

COURSE SYLLABUS

CHEM 2321-003 ORGANIC CHEMISTRY I

Fall 2012

I. TITLE: CHEM-2321 Organic Chemistry I

II. TIME & PLACE: TTh @ 9:30 - 10:50 a.m. in WA Baker Chemistry Research (CRB 114).

III. INSTRUCTOR: Dr. Carl Lovely

A. Office: CRB 204

B. Telephone: (817) 272-5446

C. E-mail: lovely@uta.edu, web page <http://www.uta.edu/faculty/clovely/>

D. Office Hours: Students are welcome to consult me informally without appointment during the hours of 2:00-3:30 p.m. on Tuesday and Thursday (unless announced otherwise). Other times can be scheduled by appointment (please call or e-mail).

E. Important Dates: September 3, Labor day

September 10, Census Day

October 31, Last day to drop a class.

November 22-23, Thanksgiving

December 5, Last day of class.

December 7 (Friday), 2012, 5:30-8:00 p.m., Departmental Final Exam

A. COURSE DESCRIPTION:

CHEM-2321 Organic Chemistry-I. 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.

B. 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.

C. 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 compound, both on paper and also in three dimensional space using models or drawings.

CHEM-2321 ORGANIC CHEMISTRY I
Fall 2012

- C. Account for the physical properties and chemical reactivity of any organic compound on the basis of molecular structure.
- D. Predict the outcome of an organic reaction, given the identities of the reactants, or provide the reagents given the starting materials and products.
- E. Recognize important substances and chemical processes which have practical applications in household, laboratory, industry, and medicine.
- F. Use the theoretical concepts of reactive intermediates, molecular orbitals, hybridization, resonance, tautomerism, and polarity in discussing the structure, reactivity and mechanisms of organic compounds.

D. DEPARTMENTAL GOALS PROMOTED BY THE COURSE

- A. Train chemists for graduate research and industry.
- B. Prepare instructors to teach chemistry in secondary schools.
- C. Prepare students to enter medicine and other health professions.
- D. Assist students to integrate knowledge of chemistry with their major discipline and to make useful applications of chemistry in their field of specialization.
- E. 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.

E. REQUIRED MATERIALS

- A. Organic Chemistry, First Edition by David Klein (Wiley Publishers)
- B. Organic Chemistry, Study Guide and Solutions Manual, First Edition, David Klein.
- C. Molecular model set (I recommend-Molecular Visions, Darling Models, but any will do).
- D. Electronic calculator that is capable of performing trigonometric, logarithmic, exponential and statistical functions.

F. TOPICS TO BE COVERED

- A. *A Review of General Chemistry – Chapter 1 (Review)*
- B. *Molecular Representations – Chapter 2 (Review)*
- C. *Acid 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.

- D. *Alkanes and Cycloalkanes – Chapter 4*
- E. *Stereoisomerism – Chapter 5*

TEST 1 on CHAPTERS 1-5 (09-27-12)

- F. *Chemical Reactivity – Chapter 6*
- F. *Substitution Reactions – Chapter 7*
- G. *Alkenes: Structure and Preparation via Elimination Reactions – Chapter 8*

H. *Addition Reactions of Alkenes – Chapter 9*

TEST 2 on CHAPTERS 6-9 (10-25-12)

I. *Alkynes – Chapter 10*

J. *Radical Reactions – Chapter 11*

K. *Synthesis – Chapter 12*

TEST 3 on CHAPTERS 10-12 (11-29-11)

L. *Alcohols and Phenols – Chapter 13*

M. *Ethers and Epoxides; Thiols and Sulfides – Chapter 14*

FINAL EXAM (12-14-11)

G. COURSE REQUIREMENTS AND POLICIES

A. Lectures:

Faithful attendance is mandatory (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 responsible for all of the material covered in the lectures, the assigned text, and the problems.**

B. Supplemental Instruction:

Each week supplemental instruction sessions will be held three times a week at a time and at a location to be announced in class and posted on Blackboard.

