**Syllabus Chemistry 2322-002: Organic Chemistry II Spring, 2014**

**Class Meetings:** Tuesday, Thursday; 9:30am–10:50 am, Chemistry Research Building (CRB) 114

**Instructor:** Suchismita Acharya, Ph.D.

**Office Location:** 300E Science Hall

**Office Telephone Number:** 817.845.0304

**Email Address:** acharya@uta.edu

**Office Hours:** Tuesday and thursday 12.30 AM-2PM; or by appointment

**Course Webpage** http://elearn.uta.edu

Handouts, problem sets, and some additional resources (like old exams) will be available at these sites or via email (MavMail).

**Important Dates** Jan 29, Census Day;

Mar 10-14, Spring Break;

Mar 28, Last day to drop classes;

May 2, Last day of classes;

**May 8 (Fri: 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 2322 - Spring14 – ACHARYA). See the problem 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:**

A comprehensive survey of the chemistry of carbon compounds: their structure, properties, bonding, stereochemistry, reactions, and reaction mechanisms. An introduction to mass spectrometry, infrared and nuclear magnetic spectroscopy and its application in structure determination. A description of carbonyl chemistry and its relevance to biomolecules, amino acids, carbohydrates and lipids. A description of the chemistry of dienes, benzene and aromatic substitution reactions and the chemistry of amines.

**Position of the Course in the College Curriculum:**

CHEM-2322 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 second half of a one-year course designed to survey the structure, reactivity and synthesis of carbon compounds. This course is a prerequisite for CHEM-5319 General Biochemistry I. Organic I, CHEM-2321 (or equivalent) with a grade of C or higher, is a prerequisite for this course – what this means in reality is that you will need material from this course to successfully navigate Organic II. It is therefore incumbent on you to review and thoroughly understand the material from this earlier course.

**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.
* Deduce the structure of an organic compound, given appropriate experimental and/or spectroscopic data. 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. Design short synthetic sequences (2-5 steps) for the preparation 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:**

1. Structural Determination of Organic Compounds: Infrared and Mass Spectroscopy – Chapter 15
2. Structural Determination of Organic Compounds: Nuclear Magnetic Resonance Spectroscopy – Chapter 16
3. Conjugated Pi Systems and Pericyclic Reactions – Chapter 17

***Midterm Exam I on CHAPTERS 15-17 (Feb 18, Tuesday, ca. 10 lectures)***

1. Aromatic Compounds – Chapter 18
2. Aromatic Substitution Reactions – Chapter 19
3. Aldehydes and Ketones – Chapter 20

***Midterm Exam II on CHAPTERS 18-20 (Mar 27, Thursday, ca. 10 lectures)***

1. Carboxylic Acids and Their Derivatives – Chapter 21
2. Alpha Carbon Chemistry: Enols and Enolates – Chapter 22
3. Amines –Chapter 23

***Midterm Exam III on CHAPTERS 21-23 (Apr 29, Thursday, ca. 7 lectures)***

1. Carbohydrates – Chapter 24
2. Amino Acids, Peptides, and Proteins – Chapter 25

***FINAL EXAM (May 8th, 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](http://www.uta.edu/universitycollege/current/academic-support/university-%20tutorial/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.
4. *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.
5. Your exams will be graded before the third following class. I will prepare an Exam Key for the three 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** – May 7th 5:30-8:00 PM. **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.**

1. **Librarian to Contact:**  Antoinette Nelson email: [nelsona@uta.edu](mailto:nelsona@uta.edu)
2. **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.
3. **Problems**: Problems will be assigned for each chapter (ca. 13 problem sets) 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:
4. **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
2. a) If you already have a Sapling Learning account, log in then skip to step 3.

b). 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.

c) 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.

1. Find your course in the list (you may need to expand the subject and term categories) and click the link.
2. 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.

**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 15%

Midterm Exams (3) 60%

Final comprehensive 25%

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.

**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.***

1. **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.***
  4. ***Misrepresentation, or "fudging" of laboratory data.***
  5. ***Submitting an assignment copied from an answer key or answer book.***
  6. ***Unauthorized possession of an examination or answer key.***
  7. ***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.***
  8. ***Giving assistance to any student, or receiving assistance from any student, during an examination.***
  9. ***Looking at, or attempting to look at, another person's work during an examination.***
  10. ***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

1. ***exchanging information during a test or quiz.***
2. ***looking at another student’s paper during a test or quiz.***
3. ***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.)***
4. ***looking at a book or any other unauthorized source during the test or quiz.***
5. ***accessing information by any electronic means (cellular phones, pages, personal stereos, etc.). None of these items are to be brought into examinations.***
6. ***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 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:***
7. ***the student will be notified and, if the situation merits, asked to explain his/her actions.***
8. ***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.***
9. ***the student may be removed to a different location to complete the test.***
10. ***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.***
11. ***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 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 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 At the end of each term, students enrolled in classes categorized as lecture, seminar, or

**Survey:**

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.

Please fill out and return this page of the Syllabus before the census date-29th Jan-2014

**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.

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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: