

Department of Chemistry and Biochemistry
CHEM 140A Syllabus
Summer Session II, 2015

Instructor: Justin Hammons

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Office: CSE 2210

Office Hours: Mon/Thu: 10:30-11:30am (immediately following lecture)

Lecture: Mon/Tue/Thu/Fri 9:00-10:20am | EBU-1 (Jacobs Hall) 4309

Discussion Section: Tue/Fri: 10:30-11:30am | EBU-1 (Jacobs Hall) 4309

Study Sessions: Sun: 3:00-5:00pm, Sun/Mon/Tue/Wed/Thu: 7:00-9:00pm | EBU-1 (Jacobs Hall) 5101

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Course Description

CHEM 140A is the first term of a year-long sequence (CHEM 140A, 140B, 140C) intended to provide an in-depth overview of the properties, reactivity and transformations of carbon-based compounds. The focus of CHEM 140A is to provide an understanding of: bonding; orbital hybridization; sigma bonding and pi bonding for the formation of organic compounds such as alkanes, alkenes, alcohols, and alkyl halides; molecular structure as a crucial factor to determine physical properties of organic compounds; concepts surrounding the electronegativity and its impact on structure; different types of isometry based on molecular formula and structure (conformational, configurational, functional, etc.); products and reaction mechanisms of the different functional groups (addition, substitution, elimination, acid-base, redox), and the influence of energetics in the outcome of a mechanism; nucleophile and electrophile (as applied to nucleophilic substitution and electrophilic addition reactions); relative stability of reactive species such as free-radicals, carbocations, and carbanions. This course is designed for students that will apply chemistry in their careers. These careers can be related to research, teaching, biochemistry, medicine, industry, and academic, industrial, governmental institutions, and more.

The goal of this course is for the student to develop fundamental skills indisputable for their career development, such as:

- Developing creativity and critical analysis.
- Developing communication and writing skills.
- Emphasizing the importance of teamwork (working in groups).

- Developing the ability to organize ideas.

Ted (Tritonlink Education)

We will be using Ted (ted.ucsd.edu) as the course webpage. All students will need to be able to access Ted. Once you are enrolled in the class you will have access using your ACS username and password. ***Be sure to check the Ted frequently for announcements and updates.*** Course materials will be posted to Ted and can be downloaded. Use the Discussion Board to ask questions on the course material. The instructor, IA, and undergraduate assistants will check the discussion board throughout the course and students are encouraged to answer questions as well. This is a good resource for late night and last minute questions. We will do our best to respond in a timely manner.

Textbook and other Resources

Required: Organic Chemistry: Structure and Function, 6th Ed. Peter Vollhardt and Neil Schore. W.H. Freeman and Company, New York, 2011.

ISBN-13: 978-1-4292-0494-1

ISBN-10: 1-4292-0494-X

We will be using the 6th edition. Other editions may have similar content but the practice problems will be different. You will most likely be using this text in 140B and 140C as well.

Recommended: Study Guide and Solutions Manual for Organic Chemistry, 6th Ed. Neil Schore. W.H. Freeman and Company, New York, 2010.

ISBN-13: 978-1-4292-3136-7

ISBN-10: 1-4292-3136-X

This book is not required and you will have ample opportunities to review the assigned practice problems. However, this book offers very nice summaries for each chapter and provides good review material for this course and the following organic chemistry courses in this series.

Recommended: Molecular Model Kit

A model kit is not required but much of this course and organic chemistry in general is visualizing molecules in 3D. Learning this material often times requires spatially orienting reactions, reagents, and products within a reaction. Having a model kit assists in this visualization process.

Resource: Office Hours and your IA/Undergraduate Assistants

UCSD Summer Academy will be incredibly fast paced, especially given the workload you'll be under. We are providing a significant number of resources to help you keep up with the course. Please attend office hours, take advantage of discussion sections, and attend the undergraduate student assistant help sessions. If you have any question, email me, email the IA, email one of the student assistants, ask us in person. ***Please email us through your***

@ucsd.edu email address! UCSD's spam filter works in weird ways and we want to make sure we get your email. We're all going to be around. We are all here to help.

Examination and Grading

There will be two 100-point midterm exams and a 200-point comprehensive final exam. Be prepared to show picture ID at all exams. Exams will be given only at the scheduled times. Make-up exams are not a possibility. If you are unable to attend an exam, you are expected to contact the instructor as soon as possible.

Midterms	200 points	(two midterms, 100 points each)
<u>Final</u>	<u>200 points</u>	
Total	400 points	

Regrading policy: Carefully check the grading on your examination after it is returned to you. Make no new marks on the exam! If there is an error, return the exam to me, Justin Hammons, with a note indicating the error. If you feel a question has been improperly graded, return the test to me, Justin Hammons, and I will regrade the entire exam. You may use either pencil or pen for the exams, however, **exams taken in pencil will not be eligible for regrades**. Please be aware that when you request a regrade of an exam, the entire exam will be regraded and your score for that exam may go up or down. Exam scores will be considered final three days after the exams are returned to the class.

Course Schedule

This is a very tentative schedule and will most likely change as we move through the course. A more detailed schedule will be provided online. **Please check Ted often for changes to the schedule.**

Midterm 1 will be on the 7th day of class (Thursday, August 13th, 2015).

Midterm 2 will be on the 15th day of class (Thursday, August 27th, 2015).

Final exam will held on Saturday, September 5th, 2015 between 8:30-11:30am.

Given the pace of the class the midterm dates could potentially be moved up or back.

Class	Topic	Chapter(s)
1	Introduction	-
1-2	Bonding	1
3-4	Structure and Reactivity	2
5-6	Alkanes	3
7	Midterm 1	Covering Chapters 1-3
8-9	Cycloalkanes	4
10-11	Stereochemistry	5
12-14, 16	Halogens	6-7

15	Midterm 2	Covering Chapters 4-6
16-20	Alcohols	8-9
21	Final	Covering all Chapters

UCSD Academic Integrity Policy

Integrity of scholarship is essential for an academic community. The University expects that both faculty and students will honor this principle and in so doing protect the validity of University intellectual work. For students, this means that all academic work will be done by the individual to whom it is assigned, without unauthorized aid of any kind. Instructors, for their part, will exercise care in planning and supervising academic work, so that honest effort will be upheld.

Students are expected to complete the course in compliance with the instructor's standards. No student shall engage in an activity that involves attempting to receive a grade by means other than honest effort; for example:

- No student shall knowingly procure, provide, or accept any unauthorized material that contains questions or answers to any examination or assignment that is being, or will be, administered.
- No student shall complete, in part or in total, any examination or assignment for another person.
- No student shall knowingly allow any examination or assignment to be completed, in part or in whole, for himself or herself by another person.
- No student shall plagiarize or copy the work of another person and submit it as his or her own work.
- No student shall employ aids excluded by the instructor in undertaking course work or in completing any exam or assignment.
- No student shall alter graded class assignments or examinations and then resubmit them for regrading.
- No student shall submit substantially the same material in more than one course without prior authorization.

UCSD Special Accommodation Policy

If you have been given an Authorization for Accommodation (AFA) letter from the Office of Students with Disabilities (OSD), you must provide the instructor, your IA, and the OSD Chemistry Department Liaison with a copy of the letter before any accommodations will be provided. All exam scheduling will be coordinated by you and the instructor, with involvement from the OSD Liaison as needed. In order to guarantee accommodations, you must follow the guidelines established by the Instructor and/or Liaison. OSD exams will run concurrently with the scheduled exam.