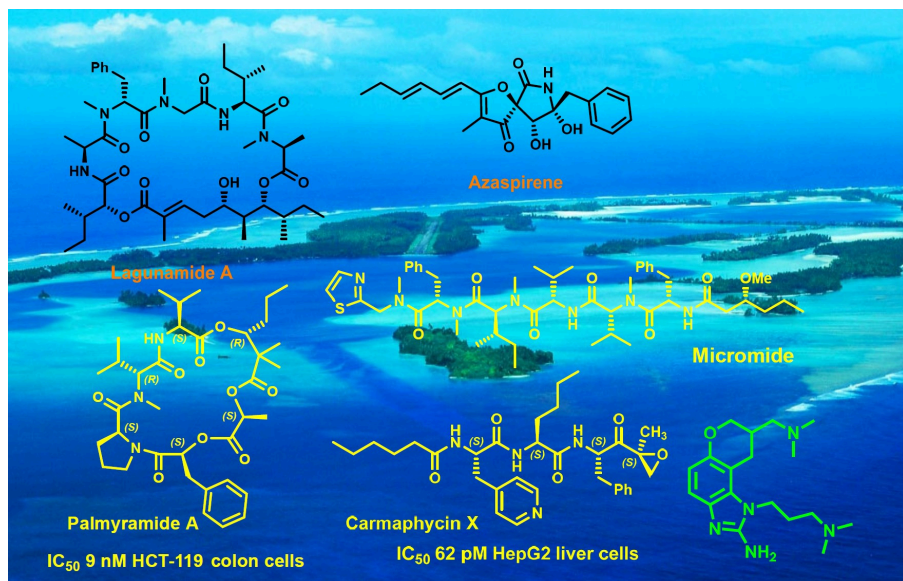


## CHEM232-01:Organic Chemistry

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## CHEM 232 Organic Chemistry, Summer 2024



## Course Information

Instructor: Prof. Mike Bergdahl

[bbergdahl@sdsu.edu](mailto:bbergdahl@sdsu.edu) (mailto:[bbergdahl@sdsu.edu](mailto:bbergdahl@sdsu.edu)) (answers asap or within 24 h following weekends)

Office Location: CSL 202

Office Hours Times: TTh, 10-11 am and 2-2:30 pm

Office Hours Location: CSL 202

Lectures: Noon – 1:15 PM

Class Location: COM 105

Canvas Course website: <https://sdsu.instructure.com/courses/153703> (<https://sdsu.instructure.com/courses/153703>)Equitable Access Course: <https://www.shopaztecs.com/t-equitableaccess.aspx> (<https://www.shopaztecs.com/t-equitableaccess.aspx>)

Dear Student!

Welcome to Chem 232, the "first semester" organic chemistry. The organic chemistry course schedule moves particularly fast in the summer, so in an essence, you MUST be on top of your responsibilities. Feel free to email your instructor or TA if you have any questions.

## Immediate Access Course Information:

Chem 232 is an "Equitable Access Course." The required course materials for this class are provided in a digital format by the first day of classes and are free through the add/drop date, using *for Organic Chemistry, by Solomons 13e*. WileyPLUS is included in the eBook. To access, click on the Wiley Course Resources link in the Canvas navigation menu. Your WileyPLUS account will be created automatically with the same email you used to sign into Canvas. Your SDSU student account will then be charged a special reduced price for use of the materials for the remainder of the summer unless you opt-out by 11:59 PM on July 12.

Here is a useful link on how to access WileyPLUS (aka Wiley Course Resources which includes the ebook):

[https://players.brightcove.net/4931690914001/default\\_default/index.html?videoid=6310650800112](https://players.brightcove.net/4931690914001/default_default/index.html?videoid=6310650800112)[https://players.brightcove.net/4931690914001/default\\_default/index.html?videoid=6310650800112](https://players.brightcove.net/4931690914001/default_default/index.html?videoid=6310650800112)

If you have questions related to access, the following link might be useful for support [RedShelf Solve link](https://u5665484.ct.sendgrid.net/ls/click?upn=u001.-2BohpqWDbR1DIXXYinAvWcetZgXbrnuUKbxR8uOEs-2BqXbwuaL-2Ffs1DiiEFUHMtTgi2r3_RZI-2BWY8S4gQZUj7b4vr5TVX-2FJKHrsKWXb0tRx-2FOh9C0EQoqLEWGsSi7YTiJawlWXbBUgJ8VBmB2IT2IDtwzUfkrXR3IVaCPwsJP-2ByzAICtRdekAQI-2BRZ5TI7Y6Dsuzolim2RkEunVRgdn6kW0pMaSleH2YfvU7WBuvwGQ4GAXszhVH9OsI-2BQKUfw-) ([https://u5665484.ct.sendgrid.net/ls/click?upn=u001.-2BohpqWDbR1DIXXYinAvWcetZgXbrnuUKbxR8uOEs-2BqXbwuaL-2Ffs1DiiEFUHMtTgi2r3\\_RZI-2BWY8S4gQZUj7b4vr5TVX-2FJKHrsKWXb0tRx-2FOh9C0EQoqLEWGsSi7YTiJawlWXbBUgJ8VBmB2IT2IDtwzUfkrXR3IVaCPwsJP-2ByzAICtRdekAQI-2BRZ5TI7Y6Dsuzolim2RkEunVRgdn6kW0pMaSleH2YfvU7WBuvwGQ4GAXszhVH9OsI-2BQKUfw-](https://u5665484.ct.sendgrid.net/ls/click?upn=u001.-2BohpqWDbR1DIXXYinAvWcetZgXbrnuUKbxR8uOEs-2BqXbwuaL-2Ffs1DiiEFUHMtTgi2r3_RZI-2BWY8S4gQZUj7b4vr5TVX-2FJKHrsKWXb0tRx-2FOh9C0EQoqLEWGsSi7YTiJawlWXbBUgJ8VBmB2IT2IDtwzUfkrXR3IVaCPwsJP-2ByzAICtRdekAQI-2BRZ5TI7Y6Dsuzolim2RkEunVRgdn6kW0pMaSleH2YfvU7WBuvwGQ4GAXszhVH9OsI-2BQKUfw-))

