

Chemistry 567

Biochemistry Lab

Spring 2026

Course overview:

Chem 567 is an upper-division biochemistry lab course designed to prepare you for future work in biotechnology and related research settings. In this course, you'll gain hands-on experience thinking and working like a practicing scientist: you'll plan experiments, keep a professional lab notebook, collect and analyze quantitative data, and communicate your findings clearly. Much of the work will be done in teams, so you'll also build the collaboration, organization, and troubleshooting skills that matter in real lab environments. Along the way, we will address specific learning goals, including those listed below.

Specific learning objectives:

- 1) Safely operate biochemistry laboratory equipment, including pipettes, centrifuges, spectrophotometers, chromatography columns, electrophoresis systems, and thermal cyclers;
- 2) Execute core experimental procedures, including separations, enzyme assays, native and denaturing gels, bacterial culture, recombinant protein expression, DNA purification, PCR, and sequencing;
- 3) Describe the purpose of each reagent and each step in an experimental protocol, and explain how they contribute to the overall objective;
- 4) Keep a laboratory notebook that clearly documents experimental procedures, observations, and results, enabling reproducibility and accountability in scientific research;
- 5) Communicate experimental results in well-organized lab reports that include relevant background, experimental rationale, theoretical context, data analysis, and thoughtful discussion of results and limitations;
- 6) Troubleshoot experiments and devise new ones based on previous results.

Instructor:

Rees Garmann

Contact: rgarmann@sdsu.edu. But I prefer that you message me via Canvas.

General questions about course material should be posted on the “Discussions” page of the Chem 567 Canvas site, where other students can offer helpful comments and solutions. I'll be monitoring these Discussions and I'll address them in class. If you need to email me, please message me on Canvas, and I'll do my best to reply within 48 hours.

TA:

Ingrid Sabor

Contact: isebor@sdsu.edu

Course meetings:

Lecture: Mon, 1:00-1:50 PM, GMCS 305

Lab: Tu and Th, 2:00–5:00 PM, CSL 226

Office hours: Upon request

Prerequisites:

The only strict perquisite for this course is Chem 560. It is recommended to take one of the Biochem electives (Chem 562, 563, or 564) before or concurrently with this course. Chem 567 fulfills a requirement for Chemistry majors with emphasis in Biochemistry.

Course materials:

Our textbook is *Biochemistry Lab* by Stumph, Metzger, and Adams. The eBook version of the text is provided by [Day1Ready](#) for free through the add/drop date. After that, your SDSU student account will be charged, unless you opt-out by the add/drop date. A link to an eBook is posted in the “Modules” page of the Chem 567 Canvas site.

In addition to the textbook, you will also need a bound laboratory notebook, as well as a lab coat, safety glasses, and gloves. Note the university charges a lab fee for this class.

Assignments and assessments:

There are three types of graded assignments for this course: Lab reports, Exams, and one Notebook inspection.

Lab reports: There are two parts of the lab report, the Introduction and flow chart, which is due before the start of the experiment, and the Final report, which is due usually 1 week after we wrap up the experiments. Electronic copies of these documents will be turned in as pdfs on Canvas. In addition, a printed copy of the Intro and flow chart will be added to your lab notebook before the experiment. For specific due dates, see the lab schedule.

Exams: There will be 5 exams, one for each experiment. They will be held during our Monday class sessions on the following dates:

Exam 1: Photosystems	February 9 th
Exam 2: LDH kinetics	February 23 rd
Exam 3: Aldolase	March 23 rd
Exam 4: Computational sequence analysis	April 13 th
Exam 5: Virus discovery	May 4 th

*Note there is no final exam for this course

Lab notebook inspection: There will be one unannounced inspection of your lab notebook at some point during the semester.

Grades:

Report 1: Photosystems	100 points
Report 2: LDH	100 points
Report 3: Aldolase	100 points
Report 4: Computational sequence analysis	100 points
Report 5: Virus discovery	100 points
Exam 1: Photosystems	100 points
Exam 2: LDH	100 points
Exam 3: Aldolase	100 points
Exam 4: Computational sequence analysis	100 points
Exam 5: Virus discovery	100 points
Notebook inspection	200 points
Total	1200 points (100%)

At the end of the semester, your final score will be computed by adding up your total points. If you receive above 90% of the points, you will certainly get at least an A- in the course; if you receive above 80%, you will get at least a B-; above 70%, at least a C-; and above 60%, at least a D. If you get less than 60% of the total points you are in danger of getting an F. However, this course is graded on a curve, so it is possible to get an A in the course even if you receive less than 90% of the points, or to get a B with less than 80%, and so on. We won't know what the curve looks like until the end of the semester, but I will keep you updated about the shape of the curve after each exam, so that you can have a good idea about how you are doing, and if you will need to bring up your score to get the grade you want.

Late submissions: Failure to submit the Introduction and flow chart by the due date will result in a 10-point penalty, with an additional 10-point deduction per week. Whether initially submitted on time or not, you are still expected to prepare and include these sections as part of your final lab report, and failure to do so will result in additional deductions.

