CHEM 30A

Course Description

Chem 30A is the first in a two-course sequence for students entering allied health fields. The focus of the first part of this class is an introduction to general chemistry. Topics include atomic structure, trends in the periodic table, the three states of matter, energy, chemical bonding in ionic and molecular compounds, nomenclature, measurement and the metric system, chemical reactions and equations, solutions, acids, bases, salts, and electrolyte systems.

Term	Fall 2023 (Course Number: 27100)
Lecture Time and Location	Friday 8:30 – 10:20 am in G7
Lab Time and Location	Friday 10:30 am–1:20 pm in SC2204
Instructor	Gorkem Ermut
Contact Information	ermutgorkem@fhda.edu I prefer to be contacted **via CANVAS**. Sometimes student emails can get lost in Outlook, but I check both regularly.
Office Hours	Fridays 1:20 PM–3:20 PM in SC1102 Second Floor.
Prerequisites	MATH 114 or MATH 130, or the equivalent
Required Course Materials	• **Textbook:** We're going to use the free available version of the text "The Basics of General, Organic and Biological Chemistry" by David Ball et al., which can be found at the link below: The Basics of General, Organic, and Biological Chemistry (Online and pdf versions available). • **Aktiv (for online homework):** Homework assignments are submitted through Aktiv. Click on the online assignment link under the modules or assignments in the left navigation area and follow the steps to start the registration process. Students must sign up for Aktiv by October 6th, or they will be dropped from the course. • **Lab Manual:** The Laboratory Manual for each experiment will be available through CANVAS • **Access to CANVAS:** CANVAS is the platform I will use to instruct the course. Students will use Canvas to access all course material **(including the lab manual)**. All the course Documents: lecture videos, class notes, and course documents can be found on CANVAS. • **Scientific Calculator** (Must have log and exponential functions. Graphing is not necessary. You may not use your phone as a calculator for any quizzes, exercises, or exams. Recommended model TI-30XIIs) • **Safety Goggles:** Goggles must form a seal around the sides and at the front and carry the ANZI Z87 shatter resistance rating. Goggles are available at the campus bookstore but may also be obtained from another source, provided they meet the given specifications. • **Disposable Gloves:** Gloves should be neoprene or nitrile (not latex) and are available at standard drug stores (CVS, Walgreens, etc.). Gloves will also be available in the lab, but students may acquire their own if desired.

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.

Important Dates

October 6th: Last Day for Adds

October 8th: Last day to drop for a full refund, without "W" (Note that dropping the course in advance of either the drop or withdrawal deadline is your responsibility, and you will not simply be dropped because you stopped attending class at some point along the way.)

November 10th: Veteran's Day holiday, no class

November 17th: Last day to drop with a "W" Drops after this date will result in an "F"

November 24th: Thanksgiving holiday - no class

December 15th: Final Exam (Friday at 9:15 am)

Information for the format of Class

• The lecture portion of Chem 30A will be "hybrid". A new lecture module will be opened to students weekly in Canvas, including the lecture videos, slides, and homework. The class meets on Fridays from 8:30-10:20 AM for class activities, quizzes, and exams.

• Lecture Videos: The initial presentation of lecture topics for this course takes the form of course videos accessible from the Canvas modules page. This means you can take the lectures at your own pace and on your own time, slowing them down or speeding them up depending on how confident you feel about a particular topic and rewinding to catch anything you missed. While you may watch the videos on your own schedule, they should be viewed **before the lecture period for the week in which they are assigned** since the synchronous meeting will focus on practice with applying the knowledge gained from the videos and will presume some exposure to the topics ahead of time.

• Participation during the lecture is critical as the lecture will also include various in-class exercises, and your work from these exercises will affect 5% of your total grade.

• The lab portion of this class is in-person and meets weekly for 3 hours per week. Students **must** be present in the lab each week to perform the experiments

• Students should spend between 8-10 hours a week on this course.

