CAL POLY POMONA
ASSESSMENT & PROGRAM REVIEW

Annual Assessment Report 2020-2021

BS Chemistry and Biochemistry: American Chemical Society, Biochemistry, and General

Chemistry and Biochemistry

College of Science

CONTACT

Name of Program Assessment Lead Kathryn McCulloch and Rakesh Mogul

Name of Person Completing Report Yan Liu

DISCIPLINARY ACCREDITATION Yes

DEVELOPMENT AND DOCUMENTATION OF STUDENT LEARNING OUTCOMES

How were the program's SLOs developed? (select all that apply)

- Our disciplinary accrediting agency has recommended learning outcomes, so we used and/or modified them.
- We developed them as a program/department using our own knowledge and expertise of the field.

Other than the CPP Catalog and the Office of Assessment and Program Review website, where else are your SLOs published? Select all that apply.

- Department Website - provide URL: https://www.cpp.edu/sci/chemistrybiochemistry/about-thedepartment/learningoutcomes.shtml
- Course Syllabi

ASSESSMENT ACTIVITIES IN 2020-2021

This section provides the opportunity for programs to share and discuss assessment activities conducted in **AY 2020-2021.** This includes data collection, rubric development, data analysis, discussion of findings, development or implementation of closing the loop improvement strategies, update of your assessment plan and/or curriculum matrix, etc.

How many total SLOs does your program assess according to your assessment plan?

- 2

How many SLOs did your program assess this past year in 2020-2021?

- My program assessed SLOs in AY 2020-2021

Please list the SLOs examined

- SLO #1: Students will compare, contrast and predict physical and chemical properties based on atomic and molecular structure. Students will apply these principles to the chemistry of living systems and demonstrate the ability to solve quantitative, interdisciplinary, and real-world problems.
- SLO #2: Students will be able to design and execute an experimental procedure, work independently, interpret experimental results, and draft a reasonable, accurate conclusion. Students will synthesize, isolate, purify and characterize compounds using modern methods and instrumental techniques.

Student Learning Outcome (SLO): **SLO 1: Students will compare, contrast and predict physical and chemical properties based on atomic and molecular structure. Students will apply these principles to the chemistry of living systems and demonstrate the ability to solve quantitative, interdisciplinary, and real-world problems.**

Assessment Activities	Evidence Used	Evaluation and Interpretation of Evidence
• Created/modified/discussed assessment procedures (e.g., SLOs, curriculum matrix, mechanism to collect student work, rubric, survey, etc.)		
• Collected direct evidence (e.g., student work, exam items, etc.) • Scored and/or analyzed direct evidence of student learning	• Assignment/exam/paper completed as part of regular coursework • Exam created by external organization (e.g., professional licensure)	• Used rubric or scoring guide • Scored exams/tests/quizzes

Findings			
N of Artifacts	**Criterion Used**	**Goal Met**	**Eye-opening Result**
2	Percentage of student at a certain level	Yes	In both exercises, the majority of students are the mastery level for SLO 1 assessment

Student Learning Outcome (SLO): **SLO 2: Students will be able to design and execute an experimental procedure, work independently, interpret experimental results, and draft a reasonable, accurate conclusion. Students will synthesize, isolate, purify and characterize compounds using modern methods and instrumental techniques.**

Assessment Activities	Evidence Used	Evaluation and Interpretation of Evidence
• Created/modified/discussed assessment procedures (e.g., SLOs, curriculum matrix, mechanism to collect student work, rubric, survey, etc.)		
• Collected direct evidence (e.g., student work, exam items, etc.) • Scored direct evidence of student learning	• Assignment/exam/paper completed as part of regular coursework	• Used rubric or scoring guide

Findings			
N of Artifacts	**Criterion Used**	**Goal Met**	**Eye-opening Result**
4	Percentage of student at a certain level	Yes	In all 4 exercises assessed, the percentage of student at the mastery level is close or above 80%.

IMPROVING THROUGH ASSESSMENT

Overall, what best describes how the program used the results in 2020-2021? Select all that apply.

- Assessment procedure changes (SLOs, curriculum matrix, rubrics, evidence collected, sampling, communications with faculty, etc.)

Ideas to improve student learning can come from different constituents. With whom did the program discuss assessment planning and/or share results during AY 2020-2021? Select all that apply.

- Program/department faculty as whole
- A committee of program/department faculty
- Program/department assessment committee
- College assessment committee
- College Assessment Liaison

The past academic year posed both challenges and opportunities. Please share any assessment discoveries (e.g., insights about assessment procedures, great achievements, etc.) regarding program assessment in 2020-2021 so that others may learn from your experiences.

Despite the challenges that the pandemic brought, the Chemistry and Biochemistry Department was able to collect assessment data and analyze the results. The key factor that contributed to the success is to have the right personnel to carry out the assessment plan. A special assessment committee consisting of faculty in the specific division that is going to be assessed is appointed. They used their expertise in the field and designed all exercises that are suitable for the SLO assessment, which lead to our assessment success.

CPP's GI2025 goals focus on eliminating equity gaps. What plans do you already implement, or would implement to support the campus' diversity, equity, and inclusion (DEI) efforts? (e.g., planned or current disaggregation of assessment data by race/ethnicity, etc.)

The Chemistry and Biochemistry Department will continue to assess our SLOs this year. Additionally, we plan to analyze the equity gap data in some chemistry courses, such as CHM 3140 and CHM 3150. Hopefully, we can develop some strategies to address the equity gaps.

The most current assessment plan and curriculum matrix we have on file for your program may be found here. To ensure we have the most updated assessment plan and curriculum matrix for your program, and for posting on our website, please upload the following documents:

Assessment Plan Yes

Curriculum Matrix Yes

If you would like us to review other assessment documents such as your evidence (e.g., assignment, survey, interview questions etc.) or scoring rubric, please upload/provide them. (Select all that apply)

- Evidence
- Rubric