

# WSU M.A. in Biological Sciences 2019-2020 Assessment Plan

## **Mission Statement**

The mission of the MA in Biological Sciences is to provide students who are interested in pursuing future career opportunities in health-related professions, education, and biomedically-related businesses with a broad exposure to advanced topics in biological sciences ranging from environmental to cellular/ molecular processes. Students will be given a firm foundation of the key working theory and recent advances that are currently accepted in the fields of biology. Our course-credit based program offers students flexibility to design their curriculum from courses within and outside of our department and to proceed at a pace that balances career and personal constraints.

## **M.A. in Biological Sciences Program Outcomes**

Students successfully completing the M.A. in Biological Sciences should be able to:

1. Demonstrate a strong understanding of current state of knowledge in their chosen fields;
2. Become familiar with current biological theory and recent advances in their chosen field to identify significant gaps in the current arena of knowledge in their specific disciplines;
3. Communicate their biological subdiscipline in written and oral forms as is common and appropriate for their field.

## **Future Assessment Learning Outcomes**

The learning outcomes for the M.A. in Biological Sciences are currently being revised. For the future assessments, the following learning outcomes will be utilized:

1. Students will demonstrate adequate progress either by completing their MA program or entering another graduate or professional program at Wayne State or another institution in 10 semesters or fewer;
2. Students will demonstrate mastery of current biological theory in their chosen field evidenced by an ability to recall specific theory at the completion of the program;
3. Students will demonstrate mastery of oral communication evidenced by an ability to successfully lead group discussions of current biological theory;
4. Students will demonstrate mastery of written communication through writing in the biological sciences.

## **Assessment 1 – Adequate progress**

### **Learning Outcome**

Students will demonstrate adequate progress either by completing their MA program or entering another graduate or professional program at Wayne State or another institution in 10 semesters or fewer

### **Data Sources**

We will tabulate the fate of all students entering the MA program, either as completing the program, leaving the program to enter another graduate or professional program, or dropping out of the program. The number of semesters taken for students in the first two categories will also be calculated.

### **Data Gathering and Timeline**

Data were gathered in May of the assessment year, including students graduating with an MA degree in the Spring/Summer, Fall, and Winter terms. For the 2019-20 assessment, the data set included ten years of students (2010-2020) to accommodate a small sample size and a lack of previous data analysis.

### **Data Evaluation**

The number of semesters needed to complete the MA degree or the number of semester present in the program before leaving for another will be tabulated, and the percent of students meeting the minimum criteria for each will be reported.

### **Criteria for Acceptable Performance**

75% of students who complete the MA program will do so in 15 semesters or fewer; 90% of students who leave the program for another graduate or professional program will do so in 6 semesters or fewer.

## **Assessment 2 – Mastery of Current Biological Theory**

### **Learning Outcome**

Students will demonstrate mastery of current biological theory in their chosen field.

### **Data Sources**

Following either completion of the MA program or upon leaving the program for another graduate or professional program, students will complete an exit survey that will assess students' confidence in biological theory in their chosen field.

### **Data Gathering and Timeline**

Surveys will be distributed and completed within 30 days of the student leaving the program. Each student completing the survey will be evaluated individually using their self-assessed scores and the percent of students meeting the minimum criteria reported.

### **Data Evaluation**

Survey questions include the following:

- How familiar are you with current biological theory in your chosen subdiscipline?
- To what degree did the MA program *develop* your knowledge of current theory?
- To what degree did the MA program *improve* your knowledge of current theory?

Survey responses will be scored on a scale of 1-4, where "4" corresponds to "Very familiar" or "High degree". Scores will be added across the respondents and reported as a mean value for each student. The percent of students meeting the minimum criteria will be reported.

### **Criteria for Acceptable Performance**

80% of students completing their thesis will score a minimum of 3.0 for each of the three questions on the exit survey.

## **Assessment 3 – Mastery of Oral Communication**

### **Learning Outcome**

Students will successfully lead group discussions of current biological theory.

### **Data Sources**

All students in the MA of Biological Sciences program are required to take BIO 8995 (Seminar in Biological Sciences), which requires students to attend the departmental seminar, read papers by the speakers each week, and lead discussions of the assigned readings. Student success in these courses is in part based on leading the discussions.

### **Data Gathering and Timeline**

Final grades for students taking BIO 8995 during the academic year (either Fall or Winter semesters) will be utilized for this assessment.

### **Data Evaluation**

The number of students earning a letter grade of “A-“ or higher will be tabulated, and the percent of students meeting this minimum criteria for this learning outcome will be reported.

### **Criteria for Acceptable Performance**

A minimum of 90% of students completing their MA degree in Biological Sciences will earn a minimum letter grade of “A-“ in the seminar course.

## **Assessment 4 – Mastery of Written Communication**

### **Learning Outcome**

Students will demonstrate mastery of written communication through writing in the biological sciences.

### **Data Sources**

Data for this assessment will include a score for each student for a writing assignment from a course selected by the student as part of their curriculum in completing the MA program. Writing samples will be scored on a four-point scale (4=outstanding; 3=acceptable, 2=below average, 1=unacceptable).

### **Data Gathering and Timeline**

Writing samples will be collected in the winter term of each assessment year; it is important that students are queried for samples multiple times during their degree program to compensate for an expected low response rate.

### **Data Evaluation**

The scores from the writing samples will be tallied for each student, and the percent of students meeting the minimum criterion for this learning outcome will be reported.

### **Criteria for Acceptable Performance**

A minimum of 85% of students completing their MA degree in Biological Sciences will earn a score of “3” or higher on the writing assignments from their curriculum.