[2B0K9maGEESLWqzsNpa6XePAD2LdOJLBJkdzhZvLat7BDxtOuMI08JvK-2BE2FM8AnFCgYq3-2B8cChV-2BRCZalfhk8VJD13-2B27NkBL0qzcGQ-2F377fVKEreNoaHOYUDfMYBV6G9fsletvXgTxEfNPOExiRVgkyEtV0VA-3D-3D\).](https://u5665484.ct.sendgrid.net/ls/click?upn=u001.-2BohpaqWDbR1DIXXinAvWcetZgXbrnuUKbxR8uOEs-2BpkdgF4KtarPL8g5K6jd7-2BZquFiZRvQStnkXzslI77Jtccd1uDZTwxCuXBwt6RIAj4MEtRRFKu7GVJakhFoS4wyuNs_RZi-2BWy8S4gQZUj7b4vr5TVX-2FJKHrsKWXb0tRx-2FOh9C0EQoqlEWiGsSi7YTiJawlWXbBUgJ8VBmB2IT2IDtwzUfkXR3IVaCPwsJP-2ByzAICtRdekAQi-2BRZ5TI7Y6Dsuzolim2RkEunVRgdh6kW0pMaSleH2YfvU7WBuvvGQ4GAXszhVH9Osl-2BQKUfw-2B0K9maGErc853riG3jilcBsyaDDsCYkxLu-2BnZ82jXBTTjtX-2FSM8bYNIQy6Ap5ejq1NYK1L-2FTycvcGuMYSybSEUminUABYX4bA2d2liz4GKWJJQ9zVEoQy-2FMsUGOMB-2B9fhN2wMg1XvxhQrf0IKXhbwfHh8SgYg-3D-3D).)

Please note that if your course is using/not using access codes in Equitable Access or Immediate Access, please review the *How to Access Content through Inclusive Access* section on [this page](https://u5665484.ct.sendgrid.net/ls/click?upn=u001.-2BohpaqWDbR1DIXXinAvWcetZgXbrnuUKbxR8uOEs-2BpkdgF4KtarPL8g5K6jd7-2BZquFiZRvQStnkXzslI77Jtccd1uDZTwxCuXBwt6RIAj4MEtRRFKu7GVJakhFoS4wyuNs_RZi-2BWy8S4gQZUj7b4vr5TVX-2FJKHrsKWXb0tRx-2FOh9C0EQoqlEWiGsSi7YTiJawlWXbBUgJ8VBmB2IT2IDtwzUfkXR3IVaCPwsJP-2ByzAICtRdekAQi-2BRZ5TI7Y6Dsuzolim2RkEunVRgdh6kW0pMaSleH2YfvU7WBuvvGQ4GAXszhVH9Osl-2BQKUfw-2B0K9maGErc853riG3jilcBsyaDDsCYkxLu-2BnZ82jXBTTjtX-2FSM8bYNIQy6Ap5ejq1NYK1L-2FTycvcGuMYSybSEUminUABYX4bA2d2liz4GKWJJQ9zVEoQy-2FMsUGOMB-2B9fhN2wMg1XvxhQrf0IKXhbwfHh8SgYg-3D-3D).)  [\(https://u5665484.ct.sendgrid.net/ls/click?upn=u001.-2BohpaqWDbR1DIXXinAvWcetZgXbrnuUKbxR8uOEs-2BpkdgF4KtarPL8g5K6jd7-2BZquFiZRvQStnkXzslI77Jtccd1uDZTwxCuXBwt6RIAj4MEtRRFKu7GVJakhFoS4wyuNs\\_RZi-2BWy8S4gQZUj7b4vr5TVX-2FJKHrsKWXb0tRx-2FOh9C0EQoqlEWiGsSi7YTiJawlWXbBUgJ8VBmB2IT2IDtwzUfkXR3IVaCPwsJP-2ByzAICtRdekAQi-2BRZ5TI7Y6Dsuzolim2RkEunVRgdh6kW0pMaSleH2YfvU7WBuvvGQ4GAXszhVH9Osl-2BQKUfw-2B0K9maGErc853riG3jilcBsyaDDsCYkxLu-2BnZ82jXBTTjtX-2FSM8bYNIQy6Ap5ejq1NYK1L-2FTycvcGuMYSybSEUminUABYX4bA2d2liz4GKWJJQ9zVEoQy-2FMsUGOMB-2B9fhN2wMg1XvxhQrf0IKXhbwfHh8SgYg-3D-3D\).](https://u5665484.ct.sendgrid.net/ls/click?upn=u001.-2BohpaqWDbR1DIXXinAvWcetZgXbrnuUKbxR8uOEs-2BpkdgF4KtarPL8g5K6jd7-2BZquFiZRvQStnkXzslI77Jtccd1uDZTwxCuXBwt6RIAj4MEtRRFKu7GVJakhFoS4wyuNs_RZi-2BWy8S4gQZUj7b4vr5TVX-2FJKHrsKWXb0tRx-2FOh9C0EQoqlEWiGsSi7YTiJawlWXbBUgJ8VBmB2IT2IDtwzUfkXR3IVaCPwsJP-2ByzAICtRdekAQi-2BRZ5TI7Y6Dsuzolim2RkEunVRgdh6kW0pMaSleH2YfvU7WBuvvGQ4GAXszhVH9Osl-2BQKUfw-2B0K9maGErc853riG3jilcBsyaDDsCYkxLu-2BnZ82jXBTTjtX-2FSM8bYNIQy6Ap5ejq1NYK1L-2FTycvcGuMYSybSEUminUABYX4bA2d2liz4GKWJJQ9zVEoQy-2FMsUGOMB-2B9fhN2wMg1XvxhQrf0IKXhbwfHh8SgYg-3D-3D).)