• Canvas homework assignments are subject to a 5% point deduction for every late day (No penalties for the first two weeks)

• **The due dates for quizzes, homework, and pre-labs are firm. No Exceptions.**

Grading Scale Breakdown:

LETTER GRADE EARNED	PERCENTAGE RANGE
A	*90-100%*
B	*80-89%*
C	*70-79%*
D	*60-69%*
F	*Below 60%*

Note: These are estimated brackets and will likely shift down (to your benefit) in the final calculation depending upon the difficulty of exams. They will not shift up, so you may be guaranteed that if you are in the range listed, your letter grade will be at least that listed above (baring any specific reason for grade lowering listed below)

Grading Policies

- **Lecture (77 %)**
  - Active Learning Assignments in Class: 5%
  - Online Homework: 20%
  - Quizzes: 4%
  - Midterm Exams 33%
  - Final Exam: 15%:
    No advance or make-up exams will be given.
- **Lab (23%):**
  - Pre-Lab assignments (5%)
  - In-Lab assignments (7%)
  - Post-Lab assignments (5%)
  - Lab Exam (6%)

Description of Assignments

Lecture (77%)

Active Learning Assignments in Class (5%): Students will be given active learning assignments in class that encourage the development of collaboration and cognitive and problem-solving skills (polls, teamwork, etc.). Many of the questions from these assignments could appear on an exam. The lowest active learning assignment grade drops, and no make-up assignments are available for any in-class assignments.

Online Homework Assignments (20%): Online homework is submitted through Aktiv (available on Canvas) and is due Sundays at 11:59 pm. Homework assignments (through Canvas) are subject to a 5% point deduction for every late day (No penalties for the first two weeks).

Quizzes (4%): Students will be given five quizzes at the end of the class. Your lowest quiz score will be dropped. **No advance or make-up quizzes will be given. No exceptions.**

Quiz 1 (Chapters 1 and 2)	**Quiz 4** (Chapters 7 and 8)
Quiz 2 (Chapter 5)	**Quiz 5** (Chapters 9 and 10)
Quiz 3 (Chapter 6)	

Midterm Exams (33%): There will be three midterm exams, and you can find the exam dates for each on pages 5 and 6. The weightage for each Midterm Exam is 11%. All three exams will be counted towards your final grade. **Please note that there won't be any advance or makeup exams given under any circumstances.**

Final Exam (15%): Students will have 2 hours to complete the Cumulative Final Exam. While the final exam will focus on the material covered after the first exam, it is cumulative, requiring mastery of the material covered throughout the entire course. The final exam will be in person on December 15th. **No advance or makeup exam will be given. No exceptions.**

Lab (23%)

Pre-Lab Assignments (5%): Online pre-lab assignments for the labs scheduled each week are submitted through **Canvas** and are due Thursday at 11:59 PM. For each experiment, you must read and understand the background information and the experimental procedure before answering online prelab questions and coming to the laboratory. **The due dates for Pre-labs are firm; pre-labs will not be accepted past the due date (the Thursday before the lab). You must complete the experiment in the lab to receive points from your pre-lab assignment. The lowest pre-lab score will be dropped from your course grade.**

In-Lab Assignments (7%): Laboratory Assignment scores are based on the work done during the lab period. Students are expected to arrive on time, conduct the experiment, analyze the data, answer the questions in the lab manual, and clean up. Students must hand in their completed sheets one week after each lab. Please note that you may work with a partner, but you must complete your work individually to avoid violating our academic honesty. **Labs are turned in before you leave the lab for the day. If you don't complete the lab in person, you will receive a zero for in-lab and pre-lab assignments. The lowest lab score will be dropped from your course grade. A second lab absence will result in zero points for that lab (including the prelab assignment for the experiment), and three lab absences will lead to an automatic failing grade in Chem 30A. Check-in and check-out for the lab are mandatory!**

Post-Lab Assignments (5%): Online post-lab assignments for the labs completed each week are submitted through **Canvas**. Students are expected to complete a Post-lab assignment to demonstrate understanding of the experiment. We do not submit lab reports for 30A, just post-lab assignments. Online post-lab questions are done on Canvas and due at 11:59 PM, a week after lab completion. **The due dates for Post-labs are firm; post-labs will not be accepted past the due date. No exceptions.**

Laboratory Exam (6%): At the end of the quarter, there will be a lab exam about the information covered in the laboratory assignments, which will be held in person during the final lab period on Friday, December 8th. This exam will focus on your understanding of the underlying techniques and concepts that we have learned during the quarter rather than on the procedural specifics of the exact experiments we performed.

