

**San José State University**  
**Chemistry Department**  
**Chem 132L, Intro. Biochem. Lab, Section 1, Spring 2023**

**Course and Contact Information**

Instructor:	Anh-Tuyet Tran, Ph.D.
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Office Hours:	MW 3:00 – 4:00 pm, F noon – 1:00 pm
Class Days/Time:	Friday 9:00 – 11:50 am
Classroom:	Duncan Hall 611
Prerequisites:	CHEM 030B or CHEM 008 (with a grade of "C" or better, "C-" not accepted). Pre/Corequisite: CHEM 132

**Course Web Page**

Course materials such as syllabus, handouts, notes, assignment instructions, etc. can be found on [Canvas Learning Management System course login website](http://sjsu.instructure.com) at <http://sjsu.instructure.com>. You are responsible for regularly checking with the messaging system to learn of any updates.

**Course Description**

This is a laboratory course of biochemistry associated with chemistry of foods and nutrition, cellular metabolism, biomacromolecules, vitamins and the structure of carbohydrates, lipids, proteins and nucleic acids.

**Course Learning Outcomes (CLO)**

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

- CLO#1:** Become familiar with different volumetric measurements and use laboratory micropipettors correctly.
- CLO#2:** Perform some enzyme assays.
- CLO#3:** Learn bio-separation techniques.
- CLO#4:** Use a spectrometer.
- CLO#5:** Keep an organized lab notebook, and write clear and concise lab reports.

**Required Materials**

- Scientific lab notebook with carbon copy of each page.
- Non-programmable scientific calculator.

**Course Requirements and Assignments**

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 practice. Other course structures will have equivalent workload expectations as described in the syllabus.

### Final Examination or Evaluation

Final Evaluation will be based on Final Quiz and Final Lab Report. There is no exam during finals week, but the last report is due on the scheduled date of the final exam. Please check their due dates in the class schedule. There will be no make-up exams or quizzes. Please consult with your instructor for special circumstances.

### Grading Information

**Safety quiz (20%):** This will be given during the second lab period and you must pass it to remain in Chem 132L course. Please read the safety section of the SJSU Catalog under Chemistry Department.

**Formal Lab Reports (30%):** A typed lab report must be submitted for each experiment. The general lab report format will be discussed in the second lab meeting. You should proofread your lab reports before submitting them, as your writing will be assessed for grammar, clarity, conciseness, and coherence.

**Lab Quizzes (40%):** Three quizzes will be given and quiz dates are on the Schedule of Experiments.

**Lab Notebook (10%):** It will be decided by the instructor based on the following qualities: overall lab notebook organization, and completion of data and results. The general lab notebook format will be discussed in the second lab meeting.

### Determination of Grades

Safety Quiz	20%
Lab Quizzes	40%
Lab Reports	30%
Lab Notebook	10%
<u>Total</u>	<u>100%</u>

Letter grades for the full course are based on the following percentage range:

A+ = 100 - 97.0%	A = 96.9 - 93.0%	A- = 92.9 - 90.0%
B+ = 89.9 - 87.0%	B = 86.9 - 83.0%	B- = 82.9 - 80.0%
C+ = 79.9 - 77.0%	C = 76.9 - 73.0%	C- = 72.9 - 70.0%
D+ = 69.9 - 67.0%	D = 66.9 - 63.0%	D- = 62.9 - 60.0%
F = 59.9 - 0%		

**Penalty for Late and/or Re-Submission:** Please check the Schedule of Experiments for lab report and assignment due dates. Late reports and assignments will be marked down as follows: 1-7 days late (-10%), more than one week (-20%), more than two weeks (-30%), more than three weeks (-40%). Specific details for each lab assignment will be given in class. You may resubmit your work to improve the score within one week after it is graded and returned. Please note 10% will be taken off from the re-submitted work so it can get maximum 90% of the possible points.

**Extra credit work** will NOT be provided at the end of the semester for students who are doing poorly. But bonus points will be given throughout the tests/quizzes and to well-written lab reports.

## Classroom Protocol

Regular attendance is essential for your success in this course. Please remember that skipping one class to study for another class is not an acceptable excuse. As you sign up for your course load, you are responsible for fulfilling the obligations that come with that course load.

You are expected to read and plan for each lab experiment BEFORE coming to lab. In most experiments, you will work individually or in small groups. Please note particularly the following safety instructions: **"Failure to comply with proper procedures and prescribed safety cautions shall subject the student to disciplinary action."**

1. Any student who engages in unauthorized experiments or who seriously disregards safety, thereby endangering self or others, shall be withdrawn immediately from the class with a grade of F.
2. Any student who shows persistent disregard for safety may have his/her grade lowered, and may risk being withdrawn with a final grade of F."

Once finishing the experiment in the lab, you should write up your lab reports on your own, even though you share experimental data and discuss the results with your lab partner. Copying other student's work is considered cheating and can get you zero point for this lab report.

Further details on each experiment, if any, will be posted in Canvas. Please email or visit the instructor during office hours if you have trouble with any of the concepts presented in the lab.

If you must miss a lab experiment for any special circumstance including illnesses, please notify the instructor as soon as possible. Only one (01) lab absence is excused, and could be made up. (Note: You should arrange with the instructor at least one week before that day, so that she could order the reagents and other materials required for the experiment you wish to make up). Unexcused absences will receive a grade of zero on the formal lab report corresponding to the missed experiment.

