

Spring 2017 Organic Chemistry I (Unique # 51200/51320)

MWF 9:00-10:00AM, Welch 2.224

Instructional Staff:

Role	Name	Office Hours	Location
Lecturer	Dr. Jonathan F. Arambula	M: 10:00-11:00AM T: 11:00-12:00PM	WEL 5.266C
TAs	Zach Kasun – kasun@utexas.edu Gang Wang – gangwang@utexas.edu Juhoon Lee – juhoonlee@utexas.edu	See Canvas	WEL 2.302

Course E-Mail : All e-mail related to CH 320M and CH 328M should be sent to the following address: jfarambula@cm.utexas.edu

Note: Dr Arambula does not use any social media-all communication with Dr Arambula will be conducted through the official UT email account above.

Course Web Site:

This CH 320M/328M course will use Canvas for online material.

The web site will be an integral component of this course! It will be updated regularly with course announcements, lecture notes, homework assignments, and exam information. Important updates will be announced in lecture, but you should plan to visit the web site regularly so you don't miss anything.

Piazza: This is an open forum, online, discussion group that we use to post Q&A for the whole class. Anyone can post & answer questions, but Dr Arambula also posts & answers questions. It is a good addition to office hrs.

Course Materials:

Textbook (required): Brown, Iverson, Anslyn *Organic Chemistry*, 7th Ed., Brooks/Cole, 2014. Study Guide (recommended): Iverson & Iverson, *Student Study Guide and Solutions Manual for Organic Chemistry*, 7th Ed., Brooks/Cole, 2014. Purchase of a molecular models kit is also highly recommended.

Prerequisites and Co-requisites:

The development of organic chemical structure, nomenclature, and reactivity. Only one of the following may be counted: Chemistry 610A, 310M, 618A, 318M, 320M, 328M.

Prerequisite: Credit of registration for Chemistry 210C or 220C; and the following

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coursework with a grade of at least C- in each: Chemistry 302 or 302H; and 204, 317, or 104M and 104N.

Adds, Drops and Withdrawal:

Friday January 20th : Last day of the official add/drop period. After this date, changes in registration require the approval of the department chair and usually the student's dean. Last day an undergraduate student may add a course except for rare and extenuating circumstances. Last day to drop the course for a possible refund.

Wednesday Feb 1st : Last day to drop the class without possible academic penalty. Last day a Q drop can/will be assigned by the instructor. You will need the approval of Dr. Arambula, your academic adviser, and your college's dean to drop the course at this point. After this date, withdrawal from the course requires a substantial non-academic reason, and can only be approved by your college's dean.

Monday, April 3rd Last day an undergraduate student may, with the dean's approval, withdraw from the University or drop a class except for urgent and substantiated, nonacademic reasons and or change from grade to P/F.

Friday May 5th : Last Class Day.

All questions related to enrollment in the course should be directed to the Chemistry Lower Division Office in WEL 2.212.

Attendance: Although attendance will not be monitored, the lectures are the heart of this course. Attendance at all lectures is strongly encouraged and all students will be responsible for information and announcements presented in lecture. **Cell phones, pagers, watch alarms, etc. must be turned to silent mode during all lectures and not used at all during examinations.**

Office Hours: Please take advantage of office hours if you have any questions about the course content (lecture notes, textbook readings, homework assignments). Although e-mail has become increasingly important as a means of communication, it does not provide a convenient forum to discuss a visual subject like organic chemistry. There are many TAs who help out with this course. They are all Ph.D. students in organic chemistry; you can work with any of them and they hold their hours in WEL 2.302.

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Recitation Sessions: Two-recitation sessions will be held per week. These sessions will be held by a TA and will involve the discussion of HW problems and discussion of new problems that will reinforce concepts and skills that were discussed the week before. Check Canvas for a schedule of sessions.

Homework: The exams in this class require that you solve problems. The best way to prepare for the exams, then, is to work as many practice problems as you possibly can. To encourage this good habit, homework will be assigned on a regular basis:

Several homework problems from the textbook will be **assigned** during each chapter (see Canvas for assignment). You should attempt to work these problems after you study your lecture notes. *Assigned problems from the textbook will not be collected or graded*, but you'll want to work through as many of them as possible so that you can develop the analytical skills you'll need in order to do well on the exams.

Evening Major Exams:

Three evening major exams will be given during the semester. These exams are scheduled from 7:00 to 9:00 p.m. on the Tuesday evenings listed below. These dates were published in the Spring 2017 course schedule.

Exam*	Date (exam time is 7–9 p.m.)	Locations (Subject to change)
Exam #1	Tuesday 2/14	UTC 2.102A
Exam #2	Tuesday 3/21	UTC 2.102A
Exam #3	Tuesday 4/18	UTC 2.102A

*The exam will emphasize material covered in lectures. Organic chemistry is a **cumulative** subject, however, so you will still be expected to know the material from earlier in the course.

All exams will be “closed book”, and you will not be allowed to use molecular models, calculators, books, or notes. Exams written in pencil will not be eligible for re-grades. Answers written in pencil with ink overlay will not be graded. Answers written in red ink will

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not be graded.