Accommodated Testing:	If you need specific accommodations, such as extended-time or reduced-distraction testing or the use of assistive technology, I am glad to work with you to arrive at an appropriate accommodation arrangement. All such requests must go through Disability Support Programs and Services (DSPS), located in the Advanced Technology Center (AT209). If you need accommodations but are not yet registered through DSPS, please make sure to contact them as soon as possible, as I am not able to provide accommodations without a written notice from that office. The DSPS website is found at www.deanza.edu/dsps
Academic Integrity:	Homework assignments are an opportunity to learn and practice the course material, and you should feel free to make use of resources that will help you to understand problems you are uncertain about, including your textbook, the course lecture videos or, other tutorials, or outside tutors. You should make sure, however, that you are, in fact, using these resources to help you understand how to approach the problems rather than simply entering the problem text into a search engine and copying any solutions you find. Course exams are a time to demonstrate your own independent knowledge of the course content, and your use of outside help to assist you in answering exam questions is limited to specifically approved materials. Consultation with another person in answering exam questions, whether in person or via the Internet, is considered cheating and will be handled as described below. The same is true for uploading any portion of an exam to an online homework help service (Chegg, CourseHero, etc.), whether during or after the exam period. You will always be provided with keys to course exams once they are returned to you, but posting exam questions online with permission is a violation of both De Anza academic integrity policies and copyright law. Cheating or plagiarizing in any form, including but not limited to those above, will not be tolerated. The first offense of academic dishonesty will result in a zero for the relevant exam or assignment, which may lead to failing the course. The offending student will also be reported to the Dean of Student Development, which may result in additional administrative consequences. For a fuller description of what constitutes a violation of academic integrity, see the De Anza College academic honor code at the link below: www.deanza.edu/policies/academic_integrity.html
Safety in the Lab	Below are general safety guidelines applicable any time you are working in a chemistry lab. For separate departmental safety protocols related to COVID-19, see the additional document here. 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 purchased from the De Anza College bookstore (NOT safety glasses) 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 lectures. 8. Use of electronic devices requiring headphones in the laboratory is prohibited at ALL times, including during lab lectures. 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 showers, and all exits. 11. Students may not be in the lab without an instructor being present. 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 the 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. Reckless behavior will not be tolerated. If your actions endanger the health and safety of yourself or someone else, you will be asked to leave, and you will receive a zero for the day.

