



NORTHERN ILLINOIS UNIVERSITY

College of Liberal Arts and Sciences

Department of Biological Sciences

Assessment Plan 2012-2013

Program: M.S. in Biological Sciences

Students interested in obtaining a Master of Science degree in Biological Sciences may select from two options: thesis and non-thesis. In addition, three specialization areas (Human Anatomical Sciences, Bioinformatics, and Biology Teaching) are available within the MS program. A Masters' degree in Biological Sciences prepares students to pursue successful careers in related areas in the public or private sectors, provides credentials for specific jobs, or may serve as a stepping-stone to professional degrees (PhD, MD, DO, DVM, etc.). Regardless of the path chosen within the MS degree, increased depth of training through research and study of the primary literature endows graduates of the program with enhanced content knowledge, applied skills and a fundamental understanding of the process of science and the scientific method. Such working knowledge can be readily applied to jobs in the field or further professional training.

1. Learning Objectives

Graduates of the Biological Sciences MS program will demonstrate:

1. Fundamental understanding of the principles, major research findings and current unresolved problems in their area of emphasis
2. Effective scientific communication skills
3. Effective laboratory and field research skills
4. Proficiency in critical thinking,
5. Appropriate use of the scientific method.
6. Technical writing proficiency



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2. Methods

Method	Description/Target	Timeline	Person/People Responsible	Objectives Assessed
Final comprehensive examination	All MS students in their final semester of the program must take a comprehensive oral examination administered by their advisor committee. (For MS-thesis students, this follows the thesis defense (see next)) Exams typically are 60-90 minutes in length. Student performance is discussed, evaluated and recorded. Target: 80% of M.S. students	Final Semester of the students' MS program	MS Advisory Committee (Graduate faculty members)	1, 2,4,5
	initially admitted to the program are expected to successfully pass this oral exam.			



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Written Research Thesis	MS-thesis students must write and defend a thesis that reviews current literature, describes an experimental problem, details methods of investigation of that problem, and summarizes the student's experimental results. The defense consists of a <i>public seminar</i> followed by a private defense to the advisory committee, and submission of an approved thesis to the graduate school. Target: Over 80% of M.S.-thesis students initially admitted to the program, are expected to successfully complete a coherent research project resulting in an important contribution to their field of knowledge, and to present the results of that research to the public, the department, and the graduate school in the form of a successfully defended Master's thesis.	Final Semester of the students' MS program	MS Advisory Committee (Graduate faculty members)	1,2,3,4,5,6
Committee Meetings	This is a tool of <i>formative</i> assessment. MS-thesis students meet with their advisory committees during their first year, and again in the second year in the program and present their project and proposed plan of	Every 6-9 months	MS Advisory Committee (Graduate faculty members)	1,2,3,4,5,6



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	<p>research. The committee asks questions, provides feedback and constructive criticism and frames the expectations for the student's final thesis content. Target: At least 80% of the students initially enrolled in the program will go on to produce a successful thesis project.</p>			
<p>Graduate Seminar (BIOS 761)</p>	<p>All MS students are required to take 2 semesters of Graduate Seminar, in which they read, analyze and present (in seminar format) research papers from the primary literature to an audience of peers and a faculty member, who assesses their performance in this exercise. This course is designed to develop students' analytical and presentation skills. Target: At least 80% of MS students will successfully complete 2 semesters of Graduate Seminar</p>	<p>Graduate seminar sections are offered every fall and spring semester.</p>	<p>BIOS Graduate Faculty</p>	<p>1,2,4,5</p>

Outcome-by-Methods

	Summative Assessment		Formative Assessment	
	Oral Exam	Thesis	Committee Mtg	Grad Seminar
1. Principles/Problems	X	X	X	X
2. Communication	X	X	X	X
3. Lab/Field Skills		X	X	
4. Critical Thinking	X	X	X	X
5. Scientific Method	X	X	X	X
6. Technical Writing		X	X	