And WileyPLUS chat support <https://wpsupport.wiley.com/s/>  [\(https://wpsupport.wiley.com/s/\)](https://wpsupport.wiley.com/s/)

#### Course schedule:

Tentative Lecture schedule, Chem 232 Summer 2024. EXAM SCHEDULE				
Monday	Tuesday	Wednesday	Thursday	Friday
24-Jun	25-Jun	26-Jun	27-Jun	28-Jun
01-Jul <i>Introduction</i> <i>Chapter 1,2</i>	02-Jul <i>Chapter 1,2 cont.</i>	03-Jul <i>Chapter 3</i>	04-Jul <i>Holiday</i>	05-Jul <i>Chapter 3, cont.</i>
08-Jul <i>Chapter 4</i>	09-Jul <i>Chapter 4, cont.</i>	10-Jul <i>Exam 1</i>	11-Jul <i>Chapter 5</i>	12-Jul <i>Chapter 5, cont.</i>
15-Jul <i>Chapter 6</i>	16-Jul <i>Chapter 6, cont.</i>	17-Jul <i>Chapter 6, cont.</i>	18-Jul <i>Chapter 6, cont.</i>	19-Jul <i>Chapter 7</i>
22-Jul <i>Chapter 7, cont.</i>	23-Jul <i>Chapter 7, cont.</i>	24-Jul <i>Exam 2</i>	25-Jul <i>Chapter 7, cont.</i>	26-Jul <i>Chapter 8</i>
29-Jul <i>Chapter 8, cont.</i>	30-Jul <i>Chapter 8, cont.</i>	31-Jul <i>Chapter 10</i>	01-Aug <i>Chapter 10, cont.</i>	02-Aug <i>Chapter 10, cont.</i>
05-Aug <i>Chapter 11</i>	06-Aug <i>Chapter 11, cont.</i>	07-Aug <i>Chapter 11, cont.</i>	08-Aug <i>Review</i>	09-Aug <i>Final Exam</i>

## Land Acknowledgment

For millennia, the Kumeyaay people have been a part of this land. This land has nourished, healed, protected and embraced them for many generations in a relationship of balance and harmony. As members of the San Diego State University community, we acknowledge this legacy. We promote this balance and harmony. We find inspiration from this land, the land of the Kumeyaay.

## Midterm Exams

Exam Format: In person exams.

Wednesday, July 10, Noon - 2 pm.

Wednesday, July 24, Noon – 2 pm

## Final Exam

**Exam Format: In person exam.**

**Friday, Aug. 9, Noon – 2 pm. The final exam is cumulative (Chapters 6-11).**

## Prerequisites

A grade of "C" (Not "C-") or better from Chem 201 (SDSU) or corresponding chemistry course.

## Course Information

Updated information is available on the course Canvas site through SDSU. Lectures will be recorded and posted the same day via the SDSU media site.

