COURSE SYLLABUS

CLASSES: Tue & Thu @ 09:30 to 10:50 AM, in WA Baker Chemistry Research Building (CRB 114).

INSTRUCTOR: Alejandro Bugarin Ph.D.

A. Office: CRB 205

B. Telephone: (817) 272-9399

C. E-mail: bugarin@uta.edu Web page: http://www.uta.edu/faculty/bugarin/

D. Office Hours: Students are welcome to consult me informally without appointment after class during the hours of 10:50-12:00 a.m. on Tue & Thu (unless announced otherwise). Other times can be scheduled by appointment.

E. Important Dates: August 24, First day of class

September 11, Census day

November 1, Last day to drop a class.

November 23-24, Thanksgiving Break

December 06, Last day of class.

December 13, 2017, 5:30-8:00 p.m., Departmental Final Exam

F. 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.

A. 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.

B. LEARNING OBJECTIVES:

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

A. Correctly name any organic compound using IUPAC nomenclature, or, given an IUPAC name, depict the molecular structure.
B. Accurately represent the structure of any organic compound, both on paper and also in three-dimensional space using models or drawings.
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.

C. 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.

D. MATERIALS

A. Organic Chemistry, Third Edition by David Klein (Wiley Publisher) (***REQUIRED***)
B. Organic Chemistry, Study Guide and Solutions Manual, Second Edition, David Klein. (***Optional***)
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. (***Optional***)
E. Open a Wiley Plus account and do the assignments. Visit www.wileyplus.com and enter your course ID: 589621 (***REQUIRED***). *It is recommended to purchase the book and Wiley Plus together to save money.*
F. Assigments will also be giving via Blackboard. Therefore, make sure you have access to blackboard.

E. TOPICS TO BE COVERED AND SCHEDULE

Class	Day	Date	Lecture Topic	Assignments Due
1	Thu	Aug 24	Class Overview; Chapter 1: A Review of General Chemistry	
2	Tue	Aug 29	Chapter 1: Electrons, Bonds, and Molecular Properties	
3	Thu	Aug 31	Chapter 2: Molecular Representations	Chapter 1
4	Tue	Sep 05	Chapter 2: Molecular Representations	
5	Thu	Sep 07	Chapter 3: Acids and Bases	Chapter 2
6	Tue	Sep 12	Chapter 3: Acids and Bases	
7	Thu	Sep 14	Chapter 4: Alkanes and Cycloalkanes	Chapter 3
8	Tue	Sep 19	Chapter 4: Alkanes and Cycloalkanes	
9	Thu	Sep 21	Chapter 5: Stereoisomerism	Chapter 4
10	Tue	Sep 26	Chapter 5: Stereoisomerism	
11	Thu	Sep 28	**Exam # 1 (Chapters 1 – 5)**	Chapter 5
12	Tue	Oct 03	Chapter 6: Chemical Reactivity and Mechanism	
13	Thu	Oct 05	Chapter 6: Chemical Reactivity and Mechanism	
14	Tue	Oct 10	Chapter 7: Substitution Reactions	Chapter 6
15	Thu	Oct 12	Chapter 7: Substitution Reactions	
16	Tue	Oct 17	Chapter 8: Alkenes: Structure and Preparation	Chapter 7
17	Thu	Oct 19	Chapter 8: Alkenes: Structure and Preparation	
18	Tue	Oct 24	Chapter 9: Addition Reactions of Alkenes	Chapter 8
19	Thu	Oct 26	Chapter 9: Addition Reactions of Alkenes	
20	Tue	Oct 31	**Exam # 2 (Chapters 6 – 9)**	Chapter 9
21	Thu	Nov 02	Chapter 10: Alkynes	
22	Tue	Nov 07	Chapter 10: Alkynes	
23	Thu	Nov 09	Chapter 11: Radical Reactions	Chapter 10
24	Tue	Nov 14	Chapter 11: Radical Reactions	
25	Thu	Nov 16	Chapter 12: Synthesis	Chapter 11
26	Tue	Nov 21	Chapter 12: Synthesis	
27	Thu	Nov 23	**Thanksgiving Day/ class canceled**	
28	Tue	Nov 28	**Exam # 3 (Chapters 10 – 12)**	Chapter 12
29	Thu	Nov 30	Chapter 13: Alcohols and Phenols	
30	Tue	Dec 05	Chapter 14: Ethers and Epoxides; Thiols and Sulfides	
31	Wed	Dec 13	**Final Exam (Chapters 1 – 14), 5:30 pm – 8:30 pm**	

