Institutional Effectiveness

2018-2019

Program: Biology MS

College and Department: College of Arts & Sciences – Department of Biology

Contact:

membership, special field trips that are not class related, involvement in research activities of other graduate students, and attendance at scientific meetings.

SLO 3: All Master of Science candidates in the Department of Biology will acquire abilities to use scientific reasoning as codified by the structured process commonly known as the scientific method.

All Master of Science candidates in the Department of Biology will acquire abilities to use scientific reasoning as codified by the structured process commonly known as the scientific method. This outcome will be demonstrated through their research, written thesis, and oral comprehensive examinations.

A departmentally developed curriculum map can be found in Appendix 1 that shows the connections between courses and student learning outcomes.

Assessment Methods:

PG 1: Increase graduate student enrollment

1. Enrollment

The Office of Institutional Assessment, Research and Effectiveness provides institution-wide data concerning enrollment, demographics, and retention. The enrollment component of this goal is assessed by comparing enrollments from year to year.

PG 2: Increase diversity

1. Enrollment and demographics

The Office of Institutional Assessment, Research and Effectiveness provides institution-wide data concerning enrollment, demographics, and retention.

2. National Association of University Fish and Wildlife Programs Data

We use the National Association of University Fish and Wildlife Programs Data to compare the gender and race/ethnicity to other programs in the nation. These reports summarize data compiled from 21-member universities that have fish and wildlife academic programs.

PG 3: Increase faculty involvement in research

1. Faculty Annual Report:

Conducted annually in the Spring semester. Each faculty member submits a Faculty Annual Effort report to the chairperson that discusses their efforts for the previous calendar year.

On-going progress towards promotion, research projects and proposals, external funding, publications and presentations, extracurricular activities involving graduate students, and number of graduate students are summarized and included in the Departmental Annual Report submitted by the chair to the Dean of the College of Arts and Sciences. In 2016, the Department of Biology modified promotion guidelines such that research and graduate student mentorship were required for promotion to the ranks of Associate Professor and Professor. In addition, the department has a differential teaching load policy that provides faculty actively involved with research and graduate student mentorship with a reduced teaching load should they select the

student's research are included to ensure that each student understands the implications of their research and the scientific method.

Results:

PG 1: Increase graduate student enrollment

The Department of Biology has monitored enrollment trends for several years and used these trends to develop strategies to meet this goal [Program Goal 1 (Table 1)]. Other than during 2016, enrollment has remained relatively constant at between 19 and 22 M.S. students. In general, the department fills all, or nearly all, of our allotment of teaching assistantships each semester. Thus, increased graduate student enrollment is dependent on faculty obtaining external funding through grants. Retention of M.S. students has been approximately 100% since 2005, with all but two students graduating.

Table 1. Number of graduate students (M.S.) enrolled as Biology majors by year.

Year	Number of Graduate Students
2014	22
2015	21
2016	16
2017	20
2018	19

PG 2: Increase diversity

Efforts to increase diversity have met with mixed results (Table 2). Very few minorities have enrolled in our graduate program; four were enrolled in 2017, with this percentage being the highest in recent history. During all but the most recent year, at least 50% of our M.S. students have been female.

Since the majority of our graduate students conduct natural resource research, NAUFWP data for 2010-2011 indicate that females represent approximately 44% of graduate s

Table 3. Number of faculty promoted to the rank of Associate Professor and Professor.

Year	Associate Professor	Professor
2014	0	0
2015	0	0
2016	0	

SLO 3: Use scientific reasoning

Comprehensive Oral Exams All students successfully passed their oral exams during the first attempt, and many demonstrated a mastery of the subject matter of which they were tested (Table 6).

Graduate Seminar Evaluation The high graduation rate (Table 6) and written demonstration of scientific reasoning in theses and oral demonstration in seminars are indications that Learning Outcome 3 is being achieved. Graduate students in the Department of Biology are extremely ser

encouraged to select either the standard or research option when discussing agreements of responsibility with the chairperson.

SLO 1: Demonstrate a command of general biology concepts and principles

No changes to the current learning objective will be made. A program review was provided for the M.S. program during the 2015-2016 academic year. One of the suggestions that is related to this outcome was to quantify the results beyond pass and fail. Following a faculty decision as to how this suggestion is to be addressed, we will modify the student learning outcome accordingly. However, there has been no strong desire to move to a letter-graded system among the graduate faculty.

We have been very pleased with the performance of our graduate students in these areas on comprehensive oral examinations. The departmental Graduate Policies Committee will continually monitor results of comprehensive oral exams to ensure that this outcome continues to be met. Faculty members on graduate committees are responsible for ensuring that consistency and quality of comprehensive oral examinations are maintained.

SLO 2: Participate in extracurricular activities

No changes will be made to this learning objective as there is room for improvement.

Faculty graduate advisors report graduate student extracurricular activity participation to the departmental chair in their annual activity reports. The chair summarizes these data and includes them in the departmental Annual Report submitted to the Dean of the College of Arts and Sciences. The departmental Chair administers a questionnaire to those graduating. Even to-9 (m.3 (u)2.2 (a)]T1. nxn)5.21.1 (t)-vi4.7 (u0 dalist

Appendix 1: Curriculum Map

Curriculum support for learning outcomes of the graduate program in the Department of Biology. Some courses included on this list have been taught irregularly over the past 10 years. Several courses are dual listed under both BIOL (Biology) and WFS (Wildlife and Fisheries Sci.); these are listed here under BIOL only.

		Learning Outcomes		
Course No.	Title	Demonstrate Knowledge	Extra-curricular Activities	Scientific Method
BIOL 5000	Parasitology	X		
BIOL 5040	Immunology	X		
BIOL 5060	Hormones & Chem. Comm.	X		
BIOL 5100	Evolutionary Biology	X		X
BIOL 5110	Microbial Evolution	X		X
BIOL 5120	Protozoology	X		
BIOL 5130	Environmental Microbiology	X		X
BIOL 5140				

BIOL 5750	Medical Microbiology		X		
BIOL 5780	Phycology		X		X
BIOL 5810	Ichthyology		X	X	X
BIOL 5820	Mammalogy		X		X
BIOL 5830	Herpetology		X		X
BIOL 5840	Limnology		X		X
BIOL 5850	Applied Microbiology		X		X
BIOL 5860	Disease	OL 58			

WFS 5640	Waterfowl Ecology & Mgmt.	X	X
WFS 5660	Wild Bird Ecology	X	
WFS 5670	t 11.04enc -0 0 11.04 282.12 7(		