Please bring your valid UT ID card to all exams, since you will need to show it when attendance is taken during the exam. Exams will commence promptly at the stated time. Students arriving after the first exam has been turned in will not be allowed to take the exam!!! Instances of academic dishonesty will be handled according to university policy, and will likely result in failure of the course. Each major exam will be worth a total of **150 raw points** (this provides the graders with maximum flexibility in assigning partial credit). Your raw score (out of 150) will then be converted into a percentage (out of 100), which in turn will be converted into a standard T-score. **The T-score represents your “curved” grade on the exam, on a 100 point scale.** T-scores are calculated using the following formula:

$$T = [((x-X)/s) \cdot 10] + 70$$

where x = your raw percentage (out of 100)

X = the raw percentage average for the class = $\sum x/N$

N = number of exam scores recorded

s = standard deviation = $[\sum (x-X)^2 / (N-1)]^{1/2}$

Use of standard T-scores allows an effective averaging of grades without introducing a bias in favor of tests with the greatest standard deviations. Since it is based on a normal (Gaussian) distribution, it generally represents the fairest way of grading. (Nearly all national exams such as the SAT, MCAT, and GRE use a similar form of Standard T-scores.)

*******Important Notice*******

In general, using T-scores increases everyone's grades compared to using absolute percentages. Nevertheless, we will keep track of your absolute percentage scores on every test. If your absolute percentage is ever higher than your T-score, we will use the absolute percentage score for your course grade calculation. No grade will be lowered by using a curving system.

Failure to take two of the midterm exams without a valid, **documented** excuse will automatically result in a failing grade for the course.

Exam File and Keys:

Answer keys for exams will be posted on Canvas, **after** all exams have been taken.

Conflict Exams & SSD:

Any student needing extra time, a reduced distraction environment, aids, etc. for exams is required to notify the chemistry undergrad office. A letter of documentation of special needs must be furnished by the Dean of Students' office; otherwise we may not be able to arrange for suitable accommodations. Sign up for this service here:

<http://www.cm.utexas.edu/testing>

Only those students having an excusable, documented conflict are eligible to take the conflict exams which will be offered before each midterm. An excusable conflict is another regularly scheduled class or lab (published in the course schedule) which meets on your exam night, between 7:00 and 9:00 p.m., an evening exam in another class scheduled at the same time as our exam (please be prepared to provide documentation, i.e. a copy of the syllabus from the other class), or a religious observance. An organizational meeting or a job is not an excusable conflict!!! If you have a job and you normally work on exam nights, plan now to change your work schedule so that you can be present for the major exams. **Students who qualify to take the conflict exams must sign up for the service at this WEB site:** <http://www.cm.utexas.edu/testing>
The conflict exams will be given from 4-6 pm on 2/15; 3/22; 4/19.

Excused Absences:

Failure to take **two** midterm exams will result in an automatic F (or, in the case of justifiable excuse, an X) being assigned for the course. Personal problems, family vacations, weddings, etc. are not valid reasons to receive an excused absence. Excused absences will require appropriate documentation.

Final Examination:

The final exam is mandatory, and will be given on Thursday, May 11, from 2-5 PM.

Please note that standard final exam times are published in the Spring 2017 course

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schedule, so you should have been aware of this exam time when you signed up for the course! The final exam will be comprehensive. Material from the entire semester can be included. The final exam will be worth 200 raw points, and will account for 35% of your overall grade in the course. Standard T-scores will be calculated in the manner described above. There will be **no make-up or conflict exam for the final**. Failure to take the final exam at the scheduled time and place without an approved, documented excuse will automatically result in a failing grade for the course. If an extreme medical emergency or justifiable nonacademic excuse prevents you from taking the final exam at the scheduled time, the symbol "X" (incomplete) will be assigned when final grades are reported at the end of the semester. (The procedure for making up an incomplete will be worked out on an individual basis, but almost always requires a student to take the final exam when it is given at the end of the next long semester.)

Grading Policy:

Your final course grade will be calculated as a **weighted** numerical average, on a 100 point scale, as described below.. T-scores will be used in the calculation of your final weighted numerical average.

Weight Graded Item (max. score = 100)

35% Final Exam Grade

60% Major exams (20% each)

5% Homework

Remember, if your raw percentage score for any exam is higher than your T-score for that exam, the raw percentage score will be used for the calculation of your grade. Also note that the T-score for each exam represents your curved grade for that exam. Since individual exam grades are curved, no additional curve will be applied at the end of the semester.

The following conversion table will be used to determine final course letter grades*:

A range: $90.0 \leq T$

B range: $80.0 \leq T \leq 89.9$

C range: $70.0 \leq T \leq 79.9$

D range: $60.0 \leq T \leq 69.9$

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F range: T < 60.0

*Missing two midterms or the final exam without a documented, valid excuse will automatically result in a failing grade.

Please note that letter grades in this course are based performance of the work you submit. You **earn** the grade; I do not give the grade. Grade boundaries do need to be established, and a consequence is that some students will finish with a “borderline” grade. Final grades assigned according to the scheme described above will indeed be final.

