

Department of Chemistry and Biochemistry CSCI

CALIFORNIA STATE
UNIVERSITY
E A S T B A Y

ASSESSMENT PLAN: BS Biochemistry

Date Updated: 12/07/2021

PROGRAM MISSION

[CSUEB Missions, Commitments, and ILOs, 2012](#)

PROGRAM LEARNING OUTCOMES (PLOs)

Students graduating with a BS in Biochemistry will be able to:

PLO 1	Demonstrate knowledge in the various area of chemistry, including inorganic chemistry, analytical chemistry, organic chemistry, physical chemistry, and biochemistry.
PLO 2	Use quantitative reasoning to analyze and solve chemical problems and evaluate chemical data.
PLO 3	Work effectively and safely in a laboratory environment to perform experimental procedures and operate modern chemical/biochemical instruments.
PLO 4	Design, carry out, record and analyze the results of chemical experiments.
PLO 5	Communicate chemical or biochemical issues clearly.

Year 1: 2021-2022

1. Which PLO(s) to assess	PLO 4
2. Is it aligned to an ILO?	Yes
3. If yes, list ILO	Specialized Discipline
4. Course name and number	CHEM 332 Organic Chemistry
5. SLO from course	Carry out standard functional group transformations of organic compounds, and isolate and characterize the resulting products
6. Assessment activity	Write a report to detail the experiments performed and the data collected and analyzed
7. Assessment Instrument	Laboratory reports
8. How data will be reported	Quantitative, based on the course Laboratory Report rubric
9. Responsible person(s)	Instructor for Chem 332, Assessment Rep
10. Time (which semester(s))	Fall 2021 or Spring 2022
11. Ways of closing the loop	Internal assessment of results and planning to address the shortcomings

Year 2: 2022-2023	
1. Which PLO(s) to assess	PLO 5
2. Is it aligned to an ILO?	Yes
3. If yes, list ILO	Written Communication
4. Course name and number	CHEM 443 Biochemistry Lab I
5. SLO from course	Develop and maintain an informative and up-to-date laboratory notebook and compose well-written laboratory reports
6. Assessment activity	Laboratory report writing
7. Assessment Instrument	Laboratory reports
8. How data will be reported	Quantitative, based on the ILO Written Communication rubric
9. Responsible person(s)	Instructor for Chem 443, Assessment Rep
10. Time (which semester(s))	Fall 2022
11. Ways of closing the loop	Internal assessment of results and planning to address the shortcomings
Year 3: 2023-2024	
1. Which PLO(s) to assess	PLO 1
2. Is it aligned to an ILO?	Yes
3. If yes, list ILO	Specialized Discipline
4. Course name and number	CHEM 332 Organic Chemistry II CHEM 352 Physical Chemistry II CHEM 442 Biochemistry II
5. SLO from course	Discuss the importance of metabolic regulatory mechanisms (example from 442)
6. Assessment activity	Embedded exam questions
7. Assessment Instrument	Midterm and final exams
8. How data will be reported	Quantitative, the assessment report will reflect the proportion of students that attain different levels of mastery (1-5, 5 is mastery)
9. Responsible person(s)	Course Instructors, Assessment Rep
10. Time (which semester(s))	Fall 2023, Spring 2024
11. Ways of closing the loop	Internal assessment of results and planning to address the shortcomings
Year 4: 2024-2025	
1. Which PLO(s) to assess	PLO 2
2. Is it aligned to an ILO?	Yes
3. If yes, list ILO	Thinking and Reasoning
4. Course name and number	CHEM 352 Physical Chemistry II CHEM 442 Biochemistry II CHEM 443 Biochemistry Lab I
5. SLO from course	Formulate the mathematical description for the quantum mechanical motion of a particle (example from 352)
6. Assessment activity	Embedded exam questions or written reports that analyze and explain concepts

	based on data collection
7. <i>Assessment Instrument</i>	Exams or laboratory reports
8. <i>How data will be reported</i>	Quantitative, report will reflect the proportion of students in that attain different levels of mastery (1-5, 5 is full mastery)
9. <i>Responsible person(s)</i>	Course Instructors, Assessment Rep
10. <i>Time (which semester(s))</i>	Fall 2024, Spring 2025
11. <i>Ways of closing the loop</i>	Internal assessment of results and planning to address the shortcomings
Year 5: 2025-2026	
1. <i>Which PLO(s) to assess</i>	PLO 3
2. <i>Is it aligned to an ILO?</i>	Yes
3. <i>If yes, list ILO</i>	Specialized Discipline
4. <i>Course name and number</i>	CHEM 332 Organic Chemistry II CHEM 443 Biochemistry Lab I CHEM 444 Biochemistry Lab II
5. <i>SLO from course</i>	Safely carry out standard laboratory techniques for the purification of organic compounds
6. <i>Assessment activity</i>	Parsing of Safety Data Sheet (SDS) and performing the experimental techniques
7. <i>Assessment Instrument</i>	Laboratory assignments and Laboratory Report rubric
8. <i>How data will be reported</i>	Qualitative, reflective assessment of laboratory safety and performance
9. <i>Responsible person(s)</i>	Course Instructors, Assessment Rep
10. <i>Time (which semester(s))</i>	Fall 2025, Spring 2026
11. <i>Ways of closing the loop</i>	Internal assessment of results with planning to address shortcomings