



## Program Level Assessment: Annual Report

Program Name (no acronyms) BS Chemistry

Department: Chemistry

Degree or Certificate Level: 2022

Is this program accredited by an external program/disciplinary/specialized accrediting organization? Yes

### 1. Student Learning Outcomes

Which of the program's student learning outcomes were assessed in this annual assessment cycle? (Please list the full, complete learning outcome statements and not just numbers, e.g., Outcomes 1 and 2.)

Year 2 assessment focuses on components of lab courses that are used as a measure of student learning. The following program student learning outcomes were assessed in this assessment cycle (Year 2):

#2 – Demonstrate proficiency of basic (general, physical, and inorganic) laboratory techniques and advanced (organic and analytical) laboratory techniques and conduct laboratory experiments safely (a, c, e, g, and h in assessment plan)

#3 – Collect, interpret, and analyze quantitative data (c, e, and f in assessment plan).

#4 - Communicate scientific results effectively, especially through written reports and oral presentations (a, b, d, and f in assessment plan)

### 2. Assessment Methods: Artifacts of Student Learning

Which artifacts of student learning were used to determine if students achieved the outcome(s)? Please describe and identify the course(s) in which these artifacts were collected. Clarify if any such courses were offered a) online b) at the Madrid campus or c) at any other off-campus location.

Data collected includes:

Outcome #2 - Score on safety exam in General Chemistry 1&2, scoring rubric for Gen Chem 2 lab Boiling Point Elevation, semester score in Physical Chemistry Lab, score on safety exam in Orgo 1&2 Lab, scoring rubric (technique points section) for Orgo 2 lab (Lab 7: E1/E2 elimination), semester score in Analytical 1 Lab, and score on grading rubric in Inorganic Lab (ferrocene lab).

Outcome #3 - Semester score in Analytical 1 Lab, rubric (data analysis) for Analytical 2 Lab (spectroscopy lab), grading rubric for Inorganic Lab (report and computational work sections for ferrocene lab), and semester score for Physical Chemistry Lab.

Outcome #4 - Presentation in Orgo 1 Lab (rubric), overall score on rubric for Analytical 2 Lab (spectroscopy lab), semester score for Physical Chemistry Lab, and overall score on rubric in Inorganic Lab (ferrocene lab).

Data from Madrid was not collected. Only general chemistry and organic chemistry are offered in Madrid. Very few chemistry and biochemistry majors take these courses in Madrid.

### 3. Assessment Methods: Evaluation Process

What process was used to evaluate the artifacts

It should be noted that small sample sizes (sometimes as few as eight students) may be skewing the results. More meaningful results will likely require data from several years.

6. Closing the Loop: Dissemination and Use of Current Assessment Findings

A. When and how to follow up on findings

C. What were the findings of the assessment?

While the n is still small (n=11), so far, 100% of the students are meeting this program objective.

D. How do you plan to (continue to) use this information moving forward?

These changes will be reflected in our annual data collection process and year annual assessment cycle.

**IMPORTANT:** Please submit any assessment tools, rubrics with this report as separate attachments copied and pasted into this Word document. Please do not just refer to the assessment plan; the report should serve as a stand-alone document.