

**Assessment Report for the 2020-2021 Academic Year
Biology Major (BS in Biology)**

Assessment Coordinators:

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Mission Statement:

The core mission of the University of San Francisco is to educate students in the knowledge and skills required to succeed as professionals and as persons, while also teaching the sensitivity and values necessary to participate in a world shared by all people. The Department of Biology particularly emphasizes the core Jesuit value of advancing the freedom and responsibility to pursue truth and to follow evidence to its conclusion. In pursuit of these values, the faculty of the Department of Biology educates undergraduate students in current biological concepts, methodologies, and ethical practices in the laboratory and the natural environment to prepare them to succeed personally and professionally with the potential for advanced training in the sciences.

(No changes since last report)

Program Learning Outcomes:

The BS in Biology program prepares students to:

1. Demonstrate both in-depth and broad knowledge of the concepts that comprise the biological sciences.
2. Apply the scientific process, including designing and conducting experiments and testing hypotheses.
3. Perform laboratory, field, and analytical techniques.
4. Discuss and critically review scientific papers and prepare oral and written reports in a standard scientific format.
5. Demonstrate an awareness of the significance ethics plays in the biological sciences.

(No changes since last report)

Curriculum Map:

See attached. (No changes since last report)

Schedule for Assessment of Program Learning Outcomes (PLOs):

- 2014-2015: PLO #5
- 2015-2016: PLO #3
- 2016-2017: PLO #4
- 2017-2018: PLO #1
- 2018-2019: PLO #2
- 2019-2020: PLO #2
- 2020-2021: Reflection bases on past assessments.

Methods for 2020-2021 Assessment:

Reflection Based on Passed Assessments:

Faculty members in the Biology Department met on 6 May 2021 to discuss program learning outcomes for the Biology major and strengths and weaknesses in the Biology curriculum based on past assessments.

Results and Findings of 2020-2021 Assessment:

1) Discussion of Program Learning Outcomes:

PLO #2: The scientific process includes communicating results of scientific investigation. The department agreed that this learning outcome should include a writing component, and in particular presenting the rationale for an investigation and the outcome of the investigation in a properly written scientific format. Assessment of this learning outcome in the past has involved rating scientific reports written by students, so it would be appropriate to incorporate a writing component into this learning outcome.

PLO #4: Reading the scientific literature involves analyzing and synthesizing information. The department agreed that these and possibly other specific aspects of writing based on scientific literature be included in this learning outcome. The department agreed that “preparing oral and written reports in a scientific format” fits better in PLO #2, and that the writing component of PLO #4 should focus more on the analytical facets of reading and writing about scientific literature.

PLO #5: Faculty members suggested that “social responsibility” is broader and more general terminology than “ethics,” which can have specific definitions. Because course may emphasize socially responsible behavior, for example in the lab, but not specifically discuss ethics, it was suggested that “ethics” might be replaced with “social responsibility.”

During the 2021-2022 academic year, the assessment committee for Biology will take the feedback from the Biology faculty members and use it to revise the PLOs for the Biology major, and then discuss proposed revisions with the faculty.

2) Discussion of the Biology Curriculum:

The department focused on writing as the area that should have priority for revision within the curriculum. Students take writing courses at USF, but these do not cover the specific details of scientific writing. As discussed above, the department identified two main areas of scientific

writing that should be covered: 1) presenting the rationale for a scientific investigation and results of the investigation in a scientific format, and 2) presenting a cogent written analysis and synthesis of the scientific literature. During the 2021-2022 academic year the assessment committee will take the lead on working with the Biology faculty members to create a document providing guidance on the important features of scientific writing to include in Biology courses, and presenting a plan for incorporating these features into courses so that students can build on their writing skills as they progress through the Biology major.

3) Curriculum Map

Although not discussed during the assessment meeting with the Biology faculty, the assessment committee noted that it should update the curriculum map for the Biology major as suggested in feedback from prior assessment reports. The assessment committee will update the curriculum map for the Biology major to reflect revisions to program learning outcomes and to include courses added to the curriculum since the map was last updated.