**CHEM 2321-001:** Organic Chemistry II
Spring 2014

**Instructor:** Dr. Jimmy R. Rogers

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**Office Hours:** Monday-Thursday, 2:00-3:30 PM

**Section Information:** CHEM 2321-001 meets MWF 9:00-9:50 AM in CRB 114

**Description of Course Content:** The first part of a comprehensive survey of the chemistry of carbon compounds: their structure, properties, bonding, stereochemistry, reactions, and reaction mechanisms. Prerequisite: CHEM 1442 with a grade of C or better.

**Required Textbooks and Other Course Materials:**
*Organic Chemistry*, David Klein
*Student Study Guide & Solutions Manual,* David Klein
Molecular Model Set (recommended)
Access to *Sapling Learning* Online Homework (details to be given in class)

**Exams**
Four mid-term exams plus a Comprehensive Final Exam will be given. These exams will cover the reading, lecture material, and assigned problems. Each exam may include some multiple choice and some short answer (write-out) questions. *Due to the nature of Organic Chemistry, each exam is comprehensive.*

The date of each exam will be announced in class approximately one week prior to the exam.

**Final Exam: Wednesday, May 7, 5:30-8:00 PM**
*Since the Final Exam is a comprehensive departmental exam, it will be given at a special time: Wednesday, May 7, from 5:30-8:00 PM. Room locations for the departmental final exam will be announced in class.*

**Important Dates:**

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| *January 20* | *Martin Luther King, Jr. Day. Classes do not meet.* |
| January 29 | Census Date |
| *March 10-14* | *Spring Break. Classes do not meet.* |
| March 28 | Last Day to Drop a Class |
| May 2 | Last day of classes |
| May 7 | Final Exam, Wednesday night, 5:30-8:00 PM |

**Drop Policy:** Students may drop or swap (i.e., add and drop 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).

> *Paperwork: When dropping the course, you are responsible for seeing that all of the proper paperwork is completed and submitted to your academic advisor. If this paperwork is not completed, you will receive a letter grade corresponding to your earned grade, including zeros for all missed work.*

**Expectations for Out-of-Class Study:** Beyond the time required to attend each class meeting, students enrolled in this course should expect to spend *at least* an additional 9 hours per week of their own time in course-related activities, including reading required material, completing assignments, preparing for exams, etc. *Students with a weak background in General Chemistry may find that they need to spend much more than 9 hours per week in study.*

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| **Grading**: | Mid-term exam average | 60% | |
| | Sapling Learning Online Homework | 10% | |
| | Comprehensive Final Exam | 30% | Wednesday, May 7, 5:30-8:00 PM |

Four mid-term exams plus a Comprehensive Final Exam will be given. These exams will cover the reading, lecture material, and assigned problems. *Due to the nature of Organic Chemistry, each exam is comprehensive.*

**Make-up Policy:** *No make-up exams will be given, and any missed exams will result in a grade of zero. However, the final exam score will replace the lowest mid-term exam score if it is to the student's benefit.*

**Grade assignments:**

| Average | Letter Grade |
|---|---|
| ≥ 88.00% | A |
| ≥ 75.00% | B |
| ≥ 65.00% | C |
| ≥ 55.00% | D |
| < 55.00% | F |

**Sapling Learning Online Homework.** There will be 12 homework assignments, and the lowest grade will be dropped. *Once the due date for a homework assignment has passed, late work will not be accepted.* Most of these assignments are quite lengthy, so it is important to begin each assignment early. If you need help with the Sapling Learning, you should visit the Chemistry Clinic in SH 318.

**Additional Homework**: *Working through problems is the best way to learn the material in this course.* In addition to the assigned homework problems on Sapling Learning, which will count toward 10% of your grade, each student is expected to work homework problems found in the textbook. Although these problems will not be collected or graded, you are responsible for working them out. Be advised that just doing the simple drill problems is not adequate preparation; you should do the longer problem-solving type of questions as this really addresses whether you adequately understand the material.

**Examination Needs:** You must bring the following to each examination:
UTA Student ID Card
No. 2 pencils with eraser
Scientific Calculator (only non-graphing calculators are allowed; you may not use a graphing calculator)
*Students are not allowed to have access to cell phones or digital pagers during any exam.*

**Cell Phones:** Please silence all cell phones prior to class. *Texting during class is inappropriate and will not be tolerated.*

**Attendance:** 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 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. An important point is that class time is limited, and I will not have time to cover all of the material given as reading assignments. You are responsible for all of the material covered in the lectures, the assigned text, and the problems.

