2024-2025

ANNUAL ASSESSMENT REPORT

BIOLOGY BS

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2024-2025 Assessment Narrative on Findings

Biology (BS)

Mission and Introduction

Introduction

1. Provide an overview of the program and the context of where it's housed within the institution (what department, etc.).

Narrative:

The Biology Program is housed the School of Science and Health.

The Biology program prides itself on being hands-on, with immersive and extensive laboratory classes in addition to regular lecture-based courses.

This is our mission: A program designed to both educate students and prepare them for immediate careers in the biological sciences (especially those in ecology or conservation), or for acceptance into graduate programs.

Program Mission Statement

1. What changes has the program made to the mission statement over the course of this cycle? Why were these changes made? Are any revisions planned?

Narrative:

This is our mission: A program designed to both educate students and prepare them for immediate careers in the biological sciences (especially those in ecology or conservation), or for acceptance into graduate programs.

This continues to be our mission

Alignment to Institution Mission

1. How does the mission of the program align with the mission of the institution?

Narrative:

The Biology Program's mission directly aligns with William Woods University's larger mission. We have a commitment to student-centered learning, and focus on foundational understanding, contributing to students' intellectual growth.

The University's focus on career preparation alights with our program's aims to prepare students to take the next step in professional careers.

While not mentioned directly the program provides opportunities for working together with diverse others, experimental design, public speaking, and other expressions of creativity and intellectual inquiry that can foster inclusion and excellence.

Student Learning Outcomes Assessment and Curriculum

Program Student Learning Outcomes

1. Describe how these outcomes pertain to the program's mission. Have any changes been made to these outcomes over the course of this cycle? Why or why not?
2. Describe the extent to which students in the program have met these outcomes.

Narrative:

Evidence:

- Biology (BS)_2024-2025 Curriculum and Assessment Findings_2024-2025
- Biology BS Annual Assessment 2023-2024

Curriculum Map

1. Describe the course pathway students take to achieve this program degree. Highlighting any key or core courses, have any changes been made to this pathway or degree requirements over the course of this cycle? Why or why not?

Narrative:

No substantive changes have been made. Will expand next year as I'm just trying to get this submitted and this wasn't my section.

Measures and Results

1. Discuss the measures you've selected or developed to measure this outcome. Why were these measures chosen? Were any measures or assessment instruments changed over the course of this cycle? Why or why not? Will different measures be chosen the next time this outcome is assessed?
2. Summarize and discuss the results of the program's measures over the course of this cycle. Have the results demonstrated improvement or mastery of this outcome? Why or why not?

Narrative:

Evidence:

- Biology (BS)_2024-2025 Curriculum and Assessment Findings_2024-2025

Participation in Assessment

1. How do program faculty participate in assessment? What is the process? Have any changes been made to encourage participation over the course of this cycle?

Narrative:

All faculty participate in assessment. We all have assessment tied to at least one of our courses. We take turns picking our speakers and designing the questions and assessments for SPR day for our Sophomores and Juniors.

Action Items and Use of Results

1. Summarize or highlight action items taken as a result of program's assessment results. How have the results driven improvement over the course of this cycle?

Narrative:

Evidence:

- Biology (BS)_2024-2025 Curriculum and Assessment Findings_2024-2025

Gen Ed

1. What courses in your program are tied to general education requirements at the institution? How many students from outside the department are taking courses in the program to fulfill gen ed requirements?

Graduate Programs please note NA in this section as it does not apply to your program.

Narrative:

BIO 114/115 is a general education course, and it is pretty much only Biology, Exercise science, and secondary education majors. BIO 209 is also a general education course offered every Fall on-ground and every term online. This is only taken by non-majors. BIO 108 is also a gen Ed, offered only on-ground in the Spring, and taken by Psychology majors and other interested non-majors.

NSSE Focused Activities

In the Spring of 2024, the faculty voted on the following NSSE objectives for focus.