## Course Catalog Description

**Prerequisite(s):** [CHEM 201](https://catalog.sdsu.edu/content.php?filter%5B27%5D=CHEM&filter%5B29%5D=232&filter%5Bcourse_type%5D=-1&filter%5Bkeyword%5D=&filter%5B32%5D=1&filter%5Bcpage%5D=1&cur_cat_oid=5&filter%5B27%5D=CHEM&filter%5B29%5D=232&filter%5Bcourse_type%5D=-1&filter%5Bkeyword%5D=&filter%5B32%5D=1&filter%5Bcpage%5D=1&cur_cat_oid=5&filter%5B27%5D=CHEM&filter%5B29%5D=232&filter%5Bcourse_type%5D=-1&filter%5Bkeyword%5D=&filter%5B32%5D=1&filter%5Bcpage%5D=1&cur_cat_oid=5) [. \(https://catalog.sdsu.edu/content.php?filter%5B27%5D=CHEM&filter%5B29%5D=232&filter%5Bcourse\\_type%5D=-1&filter%5Bkeyword%5D=&filter%5B32%5D=1&filter%5Bcpage%5D=1&cur\\_cat\\_oid=5&filter%5B27%5D=CHEM&filter%5B29%5D=232&filter%5Bcourse\\_type%5D=-1&filter%5Bkeyword%5D=&filter%5B32%5D=1&filter%5Bcpage%5D=1&cur\\_cat\\_oid=5\)](https://catalog.sdsu.edu/content.php?filter%5B27%5D=CHEM&filter%5B29%5D=232&filter%5Bcourse_type%5D=-1&filter%5Bkeyword%5D=&filter%5B32%5D=1&filter%5Bcpage%5D=1&cur_cat_oid=5&filter%5B27%5D=CHEM&filter%5B29%5D=232&filter%5Bcourse_type%5D=-1&filter%5Bkeyword%5D=&filter%5B32%5D=1&filter%5Bcpage%5D=1&cur_cat_oid=5)

with a grade of C (2.0) or better. Concurrent registration in [CHEM 232L](https://catalog.sdsu.edu/content.php?filter%5B27%5D=CHEM&filter%5B29%5D=232&filter%5Bcourse_type%5D=-1&filter%5Bkeyword%5D=&filter%5B32%5D=1&filter%5Bcpage%5D=1&cur_cat_oid=5&filter%5B27%5D=CHEM&filter%5B29%5D=232&filter%5Bcourse_type%5D=-1&filter%5Bkeyword%5D=&filter%5B32%5D=1&filter%5Bcpage%5D=1&cur_cat_oid=5) [. \(https://catalog.sdsu.edu/content.php?filter%5B27%5D=CHEM&filter%5B29%5D=232&filter%5Bcourse\\_type%5D=-1&filter%5Bkeyword%5D=&filter%5B32%5D=1&filter%5Bcpage%5D=1&cur\\_cat\\_oid=5&filter%5B27%5D=CHEM&filter%5B29%5D=232&filter%5Bcourse\\_type%5D=-1&filter%5Bkeyword%5D=&filter%5B32%5D=1&filter%5Bcpage%5D=1&cur\\_cat\\_oid=5\)](https://catalog.sdsu.edu/content.php?filter%5B27%5D=CHEM&filter%5B29%5D=232&filter%5Bcourse_type%5D=-1&filter%5Bkeyword%5D=&filter%5B32%5D=1&filter%5Bcpage%5D=1&cur_cat_oid=5&filter%5B27%5D=CHEM&filter%5B29%5D=232&filter%5Bcourse_type%5D=-1&filter%5Bkeyword%5D=&filter%5B32%5D=1&filter%5Bcpage%5D=1&cur_cat_oid=5)

is required, unless you already passed the lab and only need to repeat the lecture content of Chem 232.

## Scope and Purpose

This summer course is the first of a "two-semester study" of the fundamentals of organic chemistry. The course will focus on how to use molecular structure to predict and understand the properties and chemical reactivity of organic molecules, with examples drawn from industrial process chemistry, medicinal chemistry, and biological chemistry.

Students should meet the following **general learning outcomes** as a minimum requirement in order to pass the course. A detailed list of learning outcomes will be developed and provided chapter-by-chapter, throughout the semester.

1. Understand physical properties of organic compounds and fundamental chemical reactions in organic chemistry.
2. Determine bonding, hybridization, Lewis structures, three-dimensional structure, conformation, and stereochemistry of organic molecules.
3. Show chemical mechanisms for fundamental organic reactions using the curved arrow formalism ("arrow pushing").
4. Determine and differentiate various types of simple organic reactions, for example  $S_N1$ ,  $S_N2$ , E1 and E2 pathways, radical chain reactions, and additions to double bonds.
5. Understand the relationships between different functional groups and organic chemical reactions.
6. Identify examples of organic chemistry in common "daily life" situations or biochemical processes.
7. Be able to apply and use the outcomes above in more advanced courses such as upper division organic chemistry (CHEM 432), biochemistry, and more advanced organic chemistry courses.

## Course Outline, Assigned Reading, Highly Recommended Study Problems from Solomons 13e, Electronic Homework.

**Introduction:** A good preparation for the course is to review material from Chem 201/200 (esp. fundamentals of chemical reactions, acidity/basicity, pKa, hybridization, bonding, & resonance), which will be expanded in Chapters 1,2 and 3 in this course.

**Chapter 1: The Basics, Bonding and Molecular Structure.** Read pp. 1-53. Practice Problems: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28. WileyPlus Homework Problems: 29, 30, 31, 32, 35, 36, 37, 38, 39, 40, 41, 47, 50.

**Chapter 2: Families of Carbon Compounds.** Read pp. 54-105. Practice Problems: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27. WileyPlus Homework Problems: 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 46.

