

Chemistry 1A  
College of the Siskiyous  
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**Chemistry 1A: 1<sup>st</sup> Semester General Chemistry (5 units)**

Lecture	Lab	Problem Solving	Office Hours
			M 1 – 2 pm
TR 1:00 - 2:20 pm	T 8:00 – 10:50 am	R 2:30 – 5:30 pm	T 11 - 12 pm
	T 2:30 – 5:20 pm		W 11 - 12 pm
Life Science 9	Life Science 12	Life Science 9	R 12 - 1 pm
			F – by appointment

Chemistry 1A involves a detailed study of the basic principles and calculations including atomic structure, bonding, intermolecular forces, stoichiometry, oxidation-reduction reactions, solution chemistry, gas laws, solid state and colloidal chemistry. You should plan to study 2 hours per course unit to successfully pass the course. (3 hours lecture / 3 hours lab / 3 hours problem solving)

**Prerequisites:** Math 53 or qualification through assessment, Chem 3A or one year of high-school chemistry with a lab or equivalent

**Required Course Materials**

1. Text: Chemistry: A Molecular Approach To Chemistry 2/E. Tro.
2. Lab Manual: 1<sup>st</sup> Semester General Chemistry. Catalyst, Prentice Hall
3. Lab Materials: Lab safety goggles, OSHA approved indirect vent (provided)  
Lab coat (provided)  
Chemistry Notebook – sewn and quad ruled
4. Other Materials: Scientific Calculator: log, exponential, non-programmable  
Etudes: <https://myetudes.org>  
ALERTU: both Etudes and ALERTU found at [www.siskiyous.edu](http://www.siskiyous.edu)

**Grading**

Quizzes	100 points (20 pts each)	<b>A: 90-100%</b>
Exams	300 points (100 pts each)	<b>B: 80-89%</b>
Lab Reports	330 points (30 pts each)	<b>C: 70-79%</b>
Problem Solving	100 points (10 pts each)	<b>D: 50-69%</b>
Final	170 points	Total = 1000 points

## Lecture

- This class requires your dedicated time and commitment (3 hours of lecture, 3 hours of lab and 3 hours of problem solving per week). Please turn off your cell phones and other electronic devices otherwise you will be asked to leave the classroom. We will treat each individual with respect and always conduct mature behavior in both the lecture and laboratory.
- Homework will be assigned but NOT collected or graded. It is strongly advised to complete the homework to receive an A, B or C grade.
- Quizzes will be given during Problem Solving and may consist of closed note, open note, pop, or group quizzes. A zero score will result if you are absent. The lowest score will be dropped. No makeup quizzes are given.
- The exams will be taken during Problem Solving and may include multiple choice, fill-in, true/false, problem solving and short answer. No makeup exams are given, expect for dire, documented emergencies!
- The final exam will be a cumulative, multiple choice exam. You must take the final in order to pass the course with an A, B, or C. No makeup finals are given.
- Extra credit will be assigned and discussed during the semester.
- Please feel free to ask questions and meet with me during office hours. If for any reason you cannot meet during an office hour please email me and we can schedule a visit.

## Problem Solving

- Problem Solving will consist of practice worksheets, homework, and other relevant activities to the material we are covering in lecture.
- Worksheets will be due at the end of class unless instructor indicates otherwise.
- Exams and Quizzes will be given during Problem Solving.

## Laboratory

- Lab requires list of materials on the syllabus, along with CLOSED TOED SHOES. If you are not prepared or more than **5 minutes** late you will not be allowed into the lab.
- Safety will always be our number one priority and lab rules must be followed at all times. **ALL ACCIDENTS AND SPILLS MUST BE REPORTED TO ME!**
- If you have any medical conditions that may affect your performance in the lab such as pregnancy or allergies, please consult with me as soon as possible.
- Lab reports are due on the date given to you by the instructor. Late labs may only be turned in up to one week lab for half credit and there are no makeup labs.
- You may have a lab partner for some experiments, but each of you will complete all of the lab reports individually.
- Your lab report score will depend on the following ideas:
  1. Pre-laboratory
  2. Procedure, Calculations, Data and Observations
  3. Results and Discussions
  4. Conclusion
- **Each experiment in your lab notebook must be initialed by the lab instructor before leaving the lab.**
- Each student will be responsible for cleaning up their own area. Leaving a mess, excessive broken glassware, or inappropriate behavior will result in loss of points.
- If you do not check out of your locker at the end of the semester you will not receive a grade in the course until you do so.
- All safety and information forms will be completed during the first week of lab and must be turned in before beginning any experiments. Other lab handouts will also be provided.

**Laboratory Rules and Safety Procedures:**

1. Wear protective goggles at all times in the lab area (OSHA approved, indirect vent).
2. Wear a lab coat or apron and closed toed shoes.
3. Identify the safety features of the lab: emergency exits/ meeting locations, safety shower, eye wash station, fire alarm, fire extinguisher, fire blanket, first aid kit, emergency phone, spill kit locations (3), MSDS, broken glass, etc.  
Call 5911 for Campus Safety or 911 for emergency.
4. Dispose of waste in the appropriate area as indicated by your instructor.
5. Always turn off the gas when not in use or when you will be away from your station.
6. Do not take reagent bottles back to your desk. Use test tubes, beakers or other equipment to transfer the materials to your work station. Take small quantities – you can always get more if you need it.
7. Read the labels carefully to make sure you are using the right chemical. Once you are done with the reagent return the lid to the correct bottle to avoid contamination.
8. Wash your hands anytime you get chemicals on them and at the end of lab.
9. Keep the balance and the area around it clean. Do not move the balances. Never put an object or chemical directly on the balance. Use a weigh boat or weigh paper provided.
10. Do not eat, drink, chew gum or use tobacco in the lab.
11. Do not perform unauthorized experiments...ever!
12. After completing the experiment, clean and put away your glassware and equipment. Clean your work station and make sure the water and gas is shut off.

