

Chem 2321-001: ORGANIC CHEMISTRY I
Fall 2013

Class Meetings: Mondays, Wednesdays, and Fridays, 9-9:50 AM, 114 CRB

Instructor: Frank W. Foss Jr. Ph.D.

Office Location: 202 CRB

Organic Laboratories: 210, 212, and 214 CRB

Office Telephone Number: 817.272.5245

Email Address: ffoss@uta.edu

Office Hours: Mondays and Fridays from 10:00-11:00 AM, or by appointment

Required Materials:

Organic Chemistry, First Edition by David Klein (Wiley Publishers)

Sapling Learning Account (see section regarding *Homework*)

Strongly Suggested Materials:

Organic Chemistry, Study Guide and Solutions Manual, First Edition, David Klein.

A Molecular Model set.

Course Description:

Organic Chemistry I explores the structure of organic materials, the physical properties defined by these structures, and the manner in which we can manipulate materials through chemical synthesis. This course will focus specifically on the structure, properties, bonding, stereochemistry, reactions, and reaction mechanisms of carbon based molecules (see Course Sequence for more details).

Learning Goals:

In the Curriculum: CHEM-2321 is intended for students majoring in Chemistry, Biochemistry, Biological Chemistry, or Biology; or who plan to enter an Engineering (bioengineering, electrical, materials, or nano-science), Health (allied health, dentistry, epidemiology, medicine, pharmacy or veterinarian), Law (patent), or other Scientific (earth science, environmental, materials, physics, or psychology) Profession. Earning a C or better in this course is a prerequisite for CHEM2322 Organic Chemistry II.

In the Classroom (chronological and ascending order of proficiency):

1. *Communicate* the structure of molecules to others via IUPAC and common nomenclature and depict the structure when given the name of a molecule.
2. *Understand* the three dimensional structure of molecules and be able to represent these structures by conventional means.
3. *Account for* the physical properties, stability, and chemical reactivity of organic compounds on the basis of molecular structure.
4. *Predict* the outcome of an organic reaction when given substrates and reagents, or provide adequate reagents to convert starting materials to desired products.
5. *Design* logical synthetic pathways to create a desired compound from common starting materials.

For Your Future:

1. Develop your study skills; memorization alone is not sufficient for this course.
2. Develop your problem solving skills. Learn to combine the association of ideas and relationships with deductive reasoning and scientific method to solve problems (Chemistry problems and others).
3. Understand Chemistry's relationship with your proposed area of study.
4. Gain an informed view of *Chemistry's* impact on our quality of life.

Course Sequence (by Chapter):

- 1 *A Review of General Chemistry (Review)*
- 2 *Molecular Representations (Review)*
- 3 *Acid and Bases (Review +)*
- 4 *Alkanes and Cycloalkanes*
TEST 1 on CHAPTERS 1-4 (09-16-2013)
- 5 *Stereoisomerism*
- 6 *Chemical Reactivity and Mechanisms*
- 7 *Substitution Reactions*
TEST 2 on CHAPTERS 5-7 (10-07-2013)
- 8 *Alkenes: Structure and Preparation via Elimination Reactions*
- 9 *Addition Reactions of Alkenes*
- 10 *Alkynes*
TEST 3 on CHAPTERS 8-10 (10-30-2013)
- 11 *Radical Reactions*
- 12 *Synthesis*
- 13 *Alcohols and Phenols*
TEST 4 on CHAPTERS 11-13 (11-25-2013)
- 14 *Ethers and Epoxides; Thiols and Sulfides*

CUMMULATIVE FINAL EXAM (CHAPTERS 1-14) (12-11-2013)

Important Dates:

August 22 nd	First day of classes
September 2 nd	Labor Day Holiday
September 9 th	Census Date
September 16th	EXAM 1
October 7th	EXAM 2
October 30 th	Last day to drop
October 30th	EXAM 3
November 25th	EXAM 4
November 28-29	Thanksgiving Holidays
December 4 th	Last Day of Classes
December 5-6 th	Reading Days
December 11th	COMPREHENSIVE FINAL EXAM, 5:30-8:00 PM

Assessment:

<i>Grading:</i>	<i>Percent of total grade</i>
One Hour Exams (Lowest Grade may be replaced by Final)	4 x 16% = 64%
Homework Assignments (SaplingLearning.com), 11 of 12 graded	10%
Final Examination (Single Comprehensive Exam)	26%

Self Assessment:

Work the problems within and at the end of each chapter. I will allow time in class for questions regarding problems, or you can visit me at office hours when time is not available in class. Please have a specific question and topic to discuss if you plan on visiting office hours.

