

# Organic Chemistry II, CHEM 12B

Dr. Artun

Syllabus

Spring 2026

## CHEM 12B – Organic Chemistry II (April 6-June 26)

CHEM D012B 53, CRN 46108

CHEM D012B 54, CRN 48743

### INTRODUCTION:

- Instructor: Burcak Artun, PhD ([artunburcak@fhda.edu](mailto:artunburcak@fhda.edu))
- Course Website: Canvas
- Times
  - Lecture: T/Th 6:00pm-7:15pm
  - Location: ADM 119
- Office Hours: TBD on zoom
- Lab Instructor: Jennifer Cordoza (see lab syllabus)

### STUDENT RESOURCES

#### *Important Dates*

- *APRIL 6 First day of spring quarter classes*
- *APRIL 19 Last day to [add classes](#)*
- *APRIL 19 Last day to [drop classes](#) without a W*
- *MAY 23-25 Memorial Day Weekend - no classes, offices closed*
- *MAY 29 Last day to [drop classes](#) with a W*
- *JUNE 19 Juneteenth Holiday - no classes, offices closed*
- *JUNE 22-26 [Final exams](#)*

#### *De Anza student resource pages:*

<https://www.deanza.edu/quarter-guide/>

#### *Canvas Help:*

<https://www.deanza.edu/online-ed/help.html>

### COURSE OVERVIEW AND LEARNING OBJECTIVES:

- **Overview:** This course explores the physical properties and chemical behavior of important classes of organic compounds, focusing on alkynes, polyenes, aromatic compounds; alcohols, thiols, and ethers; and aldehydes and ketones and their derivatives. Retrosynthesis, spectroscopic structure determination, and the reaction mechanism will be examined in the course. Laboratory experiments will involve the synthesis of simple compounds and the characterization of those compounds using chromatography and infrared (IR), ultraviolet-visible (UV-Vis), and nuclear magnetic resonance (NMR) spectroscopy. This course is for chemistry majors or those in

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closely-allied fields such as biochemistry and chemical engineering. A grade of C or better in Chemistry 12A is a prerequisite.

- **Prerequisites:** Chemistry 12A with a grade C or better.
- **Advisory:** ENGL C1000 or ENGL C1000H or ESL 5
- **Units:** 5 Units
- **Hours:** Three hours lecture, six hours laboratory (108 hours total per quarter)
- **Course Objectives:**
  1. Examine the key structural features and physical properties of important classes of organic compounds, especially: alkynes; polyenes; aromatic compounds; alcohols, phenols, and ethers; thiols and sulfides; aldehydes and ketones; acetals and ketals; and imines and enamines.
  2. Compose valid names for alkynes, alcohols, ethers, thiols, aldehydes, ketones, benzene and its derivatives, and related organic compounds using both common and IUPAC nomenclature conventions.
  3. Predict the reactivity of alkynes, aldehydes, alcohols, ethers, thiols, aldehydes, ketones, benzene and its derivatives, and related organic compounds on the basis of their structure.
  4. Create detailed reaction mechanisms and use those mechanisms to explain experimental observations or predict the most likely outcome of reactions of alcohols, alkynes, ethers, thiols, aldehydes, ketones, benzene and its derivatives, and related organic compounds.
  5. Construct detailed synthetic schemes for the interconversion of alkynes, alcohols, ethers, thiols, aldehydes, ketones, benzene and its derivatives, and related organic compounds by functional group transformation using retrosynthetic analysis.
  6. Examine the behavior of alcohols, alkynes, ethers, thiols, aldehydes, ketones, benzene and its derivatives, and related organic compounds by utilizing the frameworks of kinetics, thermodynamics, and equilibrium.

