SOUTH DAKOTA BOARD OF REGENTS
ACADEMIC AFFAIRS FORMS

Institutional (Comprehensive) Program Review Report to the Board of Regents

Use this form to submit a program review report to the system Chief Academic Officer. Complete this form for all units/programs undergoing an accreditation review, nationally recognized review process, or institutional program review. The report is due 30 days following receipt of the external and internal review reports.

UNIVERSITY:	DSU
DEPARTMENT OR SCHOOL:	**College of Arts and Sciences**
PROGRAM REVIEWED:	**Biology**
DATE OF REVIEW:	**4/5/2024**
TYPE OF REVIEW:	Institutional Program Review

University Approval

To the Board of Regents and the Executive Director: I certify that I have read this report, that I believe it to be accurate, and that it has been evaluated and approved as provided by university policy.

DocuSigned by:
Jose Marie Griffiths
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President of the University

06/12/2024
Date

1. Identify the program reviewers and any external accrediting body:

Dr. Danielle Bolland
Assistant Professor of Biology
Division of Science and Mathematics
University of Minnesota Morris

2. Items A & B should address the following issues: mission centrality, program quality, cost, program productivity, plans for the future, and assessment of progress.

2(A). Describe the strengths and weaknesses identified by the reviewers

Strengths:

- The greatest strength of the Biology Program is its caring, enthusiastic faculty members, who are eager to impart knowledge to their students.
- Curriculum alignment with the Exercise Science Program, which allows a clear path towards a Biology and Exercise Science double major. This is an excellent, unique track for students pursuing advanced degrees in pre-health professional programs.
- One-on-one faculty mentoring of students with their impactful, independent research projects.

- Students who graduate from DSU in Biology are extremely well prepared for the use of technology in the workplace, making them more competitive for the job market following graduation.
- A curriculum that covers a wide breadth of topics so well-trained biologists graduate from the program.

Weaknesses:

- The absence of a dedicated budget for the maintenance of instrumentation.
- The lack of dedicated lab space for research hinders faculty and student research productivity.
- The curriculum could be strengthened with more prerequisite courses for advanced subjects.
- Small size of the Biology Program, though enrollment has trended upwards in the last five years.

2(B). Briefly summarize the review recommendations

- The reviewer questions the purpose of having the instrumentation if the university is not willing to pay to maintain it through a dedicated fund, opposed to using student lab fees, which are meant to be used for consumables that directly enhance the educational experience. Also, they noted that external equipment grants require institutional support for maintenance, and without these dedicated funds to support maintenance of equipment, DSU faculty proposals are unlikely to be funded. They suggest creating a dedicated fund for maintaining research equipment.
- The Biology Program should update the Human Anatomy lab with a cadaver to better prepare students for pre-health professional programs.
- Track students who do not complete the program. Having a better understanding of the "why" can be useful for recruiting strategies.
- To boost recruitment efforts, DSU can work with marketing to spotlight opportunities for one-on-one independent research available in the Biology Program.

2(C). Indicate the present and continuous actions to be taken by the college or department to address the issues raised by the review. What outcomes are anticipated as a result of these actions?

- The University is supportive of the development of a cadaver lab. The Biology Program is currently working with facilities to determine the costs to make the necessary ventilation changes in Room 111.
- Explore funding options (internal and external) to purchase large pieces of scientific equipment. INBRE will also be a new source for funding faculty research and equipment.
- Students who leave the Biology Program will be tracked to understand why they are not completing the degree and to determine if athletics influences the program's retention rate.
- An innovative Bioinformatics Program, which aligns with DSU's mission, will be developed to serve students with an interest in this emerging field and to boost recruitment efforts in biology courses.

3. **Starting in Fall 2019 reporting year, campuses will identify the undergraduate cross-curricular skill requirements as part of programmatic student learning outcomes and identify assessment methods for cross-curricular skill requirements as outlined in Board Policy 2.3.9. Program review completed prior to Fall 2019 need not include cross curricular skills.**

   Cross Curricular Skills (CCS):
   1. Inquiry and Analysis
   2. Critical and Creative Thinking
   3. Problem Solving
   4. Information Literacy
   5. Integrative Learning

Program Learning Outcomes:

1. Students will have a basic knowledge of the principles of biology. CCS 1, 4
2. Students will be able to use their knowledge of concepts in biology to solve new problems. CCS 2, 3, 5
3. Students will have a high degree of proficiency in the use of computer technology. CCS 1, 2, 3, 4
4. Students will be able to communicate their knowledge and results effectively orally and in writing. CCS 3, 5

Biology students will:	Gen Biol I	Gen Biol II	General Botany	Environmental Biology	Intro. to Biotechnology	Human Anatomy	Ecology	Physiology	Microbiology	Cell and Molecular	Genetics	Vertebrate Biology	Conservation Biology	Immunology	Bioinformatics	Undergrad Research
Goal 1. Have a basic knowledge of the principles of biology. a. Important concepts and methods of the major disciplines within biology.	I	I	I	I	I		R	R	R	R	R	R	R	R		M
b. History and philosophy of science	I		R						R		M					M
c. Ethical and humanistic implications of the practice of science including issues in biology that are controversial in nature.	I			I	R		R				R	R	R	R		
Goal 2. Use their knowledge of concepts in biology to solve problems. a. Understand the process of science including the basic steps of the scientific method and use this ability to conduct research in biology.	I	I		I	R		R				R					M
Goal 3. will be proficient users of computer technology to find information, acquire and analyze data, and communicate results and conclusions.	I	I	I		I		R	R		M	R				M	M
Goal 4. Students will be able to communicate their knowledge and results effectively orally and in writing	I	I		I		I			R	R	R	R	R			M