**Chapter 3: Acids and Bases.** Read pp. 106-147. Practice Problems: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 13, 14, 15, 16, 17, 18, 19. WileyPlus Homework Problems: 20, 21, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38.

**Chapter 4: Nomenclature and Conformations of Alkanes and Cycloalkanes.** Read pp. 148-197. Practice Problems: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 15, 16, 17, 18, 19, 20, 21. WileyPlus Homework Problems: 23, 24, 25, 26, 27, 28, 29, 33, 36, 37, 38, 39, 41, 43, 44, 45.

**Chapter 5: Stereochemistry.** Read pp. 198-245. Practice Problems: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31. WileyPlus Homework Problems: 32, 33, 34, 35, 36, 37, 38, 39, 40, 42, 44, 45, 46, 47, 48.

**Chapter 6: Nucleophilic Reactions.** Read pp. 246-288. Practice Problems: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19. WileyPlus Homework Problems: 20, 21, 22, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 39, 40, 41.

**Chapter 7: Alkenes and Alkynes I.** Read pp. 289-344. Practice Problems: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26. WileyPlus Homework Problems: 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 41, 42, 43, 44.

Chapter 8: Alkenes and Alkynes II. **Read pp. 345-399.** **Practice Problems:** 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25. **WileyPlus Homework Problems:** 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 53, 54.

Chapter 10: Radical Reactions. **Read pp. 454-495.** **Practice Problems:** 1, 2, 4, 5, 6, 7, 8, 9, 11, 12, 13, 14, 15, 16. **WileyPlus Homework Problems:** 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 28, 29, 30, 31, 32, 33.

Chapter 11: Alcohols and Ethers. **Read pp. 496-544.** **Practice Problems:** 2, 3, 4, 5, 6, 7, 8, 9, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24. **WileyPlus Homework Problems:** 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 51, 52.

## Adding/Dropping Procedures

July 12 is the last day to add/drop classes. The enrollment is capped to ~60, and students could request to be added prior to the add deadline.

## Essential Student Information

- Your **SDSU email address** (<https://gsuite.sdsu.edu/>) will be used for all course-related communications.
- The **Student Conduct Code** ([https://newscenter.sdsu.edu/student\\_affairs/srr/conduct.aspx](https://newscenter.sdsu.edu/student_affairs/srr/conduct.aspx)) prohibits conduct disruptive to instruction, including academic dishonesty and the unauthorized recording, dissemination, or publication (including on websites or social media) of lectures or other course materials.
- SDSU provides disability-related accommodations via the Student Ability Success Center ([sascinfo@sdsu.edu](mailto:sascinfo@sdsu.edu) | [edu/sasc](http://sdsu.edu/sasc) (<http://sdsu.edu/sasc>)). Please allow 10-14 business days for this process.
- The **Family Educational Rights and Privacy Act** (<http://bfa.sdsu.edu/hr/oerc/students/ferpa.aspx>) (FERPA) mandates the protection of student information, including contact information, grades, and graded assignments. I will not post grades or leave graded assignments in public places. Students will be notified at the time of an assignment if copies of student work will be retained beyond the end of the semester or used as examples for future students or the wider public.
- As an instructor, one of my responsibilities is to help create a safe learning environment on our campus. I am required to share information regarding sexual violence on SDSU's campus with the **Title IX** (<http://titleix.sdsu.edu/>) coordinator, Gail Mendez (619-594-6464), who will contact you to let you know about support services at SDSU and possibilities for holding accountable the person who harmed you. If you do not want the Title IX Officer notified, you can speak confidentially to SDSU's Sexual Violence Victim Advocate (619-594-0210) or Counseling and Psychological Services (619-594-5220, [psycserv@sdsu.edu](mailto:psycserv@sdsu.edu) (<mailto:psycserv@sdsu.edu>)).
- Class rosters are provided to the instructor with the student's legal name. Please let me know if you would prefer an alternate name and/or gender pronoun.
- Need help finding an advisor, tutor, counselor, emergency economic assistance, or other support? Contact the **SDSU Student Success Help Desk** (<https://studentsuccess.sdsu.edu/>) Monday through Friday, 9:00 AM to 4:30 PM. For technical or computing assistance, contact the **Library Computing Hub** (<https://virtual-academic-help.sdsu.edu/technology/>).

## Course Materials

Custom course materials (lecture slides, etc.) will be posted on Canvas. Do not share them in violation of copyright. See below, in orange text.

*Unauthorized recording or dissemination of virtual course instruction or materials by students, especially with the intent to disrupt normal university operations or facilitate academic dishonesty, is a violation of the Student Conduct Code. This includes posting of exam problems, the instructor's lecture slides and other original materials, or questions to online platforms. Violators may be subject to discipline.*

### Textbook (Required)

Organic Chemistry, 13e., by Solomons, Fryhle, and Snyder, Wiley Publ. 2022; ISBN: 978-1-119-80131-3. Material is available via "Equitable Access," including the required WileyPlus.

