



**Iligan Institute of Technology**  
of the Mindanao State University  
Quality Education for a better Mindanao

## MASTER OF SCIENCE IN BIOLOGY

### Introduction

The program leading to the degree of M.S. in Biology was instituted at the Iligan Institute of Technology of the Mindanao State University in 1995. It aims to:

- provide Mindanao, Sulu, and Palawan (MINSUPALA) regions a graduate program in the highest level envisioned to be a strong catalyst in the development of biological education, research and extension services;
- provide the manpower needs of the region in general and the Cagayan-Iligan-Corridor (CIC) area in particular to address problems of biological significance such as abuse of natural resources, pollution, increased demand for food resources, and disease prevention and control in man, livestock and agricultural crops;
- produce highly trained biologists with strong biotechnological foundations who will help bring the Philippines to a Newly Industrialized Country (NIC) status by increasing productivity and making the quality of biotechnologically processed goods competitive in the world market.

### Admission Requirements

Applicants for admission to the program must fulfill the following requirements:

1. Hold a baccalaureate degree in Biology or in any of the allied fields from a recognized institution.
2. Have a background in each of the following areas of study:
  - a) Taxonomy
  - b) Morphology
  - c) Ecology
  - d) Physiology
  - e) Genetics
  - f) Inorganic Chemistry
  - g) Organic Chemistry
  - h) Biochemistry
  - i) Statistics
3. Have a grade point average of 2.0 or better in major courses taken or show some evidence of capabilities necessary for completion of the program, e.g. excellent teaching performance, published or unpublished researches, and/or trainings and workshops attended.
4. Two (2) letters of recommendation from former instructors in undergraduate major biology courses attesting to the student's intellectual capacity for graduate studies in biology.

Probationary admission may be given to baccalaureate degree holders in the allied fields provided that:

- a) they take prescribed undergraduate courses in which they are deficient within the first three semesters in the program;
- b) while in the program they obtain a grade point average of 2.0 or better in the graduate courses and a grade point average of 2.5 or better in the prescribed undergraduate courses;
- c) they carry a full load of 10-12 units per semester in the program; and
- d) comply with the 2.5 grade point average for their undergraduate degree and submit two letters of recommendation from former instructors of their undergraduate major courses.

## Departmental Requirements

Courses in the program can be classified into seven areas namely: Taxonomy, Morphology, Developmental Biology, Physiology, Genetics, Ecology and General Biology.

1 A minimum of 37 units of graduate courses shall be required. These courses should include the following:

a. Core Courses (10 units)

Bio	281	Advanced Cell and Molecular Biology	3 units
Bio	298	Advanced Research Methodology	3 units
Bio	211	Advanced Systematics	3 units
Bio	296	Seminar in Biology	1 unit

b. Major Courses (21 units of major courses apportioned in at least three areas, in any three of the seven areas including General Biology; or eighteen (18) units of major courses apportioned similarly plus three (3) units of a graduate course in biochemistry, marine biology, fisheries, agriculture, statistics or computer science, preferably one that is directly related to the student's thesis.

### TAXONOMY

Bot	211	Advanced Plant Systematics	3 units
Zoo	211	Advanced Animal Systematics	3 units

### MORPHOLOGY

Bot	232	Morphology of Higher Vascular Plants	3 units
Bot	233	Morphology of Thallophytes	3 units
Zoo	271	Comparative Histology of Vertebrates	3 units

### DEVELOPMENTAL BIOLOGY

Bio	262	Cell Differentiation in Embryonic Systems	3 units
Bot	262	Plant Growth and Development	3 units
Zoo	263	Experimental Embryology	3 units

### PHYSIOLOGY

Bio	248	Radiation Biology	3 units
Bot	241	Advanced Plant Physiology	3 units
Bot	242	Plant and Water Relations	3 units
MCB	241	Microbial Physiology	3 units
Zoo	243	Comparative Endocrinology of Vertebrates	3 units
Zoo	244	Physiology of Reproduction	3 units
Zoo	247	Physiology of Insects	3 units

### GENETICS

Bio	252	Advanced Cytogenetics	3 units
Bio	253	Molecular Genetics	3 units
Bio	255	Genetics of Evolution	3 units
Bio	256	Population Genetics	3 units
Bio	257	Genetics of Eukaryotes	3 units
MCB	251	Microbial Genetics	3 units

## ECOLOGY

Bio	223	Terrestrial Ecology	3 units
Bio	224	Freshwater Ecology	3 units
Bio	230	Problems in Environmental Biology	3 units
Bio	249	Biology of Symbiosis	3 units
Bio	250	Radiation Ecology	3 units
Bot	215	Aquatic Botany	3 units
Bot	227	Phytogeography	3 units
MB	221	Advanced Marine Ecology	3 units
MCB	221	Microbial Ecology	3 units
Zoo	227	Zoogeography	3 units

## GENERAL BIOLOGY

Bio	287	Advanced Theoretical Biology	3 units
Bio	288	Critique in Evolution	3 units
Bio	289	Philippine Biology	3 units
Bio	293	Biometry	3 units
Bio	294	Bioethics	3 units
Bio	295	Individual Studies	3 units
Zoo	220	Ornithology	3 units

### c. Master's Thesis (6 units)

Bio	300	Master's Thesis	6 units
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2. A grade of 2.0 or better in a graduate or undergraduate course that is included in the student's approved program of study shall be given credit.

3. Comprehensive Examination – The comprehensive examination will cover all graduate courses taken by the student.

## Other Requirements

To be able to complete the program and obtain the Master of Science in Biology degree the student must comply with all the requirements of the School of Graduate Studies relating to academic credits retention, residence requirement, time limit for completion of the program, comprehensive examination, thesis, and the policy on disqualification from the program.

**MASTER OF SCIENCE IN BIOLOGY (M.S. BIO.)  
(LIST OF COURSES BY SEMESTER)**

**First Year, Summer**

Course No.	Course Title	Units	Hrs/Wk			Prerequisite(s)
			Lec	Lab	Total	
Bio 281	Advanced Cell and Molecular Biology	3	2	3	5	Cell Biology
Bio 298	Advanced Research Methodology	3	2	3	5	Biostatistics
Major		3	2	3	5	
	Total	9	6	9	15	

**First Year, First Semester**

Course No.	Course Title	Units	Hrs/Wk			Prerequisite(s)
			Lec	Lab	Total	
Bio 211	Advanced Systematics	3	2	3	5	Systematics
Major		3	2	3	5	
	Total	6	4	6	10	

**First Year, Second Semester**

Course No.	Course Title	Units	Hrs/Wk			Prerequisite(s)
			Lec	Lab	Total	
Major		3				
Major		3				
	Total	6				

**Second Year, Summer**

Course No.	Course Title	Units	Hrs/Wk			Prerequisite(s)
			Lec	Lab	Total	
Major		3				
Major		3				
Major		3				
	Total	9				

**Second Year, First Semester**

Course No.	Course Title	Units	Hrs/Wk			Prerequisite(s)
			Lec	Lab	Total	
Bio 300	Master's Thesis	6				
Bio 296	Seminar in Biology	1				
	Total	6				

**Second Year, Second Semester**

<b>Course No.</b>	<b>Course Title</b>	<b>Units</b>	<b>Hrs/Wk</b>			<b>Prerequisite(s)</b>
			Lec	Lab	Total	
Bio 300	Master's Thesis					
	Total					