Learning Strategies:

Class Preparation: Work ahead. One of the major challenges to Organic Chemistry is that you are learning a scientific language, as well as a large volume of data and skills. You are responsible for understanding this material as it pertains to future lessons and your exams. My role during class is to enhance understanding, tie together themes and ideas, and teach you *how* to learn organic chemistry. It is recommended that you dedicate three hours outside of class for every one hour inside our classroom for this course.

Working through problems in the book will point out areas that you need to review for better comprehension (See *Self-Assessment*). If you are prepared for class, then you will be able to ask questions in areas that will benefit your comprehension greatest. If you test yourself against problems in the book, you will know how to focus your test preparation time.

Attendance: Attendance is necessary for success in this course. Your book, like your instructor, may not be able to communicate all the answers to all people in one attempt. Unfortunately, the text cannot restate an idea if it is unclear. You will be expected to ask and answer questions encountered in class and from your homework. Material from these class discussions may be emphasized on exams.

Classroom Etiquette: Recording devices are *allowed* in our classroom. Please turn your cell phones to silent and avoid activity that will distract your classmates. Students surfing the web or texting will be asked to leave. Taking notes by hand is recommended for organic chemistry, as you will benefit practicing the structural language of chemistry.

Graded Materials:

Homework Assignments: Graded homework has a purpose. It enhances overall learning and performance of chemistry students in the classroom and on standardized exams. We will answer multiple short questions that hone the skills needed to excel on the classroom exams. The questions test a range of ability, so that you can evaluate how effective you are on each topic. Be sure to review questions that give you trouble. All assignments must be completed online at www.SaplingLearning.com. Sapling Learning accounts are available for a fee (~\$38).

Setting up a Sapling Learning Account

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, we will be using Sapling Learning for our homework. To get started:

- A. Go to <http://saplinglearning.com> and click "US Higher Ed" at the top right
- B. a. If you already have a Sapling Learning account, log in and skip to step 3. b. If you have Facebook account, you can use it to quickly create a Sapling Learning 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. c. Otherwise, click "create account". 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.
- C. Find your course in the list (listed by subject, term, and instructor) and click the link.
- D. Select your payment options and follow the remaining instructions.
- E. Work on the Sapling Learning training materials. The activities, videos, and information pages will familiarize you with the Sapling Learning user environment and serve as tutorials for efficiently drawing molecules, stereochemistry, etc. within the Sapling Learning answer modules. These training materials are already accessible in your Sapling Learning course.
- F.
 - 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 and TAs.
 - 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.

Your 11 best homework grades (of 12) will be averaged to make up 10% of your total grade. Start your homework early and leave yourself time to come to office hours for help on more challenging problems. Completing only the assigned homework questions will likely not prepare you sufficiently for the in class exams.

Exams: Please bring a **#2 pencil** and **ScanTron form 882-E** for completing multiple-choice questions. You will need **a pen** for answering write out questions. You may not use a calculator, phone, pda, etc. for any portion of the exam. Remember to clearly state your answers for written questions and indicate your final answer where required for multiple-choice questions. **Expect to see questions that require you to extend your knowledge.** I will grade each write out question and award partial credit where possible. Partial credit will not be awarded in situations where it is unclear what structure or statement represents your intended answer.

Your exams will be graded before the third following class. I will prepare an Exam Key for the four mid-term exams and include the grading rubric for each write out questions when possible. My primary goals while grading are to provide thorough, accurate answers and grade all exams equally. To do this properly for >90 students, I have to remain faithful to my grading rubric. If you have questions regarding a graded problem, please see me outside of class. I can only consider answers written in pen, which is why I suggest you use a pen for the write-out portion of the exam.

Make-up exams: There will be no make up examinations for this course. You will be allowed to replace your lowest exam grade with your score from the final exam. Should you miss an exam, your zero will be replaced with your final exam score. If you miss multiple exams, please see me outside of class. For any exceptions, you **MUST** have documentation of a genuine excuse for having missed the exam. If extenuating circumstances exist, you will not take the same exam as your classmates. Travel is not an excuse to reschedule any exam. **DO NOT SCHEDULE TRAVEL THAT CONFLICTS WITH YOUR FINAL EXAMINATION – DECEMBER 11th 5:30-8:00 PM.**

Librarian to Contact: Antoinette Nelson email: nelsona@uta.edu

Academic Integrity: This class will have a zero tolerance policy for cheating and academic dishonesty. Cheating, plagiarism, and collusion will be reported to the office for Student Conduct. 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.

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

Please fill out and return this last page of the syllabus before Census date – January 30th

Receipt and Affirmation: By signing this section, you agree that you have read or heard described the above sections. If you have any concerns, please see your instructor outside of class.

Print: _____

UTA ID _____

Signature: _____

Americans with Disabilities Act (Fill out Part A or B, as desired.)

A. 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 might 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: _____

B. 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: _____