REMEMBER accidents are mainly caused by carelessness, but you can help avoid them by closely following the precautions printed in your lab experiments and handouts.

## **Laboratory Notebook**

Notebooks should follow the listed guidelines in order to receive full credit.

Pre-laboratory: Completed BEFORE coming into the lab. This will be checked at the beginning of each lab period. (5 pts)

1. Name, Date, and Experiment number on EVERY page
2. Purpose: 1-2 sentences describing the main goal of the experiment
3. Safety: List of chemicals including MSDS information AND list of equipment

Procedures, Calculations, Data, and Observations: These steps are done as you complete the experiment (10 pts)

Calculations need to be labeled and shown on the left hand side of the notebook, opposite the procedure and data. The appropriate significant figures and units should always be used.

Results and Discussion: This section will provide 1-2 tables (with titles) summarizing the experimental data. Explanation of the experimental procedure follows, along with experimental, equipment, instrumentation, and human errors. (10 pts)

Conclusion: 3-5 sentences: Summarize the experiment, give your final results (usually matching the purpose of the experiment), and describe something you learned while completing the experiment. (5 pts)

- Each lab is worth 30 points
- Black or blue pen must be used in the lab notebook
- Every page must be numbered in the lab notebook
- The whole lab notebook is turned in when the experiment is due
- No pages should ever be torn out of the notebook
- A table of contents will be kept in the first 2 pages of the notebook
- More details will be given in lab

### **Students with Disabilities**

If you anticipate the need for reasonable accommodations to meet the requirements of this course, you must register with the Disabled Students Programs & Services (DSPS). If you qualify for services through DSPS, bring your official notification of your accommodation needs to me within the first 3 weeks of class.

**CHEATING IS NEVER TOLERATED! IF CAUGHT CHEATING YOU WILL AUTOMATICALLY RECEIVE A ZERO SCORE ON THAT ASSIGNMENT. OTHER DISCIPLINARY ACTION MAY ALSO TAKE PLACE AT THE INSTRUCTORS DISCRETION. PLEASE SEE THE STUDENT HANDBOOK FOR MORE INFORMATION.**

**Reminder:** If you choose to drop the course it is your responsibility to officially do so, not the instructor's responsibility!

### **Student Learning Outcomes**

1. Compare and evaluate multiple atomic theories, chemical and physical processes, and basic quantum mechanics to explain the electron structure and chemical bonding between atoms
2. Solve quantitative problems by identifying key data and constructing correct chemical formulas for unit conversions and stoichiometry
3. Analyze and demonstrate an understanding of the properties and relationships between various types of matter (gases, solids, liquids, solutions) and energy.
4. Perform experiments, data analysis and interpretation of results by applying the scientific method
5. Demonstrate laboratory techniques correctly following appropriate safety guidelines and standard operating procedures

### **College of the Siskiyous Resources**

- Counseling: 938-5353
- Disabled Student Services and Programs: 938-5297
- Library: 938-5331
- Computer Lab: 938-5324
- Tutoring: 938-5514
- MESA: 938-5272
- Math Lab: 938-5365
- Writing Lab: 938-5325

**Schedule**

Week	Lecture	Lab	Problem Solving
1	Matter and Measurement	Laboratory Safety	Lab Notebooks
2	Atoms and Elements	Check in and Basic Lab Techniques	Basic Lab Techniques cont
3	Chemical Equations	Reactions in Aqueous Solutions	<b>Quiz 1</b>
4		Activity Series	<b>Quiz 2</b>
5	Chemical Quantities	Chemical Formulas	<b>Exam 1</b>
6		Gravimetric Determination of Phosphorous	
7	Gases	Gravimetric Determination continued	<b>Quiz 3</b>
8	Thermochemistry	Heat of Neutralization	
9	Quantum Chemistry	Heat of Neutralization continued	<b>Quiz 4</b>
10	Periodic Properties	Atomic Spectra and Atomic Structure	<b>Exam 2</b>
11	Chemical Bonding	What's in your Kitchen Zinc?	
12		What's in your Kitchen Zinc? Cont	Kitchen Zinc Cont <b>Quiz 5</b>
13	<b>Thursday Nov 11 Veterans Day</b>	Molecular Geometries	
14	Intermolecular Forces	Analysis of Antacids	<b>Quiz 6</b>
15	<b>Thursday Nov 25 Thanksgiving</b>	Analysis of Antacids continued	
16	Solutions	Analysis of Antacids continued	<b>Exam 3</b>
17		Colligative Properties	
18	Finals Dec 13-16		

The instructor reserves the right to change the information provided in this syllabus as necessary throughout the semester.