Re-evaluation Policy:

Requests for major exam re-grades must be submitted in writing to the Lower Division Office (WEL 2.212) within **one week** after the return of the graded material. When you fill out the re-grade request form, please provide a clear and concise explanation of the perceived problem. To demonstrate that you have reviewed the “official” answer key, you will also be asked to staple a copy of the relevant page(s) from the posted answer key to your re-grade request form. Re-grades will not be considered for exams written in pencil, for questions answered in red ink, or for questions that refer to “see back of page” or that give similar instructions to graders. **Re-grades will not be considered for less than a 5 raw point change**, except for mistakes in addition by graders. Do not write on the exam itself, as submitting an altered exam for a re-grade is considered to be cheating and will be treated as such! (A random sample of exams will be photocopied before graded exams are returned.) We will usually re-grade the entire exam and that may result in a lower score as well. There will be no re-grades possible for the final exam. Dr. Arambula will look carefully at the final exams of all students who end up reasonably close (generally within 2 percentage points) to the final letter grade boundaries to determine if each exam was graded correctly, according to the instructions.

Academic Dishonesty:

We expect each of you to conduct yourselves honorably. Students who violate the University rules on scholastic dishonesty are subject to disciplinary penalties including the possibility of failure in the course and dismissal from the University. **During the major exams: you are not to even look at a cell phone, or other electronic device (tablets or**

smart phones)-this will be considering cheating. *The university policies on scholastic dishonesty will be strictly enforced.*

Emergency Evacuation:

The following recommendations regarding emergency evacuation from the Office of Campus Safety and Security, 512-471-5767, <http://www.utexas.edu/safety/>

1. Occupants of buildings on The University of Texas at Austin campus are required to evacuate buildings when a fire alarm is activated. Alarm activation or announcement requires exiting and assembling outside.
2. Familiarize yourself with all exit doors of each classroom and building you may occupy. Remember that the nearest exit door may not be the one you used when entering the building.
3. Students requiring assistance in evacuation shall inform their instructor in writing during the first week of class.
4. In the event of an evacuation, follow the instruction of faculty or class instructors.
5. Do not re-enter a building unless given instructions by the following: Austin Fire Department, The University of Texas at Austin Police Department, or Fire Prevention Services office.

STUDY GUIDE AND TIPS FOR ORGANIC CHEMISTRY

Organic chemistry will be challenging and difficult, even for the brightest students. In this course, you will develop analytical (reasoning) thinking skills to solve organic problems. This is an acquired skill, which take time to develop. Although it will require some memorizing of facts, memorization alone will not be sufficient. You must apply these tools, in an analytical fashion to solving organic problems. Follow these important guides for you to be successful:

1. **DO NOT FALL BEHIND.** There is a large volume of material to be covered and each concept is built upon the previous one; this means that the material is cumulative. Get into the habit of reviewing each day's lecture and the previous days lecture; you will see how the whole is related to the parts. **A good way to do this is to re-copy your class notes.** You can add material and other hints and you will quickly recognize things you do not understand. Ask for help that day!
2. **FOLLOW THE TOPIC GUIDE.** We do not cover every subject in textbook. To be most efficient with your time, focus on the outline of the course-the Topic Guide which is posted to the course WEB site & updated frequently.
3. **UNDERSTAND THE BASICS.** All of chemistry is governed by the basic laws of physics and mathematics. We will not be dealing with the high levels of math in this class, but the results of the calculations are simplified to drawings of structures. Most reactions can be understood by attaching positive "pieces"

(electrophiles) to negative “pieces” (nucleophiles). Regardless of the topic, try to identify the basic underlying principle. This approach will always be presented in the lecture.

4. **DEVELOP YOUR ANALYTICAL THINKING.** This is an acquired skill; all of us have had to learn it. One of the best ways to develop this cognitive process is to solve as many problems as you can. Homework sets (for graded credit) will be assigned, but all the problems at the end of the chapters deserve attention. Some of those will appear on the major exams.
5. **BRAIN MAINTENANCE.** This material is intense and you can only absorb a finite amount of material in any one study session. You have other courses to study as well. Arrange a daily schedule so that you mix in a non science course with your science courses; take a study break at least every 2 hrs; exercise and eat balance meals, your brain requires oxygen and glucose to function properly; get plenty of sleep; if you plan to be up late, take a nap in the late afternoon. A certain amount of school (course) anxiety will be natural, but your best defense against it will be thorough preparation.

Course Outline

Chapter 1: Covalent Bonding and Shapes of Molecules

Chapter 2: Alkanes and Cycloalkanes

Chapter 3: Stereoisomerism and Chirality

Chapter 4: Acids and Bases

Chapter 5: Alkenes

Chapter 6: Reactions of Alkenes

Chapter 7: Alkynes

Chapter 8: Haloalkanes, Halogenation, and Radical Reactions

Chapter 9: Nucleophilic Substitution and beta-Elimination

Chapter 10: Alcohols

Chapter 11: Ethers, Epoxides, and Sulfides