## University Policies

Per University Policy S16-9, university-wide policy information relevant to all courses, such as academic integrity, accommodations, etc. will be available on Office of Graduate and Undergraduate Programs' [Syllabus Information web page](http://www.sjsu.edu/gup/syllabusinfo/) at <http://www.sjsu.edu/gup/syllabusinfo/> Make sure to review these policies and resources.

**Safe and Respectful Community:** We hope that the classroom and laboratory 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 or lab is unacceptable. Students exhibiting this behavior will be asked to leave the class. Examples of such behavior include

- a) Persistent interruptions or using disrespectful adjectives in response to the comments of others.
- b) The use of obscene or profane language.
- c) Yelling at classmates and/or faculty.
- d) Persistent and disruptive late arrival to or early departure from class without permission.
- e) Physical threats, harassing behavior, or personal insults (even when stated in a joking manner).
- f) Use of personal electronic devices such as pagers, cell phones, PDAs in class, unless it is part of the instructional activity.

The university has a brochure on student conduct that you can view at <http://www.sjsu.edu/studentconduct/docs/ENGLISH%20Brochure.pdf>

## Safety/Emergency Information:

If you hear a continuously sounding alarm, or are told to evacuate by Emergency Coordinators (colored badge identities), please walk quickly to the nearest stairway (end of each hall). If an alarm should occur during an exam or quiz, please attempt to give your instructor the paper. Be sure to take all your personal belongings with you as you may not be immediately allowed to return. Follow instructions of Coordinators. Be quiet so you can hear. Once outside, move away from the building. Do not return to the building unless the Police or Coordinators announce that it is permissible.

### Resources for help

- 1) The instructor.
- 2) *COSAC* – The College of Science Advising Center is located in the second Floor of Duncan Hall, DH 213. They have peer advisors and tutors. Check their schedule.
- 3) *Peer Connections* – They have small group, individual, and drop-in tutoring for a number of undergraduate courses, consultation with mentors is available on a drop-in or by appointment basis. Visit Peer Connections website at <http://peerconnections.sjsu.edu> for more information.
- 4) *SJSU Writing Center* – The SJSU Writing Center is located in Clark Hall, Suite 126. In addition to one-on-one tutoring services, the Writing Center also offers workshops every semester on a variety of writing topics. To make an appointment or to refer to the numerous online resources offered through the Writing Center, visit the Writing Center website at <http://www.sjsu.edu/writingcenter>.
- 5) *ASPIRE* – Student Services Center – Services are limited to low income, first generation college students or students with disabilities.
- 6) *Counseling Services* - Professional psychologists, social workers, and counselors are available to provide consultations on issues of student mental health, campus climate or psychological and academic issues on an individual, couple, or group basis. To schedule an appointment or learn more information, visit Counseling Services website at <http://www.sjsu.edu/counseling>.
- 7) Private tutors – Cost \$\$\$. You might find ads in SAACS and in the hallways where Chemistry courses are taught (basement of Duncan Hall, DH 20) or you can post your ad in that room.
- 8) *Career Center*: <http://www.sjsu.edu/careercenter/>
- 9) *Accessible Education Center*. If you feel that you are unable to keep up with the class even though you have all the prerequisites; if you are spending ample time studying yet you never have time to finish exams and quizzes and/or if this class, for some reason, is testing your abilities to learn, you might consider paying a visit to the Accessible Education Center, ADM 110. They might be able to test you to determine whether you have a learning disability.

**We hope you will find this course to be an intellectually stimulating and a pleasant learning experience. Best wishes to your SUCCESS in Chemistry!**

## Chem 132L, Spring 2023, Course Schedule

*Schedule is subject to change and will be announced in class at least one week ahead.*

Week	Date	Experiment / Activity	Lab Report Due
1	Jan. 27	Check-in Safety Discussion <b>Expt. 1: Weights, Measurements, and Moisture Content</b>	(none)
2	Feb. 03	<b>Expt. 1 (cont'd)</b> <b>Discussion on lab reports/notebook and Safety Quiz</b>	(none)
3	Feb. 10	<b>Expt. 2: Acid/Base Titration</b>	<i>Expt. 1</i>
4	Feb. 17	<b>Expt. 3: Buffers and pH</b>	<i>Expt. 2</i>
5	Feb. 24	<b>Expt. 4: Paper Chromatography of Amino Acids and Quiz #1</b>	<i>Expt. 3</i>
6	Mar. 03	<b>Expt. 4 (cont'd) &amp; Expt. 5: Transamination (Part 1)</b>	(none)
7	Mar. 10	<b>Expt. 5: (Part 2)</b>	<i>Expt. 4</i>
8	Mar. 17	<b>Expt. 5: (Parts 3) &amp; Expt. 6: Photometry</b>	(none)
9	Mar. 24	<b>Expt. 6: (cont'd)</b>	<i>Expt. 5</i>
10	Mar. 31	<i>Spring Break</i>	(none)
11	Apr.07	<b>Expt. 7: Vitamin C Determination</b>	<i>Expt. 6</i>
12	Apr. 14	<b>Expt. 8: Bradford Assay and Quiz #2</b>	<i>Expt. 7</i>
13	Apr. 21	<b>Expt. 9: Activity of Pepsin</b>	<i>Expt. 8</i>
14	Apr. 28	<b>Expt. 10A: Preparation of DNA from Food Samples</b>	<i>Expt. 9</i>
15	May. 05	<b>Expt. 10B: Detection of GMOs using PCR</b>	(none)
16	May 12	Check off notebooks, Lab Check-out and <b>Final Quiz</b>	(none)
Final Exam	<b>Tuesday May 23</b>	<b>Final Lab Report, due 7:15 - 9:30 am</b>	<i>Expt. 10</i>