### REQUIRED MATERIALS:

- Textbook: McMurry, Organic Chemistry, 10<sup>th</sup> ed, OpenStax  
<https://openstax.org/details/books/organic-chemistry> (PDF download)
- Lab Text: *Experimental Organic Chemistry: A Miniscale and Microscale Approach, 6e*, by John C. Gilbert and Stephen F. Martin (Brooks/Cole: 2015; ISBN 978-1-305-08046- 1)
- OSHA-approved Safety Goggles (Indirect Vent, Z87) & chemical resistant lab gloves (nitrile for latex-free)
- Standard combination lock for lab drawer (or small bike lock) to lock an assigned laboratory drawer.

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## Recommended:

- Textbook: *Organic Chemistry, 3e*, by David Klein, ISBN:978-1-119-31615-2 Klein, David. *Organic Chemistry, 3<sup>rd</sup> edition*, John Wiley & Sons: New Jersey, 2017. (Wiley publisher site for eBook options: (Copy link and paste in browser))
- [Organic Chemistry, 3e, by David Klein](#)
- [Edition-p-9781119351603](#) and De Anza bookstore: <https://www.deanza.edu/bookstore/> or other outlets)

## COURSE WORK AND GRADING

- This class is divided into two separate instructional periods: a lecture period devoted to the primary course material and a lab period for conducting lab experiments. Registration in the course automatically enrolls you in both periods. **At De Anza College the lab and lecture cannot be taken as separate courses.**

- **Work Expectation:**

*Each week there are 2x 75 min lectures, and 2x3 hour lab sections. Expect to spend an additional 8-12 hours a week on the course.*

*You will spend additional time preparing for the labs (PreLab), Solving HW problems, answering quiz questions, and writing up the results from the labs (Lab WriteUp or PostLab Activity), as well as preparing for Quizzes and Midterms. You are expected to join class having done some related reading and chapter assignments.*

- **Grading is based on the following breakdown:**

**Lecture 70% of Total Grade**

- |                          |                        |
|--------------------------|------------------------|
| • <b>Midterms</b>        | <b>40 % of Lecture</b> |
| • <b>Lecture Quizzes</b> | <b>20 % of Lecture</b> |
| • <b>Homework</b>        | <b>10 % of Lecture</b> |
| • <b>Final</b>           | <b>25 % of Lecture</b> |
| • <b>Attendance</b>      | <b>5 % of lecture</b>  |

**Lab 30% of Total Grade**

- **The Following Grade Scale will be used**

A <sup>+</sup> 97.0 – 100.0 %	B <sup>-</sup> 77.0– 80.9 %	D <sup>-</sup> 60.0 – 62.9 %
A 93.0 – 96.9 %	C <sup>+</sup> 73.0 – 76.9 %	F 0 – 59.9 %
A <sup>-</sup> 89.0– 92.9 %	C 70.0 – 72.9 %	
B <sup>+</sup> 85.0 – 88.9 %	D <sup>+</sup> 66.0 – 69.9 %	
B 81.0– 84.9 %	D 63.0 – 65.9 %	

### Notes on Grading

- There will not be a curve in general unless deemed necessary by me

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- Final Exam is cumulative
- A grade of "C" (% 70.0) or better is required to pass the course
- You will need to pass **both lab and lecture** to be able to pass the course

## LECTURE

### **Midterms - 40% of Lecture Grade**

There will be three Midterms. The schedule will be provided. The assessments will consist of the material covered in lecture. Midterms are a mix of multiple choice and free response. *I will provide Study Guides. I will be testing for concepts.*

### **Quizzes – 20% of Lecture Grade**

There will be a quiz at the end of each chapter.

### **Final Exam - 25% of Lecture Grade**

The final exam is cumulative and it is a mix of multiple choice and free response questions. No make-up exam will be given if you miss the final unless you have a valid excuse and talk to me. The final exam will take place in the last week of class as scheduled.

### **Assignments – 10 % of Lecture Grade**

**Problem solving:** You will be assigned problems from the textbook to follow up and to reinforce your knowledge of the topics. These problems will help increase your grasp of the material. Please make sure to work on and understand the sample problems available to you in your textbook before you attempt the assignment problems. Chapter assessments may include similar problems.