Schedule conflicts: Emergencies happen. If you have an emergency that conflicts with one of our exams or labs, please let me know as soon as you can. If you know in advance that you have a conflict with one of the lab sessions or exam dates, email me at least one week beforehand with your reason for why you can't make it. If you miss an exam for any reason other than a valid emergency, and if you did not communicate your conflict to me one week in advance, then you will not be able to make up that exam.

Medical-related absences: Students are instructed to contact their professor / instructor / coach in the event they need to miss class, etc. due to an illness or injury. All decisions about the impact of an absence, as well as any arrangements for making up work, rest with the instructors. [Student Health Services](#) (SHS) does not provide medical excuses for short-term absences due to illness or injury. When a medical-related absence persists beyond five days, SHS will work with students to provide appropriate documentation. When a student is hospitalized or has a serious, ongoing illness or injury, SHS will, at the student's request and with the student's consent, communicate with the student's instructors via the Vice President for Student Affairs and may communicate with the student's Assistant Dean and/or the [Student Ability Success Center](#).

Accommodations: If you are a student with a disability and you need accommodations for this class, please contact Student Ability Success Center (sascinfo@sdsu.edu, sdsu.edu/sasc) to get an accommodation letter as soon as possible. Please allow 10-14 business days for this process. Accommodations are not retroactive, and I can't provide accommodations based upon disability until I've received an accommodation letter from Student Ability Success Center.

Additional resources: A complete list of all academic support services is available on the Student Affairs' [Academic Success](#) website. [Counseling and Psychological Services](#) at (619) 594-5220 offers confidential counseling services by licensed therapists; you can [Live Chat with a counselor](#) between 4:00pm and 10:00pm, or you can call San Diego Access and Crisis 24-hour Hotline at (888) 724-7240.

Statement on Cheating and Plagiarism: The University adheres to a strict policy regarding cheating and plagiarism. The California State University system requires instructors to report all instances of academic misconduct to the Center for Student Rights and Responsibilities. Academic dishonesty will result in disciplinary review by the University and may lead to probation, suspension, or expulsion. Instructors may also, at their discretion, penalize student grades on any assignment or assessment discovered to have been produced in an academically dishonest manner. The Student Conduct Code prohibits conduct disruptive to instruction, including academic dishonesty and the unauthorized recording, dissemination, or publication (including on websites or social media) of lectures or other course materials. Other examples of academic dishonesty include but are not limited to:

- copying, in part or in whole, from another's test or other examination;
- obtaining copies of a test, an examination, or other course material without the permission of the instructor;
- collaborating with another or others in work to be presented without the permission of the instructor;
- falsifying records, laboratory work, or other course data;
- submitting work previously presented in another course, if contrary to the rules of the course;
- altering or interfering with grading procedures;
- assisting another student in any of the above;
- using sources verbatim or paraphrasing without giving proper attribution (this can include phrases, sentences, paragraphs and/or pages of work);
- copying and pasting work from an online or offline source directly and calling it your own;
- using information you find from an online or offline source without giving the author credit;
- replacing words or phrases from another source and inserting your own words or phrases.

Student Privacy and Intellectual Property: The Family Educational Rights and Privacy Act (FERPA) mandates the protection of student information, including contact information, grades, and graded assignments. I will use Canvas to communicate with you, and I will not post grades or leave graded assignments in public places. Students will be notified at the time of an assignment if copies of student work will be retained beyond the end of the semester or used as examples for future students or the wider public. Students maintain intellectual property rights to work products they create as part of this course unless they are formally notified otherwise.

Religious observances: According to the University Policy File, students should notify their instructors of planned absences for religious observances by the end of the second week of classes.

SDSU Economic Crisis Response Team: If you or a friend are experiencing food or housing insecurity, or any unforeseen financial crisis, visit sdsu.edu/ecrt, email ecrt@sdsu.edu, or walk-in to Well-being & Health Promotion on the 3rd floor of Calpulli Center.

Statement on sexual violence: As an instructor, one of my responsibilities is to help create a safe learning environment on our campus. I am required to share information regarding sexual violence on SDSU's campus with the [Title IX](#) coordinator, Gail Mendez (619-594-6464), who will contact you to let you know about support services at SDSU and possibilities for holding accountable the person who harmed you. If you do not want the Title IX Officer notified, you can speak confidentially SDSU's Sexual Violence Victim Advocate (619-594-0210) or Counseling and Psychological Services (619-594-5220, psycserv@sdsu.edu).

Land acknowledgment: For millennia, the Kumeyaay people have been a part of this land. This land has nourished, healed, protected and embraced them for many generations in a relationship of balance and harmony. As members of the San Diego State University community, we acknowledge this legacy. We promote this balance and harmony. We find inspiration from this land, the land of the Kumeyaay.

Disclaimer: I have made every effort to make this Syllabus as complete and accurate as possible. But there will inevitably be changes during the semester. These will be posted on the Chem 567 Canvas site and announced in class. It is the responsibility of each student to pay attention and be aware of these changes.