

San José State University
Chemistry Department
CHEM 190, Introduction to Research, Fall 2022

Course and Contact Information

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Office Hours:	Mondays and Wednesdays 12:00 – 1:00 pm or by email appointment	Tuesdays and Thursdays 11:00 am – 12:00 pm or by email appointment
Class Days/Time:	Fridays 10:00 am – 12:00 pm (9/9/2022-10/14/2022)	
Classroom:	Duncan Hall 507	

Technology Intensive

This course requires access to canvas for course information and assignments as well as a number of online resources. Please be prepared to bring a computer to class.

Course Description

Supplemental course for students taking lower division chemistry lecture courses. This course focuses on fundamental principles and techniques geared toward preparing students for independent experimental work in a faculty-hosted research laboratory.

Course Format

In-person and hybrid if necessary. Subjective to any change in University policies.

Course Materials on Canvas

Course materials such as syllabus, handouts, notes, assignment instructions, etc. can be found on [Canvas Learning Management System course login website](#). You are responsible for regularly checking with the messaging system through [MySJSU](#) on [Spartan App Portal](#) to learn of any updates. For help with using Canvas see [Canvas Student Resources](#) page.

COVID-19 and Monkeypox Information

Students registered for a College of Science (CoS) class with an in-person component should view the [CoS COVID-19 and Monkeypox Training](#) slides for updated CoS, SJSU, county, state and federal information and guidelines, and more information can be found on the [SJSU Health Advisories](#) website. By working together to follow these safety practices, we can keep our college safer. Failure to follow safety practice(s) outlined in the training, the SJSU Health Advisories website, or instructions from instructors, TAs or CoS Safety Staff may result in dismissal from CoS buildings, facilities or field sites. Updates will be implemented as changes occur (and posted to the same links).

Learning Outcomes

CHEM 190 covers the following Program Learning Objectives (PLOs):

- PLO 1.1 - Students will be able to identify, formulate, and solve a range of chemistry problems (fundamental to complex) through application of mathematical, scientific, and chemical principles.

- PLO 1.2 - Students will be able to recognize, relate, and/or apply chemistry terms and concepts to propose and solve interdisciplinary and multidisciplinary real world problems.
- PLO 2.2 Students will be able to acquire, record, and critically evaluate data through use of instrumentation and software, appropriate record keeping practices, figure preparation, and scrutiny of experimental results.
- PLO 2.3 Students will be able to recognize and assess laboratory hazards, practice risk minimization, and conduct safe laboratory practices

The following are the Course Learning Outcomes (CLO) for CHEM 190:

Upon successful completion of this course, students will be able to:

1. Demonstrate safe laboratory practices
2. Answer questions regarding chemical safety
3. Understand and properly use instruments for making measurements in the laboratory
4. Perform basic calculations common in research laboratories
5. Navigate scientific protocol
6. Be proficient with a number of basic laboratory instrumentation

Required Texts/Readings

Textbook

None

Other Readings

Readings will be assigned to match the in-class discussions and laboratory work goals. These readings will be posted on Canvas and will be the responsibility of the student to check regularly.

Course Requirements and Assignments

Weekly assignments will usually be comprised of reading/videos, tutorials, practical activities and writing.

- Students are required to attend, participate, and complete all required training sessions and activities (typically hosted weekly).
- Students are required to complete all relevant tutorials and preparatory work prior to carrying out weekly laboratory work.
- Students are required to come prepared to discuss any readings assigned as well as perform all work in a safe, timely manner.

Note that the [University Policy S16-9](#), states that:

“Success in this course is based on the expectation that students will spend, for each unit of credit, a minimum of 45 hours over the length of the course (normally three hours per unit per week) for instruction, preparation/studying, or course related activities, including but not limited to internships, labs, and clinical practica. Other course structures will have equivalent workload expectations as described in the syllabus.”

Grading Information

Students will be graded on the quality of their written assignments, the extent of their participation, and the thoughtfulness and effort put into their laboratory work.

Points will be allocated as such:

Laboratory-based Assignments	100 pts
Required Training Sessions/Activities	100 pts
Instructor Evaluation	25 pts
Final	25 pts

Determination of Grades

Course Grade:

The final course grade will be determined by rounding your final score to two significant figures and assigning grades as follows:

<i>Grade</i>	<i>Percentage</i>
<i>A plus</i>	<i>97 to 100%</i>
<i>A</i>	<i>94 to 96%</i>
<i>A minus</i>	<i>90 to 93%</i>
<i>B plus</i>	<i>87 to 89 %</i>
<i>B</i>	<i>84 to 86%</i>
<i>B minus</i>	<i>80 to 83%</i>
<i>C plus</i>	<i>77 to 79%</i>
<i>C</i>	<i>74 to 76%</i>
<i>C minus</i>	<i>70 to 73%</i>
<i>D plus</i>	<i>67 to 69%</i>
<i>D</i>	<i>64 to 66%</i>
<i>D minus</i>	<i>60 to 63%</i>
<i>F</i>	<i>Below 60%</i>

Classroom Protocol

At SJSU, we hope that the classroom will serve as an environment that will promote learning and the development of new ideas, as well as be a safe and respectful community. Behavior that interferes with the normal academic function in a classroom is unacceptable. Students exhibiting this behavior will be asked to leave the class. Examples of such behavior include

- Persistent interruptions or using disrespectful adjectives in response to the comments of others.
- The use of obscene or profane language.
- Yelling at classmates and/or faculty.
- Persistent and disruptive late arrival to or early departure from class without permission.
- Physical threats, harassing behavior, or personal insults (even when stated in a joking manner).

University Policies

Per [University Policy S16-9](#), relevant university policy concerning all courses, such as student responsibilities, academic integrity, accommodations, dropping and adding, consent for recording of class, etc. and available student services (e.g. learning assistance, counseling, and other resources) are listed on [Syllabus Information](#) webpage (<https://www.sjsu.edu/curriculum/courses/syllabus-info.php>). Make sure to visit this page to review and be aware of these university policies and resources.

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Course Schedule

The schedule is subject to change with fair notice. Any change to the schedule will be announced in class.

Class	Date	Lecture Topics	Lab Topics
1	09/09/2022	Information literacy, Faculty presentation	Understanding pH meters, scales and sterility
2	09/16/2022	Keeping a lab notebook, Faculty presentation	Use of micropipettes
3	09/23/2022	Calculations, Faculty presentation	Making buffers
4	09/30/2022	Reading and writing protocols, Faculty presentation	Bradford assay
5	10/07/2022	Professional development, Faculty presentation	Analysis of Bradford assay
6	10/14/2022	Interviews with faculty	
<i>Final Event</i>	12/12/2022	<i>Presentation on Stream Rotation (9:45 am – 12:00 pm)</i>	