

## CHEMISTRY 30A SYLLABUS

**GENERAL INFORMATION** Modality: In-person on-campus course

CHEMISTRY30A (CHEM D030A63, D030A64) Fall 2024; CRN 21592/23677

Instructor: Chad Miller E-mail: millerchad@fhda.edu

Lecture	Tues Thur (Chad Miller)	5:30PM – 7:20PM	Room ADM119
Lab (CRN 21592)	Tues (Chad Miller)	7:30PM – 10:20PM	Room SC2204
Lab (CRN 23677)	Thur (Jie Liang)	7:30PM – 10:20PM	Room SC2204
Office hours	Tues Thur (Chad Miller)	4:20PM – 5:20PM	Room ADM119

**Course Description:** This is a two-part course to be taken in sequence by students entering the allied health fields. The focus of the first part of this course is an introduction to general chemistry with a discussion of various measurement tools, followed by a discussion of energy and matter, and the discovery of an atom. The next set of topics will cover an introduction to elements, compounds, and types of bonding in compounds, followed by various types of chemical reactions and stoichiometric calculations based on chemical equations. The course will discuss the properties of gases and solutions and concludes with a discussion of acid-base chemistry and nuclear chemistry.

### Materials:

- ✓ **Any of these three recommended textbooks below are compatible with our course curriculum.**  
McMurry J, General, Organic and Biological Chemistry; 8th edition, Pearson Learning Solutions (online, free access per the web link below)  
[https://chem.libretexts.org/Bookshelves/Introductory\\_Chemistry/Fundamentals\\_of\\_General\\_Organic\\_and\\_Biological\\_Chemistry\\_\(LibreTexts\)](https://chem.libretexts.org/Bookshelves/Introductory_Chemistry/Fundamentals_of_General_Organic_and_Biological_Chemistry_(LibreTexts))  
Mastering Chemistry with the eText for Owens' General, Organic, and Biological Chemistry  
Janice G. Smith, General, Organic and Biological Chemistry 4th ed., 2018, McGraw-Hill
- ✓ OSHA-approved **Safety Goggles** (Indirect Vent, Z87) [Available from the Chemistry department]
- ✓ **Lab notebook: A composition notebook (any color) with pages sewn, not perforated.**
- ✓ **Scientific calculator: Basic, inexpensive model, e.g. TI-30XII or similar**
- ✓ **Lab experiment procedures and descriptions and lab worksheet activities will be available on Canvas.**

### Important Dates: Please note the following dates

- ☑ **September 24: Attend the 9/24 & 9/26 lectures and the Tuesday or Thursday lab section that you are enrolled in order to maintain registration in this course.**
- ☑ **December 10: Final Exam date. 6:15PM – 8:15PM**

**Classroom Courtesy:** We want to achieve the highest level of learning experience in lecture and in lab and to accomplish that please refrain from conducting any unrelated conversations, cell phone activity (no calls, texts, IMs, browsing or camera use) and any other behaviors that would be disruptive to yourself, others and to the instructor. Students who engage in disruptive conduct will be required to leave the classroom. Computers in the lectures and lab can only be used for activities pertaining to the course material. Recording class lectures or related activities always requires approval of the instructor.

**Attendance & Academic Integrity:** Students are expected to attend all lectures and labs. The course Grading Policy details the specifics for lack of attendance. All incidents of dishonest, unethical behavior including any cheating, copying the work of others and claiming it is your originality (also known as plagiarism), altering any graded exams, quizzes, lab reports, other classroom materials will be reported to the College Administration. It is your responsibility to recognize academic dishonesty: <http://www.deanza.edu/studenthandbook/academic-integrity.html>

**Covid-19 Policies:** Please consult the De Anza College return-to-campus web page and any announcements on your student portal that detail relevant information pertaining to the campus regulations and policies pertaining to Covid-19. <https://www.deanza.edu/return-to-campus/students.html>

## GENERAL INFORMATION

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**NOTE: Copyright protection of course materials:** All materials developed and/or authored by this course instructor are protected by US copyright law and may not be distributed or sold to any third parties including individuals who are not course-registered students, other individuals, companies, Web sites and content aggregators or any other party that has no valid or lawful right to possess such materials. Any such legal distribution of materials requires in advance of distribution the written consent, including signature and date, of this instructor.

**Instructional and Student Resources:** De Anza College provides a variety of resources to facilitate learning experiences including those listed below. Please visit <http://www.deanza.edu/student-services/> to learn more.

- **De Anza College Winter quarter guide:** <https://www.deanza.edu/quarter-guide/>
- **Student Success Center:** <http://www.deanza.edu/student-success/> Tutoring is available for on-site and online tutoring on a range of subject matter including chemistry. Resources are in Bldg S43.
- **Counseling and Advising Center:** <http://www.deanza.edu/counseling/> Provides support in the form of counseling and assistance on academic matters and personal challenges.
- **Disability Support Programs & Services:** <http://www.deanza.edu/dsps/> Offers support services including accommodations and educational classroom assistance designed to help students with disabilities. Resources are in the [RSS Room141](#) and can be reached at 408.864.8753.

