

Program Name (no acronyms): BS Biochemistry

Department: Chemistry

Degree or Certificate Level: Undergraduate

College/School: A&S

Date (Month/Year): August 2021

Assessment Contact: Brent Znosko

In what year was the data upon which this report is based collected? 2018-present

In what year was the program's assessment plan most recently reviewed/updated? 2021

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 1 assessment focuses on lecture courses. The following program student learning outcomes were assessed in this annual assessment cycle (Year 1):

Outcome #1 – Demonstrate a foundational understanding of organic, inorganic, analytical, and physical chemistry and advanced knowledge in biochemistry.

Outcome #2 – Demonstrate proficiency of basic (general, organic, analytical, and physical) and advanced biochemistry laboratory techniques and conduct laboratory experiments safely.

Outcome #3 – Collect, interpret, and analyze quantitative data.

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.

Outcome #1 – Students' overall percentiles on the ACS organic exam were collected for CHEM 2440. Students' overall percentiles on the ACS inorganic exam were collected for CHEM 4500. Students' overall percentiles on the ACS analytical exam were collected for CHEM 2200. Students' overall percentages on the ACS physical exam were collected for CHEM 3330. Students' overall percentiles on the ACS biochemistry exam were collected for CHEM 4620.

Outcome #2 - Students' scores on technique-specific questions on the ACS organic exam were collected for CHEM 2440. Students' scores on technique-specific questions on the ACS biochemistry exam were collected for CHEM 4620. Students' scores on technique-specific questions on the ACS physical exam were collected for CHEM 2440.

Outcome #3 - Students' scores on quantitative questions on the ACS organic exam were collected for CHEM 2440. Students' semester scores were collected for CHEM 2200. Students' scores on quantitative questions on the ACS biochemistry exam were collected during COVID (ACS exams can

Madrid was not collected. Only general chemistry and organic chemistry are

offered in Madrid, and these courses very rarely include majors.



3. The organic and physical faculty noted that using questions on an ACS exam may not be the best measure to evaluate quantitative and/or lab technique learning objectives. These objectives may be better measured by lab performance.
4. With that said, the organic faculty noted that they may need to devote more lecture time to quantitative problems.

When and how did your program faculty share and discuss these results and findings from this cycle of assessment?

The data was shared with faculty via email on Tuesday, Aug. 3. The data was discussed at a faculty retreat on Monday, August 9. Faculty divided into their respective areas of expertise (general chemistry, organic, inorganic, analytical, physical, and biochem) to discuss their specific results. Faculty in their respective areas discussed the data in the weeks following the retreat.

How specifically have you decided to use these findings to improve teaching and learning in your program? For example, perhaps you've initiated one or more of the following:

Changes to the Curriculum or Pedagogies

- Course content
- Teaching techniques
- Improvements in technology
- Prerequisites

How has this change/have these changes been assessed?