Chemistry 262 — Syllabus, Summer 2017

Organic Chemistry

Lecture Instructor: Dr. Rhiannon Iha  
E-mail: rkiha@wustl.edu  
Office: N/A

Lecture: M-F 9am to 10:45am, TBD  
Preliminary Exams: T, 7-8pm, TBD

Help Sessions: M, 7pm-8pm, TBD  
Office Hours: M-F 10:45am to 14:45 am, TBD

Text Books:

Supplementary Materials:
Washington University Orbit Molecular Model set, Indigo Instruments  
Calculator: Any non-programmable, non-graphing calculators  
iClicker (Available through the library)

Laboratory Materials:
Chemistry Spiral Bound Carbonless lab Notebook, 50-100 pgs, Hayden McNeil  
Safety Goggles, OSHA-ANSI Z87.1 Approved, Nitrile Gloves, Disposable Lab Coat  
(all items are available at the Washington University Book Store)

Course Description:
The second semester of organic chemistry is an extension of the first semester of organic chemistry, and the reactions and mechanisms studied during the first semester will be continued and expanded upon. Many of these new reactions will focus on carbonyl chemistries, which are very important in a variety of biological processes. Additionally, spectroscopic methods used in the identification and analysis of organic compounds will be integrated into course material and will be used to help understand both structure and reactivity. This course builds upon information learned in the first semester of organic chemistry and will provide a foundation for solving complex chemical and biochemical questions. Since problem-solving skills are necessary skills for the application of organic chemistry, memorization of material is not enough and the application of learned knowledge to new situations is a key part of being successful in organic chemistry and in scientific fields.

Course Philosophy and Teaching Philosophy:
A key goal of education is to create independent, life-long learners. Organic chemistry is no different in that it is a course designed to prepare students for future education and employment in scientific fields; as such this course is designed to not only help students expand their understanding of chemistry and gain a foundation for understanding biochemical and biological processes, but it is a course where students should develop learning, study, and problem solving skills that will be beneficial to them for future educational and occupational endeavors. It is important to note that in many cases a traditional lecture course is set up such that students believe that they should get answers from instructors; instead this course focuses on the idea that instructor should provide a reasonable foundation of material such that students can explore and obtain answers for themselves. What this means is that the person in charge of learning is the student. To support this philosophy, a variety of assignments and activities both in and out of class will be employed to help students engage the material on different levels and in different ways. This will require participation from students during lecture time and also requires an active involvement of students in every facet of the course.
IMPORTANT COURSE INFORMATION

Lectures Attendance and Participation:
The quantity of information to learn for chemistry 262 is significant, and in combination with the fast pace of a summer course, is too much to cover in the lecture. As such, the lectures will focus on key ideas, illustrative examples, and material that the instructor feels should be emphasized or explained in greater depth. Video lectures on certain topics will also be provided to watch outside of class. During lecture there will be activities designed to extend and enrich students’ understanding of organic chemistry; in order to provide credit for that work, attendance is necessary. So, while attendance will not be formally recorded or required, it can affect a student’s grade. Remember, the lecture is designed to highlight significant points course material, and material presented on quizzes and exams will often be closely related. Consequently, it is to your advantage to attend the daily lectures as part of the regular studying that will help you to perform well in the course. Organic chemistry is a subject where new topics build upon previously learned materials and skills. Finally, you should plan to attend every lecture, as missing one class is equivalent to missing a full week of class during the regular semester.

Blackboard:
Please become familiar with and plan to regularly access Blackboard. Required video lectures, suggested book problems, practice problem sets, online chapter quizzes and grades will be posted there. Additionally most course-related communication will occur through Blackboard. The discussion board will be an important feature for communicating with the instructor and other students. Questions and clarifications about course material and related problems from the book or problem sets can be submitted in the discussion board; other students may feel free to answer the questions, and Dr. Iha will check the board daily to provide answers and clarifications.

