

# BIOLOGICAL SCIENCES (MS)

A program of study leading to the Master of Science degree in Biology designed for students who:

- Have a strong desire to increase their understanding of the life sciences.
- Plan additional education at the master's level for increased proficiency in teaching and/or research.
- Plan to continue study toward the PhD.

Program Requirements	Quarter Hours
Degree Requirements	50
<b>Total hours required</b>	<b>50</b>

## Learning Outcomes

Students will be able to:

- Apply biology knowledge to design a scientific study to test an original hypothesis.
- Distinguish among the diversity of fields and approaches within Biology.
- Critically analyze and evaluate the validity of scientific findings.
- Effectively communicate scientific information in both written and oral form.
- Conduct a novel research study using the scientific method with qualitative and/or quantitative data analysis and explain its relevance and contribution to science.

## Degree Requirements

### Course Requirements

50 hours of graduate credit including:

Course	Title	Quarter Hours
BIO 402	INTRODUCTION TO GRADUATE STUDIES	2
BIO 403	DEVELOPMENT OF TOPICS FOR RESEARCH	4
BIO 494	COMMUNICATING SCIENCE	4
BIO 499	THESIS RESEARCH (20 quarter hours)	20
Select at least one course from the Ecology, Evolution, and Population biology core area		4
Select at least one course from the Genetics, Cell and Molecular biology core area		4
Select at least one course from the Physiology and Neurobiology core area		4
Select two additional courses from any of the core areas		8

Graduate students are also required to attend all of the seminars presented in the department's Seminar Series.

### Core Areas of Study

#### Ecology, Evolution, and Population Biology

Course	Title	Quarter Hours
BIO 415	TOPICS IN ECOLOGY	
BIO 417	AQUATIC BIOLOGY	

BIO 419	TOPICS IN BEHAVIORAL PARASITOLOGY
BIO 421	MOLECULAR METHODS IN ECOLOGY AND EVOLUTION
BIO 430	DEVELOPMENTAL BIOLOGY
BIO 432	POPULATION ECOLOGY
BIO 435	CONCEPTS IN EVOLUTION
BIO 445	TOPICS IN PALEOBIOLOGY
BIO 489	RESEARCH IN FIELD BIOLOGY

#### Genetics, Cell and Molecular Biology

Course	Title	Quarter Hours
BIO 409	PLANT PHYSIOLOGY	
BIO 420	ADVANCED MICROBIOLOGY	
BIO 421	MOLECULAR METHODS IN ECOLOGY AND EVOLUTION	
BIO 425	CELLULAR EVENTS IN THE IMMUNE RESPONSE	
BIO 430	DEVELOPMENTAL BIOLOGY	
BIO 439	CELLULAR NEUROBIOLOGY	
BIO 447	TOPICS IN MEDICAL BACTERIOLOGY	
BIO 448	THE BIOLOGY OF INFECTION	
BIO 449	TOPICS IN MICROBIOLOGY AND BIOTECHNOLOGY	
BIO 455	GENETIC TOXICOLOGY	
BIO 460	MOLECULAR BIOLOGY	
BIO 461	TOPICS IN MOLECULAR BIOLOGY	
BIO 462	ADVANCED GENETIC ANALYSIS	
BIO 471	IMMUNOBIOLOGY	
BIO 475	INTRODUCTION TO PHARMACOLOGY	
BIO 480	CANCER BIOLOGY	
BIO 481	TOPICS IN CANCER	
BIO 486	ENDOCRINOLOGY	

#### Physiology and Neurobiology

Course	Title	Quarter Hours
BIO 409	PLANT PHYSIOLOGY	
BIO 412	TOPICS IN EXERCISE PHYSIOLOGY	
BIO 439	CELLULAR NEUROBIOLOGY	
BIO 440	BEHAVIORAL NEUROSCIENCE	
BIO 441	TOPICS IN NEUROBIOLOGY	
BIO 442	COGNITIVE NEUROSCIENCE	
BIO 452	ADVANCED COMPARATIVE PHYSIOLOGY	
BIO 465	PRINCIPLES OF TOXICOLOGY	
BIO 475	INTRODUCTION TO PHARMACOLOGY	
BIO 485	MAMMALIAN REPRODUCTION	
BIO 486	ENDOCRINOLOGY	
BIO 489	RESEARCH IN FIELD BIOLOGY	

BIO 490, as appropriate, may also be approved in one of the three core areas.

BIO 406 can be taken as an elective.

### **Advancement to Candidacy**

Based upon the results of a qualifying examination taken near the end of the third quarter of the student's first full year and earning grades of B or better on graduate courses taken during the first year. Participation in undergraduate laboratory instruction is strongly encouraged.

### **Thesis Requirement**

Results based upon an independent laboratory investigation.

### **Final Examination Requirement**

An oral examination, including presentation of a seminar based on the MS thesis research, and a period of questioning on the thesis, the area of research which the thesis addresses, and basic biology as it relates to the thesis area.

## **Program Graduate Academic Student Handbook**

### **Academic Probation**

Students are expected to maintain a minimum cumulative grade point average (GPA) of 3.00. If a student's cumulative GPA falls below this minimum the student will be put on academic probation and will have one quarter of coursework to raise their cumulative GPA up to at least a 3.00 or face dismissal from the program. If the student's cumulative GPA falls below the minimum a second time, they will be dismissed from the program.

### **Academic Dismissal**

Students may be dismissed for breaches of academic integrity, breaches of the code of student responsibility, or violations of satisfactory progress, including but not limited to, failing a retake of the oral qualifying exam, not maintaining at least a 3.00 cumulative GPA, or lack of progress towards degree completion. Students who have completed their coursework, but who are still working on their thesis (MS) must be enrolled in candidacy continuation during the three quarters of the academic school year. Failure to enroll in candidacy continuation will result in dismissal from the program.

### **Readmission**

If a student leaves the program for any reason they must reapply to the program unless prior agreement for readmission has been granted by the Director of Graduate Studies in Biology (hereafter, Program Director). A specific timeline for readmission must be specified and agreed to by the Program Director prior to the student leaving the program.

### **Transfer Credit**

Two semester courses or three quarter courses from another institution or program may be accepted as transfer credit upon approval of the Program Director and Associate Dean for Graduate Studies. Credit will only be transferred for courses that have equivalents in the DePaul curriculum as determined by the Program Director. Transfer credit can only be awarded for graduate level coursework which has not counted toward the completion of a degree at DePaul or any other institution.

### **Undergraduate Courses**

No undergraduate courses will be counted towards the graduate degree.

### **Graduation Requirements**

In order to graduate, students must satisfy the degree requirements as specified in the course catalog for MS degrees, including but not limited to maintaining a minimum cumulative GPA of 3.00.

### **Graduation with Distinction**

This program does not offer the "With Distinction" designation at the time of graduation.

### **Time Limitation**

Students pursuing a master's degree must complete all requirements for the master's degree within a maximum of six years from their first term of enrollment in the program.