2B - Connected your learning to societal problems or issues.
2F - Learned something that changed the way you understand an issue or concept.
9A - Identified Key information from reading assignments.
6A - Reached conclusions based on your own analysis of numerical information (numbers, graphs statistics, ...)

How has your program incorporated these learning objectives into the program curriculum?

Graduate Programs please note NA in this section as it does not apply to your program.

Narrative:

We will write this better next year. This was not my section, and I am just trying to get this submitted at this point.

Concentrations

Concentration Information

Please list the concentrations that relate to your program. If you do not have any Concentrations, please note N/A in the text box.

Narrative:

There are two concentrations within the B.S. Biology. There are a pre-Vet and a pre-Med concentration.

Faculty Qualifications, Activities and Scholarship

Scholarship and Research

1. Summarize and highlight key scholarship and research activities conducted by faculty over the course of the review cycle.

Narrative:

This year the bulk of the scholarship and research activities centered on supporting students on their senior and honors research projects. We also each included a self-designed research project into many of our labs.

Dr. Greenland-White had a formal research project focusing on the impact of altitude on the rates of Covid-19 infection progressing into Long-Covid. She was able to do this project with the help of Emma Griggs and Anna Hirschkowitz. They presented that work at the William Woods' 2025 Research, Scholarship, and Creativity Symposium, and at the 2025 Annual Meeting of the Missouri Academy of Science.

The abstract from that presentation is included as evidence in an attachment.

Evidence:

- Abstract MAS

Faculty Awards and Honors

1. Discuss and highlight awards and honors received by faculty over the course of the cycle.

Narrative:

Dr. Greenland-White was awarded the William Woods University Cox Distinguished Professor 2024/2025 grant which allowed her to pursue a research project with undergraduate students.

Dr. Greenland-White has also honored to receive the Louis D. Beaumont Distinguished Professor Award for Excellence in Teaching-2025

Evidence:

- Greenland-White prof of the year

Teaching Support and Monitoring Teaching Quality

1. How are faculty being supported to ensure high quality teaching and learning?

Narrative:

In addition to the provided professional development opportunities provided by the school, and the support that comes from school meanings this year, Dr. Sean Baldridge, as Dean of the school, has observed each of us teach and has made himself available for feedback from that.

Evidence:

- Dr Baldridge classroom visit schedule from Teams

Program Data: Student Experience

Enrollment and Recruitment

1. What are the trends with enrollment in this program over the course of the review cycle? How does this compare to institutional trends or similar programs on campus?
2. Describe recruitment efforts or goals such as increased enrollment or diversity. Have these initiatives been successful?

Narrative:

Our enrollment is down a bit from Fall 2020/2019 but up from the Fall 2021 dip. The dip tracks the University dip, but our current enrollment is a little lower than it was five years ago. I believe this in large part due to a decrease in equestrian students which were many of our

pre-vet majors, and a tunneling of incoming students to Exercise Science and Business.

We do not put much effort into recruitment other than the usual. Discovery days, Prospective students, and we are always happy to work with admissions and marketing whenever they are interested.

Evidence:

- Science and Health Department Report Full

Retention

1. Has student retention remained in an acceptable range over the course of the review cycle?
2. Discuss strategies or actions that the program is doing to impact student retention within the program?

Narrative:

Over the past two years our retention within the department has been 62.5% and 70%. I believe retention is within an acceptable range. When we lose students, it is often freshman who find Biology too hard or athletes who aren't getting along with their coaches. I think our strategy of being very present, caring, and approachable faculty make Biology students feel at home and welcome.

Evidence:

- Science and Health Department Report Full

Curriculum/Course Retention and Success

1. Describe enrollment trends in the courses within the program.
2. Reflect on the success of the students within the courses over the course of the cycle. Highlight some completion or DFW rates in the core courses. Were these in line with expectations?
3. Assess student performance and success in online vs. on-campus courses.

Narrative:

Some of our courses are offered every other year and so that can lead to some of our annual courses having some spikes and dips in enrollment, but otherwise course enrollment trend is constant. Our main wildcard is Exercise Science students and which Biology courses they require.