**IT IS YOUR RESPONSIBILITY TO KEEP UP WITH INFORMATION POSTED ON BLACKBOARD**

Reading Assignments, Practice Problems, and Exploratory Worksheets:
Before each chapter, related reading and recommended problems will be provided. These problems are posted on Blackboard along with supplemental practice problems sets and exploratory worksheets. In general, practice problem sets will not be collected or graded, and students should check their answers in the solution manual or answer key. To get the most out of doing these problems, they should be attempted without using the answer key. It is often important to struggle and reason through problems to gain a better understanding of organic chemistry. Finally, if you have difficulty doing these problems, please ask for help by attending office hours.

Online Chapter Quizzes and In Class Pop Quizzes:
These quizzes are designed to help students keep up with material and test themselves on fundamental concepts. In blackboard, there will be an online quiz for each of the chapters involving chemistry and chemical reactions. There are a variety of questions of varying difficulty that will be selected randomly for each instance of the quiz; a chapter quiz can be taken up to five times with only the highest quiz score being credited to the course grade. Answers to online quiz questions will not be provided. During the semester there will also be unannounced quizzes during lecture time. Answers will only be provided in class. Not all in class pop quizzes will count toward the course grade.

Preliminary Exams and Final Exam:
There will be 4 preliminary exams and one cumulative final; these exams will focus on testing students’ understanding of core chemical concepts, reactions, mechanisms, and more. These exams will also have questions that require the application of learned knowledge. Complete answer keys will not be provided for these exams. The final exam occurs during the final lecture and the exam will not be returned.

Graded Problem Sets:
Science and medicine are at their nature collaborative activities and students often learn best from their peers or from teaching their peers. In order to provide credit for work done outside of class, to help students stay up to date with material, foster collaboration, there will also be four graded homework sets with 1 to 3 problems presented each day, which be available on Blackboard. Some problems for the graded homework set may be taken from the practice problem sets. These homework sets will be due Friday morning before lecture starts at 9am. Not all problems will be graded. A small selection of the problems assigned will be graded in terms of correctness; points will be given for the completeness of the homework set. Complete answer keys will not be provided for these problem sets. These problems should be done on the day they are assigned.
COURSE POLICIES

Academic Integrity Policy:
Ethical behavior is an essential component of learning and scholarship, particularly in the sciences and in the pursuit of medicine. As such, students are expected to adhere to Washington University’s academic integrity policy and are expected to behave ethically and honestly with respect to their education, exams, laboratory work, and course work.

Students should not be in possession and should not use or study from past lectures, exams, quizzes, problem sets, or lab reports—unless provided by the instructor—from previous iterations of the course or from courses in which they were not a student. Any violation of the university or course academic integrity policy including but not limited to cheating; possession of old exams; violating the rules of an exam/assignment; submitting false re-grade requests; copying the work of others; or plagiarism of other students’ work on examinations, quizzes, assignments, and laboratory reports, will be referred to Washington University’s Committee on Academic Integrity. If it is found that the student has violated the academic integrity policy, the penalty will be automatic failure of the course and any other conditions decided upon by the Academic Integrity Committee.

If you have any doubts or questions about what constitutes a violation of the Academic Integrity policy, or any other issue related to academic integrity, please ask your instructor.

Re-grade Policy
Graded material can be submitted for a re-grade with the online re-grade request form available in the “Course Documents” section of blackboard. All re-grade requests must be submitted before lecture and within one class session of receiving the graded material; the complete original quiz, exam, or problem set must be turned in without any additional marks etc. to be considered for a re-grade. Additionally, upon turning in a request, it should be noted that the entire quiz, exam, or problem set will be re-graded, though the focus will be with respect to the requested re-grade material.