**SCHEDULE CHEM30A Chad Miller Fall 2024 (Lecture content, labs and dates subject to change)**

Week	Date Tu/Th	Lecture Content	Lab Schedule Tues & Thurs sections	Lecture & Lab Exam Dates
1	9/24	Introductions and syllabus States of matter & classification, elements & symbols, measurements, unit conversions	Lab safety and check-in	
	9/26	Temperature, heat, energy, density, problem solving		
2	10/01	Atoms, periodic table, electron configuration	Exp1: Density	
	10/03	Lecture quiz 1		Lecture quiz 1
3	10/08	Electron configuration continued Ionic compounds Molecular compounds	Lab worksheets 1, 2 Nomenclature Molecular structures	
	10/10	Classification & balancing chemical reactions		
4	10/15	Classification & balancing chemical reactions (continued)	Exp2: sand/salt separation	
	10/17	Chemical reactions/mass relationships		
5	10/22	Review – group problem solving	Exp3: Chemical reactions	
	10/24	Midterm 1		Midterm 1
6	10/29	Intermolecular forces, Gases	Exp4: Yield of sodium carbonate	
	10/31	Gases (continued) Molecular structure continued		
7	11/05	Liquids and Solids Solutions	Exp5: Synthesis of Alum	
	11/07	Solutions (continued)		
8	11/12	Energy, chemical processes, equilibrium, reaction rates Lecture quiz 2 - due in class 11/21	Exp6: Gas forming reactions	
	11/14	Review – group problem solving		
9	11/19	Midterm 2	Exp7: Citric acid titration	Midterm 2
	11/21	Acids and Bases		
10	11/26	Acids and Bases (continued)		
	11/28	No class no lab on Thanksgiving Holiday		
11	12/03	Nuclear Chemistry	Check-out Lab exam	Lab exam
	12/05	Review – group problem solving		
12	12/10	FINAL EXAM		FINAL EXAM

**GRADING POLICY CHEM30A Chad Miller Fall 2024**

Assessment	Points	Total Points	Percent
Lab reports, safety, technique	variable	200	20%
Lab exam (1)	100	100	10%
Lecture quizzes (2)	20, 80	100	10%
Midterms (2)	200, 200	400	40%
Final exam	200	200	20%
<b>Total</b>		<b>1,000</b>	<b>100%</b>

Grade	% of Total Points	Grade	% of Total Points
A+	98% - 100%	B-	77% - 79%
A	90% - 97%	C+	74% - 76%
A-	87% - 89%	C	65% - 73%
B+	84% - 86%	D	55% - 64%
B	80% - 83%	F	<55%
% of total points determines the letter grade			

**Lab Assessments:**

- Laboratory experience is an essential component of this course. Each lab must be prepared for in advance by writing a 'pre-lab' in your lab notebook, then the lab must be properly and safely conducted, followed by the timely completion of a post-lab assignment.
- The format and content of pre-labs and post-lab assignments will be described in the first lab meeting.
- All submitted written work for the lab (i.e., pre-labs, lab assignments) must be of the student's original authorship. Per instruction, students may at times share experimental data, however all lab assignments must be individually written. Submitted work that is copied from another student will be scored as '0' (zero) points and such student will receive one warning regarding academic dishonesty. Any additional copied reports or assignments that are submitted will result in a report to Administration as a violation of academic integrity and code of honesty.
- A pre-lab is due at the start of the lab meeting. The pre-lab will be evaluated by the instructor and marked as complete or incomplete; it is not scored. A student may not participate in the lab if a proper pre-lab was not submitted on its due date and time and marked as complete.
- All post-lab assignments that cover the seven wet chemistry labs and the two worksheet activities account for a total of 160 points.
- There will be no (zero) make-up labs. Time and facilities will not permit rescheduling of labs for students in this course. Students need to attend each lab lecture in order to participate in each lab.
- If a lab is missed and excused by the instructor, a lab partner data set will be provided. A second missed lab will be scored as "0" points unless excused by physician documentation. If three (3) or more labs are missed (not attended/no instructor approval) a score of '0' points will be given to the total lab score.
- A 100-point lab exam will be given during lab in the 11<sup>th</sup> week of the course.
- Competent lab technique, safety compliance, self-sufficiency, teamwork and housekeeping will be monitored and will account for 40 lab points.
- Adherence to proper lab safety, instructor directives and lab cleanliness/housekeeping are critical. Improper attention to these requirements and practices can result in a drop from the course.

**Two (2) Lecture midterms and two (2) Lecture quizzes:**

- The dates of the lecture midterm exams and quizzes are defined in the Schedule.
- Midterm and quiz grades will not be dropped and need to be taken on scheduled dates and times.
- Midterm exam grades will not be dropped. An unexcused missed midterm exam will have a point score of '0/200' points. In the event a student submits a physician letter, or otherwise instructor-approved documented reason for an absence resulting in missing one midterm exam, then the Final exam will be weighted as 40% of the total grade. The Final exam score will not compensate in any manner or be adjusted for two missed midterm exams. There is no make-up lecture quiz.
- There are no extra credit projects or activities that are scheduled for this course. The instructor retains the option of providing an unplanned exercise owing to extenuating circumstances or events.