*Assignment grade will be based on assigned end-of-chapter problems.*

**Coverage:** In Chem 12B the following Chapters will be covered: Chapters 17, 18, 19, 14, 15, 16

**Reading:** Please read the assigned textbook chapters carefully **before** coming to lecture.

***Do not hesitate to drop in to the office hours if for any reason you think you are falling behind, need reinforcement of material or simply to say hi. Office hours are a crucial part of the support system the students have.***

***Remember "practice makes perfect" and "mistakes are the stepping stones to learning". It is essential that you attempt as many problems as possible***

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## LAB

SEE SEPARATE LAB SYLLABUS

## POLICIES

- **Registration:** Enrollment is strictly limited to 30 students per section. Spaces are filled in accordance with the official class roster from Admissions and Records, followed by the official wait list. Any errors must be addressed directly with Admission and Records. Waitlisted students **must come to lecture** for the first day of class, but may not be assigned a code until someone drops the course within the first two weeks
- **Policy on attendance:** Lecture and Lab are both in person and on campus. Attendance of **both** the Lecture and scheduled Labs are required for the successful completion of this course. Unexcused absences will affect your grade. **Attendance is expected for all lectures, all lab lectures and all labs. The De Anza College Chemistry Department does not offer make-up labs**
- **Policy on missing class:** If you need to miss class you must notify the instructor **at least 24 hours in advance** for approval. Missing a lab period may affect your grade negatively. If you have an excused absence, we can talk about ways to compensate for the missed lab.

*You will be dropped from the course for any unexcused absences during the first two weeks of class.*

*Absences from lecture or lab will be evaluated on a case by case basis. It is your responsibility to contact the Instructor for any absences. Clear Communication is the best whatever the reason is. If I don't know your reasons, I can't be reasonable...*

- **Policy on late assignments:** Items turned in late will receive an automatic 5% deduction per day in points. If the assignment is late over a week, the most you can get out of that assignment is 65%

*ALL assignments, and exams must be completed and turned in to receive credit for this course. No exceptions. It is the responsibility of the student to arrange for make-ups for missed work. Lab absences may not be made up.*

- **Policy on Final exams:** Final exam dates are determined by the De Anza College and cannot be changed. Please find the exam dates from your course calendar, and put all of the dates into your calendar.
- **Dropping the course:** Dropping the course must be done through the Admissions and Records office. **It's the student's responsibility to withdraw from the course by the**

*deadline set by the Admissions and Records Office.* Dropping the course after the deadline will result in a (W-withdrawal) on your transcript.

***Policy on plagiarism There's a zero-tolerance policy for cheating and academic misconduct.*** You should remember as a De Anza College student, you agreed to abide by the policies of the De Anza College Rules of Conduct. It is expected that you are familiar with the code of conduct and disciplinary actions that may result from academic misconduct. ***All submitted work should be your own, and should represent your own grasp of the material. Cheating will not be tolerated.***

If you have any questions about what constitutes unfair collaboration or cheating, please contact the instructor.

These policies are found in the De Anza College manual:

<https://www.deanza.edu/policies/academic-integrity.html>

***Students who violate academic integrity policy (e.g. are caught cheating or plagiarizing) will be reported to the Dean of Student Services. Any plagiarized material will receive a 0.***

### STUDENT LEARNING OUTCOMES

- Construct logical multi-step syntheses for organic molecules.
- Use Molecular Orbital theory and Resonance to explain reactions of benzene and other molecules with conjugated  $\pi$  systems.
- Increase breadth of knowledge of organic reactions to include functional groups containing oxygen, benzene and more complex  $\pi$  systems.
- Construct molecular structures of increasingly complex molecules from IR,  $^1\text{H}$  NMR, and  $^{13}\text{C}$  NMR data.

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- Construct molecular structures of increasingly complex molecules from IR,  $^1\text{H}$  NMR, and  $^{13}\text{C}$  NMR data.

## Office Hours:

T,TH	1:00 PM - 2:00 PM	Zoom
M,W	12:00 PM - 1:00 PM	Zoom