### Student Study Guide and Solutions Manual (Highly recommended)

Not included in the WileyPlus package, but can be purchased electronically from the bookstore for ~\$20 at:

<https://shopaztecs.redshelf.com/app/ecom/book/2115224/organic-chemistry-student-study-guide-solutions-manual-2115224-9781119768258-t-w-graham-solomons-craig-b-fryhle-scott-a-snyder> (<https://shopaztecs.redshelf.com/app/ecom/book/2115224/organic-chemistry-student-study-guide-solutions-manual-2115224-9781119768258-t-w-graham-solomons-craig-b-fryhle-scott-a-snyder>)

### Electronic Homework

WileyPLUS is included with the eTextbook listed above and will be used for homework in this course. The electronic homework is the **WileyPlus Homework Problems** (above) from the back of each chapter. In addition, there is **one online quiz** assigned to each chapter. Each **WileyPlus Homework Problem** is worth 5p and each **online quiz** 10p, respectively. (15 points max each chapter)

**Other Learning Materials** Each chapter in the text has the highly recommended non-graded problems (**Practice Problems**) found within each chapter. These problems encapsulate the nature of problems you will face on the exams, quizzes and electronic homework. **The key take-home from organic chemistry is the understanding of the topics, thus you should never memorize but rather understand and apply yourself. WORK THE PROBLEMS!! Use PEN or PENCIL (no joke).**

**Old exams and Course Tools** In the "**Modules**" section you will find a lot of goodies useful in the course: posted lecture slides, lecture recordings, study skills, reference sheets, "Learning Glass" video recordings (Chapter 1-5), and plenty of old exams.

**Required Equipment** Computer or laptop in order to access the course material.

## Course Structure and Conduct

Canvas will be used for all course management and communication platform.

## Course Assessment and Grading

There will be two **midterm exams** during the summer, each worth 125 points. Please see the exam/lecture schedule on this page.

The **final exam** is **cumulative** (Ch. 6 - 11) and is worth 250 points. STUDY RIGHT and the learning curve will be less steep.

There are **no make-up exams offered**. Please remember that the exams are in person and not online.

There are 12 homework electronic submissions (each @ 5 points) = 60 points

There are 10 electronic quizzes for each chapter (each @ 10 points) = 100 points

Activity	Points
12 on-line homework submissions (each 5 points)	60
10 on-line quizzes submissions (each 10 points)	100
Midterm 1	125
Midterm 2	125
Final Exam	250
<b>Grand Total</b>	<b>660</b>

**Letter Grades** will be assigned according to the following table. Scores will not be rounded.

Letter Grade	Minimum Score / 660
A	594
A-	560
B+	528
B	494
B-	462
C+	428
C	396
C-	362
D+	330
D	296
D-	264
F	0

## Students with Disabilities

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

## Absences

- If you plan to be absent for a religious observance or holiday, notify me by the end of the first week of class.
- If you are absent more than five days due to illness or injury, you may contact [Student Health Services](http://shs.sdsu.edu/index.asp) [☞](http://shs.sdsu.edu/index.asp) for help in communicating your absence.

## Academic Honesty

Academic honesty is always vital and special attention is warranted.

The University adheres to a strict policy regarding cheating and plagiarism. These activities will not be tolerated in this class. Become familiar with the policy at [https://newscenter.sdsu.edu/student\\_affairs/srr/conduct.aspx](https://newscenter.sdsu.edu/student_affairs/srr/conduct.aspx) [☞](https://newscenter.sdsu.edu/student_affairs/srr/conduct.aspx). Any cheating or plagiarism will result in failing this class and a disciplinary review by Student Affairs. **Cheating, which includes unauthorized team work and the use of unauthorized resources or hired/voluntary help during exams, will not be tolerated.** I want you all to be proud of yourselves for working hard, learning lots, and doing a great job at a tough course, not ashamed of yourselves for having cheated in O Chem. I believe that everyone in this class has the ability and talent to do a great job and I'm committed to help you achieve your best, but there's no substitute for hard and honest work.

The University adheres to a strict [policy prohibiting cheating and plagiarism](http://go.sdsu.edu/student_affairs/srr/cheating-plagiarism.aspx) [☞](http://go.sdsu.edu/student_affairs/srr/cheating-plagiarism.aspx), including

- Copying, in part or in whole, from another's test or other examination.
- Obtaining copies of a test, an examination, or other course material without the permission of the instructor.
- Collaborating with another or others in coursework without the permission of the instructor.
- Falsifying records, laboratory work, or other course data.
- Submitting work previously presented in another course, if contrary to the policies of the course.
- Altering or interfering with grading procedures.
- Assisting another student in any of the above.
- Using sources verbatim or paraphrasing without giving proper attribution (this can include phrases, sentences, paragraphs and/or pages of work).
- Copying and pasting work from an online or offline source directly and calling it one's own.
- Using information found from an online or offline source without giving the author credit.
- Replacing words or phrases from another source and inserting one's own words or phrases.

Under CSU policy, instructors must report instances of academic misconduct to the Center for Student Rights and Responsibilities for disciplinary review by the University, which may lead to probation, suspension, or expulsion. Instructors may also, at their discretion, penalize student grades on any assignment or assessment discovered to have been produced in an academically dishonest manner.

## Extra Help

Help is available in a variety of forms.