Chem 30A Fall 2023 Lab and Lecture Tentative* Schedule

Week of	Lecture Content for the week (Watch all videos before coming to the lecture)	Friday Lecture	Lab Scheduled for the Week (Prelab assignments are due before the lab starts)	Assignments Due for the week
Sep 29th (Week 1)	Introduction to the course Chapter 1: Chemistry Matter, and Measurement	Chapter 1 class activity	Laboratory Safety and Check-In ***Mandatory Attendance***	**Lecture Assignments** **Due 10/01 at 11:59 PM:** **Chapter 1 assignment** Familiarize yourself with CANVAS and format of the course. **Lab Assignments** **Due 9/28 at 11:59 PM:** ACS Essentials of Lab Safety for Chem 30A
Oct 6th (Week 2)	Chapter 2: Elements, Atoms, and the Periodic Table	Chapter 2 class activity **Quiz 1 (Chapters 1 and 2)**	Density	**Lecture Assignments** **Due 10/08 at 11:59 PM:** **Chapter 2 assignment** **Lab Assignments** **Due 10/05 at 11:59 PM:** Prelab: Density
Oct 13th (Week 3)	Chapter 3: Ionic Bonding and Simple Ionic Compounds Chapter 4: Covalent Bonding and Simple Molecular Compounds	**Exam 1 (Chapters 1-4)**	Sand/Salt Separation + Nomenclature	**Lecture Assignments** **Due 10/15 at 11:59 PM:** **Chapter 3 assignment AND** **Chapter 4 assignment** **Lab Assignments** **Due 10/12 at 11:59 PM:** Prelab: Sand/Salt Separation Prelab: Nomenclature Postlab: Density
Oct 20th (Week 4)	Chapter 5: Introduction to Chemical Reactions	Chapter 5 class activity **Quiz 2 (Chapter 5)**	Chemical Reactions	**Lecture Assignments** **Due 10/22 at 11:59:** **Chapter 5 assignment** **Lab Assignments** **Due 10/19 at 11:59 PM:** Prelab: Chemical Reactions Postlab: Sand/Salt Separation Postlab: Nomenclature
Oct 27th (Week 5)	Chapter 6: Quantities in Chemical Reactions	Chapter 6 class activity **Quiz 3 (Chapter 6)**	Yield of Sodium Carbonate	**Lecture Assignments** **Due 10/29 at 11:59 PM:** **Chapter 6 assignment** **Lab Assignments** **Due 10/26 at 11:59 PM:** Prelab: Yield of Sodium Carbonate Postlab: Chemical Reactions
Nov 3rd (Week 6)	Chapters 5 and 6 Review	**Exam 2 (Chapters 5 and 6)**	Synthesis of Alum (Day 1) + Structures of Molecular Compounds	**Lecture Assignments** **Due 11/5 at 11:59 PM:** **Complete the Chapter 5 and 6 assignments if you haven't already** **Lab Assignments** **Due 11/2 at 11:59 PM:** Prelab: Synthesis of Alum Prelab: Structures of Molecular Compounds Postlab: Yield of Sodium Carbonate

Nov 10th (Week 7)	Chapter 7: Energy and Chemical Processes	Veteran's Day Week **No Class Scheduled this week**	Veteran's Day Week **No Lab Scheduled this week**	**Lecture Assignments Due 11/12 at 11:59 PM:** **Chapter 7 assignment** **Lab Assignments Due 11/9 at 11:59 PM:** Postlab: Synthesis of Alum NO Prelab is due this week!
Nov 17th (Week 8)	Chapter 8: Solids, Liquids and Gases	Chapter 7 and 8 class activity **Quiz 4 (Chapters 7 and 8)**	Synthesis of Alum (Day 2) Gas Forming Reaction	**Lecture Assignments Due 11/19 at 11:59:** **Chapter 8 assignment** **Lab Assignments Due 11/16 at 11:59:** Prelab: Gas Forming Reaction
Nov 24th (Week 9)	Chapter 9: Solutions	Thanksgiving week **No Class Scheduled this week**	Thanksgiving Break **No Lab Scheduled this week**	**Lecture Assignments Due 11/26 at 11:59 PM:** **Chapter 9 assignment** **Lab Assignments Due 11/23 at 11:59 PM:** Postlab: Gas Forming Reaction NO Prelab is due this week!
Dec 1st (Week 10)	Chapter 10: Acids and Bases		Citric Acid Titration	**Lecture Assignments Due 12/3 at 11:59 PM:** **Chapter 10 assignment** **Lab Assignments Due 11/30 at 11:59 PM:** Prelab: Citric Acid Titration
Dec 8th (Week 11)	Chapter 11: Nuclear Chemistry	Chapter 9, 10, and 11 class activity **Quiz 5 (Chapters 9 and 10)**	Comprehensive Lab Exam and Lab Check-out	**Lecture Assignments Due 12/10 at 11:59 PM:** **Chapter 1 assignment** **Lab Assignments Due 12/7 at 11:59 PM:** Postlab: Citric Acid Titration NO Prelab is due this week!
Dec 15th (Week 12) (Final's Week)	**Cumulative Final Exam:** December 15th 9:15 -11:15 am	**No Class is scheduled for this week**	**FINALS WEEK NO LAB SCHEDULED THIS WEEK**	**Finals Week** **No Assignments are due this week**

***Schedule is tentative, and dates/topics are subject to change**

Student Learning Outcome(s):

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

Office Hours:

F	01:20 PM	03:20 PM	In-Person	SC1102 Second Floor