

**CHEM 432 Sec 1 ORGANIC CHEMISTRY**  
**San Diego State University**

**Fall Semester, 2014, Main Campus**

<b>Instructor Contact</b>	Prof. Jeffrey L Gustafson Chemical Sciences Laboratory (CSL) 208 <a href="mailto:Jgustafson@mail.sdsu.edu">Jgustafson@mail.sdsu.edu</a> (preferred contact); (619)-594-5580 (office)
<b>Lectures</b>	MWF 11:00am–11:50am in WC-220 Scheduling and content is given in the lecture outline below.
<b>Midterm Exams</b>	Saturdays September 20, October 18, November 22 10:00am-12:00 in <b>TBD</b>
<b>Final Exam</b>	Saturday, December 13, 3:30pm–5:30pm ( <i>Group Final; see registrar's schedule</i> )
<b>Office Hours</b>	MWF 12:10pm–1:10pm in CSL-213
<b>Prerequisites</b>	A grade of 'C' or better in Chem 232 or corresponding course. If you have already taken and passed the 432 lab, bring proof to the first lecture. If you have taken 1 <sup>st</sup> semester Orgo elsewhere and want me to evaluate whether you have satisfied the prerequisites, bring written proof of what you have taken and written documentation of what the class entailed.
<b>Expected Learning Outcomes</b>	<p>a) To be able to understand physical and chemical properties of organic substances such as carbonyl compounds, amines and aromatic substances.</p> <p>b) To be able to understand the chemical differences between ketones, aldehydes, and carboxylic acids and their derivatives.</p> <p>c) To be able to determine bonds and hybridizations, aromaticity, and stereochemistry of simple organic carbonyl compounds.</p> <p>d) To be able to depict chemical mechanisms for various organic reactions in the area of carbonyl chemistry using the curved arrow formalism.</p> <p>e) To be able to mechanistically understand reduction and oxidation reactions of organic molecules.</p> <p>f) To be able to determine simple structures of organic compounds based on spectroscopy using infrared (IR) and nuclear magnetic resonance (NMR).</p> <p>g) To be able to see a connection and similarity between organic chemistry and the application on common "daily life" biochemical processes.</p> <p>h) To be able to apply and use the outcomes above in more advanced organic chemistry courses, biochemistry, and synthetic organic chemistry.</p>
<b>Textbook</b>	<i>Organic Chemistry, 11e.</i> , by Solomons, Fryhle, and Snyder, Wiley Publ. 2013; ISBN: 978-1-118-13357-6. Available from the SDSU bookstore for \$158.49 as a bundle with the <i>Sapling Learning</i> (online homework) access (also sold separately; see below).

**Optional Learning Materials**

*Molecular Visions Organic Model Kit* or similar organic chemistry molecular modeling set. Optional, but highly recommended.

*Study Guide and Solutions Manual to Accompany Organic Chemistry, 11e.*, by Solomons, Fryhle, Snyder, and Antilla, Wiley Publ. 2013; ISBN: 978-1-118-14790-0. Not required, but useful for studying.

**Electronic Homework**

*Sapling Learning*

<http://www.saplinglearning.com/>

Access to *Sapling* is available in a bundle with the textbook from the SDSU bookstore or by purchasing an access code for \$29.99 directly from Sapling Learning. The Sapling website will direct you to register for this course. eHomework will contribute 250 points to your final grade. (see last page for instructions).

**Clickers**

We will use *i>clickers* for in-class problem solving exercises. Points will be awarded for these questions, with 2 points given for a wrong answer (i.e. just trying) and 3 points for a correct response. The total of these points will be scaled to 50 and added to your final total as extra credit. Up to 10 "bonus" points will be added to your total out of 50, limited by the maximum of 50 clicker points, to accommodate legitimate absences, clicker problems, etc.

**Note that you will have to attend class to earn these points! Answering for someone else is cheating and if I catch you, then both you and the person for whom you are answering will lose all clicker points for the entire semester, plus I will refer the case to SDSU CSRR (see below).**

You can either purchase an *i>clicker2* device (\$44.50 new or \$34.35 used from the SDSU bookstore) or you can use *i>clicker GO*, which is an app for web browsers, Android, and iOS. *i>clicker GO* costs \$9.99 for a 180 day subscription (available as an in-app purchase or by vouchers sold at the SDSU bookstore). *Please note that most professors using clickers at SDSU currently require the device and do not support the i>clicker GO app; ask if you want to be sure because the device will work for all your classes that require i>clickers.*

To register your *i>clicker2* device (not the app!), follow the link under "Tools" on the Blackboard page for this course.