- Online discussions on this Canvas site
- Office hours
- Discussions with your TA and your TA's office hours
- Tutors (the Chemistry Office will publish a tutor list)

You are always welcome to join my office hours for help in a fun and positive group setting, but please make a strong effort to solve problems on your own or work with study groups because doing so will enhance your learning experience.

## Tips for Success

**Do not fall behind.** We will start with reviewing the fundamentals and build on them so that you can develop a deep understanding of how the structure of organic molecules determines their properties. Consequently, material later in the course will be much more difficult if you haven't mastered the material that comes first, and we will never move on to a point where you will not need the earlier material.

In our opinion, the most important skill for success is your ability to self-assess. Don't plan to study for a fixed number of hours. Plan to study for as long as it takes until you are confident that you've mastered the material. Develop a plan to check the completeness of your understanding by problem solving exercises and discussion with your peers. You should be confident of your skills when heading into an exam. Obviously, this is much harder to achieve if you don't start preparing until the day before an exam.

You can't be a proficient scientist without a basis of factual knowledge, meaning that some 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. For that reason, exam questions will use concepts that you've learned, but won't be identical those questions found on old exams and as practice problems.











Few people find organic chemistry easy to learn. You should expect to study hard to earn a great grade!
















**To the student and how to succeed in Organic Chemistry (and science in general):**

1. *Develop good study habits:*
2. Attend all lectures and labs.
3. Take good lecture notes.
4. Use your lecture notes as a guide to your reading in the textbook. Write your questions down if there is something you don't understand. Ask your instructor if you don't understand a concept.
5. Make flash cards of definitions, concepts, reactions, structures, and nomenclature that are in the textbook that are emphasized by your instructor in lecture. Writing something is equivalent to reading it ten times.
6. Do all the homework problems with the aid of the study guide or answer book. The suggested problems (homework) have about the same difficulty as the problems you will be given on the exams.
7. One of the alternative ways for understanding of organic chemistry is to find a study partner or to form a study group and work on problems independently, and then review the answers in the group.
8. Keep up to date and **don't fall behind**.
9. Seek course advice from science professors and students.
10. If necessary, see your instructor or department for a tutor.
11. Try to see the "big picture"; try to see how the topic of the week fits in with the whole course. If you have a difficulty achieving this, ask your instructor.
12. Practice applying what you have learned in class to the world around you.
13. Try to foster your own scientific curiosity – wonder why things are and how they happen.
14. Put emphasis on understanding concepts rather than memorizing material.
15. If you read the text more than 10 minutes without practicing a problem, something is wrong.....this is not how you should study organic chemistry.
16. *Have a positive attitude.*
17. *Realize that science requires more self discipline than many other majors, but actually offers more rewards.*
18. *Be organized.*
19. *Persevere and be determined to succeed.*

Good Luck in Chem 232!!

## Course Summary:

Date	Details	Due
Sun Jul 7, 2024	 <a href="https://sdsu.instructure.com/courses/153703/assignments/1269197">Chapter Zero - Homework Academic Integrity Assignment</a> <a href="https://sdsu.instructure.com/courses/153703/assignments/1269197">https://sdsu.instructure.com/courses/153703/assignments/1269197</a>	due by 11:59pm
	 <a href="https://sdsu.instructure.com/courses/153703/assignments/1269198">Chapter Zero - Homework Working with Chemistry Questions in WileyPLUS and using Marvin Sketch</a> <a href="https://sdsu.instructure.com/courses/153703/assignments/1269198">https://sdsu.instructure.com/courses/153703/assignments/1269198</a>	due by 11:59pm
	 <a href="https://sdsu.instructure.com/courses/153703/assignments/1269180">Quiz Chapter 1</a> <a href="https://sdsu.instructure.com/courses/153703/assignments/1269180">https://sdsu.instructure.com/courses/153703/assignments/1269180</a>	due by 11:59pm
	 <a href="https://sdsu.instructure.com/courses/153703/assignments/1269178">Quiz Chapter 2</a> <a href="https://sdsu.instructure.com/courses/153703/assignments/1269178">https://sdsu.instructure.com/courses/153703/assignments/1269178</a>	due by 11:59pm
Thu Jul 11, 2024	 <a href="https://sdsu.instructure.com/courses/153703/assignments/1269185">Quiz Chapter 3</a> <a href="https://sdsu.instructure.com/courses/153703/assignments/1269185">https://sdsu.instructure.com/courses/153703/assignments/1269185</a>	due by 11:59pm
	 <a href="https://sdsu.instructure.com/courses/153703/assignments/1269187">Chapter 1 Homework</a> <a href="https://sdsu.instructure.com/courses/153703/assignments/1269187">https://sdsu.instructure.com/courses/153703/assignments/1269187</a>	due by 11:59pm
	 <a href="https://sdsu.instructure.com/courses/153703/assignments/1269190">Chapter 2 Homework</a> <a href="https://sdsu.instructure.com/courses/153703/assignments/1269190">https://sdsu.instructure.com/courses/153703/assignments/1269190</a>	due by 11:59pm
	 <a href="https://sdsu.instructure.com/courses/153703/assignments/1269191">Chapter 3 Homework</a> <a href="https://sdsu.instructure.com/courses/153703/assignments/1269191">https://sdsu.instructure.com/courses/153703/assignments/1269191</a>	due by 11:59pm
Thu Jul 25, 2024	 <a href="https://sdsu.instructure.com/courses/153703/assignments/1269184">Quiz Chapter 4</a> <a href="https://sdsu.instructure.com/courses/153703/assignments/1269184">https://sdsu.instructure.com/courses/153703/assignments/1269184</a>	due by 11:59pm
	 <a href="https://sdsu.instructure.com/courses/153703/assignments/1269177">Quiz Chapter 5</a> <a href="https://sdsu.instructure.com/courses/153703/assignments/1269177">https://sdsu.instructure.com/courses/153703/assignments/1269177</a>	due by 11:59pm