I don't know what DFW is, but our students generally successfully complete our courses. Not many students fail in major courses, they are generally self-selecting out Freshman year or make it. We are challenging but approachable. Again, when students leave our department or University it really never seems to be due to Biology Faculty or curriculum.

None of our in major courses are offered online.

Completion

1. How many students are graduating from the program? Have the completion rates been in line with expectations?

2. Describe findings resulting from exit surveys or program alumni surveys that were conducted over the course of the cycle.

Narrative:

Our graduation rates were low in the Fall 2019 - 2024 cycle (35.29% within the department). It seems like we might have an every other year dip. We should keep an eye on this the next few years...

Evidence:

- Science and Health Department Report Full

Course Evaluation Data

1. What were some positive and negative feedback received from students who completed the courses? Highlight any trends or insights that came from course evaluations over the course of the cycle.

Narrative:

In general, Biology course evaluations were at or exceeded University averages. Our most glaring weakness was well organized. Our biggest strengths are demonstrates enthusiasm for the subject, presents thought-provoking questions and problems, and sets high expectations for learning.

I will also note that all Biology faculty have one teacher of the year before: an incredibly high honor chosen by our students.

Evidence:

- BIO_Fall_2024
- BIO_Spring_2025

Student Advising

1. What advising mechanism is in place for the student?

Narrative:

All BS majors are advised by full-time Biology faculty or by the full-time veterinary faculty.

Student Awards and Achievements

1. Highlight the accomplishments and external honors received by students in the program over the course of this cycle.

Narrative:

I don't know of any awards received by our BS students.

Program Analysis

SWOT Analysis

1. Strengths, Weaknesses, Opportunities, and Threats.

Narrative:

Strengths:

- **Dedicated and Effective Faculty:** Faculty are highly accessible, fostering a strong sense of community. Student reviews are overwhelmingly positive.
- **Clear Program Purpose/Mission:** The program's purpose and mission are clearly defined and aligned with the university's mission, focusing on small group and one-on-one interactions with scholar-practitioners.
- **Effective Course Rotation:** The program maintains a clear course rotation with minimal reliance on tutorial or independent study courses.
- **Well-Researched Curriculum:** Course offerings and recent curriculum changes, particularly within the pre-vet and pre-med concentrations, are well-researched and aligned with current trends and requirements.

Weaknesses:

- **Severe Infrastructure Deficiencies:** The program suffers from inadequate and unsafe building and lab spaces, along with outdated equipment, significantly impacting student learning and program capacity.
- **Technology Limitations:** Insufficient and outdated technology in classrooms and labs hinders effective instruction and limits students' exposure to modern biological instrumentation.

Opportunities:

- **Explore Resource Sharing:** Investigating the possibility of resource sharing (e.g., live distance learning, qualified adjuncts) with nearby institutions to alleviate faculty workload.
- **Highlight Chemistry Minor Value:** Emphasize the marketability and potential salary benefits of a chemistry minor for biology majors not pursuing professional schools.

Threats:

- **Limitations Due to Infrastructure:** The severely inadequate facilities and equipment will continue to hinder the program's ability to provide a competitive education and attract students.
- **Loss of Key Faculty:** The heavy workload and reliance on everyone working at overload means that we are vulnerable when there is turnover (as with Dr. Keller leaving this year) **Lack of Administrative Prioritization:** If the university does not prioritize investment in the sciences, the identified weaknesses will persist, and the program's potential will be limited.

Evidence:

- External Review Report - BS - Busalacki

Industry and Program Trends

Senior Exit Surveys

1. What were some positive and negative feedback received from students as they complete their degrees? Highlight any trends or insights that came from exit surveys over the course of the cycle.

Narrative:

Not met as the average was 45 and only 29% received over a 51 (n = 7)

Recommendations from Previous Annual Assessment Reports

1. Summarize Action Items, goals from the program that were listed in the previous Annual Assessment report, describe how/if those recommendations were applied this year.

Narrative:

There were a few action items to change benchmarks, which we did not do. We should address this in Fall 2025.