Disability Resources and Accommodations
Washington University is committed to providing accommodations and/or services to students with documented disabilities. Students who are seeking support for a disability or a suspected disability should contact Disability Resources at 935-4153. Disability Resources is responsible for approving all disability-related accommodations for WU students, and students are responsible for providing faculty members with formal documentation of their approved accommodations at least one week prior to using those accommodations. Disability Resources VISA forms will be accepted via email and personal delivery. If you have already been approved for accommodations please provide a copy of your VISA within the first week of the session.

Recording of Lectures
In this class, students are not allowed to record audio, make any video, or take photographs of course activity, course lectures, and course material (including those recordings or videos prepared by an instructor), except students permitted to record as an accommodation. The redistribution of any audio or video recordings (including those recordings or videos prepared by the instructor), of statements, comments, or lecture material from the course to individuals who are not students in the course is prohibited without the express permission of the instructor.

Changes to the Syllabus and/or Course
Since there are always unexpected events and circumstances that can occur during the semester, it is possible that certain course requirements, course material, assignments, exams, and due dates may change during the semester. Consequently, the syllabus, the material covered, grading, assignments, examinations etc. can and may be changed at the prerogative of the course instructor; the instructor has the right to make modifications to the syllabus and course at anytime during the semester.
Course Outline and Reading (tentative)

Chapter 16 - Aromatic Compounds: Lecture 1 and 2

Chapter 17 - Reactions of Aromatic Compounds: Lecture 2 to 4

Chapter 18 - Ketones and Aldehydes: Lecture 5 to 7

Chapter 12 - Infrared Spectroscopy, and Mass spectrometry: Video Lectures

Chapter 13 - Nuclear Magnetic Resonance Spectroscopy: Video Lectures

**Small Group Spectroscopy Problem Solving Sessions**: Lecture 8 to 10

**In Class Spectroscopy Problem Solving**: Lecture 11

Chapter 19 - Amines: Lecture 12 and 13

Chapter 20/21 - Carboxylic Acids and Derivatives of Carboxylic Acids: Lecture 13 to 16

Chapter 24 - Amino Acids, Peptides, Proteins: Lecture 17

Chapter 22 - Additions and Condensations of Enols and Enolate Ions: Lecture 18 to 22

Chapter 23 - Carbohydrates and Nucleic Acids: Lecture 22 and 23

FINAL EXAM: Lecture 24 (In Class)

**The order of topics and the number of lectures devoted may change throughout the semester**

**Some topics will be introduced/taught via video lectures followed up with in class activities and problem sessions**
# COURSE CALENDAR

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Grading

3 x 75 point Preliminary Examinations (Tuesday Nights, 7pm-8pm) = 225 points

You will take four preliminary exams, the lowest preliminary exam score will be dropped

In class clicker participation = 20 points

Online Chapter Quizzes = 50 points

Online quizzes may be taken 5 times. The highest score on a given quiz will be counted toward the grade

Pop Quizzes = 45 points

You will sit for multiple pop quizzes during lecture time, only the 5 highest scores will count

4 x 40 point Graded Homework sets = 160 points

One to three problems will be provided each day at the end of each lecture and on blackboard
The homework set is due Friday morning before lecture at 9am
Late homework sets (being turned in after 9am) will receive a five-point deduction

1 Cumulative, In Class Final = 175 points

Laboratory Reports = 175 points

Total = 850 points

- All in class and evening exams and quizzes are closed book and closed note.
- A failing average exam/quiz grade or a failing grade on laboratory reports will result in failure of the course.
- There will be no make-up exams given, but one preliminary exam grade will be dropped.

Grading Breakdown
A 92% and above
B 82% and above
C 72% and above
D 62% and above

This class is not graded on a curve or with respect to an average grade. Grade cutoffs represent the percentage of material that should be mastered to obtain a given letter grade. The grade cutoff listed is for that type of letter grade (e.g. if one obtains a 92.3%, they will likely receive an A-). The cutoff for pluses and minuses will be determined at the end of the semester. These percent cutoffs, are flexible and may be changed based upon exam performance and are considered to be goals to strive for. However, grade cutoffs will not be made higher than these percentages.