cheating is the use or acquisition of information (data, constants, formulas, textual material, etc.) from either unauthorized sources or in an unauthorized manner. Examples include but are not limited to

- exchanging information during a test or quiz.
- looking at another student's paper during a test or quiz.
- bringing information in any forms into a test or quiz other than personal knowledge. This includes written notes (crib sheets) and digitally stored information (formulas, constants, textual, etc.)
- looking at a book or any other unauthorized source during the test or quiz.
- accessing information by any electronic means (cellular phones, pages, personal stereos, etc.). None of these items are to be brought into examinations.
- processing data or information in an unauthorized manner using a programmable calculator or computer, i.e., there should be no use of a computer program. You are only permitted to use simple calculators that perform arithmetical, logarithmic, and trigonometric functions.

In the event that a test proctor determines that a student is cheating, the following actions will be taken:

- the student will be notified and, if the situation merits, asked to explain his/her actions.
- the source of the unauthorized information will be removed during the remainder of the test period and returned to the student following the test, if appropriate.
- the student may be removed to a different location to complete the test.
- calculator/computer memory will be cleared of the stored information and programs as appropriate. In some cases the proctor will need to temporarily examine the calculator to verify unauthorized use. The calculator will be returned to the student to finish the test.
- a record of the events and actions surrounding the alleged act of cheating will be submitted to the Associate Vice Provost for Student Affairs for further action. See Undergraduate Catalog for further information.

The following statement is a summary of University policy on cheating *"Students who violate University ruled on scholastic dishonesty are subject to disciplinary penalties, including the possibility of failure in the course and dismissal from the University. Since dishonesty harms the individual, all students and the integrity of the University, policies on scholastic dishonesty will be strictly enforced.*

Grade

Students enrolling in a course with the intention of **replacing a previous grade** earned in the same course must declare their intention to do so at the Registrar's Office by CENSUS

Replacement: DATE of the semester in which they are enrolled. Please consult the Undergraduate Catalog for the university policy regarding grade replacement.

Pass/Fail: If P or F is a grade option in this class and you intend to take this class for a pass/fail grade instead of a letter grade, you MUST inform the instructor, through the necessary paperwork, of your intentions BEFORE the census date.

Drop Policy: Students may drop or swap (adding and dropping a class concurrently) classes through self-service in MyMav from the beginning of the registration period through the late registration period. After the late registration period, students must see their academic advisor to drop a class or withdraw. Undeclared students must see an advisor in the University Advising Center. Drops can continue through a point two-thirds of the way through the term or session. It is the student's responsibility to officially withdraw if they do not plan to attend after registering. **Students will not be automatically dropped for non-attendance**. Repayment of certain types of financial aid administered through the University may be required as the result of dropping classes or withdrawing. For more information, contact the Office of Financial Aid and Scholarships (http://wweb.uta.edu/ses/fao).

Electronic Communication: UT Arlington has adopted MavMail as its official means to communicate with students about important deadlines and events, as well as to transact university-related business regarding financial aid, tuition, grades, graduation, etc. All students are assigned a MavMail account and are responsible for checking the inbox regularly. There is no additional charge to students for using this account, which remains active even after graduation. Information about activating and using MavMail is available at http://www.uta.edu/oit/cs/email/mavmail.php

Student Feedback Survey: At the end of each term, students enrolled in classes categorized as lecture, seminar, or laboratory shall be directed to complete a Student Feedback Survey (SFS). Instructions on how to access the SFS for this course will be sent directly to each student through MavMail approximately 10 days before the end of the term. Each student's feedback enters the SFS database anonymously and is aggregated with that of other students enrolled in the course. UT Arlington's effort to solicit, gather, tabulate, and publish student feedback is required by state law; students are strongly urged to participate. For more information, visit http://www.uta.edu/sfs.