**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.

**Topics to be Covered:** The first fourteen chapters from the David Klein textbook will be covered this semester.
Chapter 1, "A Review of General Chemistry: Electrons, Bonds, and Molecular Properties"
Chapter 2, "Molecular Representations"
Chapter 3, "Acids and Bases"
Chapter 4, "Alkanes and Cycloalkanes"
Chapter 5, "Stereoisomerism"
Chapter 6, "Chemical Reactivity and Mechanisms"
Chapter 7, "Substitution Reactions"
Chapter 8, "Alkenes: Structure and Preparation via Elimination Reactions"
Chapter 9, "Addition Reactions of Alkenes"
Chapter 10, "Alkynes"

Chapter 11, “Radical Reactions”
Chapter 12, “Synthesis”
Chapter 13, “Alcohols and Phenols”
Chapter 14, “Ethers and Epoxides; Thiols and Sulfides”

**Course Goals:** Upon completing the course, the student should be able to:

1) Correctly name organic compounds using IUPAC nomenclature, or, given an IUPAC name, depict the molecular structure.
2) Accurately represent the structure of any organic compound, both on paper and also in three dimensional space using models or drawings.
3) Account for the physical properties and chemical reactivity of any organic compound on the basis of molecular structure.
4) Predict the outcome of an organic reaction, given the identities of the reactants.
5) Recognize important substances and chemical processes which have practical applications in household, laboratory, industry, and medicine.
6) Use the theoretical concepts of reactive intermediates, molecular orbitals, hybridization, resonance, tautomerism, and polarity in discussing the structure and reactivity of organic compounds.

**Student Support Services**: UT-Arlington provides a variety of resources and programs designed to help students develop academic skills, deal with personal situations, and better understand concepts and information related to their courses. Resources include tutoring, major-based learning centers, developmental education, advising and mentoring, personal counseling, and federally funded programs. For individualized referrals, students may visit the reception desk at University College (Ransom Hall), call the Maverick Resource Hotline at 817-272-6107, send a message to resources@uta.edu, or view the information at www.uta.edu/resources.

Problem-Solving Skills Session: Dr. Rogers will conduct a “Problem-Solving Skills Session” each Wednesday afternoon, 3:30-5:00, in SH 100. Emphasis will be given on practicing the skills learned in the Chemistry 2321 lecture. Attendance is optional.

Chemistry Clinic: The Chemistry Clinic, located in Room 318 Science Hall, will be staffed with tutors available to answer your questions related to lecture and homework. Hours of the Chemistry Clinic will be announced in class. This service is free for students enrolled in Chemistry 2322.

Science Education and Career Center: The Science Education and Career Center, located in Room 105 of the Life Science Building, provides a variety of materials for assisting Chemistry students, including old Chemistry 2321 exams.

Supplemental Instruction (SI) is a FREE voluntary academic development program that increases student performance and retention. The program is offered to all students in this class, as well as for other historically difficult subjects on campus.
SI provides regularly scheduled out-of-class peer facilitated sessions. Senior students (SI Leaders), who have successfully taken the course before, facilitate structured group study sessions to support students to master course content and learn effective study skills.
On average, students who attend SI on a regular basis, obtain a half letter to a full letter grade higher when compared to those students who do not attend. It is also a great way to get to know students in your class.
All SI Leaders receive extensive training. Session times will be presented by your SI Leader during the first week of class; alternatively you can visit our website at www.uta.edu/utsi

**Strategies for Succeeding in Chemistry 2321**:

1. Attend *every* lecture.
2. Prior to class, read the chapter which will be covered in lecture.
3. Review your lecture notes after each class. Correct obvious errors and note topics which require further study or clarification.
4. Work all of the suggested homework problems. Do not look in the solutions manual until you have given your best effort to solve the problem on your own.
5. Use practice tests available from the Science Learning Center.
6. Spend the necessary amount of time studying chemistry. The rule of thumb for succeeding in Chemistry is three hours of study for every hour of lecture. This means that at a minimum you should plan to study Chemistry nine hours each week.
7. Don’t procrastinate. These concepts take time to sink in, and you may have to practice these exercises over a period of many days in order master the necessary skills.
8. Form a study group. This is your first avenue for getting help. Be able to communicate with each other on short notice, not just before 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.*

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.

**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.

**Final Review Week:** A period of five class days prior to the first day of final examinations in the long sessions shall be designated as Final Review Week. The purpose of this week is to allow students sufficient time to prepare for final examinations. During this week, there shall be no scheduled activities such as required field trips or performances; and no instructor shall assign any themes, research problems or exercises of similar scope that have a completion date during or following this week *unless specified in the class syllabus*. During Final Review Week, an instructor shall not give any examinations constituting 10% or more of the final grade, except makeup tests and laboratory examinations. In addition, no instructor shall give any portion of the final examination during Final Review Week. During this week, classes are held as scheduled. In addition, instructors are not required to limit content to topics that have been previously covered; they may introduce new concepts as appropriate.