If you choose *i>clicker GO*, then its website or app will direct you to search for this course and register. *i>clicker GO* is available from the Apple App Store, Google Play, or at <https://iclickergo.com/>.

**You must register your *i>clicker* or you will earn no clicker points! Clicker points will start to count during Week 2 of the course.**

**Exams**

There will be three 2 hour midterm exams during the semester, each worth 150 points. The final exam (also 2 hours) is cumulative and is worth 300 points. If your final exam score is higher than any of your midterm exam scores, then the lowest midterm exam score will be dropped and your final exam score will be scaled to a maximum of 450 points. I.e., your final exam will count for more, replacing the lower midterm exam grade, and giving you a better overall class performance. **There will be no make-up exams.** If you miss an exam, for \*any reason\*, it will count as the dropped exam. The final exam is not optional and cannot be dropped. **There will be no quizzes.**

**Grades**

Your final grade will be based on a maximum of 1000 points, distributed as

follows:

<b><i>Contribution</i></b>	<b><i>Points</i></b>
midterm 1	150
midterm 2	150
midterm 3	150
final exam	300
eHomework	250
Clickers (extra credit)	+50
<b><i>total</i></b>	<b>1000</b>

**Letter Grade Assignment**

Grades will be curved if the instructor deems appropriate, but never downward. The assignment of a letter grade to a given numerical grade will depend on the overall class performance, is a part of the curving process, and so cannot be given precisely in advance. If you're concerned about your progress, then please make an appointment to meet with me.

**Cheating and Plagiarism**

Academic dishonesty is not tolerated and will result in you receiving a grade of zero for the associated activity. Moreover, I will report all violations to the SDSU Center for Student Rights and Responsibilities for investigation and possible disciplinary action, which can include expulsion from SDSU.

For information on SDSU policies, please refer to this URL:  
<http://csrr.sdsu.edu/cheating-plagiarism.html>

**Student disabilities:**

If you are a student with a disability and believe you will need accommodations for this class, it is your responsibility to contact Student Disability Services at (619) 594-6473. To avoid any delay in the receipt of your accommodations, you should contact Student Disability Services as soon as possible. Please note that accommodations are not retroactive, and that I cannot provide accommodations based upon disability until I have received an accommodation letter from Student Disability Services. Your cooperation is appreciated.

**Labs**

The lab coordinator for this course is Dr. Jeffrey Gustafson. You must attend your first scheduled lab or your spot may be forfeit!

**Extra Help**

Help is available in a variety of forms.

- Work with your classmates on difficult material.
- Talk to your laboratory TA.
- Get a tutor. The Chemistry office (GMCS 209) or I can also help you to find one.

**Lecture Materials**

Powerpoint slides will be posted after class. Worked problems and examples done on the board generally will not be posted. You will miss this material if you don't attend.

**10 Tips for Success**

- 1) *Attend all lectures and labs.*
- 2) Read material in book before lecture, prior knowledge will help you become engaged in lecture and better comprehend material.
- 3) Write questions down, and attend office hours.
- 4) Do assigned homework (worth an exam!).
- 5) Discuss concepts with classmates, or study partner.
- 6) Don't fall behind!
- 7) Try to see the big picture. Organic chemistry builds upon itself. Many of

the topics within a chapter are just a slight variation of something you learned.

- 8) Be curious. Always ask why? Curiosity makes a scientist tick.
- 9) Focus on understanding concepts, not memorization.
- 10) Actively read tests and notes... every few minutes you should try a problem.

You can't be a proficient scientist without a basis of factual knowledge, meaning that a little memorization is an essential part of your education. That said, exams will be designed as much as possible to test your **\*comprehension\*** rather than focusing on rote memorization. Expect that some exam questions will include a small "twist" that will be very easy to handle if you have understood, but very hard if you have only memorized. This will be completely clear; I do not use trick questions.

## Chem 432 Lab Crashers

Crashers will be taken on a **lottery** basis depending on the availability of space.