C. Preparation:

It is essential that you schedule adequate study time for this course! Experts recommend that you allow three hours of out-of-class preparation for each semester hour of credit. This means a minimum of nine hours per week for lecture material. You should plan a weekly schedule, make a written copy of it, and keep to your plan. Use this study time for reading, reviewing class notes, doing the assigned exercises, and preparing for examinations. You will not be successful if you study the night before the test/exam. The study of organic chemistry is a cumulative process, in other words, "what you learned last week will be assumed next week."

D. Examinations:

Examinations, both mid terms (1.2 hour) and the final (2 ½ hours) will consist of mainly of 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

CHEM-2321 ORGANIC CHEMISTRY I

Fall 2012

not do well. Some knowledge from previous chapters will normally be necessary. Examinations have been tentatively scheduled on the following dates September 27, October 25, and November 29 and will be given at class time. These exam dates may change depending upon our progress through particular chapters. You will be given a week's notice if an exam is to be held on a different day (note exams will only be postponed and not brought forward). Only exams which are missed due to **prior excused absences for genuine, documented emergencies** may be made up.

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 Blackboard. 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 which 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.

1. Only answers written in ink will be considered for re-grading (multiple choice excepted)
2. If a regrade is requested, then all of the exam will be re-graded. This could result in your grade going up or down.
3. 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 Friday, December 7, 5:30-8:00 pm; it will be **comprehensive** in nature and will be written by all faculty that are teaching Organic I this semester.

E. Quizzes:

During the course of the semester ten short quizzes will be administered via Blackboard. Your best eight quizzes will figure into your final grade. No make-up quizzes will be given.

F. Problems:

Problems from the textbook and in handouts will be assigned weekly (see Blackboard), although these will not be collected and graded, **you are responsible for working them out**. 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! An **optional** on-line homework system is available through WileyPlus which requires the purchase of a registration and linked through class web site.

H. GRADING

- A. 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.*
- B. Individual grades will contribute to the final total as follows:

Quizzes	10%
Three midterms	61%
Final comprehensive	29%

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

- C. Final letter grades will be awarded on the following basis:

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

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

And Now, a Word About 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 examinations. 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.

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 take your tests 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:-

CHEM-2321 ORGANIC CHEMISTRY I

Fall 2012

- *exchanging information during a test or quiz*
- *looking at another student's paper during a test or quiz*
- *bringing information in any form into a test or quiz other than personal knowledge. This includes written notes (crib sheets) and digitally stored information (formulas, constants, textual, etc.) on calculators, cell phones, pagers etc.*
- *looking at a book or other unauthorized source during the test or quiz.*
- *accessing information by any electronic means (cellular phone, pagers, personal stereos, etc.)*
- *processing data or information in an unauthorized manner using a programmable calculator or computer. In other words, unless you have received authorization, you are not to use any computer program. This includes specialty computers or calculators in which the programming is "built in" to the computer. You are permitted to use simple calculators which perform arithmetical, logarithmic, and trigonometric functions.*

In the event that a test proctor or instructor 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 their 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."

Bomb Threat Policy

In the event of a bomb threat to a particular facility, the University Police will evaluate the threat. If required, the exams may be moved to an alternate location, but they will not be postponed. UT-Arlington will prosecute phoning in bomb threats to the fullest extent of the Law.

Grade Replacement

CHEM-2321 ORGANIC CHEMISTRY I

Fall 2012

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 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 for NON-PAYMENT of Tuition:

If you are dropped from this class for non-payment of tuition, you may secure an Enrollment Loan through the Bursar's Office. You may not continue to attend class until your Enrollment Loan has been applied to outstanding tuition fees.

Americans with Disabilities Act

In an effort to be certain that students with documented disabilities are reasonably accommodated, I would like to ask your cooperation in informing me of any legitimate needs you may have in this course. Your need for this request will be verified through the appropriate University office to be certain the best accommodation is provided for your particular disability as it relates to this course. It is important for you to understand that this document will be held in the strictest confidence and will not be kept with any of your permanent student records.

Name: SS#:

Course: Section:

Disability:

Suggested Accommodation:

Also, if you do not require an accommodation but would be agreeable to having your class notes duplicated or assist in another manner with a disabled peer, please indicate below.

Name: SS#:

Note Sharing: Other Assistance: