

Chemistry 3AL Course Syllabus
General Chemistry Lab

Santa Rosa Junior College Spring 2024

Instructor: Mr. Joe Fassler

E-mail: jfassler@santarosa.edu

Office: 342 Lindley

Phone: (707) 524-1727

Homepage: <https://srjcstaff.santarosa.edu/~jfassler/>

Office Tuesday 9:00 AM–10:00 AM
Hours Wednesday 10:30 AM–12:00 PM
 Thursday 9:00 AM–10:00 AM

Class Times	Section	Meeting Time	Room	Instructor
	Section 4925	Mon 11:00–3:00 PM	396/383 Lindley	Fassler

Description

Chemistry 3AL (formerly part of Chem 1A) is an introduction to the fundamental practices and laboratory techniques used in chemistry. Topics include atomic theory, stoichiometric calculations, reactions, ideal gases, titration, thermochemistry, molecular geometry and models of chemical bonding. Chem 3AL is the lab portion of first semester General Chemistry. You must be concurrently enrolled in the lecture course, Chem 3A. Separate final grades will be awarded for the lab and lecture courses.

Prerequisites / Co-requisite

Completion of Chem 42 or one year of high school chemistry

OR petition / placement through the Chemistry Diagnostic Test

Concurrent enrollment in Chem 3A (any section)

College-level prerequisites must be completed with a grade of C or higher.

Each student should be comfortable with algebra, scientific notation, significant figure conventions, graphing, and logarithmic calculations. You should be familiar with metric system conversions, dimensional (unit) analysis, chemical symbolism, nomenclature, balancing equations, and basic stoichiometric calculations.

Learning Outcomes

1. Demonstrate proficiency in fundamental chemistry laboratory techniques.
2. Carry out experiments safely and carefully in the lab.
3. Obtain accurate data and interpret and manipulate the data correctly.
4. Relate experimental observation in the lab to theoretical chemical concepts from the lecture.

Required Course Materials

Lab manual: *Chemistry 3A Lab Manual*, Spring 2023, Fall 2023 OR Spring 2024 ed.

Bound laboratory or composition notebook for recording data and observations

Lab apron, safety goggles (available free in the stockroom), scientific calculator

Important Dates

Sunday, February 4th – Last day to drop without a grade

Sunday, April 21st – Last day to withdraw with a W

Monday, May 20th, 10:00 – 12:45 PM – Final exam

Grading

Laboratory 260 points

There will be 12 labs this semester. Of these, there will be 10 regular lab reports worth 20 points each and two formal lab reports worth 30 points each.

Final Exam 40 points

The final exam will be comprehensive, and there will be no makeup. Any scheduling conflicts must be resolved before February 4th, the last day to drop without a W.

Final Grades 300 points possible

Letter grades will be assigned based on percentages rather than the number of points earned. The approximate grading scale for the course will be:

≥ 88% A

≥ 76% B

≥ 65% C

≥ 50% D

Course Content

Laboratory

Chem 3AL is a laboratory course designed to supplement the material you will be learning in the Chem 3A lecture course. It will introduce you firsthand to important practical techniques in chemistry. You will also further develop the skills of taking careful measurements, making good observations, and keeping clear, accurate records in a lab notebook. Each lab is preceded by a mandatory lab lecture that will explain the principles in the lab as well as procedural and safety considerations. You are also expected to come prepared, having read over the lab and answered any assigned prelab questions ahead of time.

Student Expectations

Good Labkeeping

Maintaining a tidy work area in the lab and cleaning up after yourself are laboratory requirements. Our stockroom staff is helpful, but does not have time to clean up after each student. Before you leave, the counters, floors, sinks and balances should be clean, stools well stacked in the closet, equipment in its proper place, and chemical waste disposed of in the correct container. All students in a section are responsible for helping clean up the lab, regardless of who made any messes.

Academic Integrity

All work submitted for grading must be your own. You are free to collaborate with other students, discussing questions as you like, but you must turn in only your own work. Work that is found to have been copied or plagiarized will be penalized or

given a score of zero, whether it is the original or the copy. I do not hesitate to penalize anyone found cheating or plagiarizing.

Submitting Lab Reports

The lab assignments this semester will be submitted using Canvas to minimize paper handling. For these assignments, you will need to find a way to scan or photograph your work. Please submit each assignment in a single PDF file, with the pages in order. There are a number of phone apps that can do this for you, or you can use a scanner if you have one. Instructions are on the Canvas front page. Adobe Acrobat DC is also able to organize PDFs as needed. Please check your file size and avoid extremely large (>10 MB) files. If you have trouble, you can send files to me as e-mail attachments. If you attempt to send me a link to a Google Doc (please avoid this method), you must also set the permissions so that I can open the document from your link. I can help you get set up if you encounter any issues.

Creating a Productive Work Environment

Since you will be spending many hours working this semester, I recommend that you find or create a comfortable and productive study area for yourself. It should be free from distraction as much as possible. Consider and optimize your posture, the lighting and your work surfaces. It is best if you can maintain a regular routine, including a good sleep schedule, stretch breaks, meals and time outside. Good habits (or lack thereof) will impact your learning for better or for worse.

Course Policies

Missed Labs

If you miss a lab period, it may be possible to make up the lab in another section. However, it is important to obtain the consent of the lab instructor, and the experiment you do has to be the same as the one the rest of the class is doing.

Late Labs

Late labs will be marked down by 20% of the value of the assignment (4 points on a 20 point lab). They will not be accepted more than two weeks after the regular due date for the report. No more than three late labs will be accepted from each student for the semester.

Re-evaluation of Graded Work

If you believe that your work has been graded incorrectly, please attach a brief note explaining the suspected error and submit it to me within two weeks of the day it was returned to the class. Do not write on any work that you are submitting for a re-grade. If you are comparing your graded materials with that of other students, both your work and that of your colleague must be submitted together for consideration. The entire submission will be re-evaluated, and the score may be adjusted up, down, or not at all.

Safety and General Information

Laboratory Safety

Safety in the laboratory is of primary importance. You must be appropriately dressed in long pants and closed-toed shoes. Backpacks and other loose articles must be stored in the cubbies provided, not on the floor. If you have long hair, it must be tied back. When anyone in class is working on chemistry, everyone must be wearing safety goggles. These may be worn over prescription glasses. Food and drink are strictly prohibited in lab. More complete laboratory safety procedures will be reviewed during the first lab.

Emergency Information (Lab)

In the event of an emergency, remain calm and take deliberate action as necessary. In an earthquake, protect yourself from falling objects, including any heavy items or chemicals you may have out on the bench. If an evacuation is ordered, take your belongings (if there is time) and exit the building in an orderly manner. Wait outside with your class in a safe area that allows access for emergency vehicles. Copies of the *Emergency Preparedness Handbook* are posted throughout the building. Any type of emergency can be reported to the District Police Dispatch at (707) 527-1000.

Accommodations for Students with Disabilities

If you need disability-related accommodations for this class, please provide the Authorization for Academic Accommodations Letter from the Disability Resources Department (DRD) to your instructor as soon as possible. You may also speak with me privately during office hours about your accommodations. Please remind me about any testing accommodations at least a day or two before the exam, and keep me informed of what you need. I am happy to provide accommodation for you. If you have not received authorization from DRD, contact their office directly. They can be reached online, or by phone at 527-4278.

Advice for the Chemistry Lab

The study of chemistry is a discipline that grew out of experiments in the laboratory. By studying the behavior of matter yourself, you become a participant in a long tradition of using careful observations and measurements to uncover the mysteries of nature. These experiments allow us a window for seeing the behavior of invisible atoms. When you are in lab, there are several things to practice. First is to carry out an experiment in a safe manner. Next is to record what you do and see in order to document your work. Finally, you will need to interpret your observations in some way and make connections to the theories and models you are also learning. There is a lot to juggle in the lab, but it's fun to try chemistry for yourself. If you have a partner, work with them and help them, but don't depend on them. Think for yourself! When you see something that surprises you, consider how the behavior of molecules and atoms could be causing what you observed. It's how chemists think, and how you can unlock the otherwise mysterious behavior of substances too.