1. Preference will be given to SDSU enrolled students, open university students will be accepted, provided no SDSU enrolled student participates in the lottery.
2. Preference will be given to students taking Lecture and lab together
3. Students enrolled must show up for the first day of their lab

To keep their space in the lab, failure to show-up after 1hr the space will be given to crasher. If unable to make it to the lab and still want to keep the space, email [Jgustafson@mail.sdsu.edu](mailto:Jgustafson@mail.sdsu.edu) or Chem office 619-594-5595 at least 2hr before lab start up time.

4. Add codes for the lecture (students who are repeating the lecture to get a better grade, provided they passed the lab) can be obtained from the Lecturer

Lecturer gives add codes for Chem 432 lecture

Jeff gives add code for Chem 432Lab.

For crashers getting a lab space determines whether they are in the lecture or not.

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**Spring Semester, 2014, Main Campus**

**Tentative Lecture Outline**

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
<b>August 25</b> Intro/Review Chapter 11		<b>August 27</b> Chapter 12		<b>August 29</b> Chapter 12		
<b>Sept. 1</b> Labor day, No Class		<b>Sept. 3</b> Chapter 12	<b>Sept. 4</b> Drop deadline	<b>Sept. 5</b> Chapter 12		
<b>Sept. 8</b> Chapter 12/begin chapter13		<b>Sept. 10</b> Chapter 13 Chapter 12 HW due		<b>Sept. 12</b> Chapter 13		
<b>Sept. 15</b> Chapter 13		<b>Sept. 17</b> Chapter 14		<b>Sept. 19</b> Chapter 1 Chapter 13 HW due 4	<b>Sept. 20</b> Exam 1	
<b>Sept. 22</b> Chapter 14		<b>Sept. 24</b> Chapter 15		<b>Sept. 26</b> Chapter 15 Chapter 14 HW due		
<b>Sept. 29</b> Chapter 15		<b>Oct1</b> Chapter 15		<b>Oct 3</b> Chapter 15		
<b>Oct. 6</b> Chapter 16 Chapter 15 HW due		<b>Oct 8</b> Chapter 16		<b>Oct 10</b> Chapter 16		
<b>Oct. 13</b> Chapter 17 Chapter 16 HW due		<b>Oct 15</b> Chapter 17		<b>Oct 17</b> Chapter 17	<b>Oct. 18</b> Exam 2	
<b>Oct. 20</b> Chapter 17		<b>Oct 22</b> Chapter 17		<b>Oct 24</b> Chapter 18 Chapter 17 HW due		

<b>Oct. 27</b> Chapter 18		<b>Oct 29</b> Chapter 18		<b>Oct 31</b> Chapter 18		
<b>Nov.3</b> Chapter 18		<b>Nov. 5</b> Chapter 19 Chapter 18 HW due		<b>Nov. 7</b> Chapter 19		
<b>Nov. 10</b> Chapter 19		<b>Nov. 12</b> Chapter 19		<b>Nov 14</b> Chapter 19		
<b>Nov 17</b> Chapter 20 Chapter 19 HW due		<b>Nov 19</b> Chapter 20		<b>Nov 21</b> Chapter 20	<b>Nov 22</b> <b>Exam 3</b>	
<b>Nov 24</b> Chapter 21 Chapter 20 HW due		<b>Nov 26</b> No class		<b>Nov 28</b> No Class		
<b>Dec 1</b> Chapter 21		<b>Dec 3</b> Chapter 21		<b>Dec 5</b> Chapter 21		
<b>Dec 8</b> Chapter 21		<b>Dec 10</b> Last day of class!! Review Chapter 21HW due			<b>Dec 13</b> <b>Final</b> <b>Exam</b>	

### 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, we will be using Sapling Learning for our homework. To get started:

1. Go to <http://saplinglearning.com> and click "US Higher Ed" at the top right
2. a. If you already have a Sapling Learning account, log in and skip to step 3.  
b. If you have Facebook account, you can use it to quickly create a Sapling Learning 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 "create account". 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.

3. Find your course in the list (listed by subject, term, and instructor) and click the link.
4. Select your payment options and follow the remaining instructions.
5. Work on the Sapling Learning training materials. The activities, videos, and information pages will familiarize you with the Sapling Learning user environment and serve as tutorials for efficiently drawing molecules, stereochemistry, etc. within the Sapling Learning answer modules. These training materials are already accessible in your Sapling Learning course.

- 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](mailto:support@saplinglearning.com) explaining the issue. The Sapling support team is almost always more able (and faster) to resolve issues than your instructor and TAs.
- 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.