

Department of Chemistry and Biochemistry CSCI

CALIFORNIA STATE
UNIVERSITY
E A S T B A Y

ASSESSMENT PLAN: BS Chemistry

Date Updated: 12/07/2021

PROGRAM MISSION

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

PROGRAM LEARNING OUTCOMES (PLOs)

Students graduating with a BS in Chemistry 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 420 Instrumental Analysis
5. SLO from course	Articulate observations on data in meaningful discussions in lab reports
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 420, Assessment Rep
10. Time (which semester(s))	Fall 2021
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 420 Instrumental Analysis
5. SLO from course	Articulate observations on data in meaningful discussions in lab reports
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 ILO Written Communication rubric
9. Responsible person(s)	Instructor for Chem 420, 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
5. SLO from course	Identify common organic functional groups and show a knowledge of the chemistry and reactivity of each functional group
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)	Instructor for Chem 332, Assessment Rep
10. Time (which semester(s))	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
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

7. <i>Assessment Instrument</i>	Midterm and final exams
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>	Instructor for Chem 352, Assessment Rep
10. <i>Time (which semester(s))</i>	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 420 Instrumental Analysis
5. <i>SLO from course</i>	Work effectively in a group and communicate clearly with project partners
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>	Instructor for Chem 420, Assessment Rep
10. <i>Time (which semester(s))</i>	Fall 2025
11. <i>Ways of closing the loop</i>	Internal assessment of results with planning to address shortcomings