**Final Exam:**

- The Final exam will assess the student's ability to understand the topics, principles and applications that are covered in the course.
- The Final exam cannot be rescheduled, dropped from the total course grade or substituted.

## Chemistry Department lab safety guidelines

From the American Chemical Society Safety In Academic Laboratories Guidelines, 7th Ed., the following mandatory minimum safety requirements must be followed by all students and be rigorously enforced by all Chemistry faculty:

- 1) Chemistry Department-approved safety goggles must be worn at all times once laboratory work begins, including when obtaining equipment from the stockroom or removing equipment from student drawers, and may not be removed until all laboratory work has ended and all glassware has been returned to student drawers.
- 2) Shoes that completely enclose the foot are to be worn at all times; NO sandals, open-toed, or open-topped shoes, or slippers, even with socks on, are to be worn in the lab.
- 3) Shorts, cut-offs, skirts or pants exposing skin above the ankle, and sleeveless tops may not be worn in the lab: ankle-length clothing must be worn at all times.
- 4) Hair reaching the top of the shoulders must be tied back securely.
- 5) Loose clothing must be constrained.
- 6) Wearing "...jewelry such as rings, bracelets, and wristwatches in the laboratory..." should be discouraged to prevent "...chemical seepage in between the jewelry and skin...".
- 7) Eating, drinking, or applying cosmetics in the laboratory is forbidden at ALL times, including during lab lecture.
- 8) Use of electronic devices requiring headphones in the laboratory is prohibited at ALL times, including during lab lecture.
- 9) Students are advised to inform their instructor about any pre-existing medical conditions, such as pregnancy, epilepsy, or diabetes, that they have that might affect their performance.
- 10) Students are required to know the locations of the eyewash stations, emergency shower, and all exits.
- 11) Students may not be in the lab without an instructor's presence or permission.
- 12) Students not enrolled in the laboratory class may not be in the lab at any time after the first lab period of each quarter.
- 13) Except for soapy or clear rinse water from washing glassware, NO CHEMICALS MAY BE Poured INTO THE SINKS; all remaining chemicals from an experiment must be poured into the waste bottle provided.
- 14) Students are required to follow the De Anza College Code of Conduct at all times while in lab: "horseplay", yelling, offensive language, or any behavior that could startle or frighten another student is not allowed during lab.
- 15) Strongly recommended: Wear Nitrile gloves while performing lab work; wear a chemically resistant lab coat or lab apron; wear shoes made of leather or polymeric leather substitute.

**All students must complete the ACS Lab Safety Course that is in its own module on Canvas. You will receive a certificate of training after completing all sections. This needs to be done before the start of your second laboratory session (i.e., before the 2<sup>nd</sup> week of this course).**

## CHEM 30A SUCCESSFUL STUDY PRACTICES

Attend all lectures and labs. This is one of the most important recommendations I can provide. There is a significant amount learning that takes place during each class lecture and in each lab and the optimal way to learn and keep current with the stream of content is to **attend** and **participate** in all learning activities in class and individual and team activities in the labs.

1. Read course content that is available on Canvas before that topic is covered in class. The expectation here is not for you to automatically gain expertise in the content on your own, but rather for you to have a basis or framework of the concepts and skills we will cover in the class.
2. Participate in all class discussions and problem-solving sessions.
3. Ask questions in class to gain clarification and a correct understanding.
4. Prepare for all labs by reading the lab reference materials in advance of the labs.
5. Try to identify, establish and maintain a compatible study environment free of distraction.
6. If helpful, and it is my recommendation, study with classmates to supplement private study.
7. Learn the material as it is presented and do not accumulate unread chapters or content.
8. Do not attempt to study too much material at any one point.
9. Do not cram before exams – pace your study and problem solving at the class tempo.
10. Try to maintain a healthy lifestyle to facilitate learning and do your best to balance school, work and life's competing obligations and commitments.

### Student Learning Outcomes

- Solve stoichiometric problems by applying appropriate molar relationships.
- Identify the differences between elements and compounds and describe the chemical bonding in compounds- ionic vs covalent.

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- Solve stoichiometric problems by applying appropriate molar relationships.
- Identify the differences between elements and compounds and describe the chemical bonding in compounds- ionic vs. covalent.

**Office Hours:**

T,TH	08:00 AM	08:30 AM	In-Person,By Appointment	SC2210
T,TH	11:30 AM	12:00 PM	In-Person,By Appointment	SC2210
T,TH	04:20 PM	05:20 PM	In-Person,By Appointment	ADM119
T,TH	04:20 PM	05:20 PM	In-Person,By Appointment	ADM119