F. 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 *at time and a location* to be announced in class and posted at the class web site.

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, mid-terms (80 min.) and the final (2 ½ hours) will consist of mainly multiple-choice and a few short-answer questions. Each midterm 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 scheduled on the dates programmed on table 1 of page 2, and they most likely won't be altered. These exam dates will only change under special circumstances. 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. You must bring **# 2 pencil** and **ScanTron form 882-E** to the test.

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.

A descriptive answer key for each exam will be posted on the course web page. 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 don't 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.

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 Wednesday, December 13, 5:30 pm to 8:00 pm; it will be **comprehensive** in nature and will be written by all faculty that are teaching Organic I this semester. Exam location: to be announced.

E. **Quizzes on Wiley Plus**:

During the course of the semester eleven short quizzes will be administered via **WileyPlus**, create your account, www.wileyplus.com. Your best ten quizzes will figure into your final grade. No make-up quizzes will be given. This semester your class can be find using the following **Course ID: 589621**

F. **Quizzes on Blackboard**:

Also, throughout the course of the semester ten short quizzes will be administered via **Blackboard**, go to your account, https://elearn.uta.edu/. Your best ten quizzes will figure into your final grade. No make-up quizzes will be given. However, if you missed a quiz and want to make up for the grade read the following homework assigments.

G. **Homework Problems (optional)**:

Problems from the textbook (David Klein) will be assigned, although these will not be fully 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. A minimum of **15 problems** will be collected, *of your choice,* from each chapter. It is expected that you pick problems from all levels of difficulty. Questions and answers should be on your hand-out. You must follow the rules (I will ***only*** explain all the rules the first day of class), if you miss any of those rules you will receive a negative grade (-1 point each time). 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! **Additional** on-line homework system are available through Wiley Plus and Blackboard, which are linked to this class.

G. 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. No "curve" for scores will be given. ***Therefore, work hard throughout the semester.*** If you need extra help, please visit the Chemistry Clinic located on SH 318. An alternative is to attend Prof. Rogers problem solving weekly sections, which date and time will be announced in class.

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

Wiley Plus + Orion	10%
Quizzes on Blackboard	05%
Three midterms	60%
Final comprehensive	25%

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
89% or higher	A
76% or higher	B
65% or higher	C
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.

Attendance:

At the University of Texas at Arlington, taking attendance is not required. Therefore, I will not take attendance. However, I strongly encourage you to attend class meetings for your own benefit.

Academic Integrity:

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 date, 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:

- *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."*

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 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

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.

Emergency Exit Procedures:

Should we experience an emergency event that requires us to vacate the building, students should exit the room and move toward the nearest exit, which is located at your front-left corner. When exiting the building during an emergency, one should never take an elevator but should use the stairwells. Faculty members and instructional staff will assist students in selecting the safest route for evacuation and will make arrangements to assist handicapped individuals.

Title IX:

The University of Texas at Arlington is committed to upholding U.S. Federal Law "Title IX" such that no member of the UT Arlington community shall, on the basis of sex, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any education program or activity. For more information, visit www.uta.edu/titleIX.

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 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:

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:

***For accommodations contact: **The Office for Students with Disabilities, (OSD)** www.uta.edu/disability or calling 817-272-3364.