Date	Details	Due
	 <a href="https://sdsu.instructure.com/courses/153703/assignments/1269183">Quiz Chapter 6</a> ( <a href="https://sdsu.instructure.com/courses/153703/assignments/1269183">https://sdsu.instructure.com/courses/153703/assignments/1269183</a> )	due by 11:59pm
	 <a href="https://sdsu.instructure.com/courses/153703/assignments/1269192">Chapter 4 Homework</a> ( <a href="https://sdsu.instructure.com/courses/153703/assignments/1269192">https://sdsu.instructure.com/courses/153703/assignments/1269192</a> )	due by 11:59pm
	 <a href="https://sdsu.instructure.com/courses/153703/assignments/1269193">Chapter 5 Homework</a> ( <a href="https://sdsu.instructure.com/courses/153703/assignments/1269193">https://sdsu.instructure.com/courses/153703/assignments/1269193</a> )	due by 11:59pm
	 <a href="https://sdsu.instructure.com/courses/153703/assignments/1269194">Chapter 6 Homework</a> ( <a href="https://sdsu.instructure.com/courses/153703/assignments/1269194">https://sdsu.instructure.com/courses/153703/assignments/1269194</a> )	due by 11:59pm
	 <a href="https://sdsu.instructure.com/courses/153703/assignments/1269179">Quiz Chapter 10</a> ( <a href="https://sdsu.instructure.com/courses/153703/assignments/1269179">https://sdsu.instructure.com/courses/153703/assignments/1269179</a> )	due by 11:59pm
	 <a href="https://sdsu.instructure.com/courses/153703/assignments/1269186">Quiz Chapter 11</a> ( <a href="https://sdsu.instructure.com/courses/153703/assignments/1269186">https://sdsu.instructure.com/courses/153703/assignments/1269186</a> )	due by 11:59pm
	 <a href="https://sdsu.instructure.com/courses/153703/assignments/1269181">Quiz Chapter 7</a> ( <a href="https://sdsu.instructure.com/courses/153703/assignments/1269181">https://sdsu.instructure.com/courses/153703/assignments/1269181</a> )	due by 11:59pm
	 <a href="https://sdsu.instructure.com/courses/153703/assignments/1269182">Quiz Chapter 8</a> ( <a href="https://sdsu.instructure.com/courses/153703/assignments/1269182">https://sdsu.instructure.com/courses/153703/assignments/1269182</a> )	due by 11:59pm
Sun Aug 11, 2024	 <a href="https://sdsu.instructure.com/courses/153703/assignments/1269188">Chapter 10 Homework</a> ( <a href="https://sdsu.instructure.com/courses/153703/assignments/1269188">https://sdsu.instructure.com/courses/153703/assignments/1269188</a> )	due by 11:59pm
	 <a href="https://sdsu.instructure.com/courses/153703/assignments/1269189">Chapter 11 Homework</a> ( <a href="https://sdsu.instructure.com/courses/153703/assignments/1269189">https://sdsu.instructure.com/courses/153703/assignments/1269189</a> )	due by 11:59pm
	 <a href="https://sdsu.instructure.com/courses/153703/assignments/1269195">Chapter 7 Homework</a> ( <a href="https://sdsu.instructure.com/courses/153703/assignments/1269195">https://sdsu.instructure.com/courses/153703/assignments/1269195</a> )	due by 11:59pm
	 <a href="https://sdsu.instructure.com/courses/153703/assignments/1269196">Chapter 8 Homework</a> ( <a href="https://sdsu.instructure.com/courses/153703/assignments/1269196">https://sdsu.instructure.com/courses/153703/assignments/1269196</a> )	due by 11:59pm
	 <a href="https://sdsu.instructure.com/courses/153703/assignments/1316913">Final Exam</a> ( <a href="https://sdsu.instructure.com/courses/153703/assignments/1316913">https://sdsu.instructure.com/courses/153703/assignments/1316913</a> )	
	 <a href="https://sdsu.instructure.com/courses/153703/assignments/1292352">Midterm Exam I</a> ( <a href="https://sdsu.instructure.com/courses/153703/assignments/1292352">https://sdsu.instructure.com/courses/153703/assignments/1292352</a> )	
	 <a href="https://sdsu.instructure.com/courses/153703/assignments/1301725">Midterm Exam II</a> ( <a href="https://sdsu.instructure.com/courses/153703/assignments/1301725">https://sdsu.instructure.com/courses/153703/assignments/1301725</a> )	