

CURRICULUM
Bachelor of Science in Biology (BS Biology)

Academic Year 2018-2019

Reference CMOs: CMO No. 49, s. 2017, CMO 4 s. 2018 and CMO No 20, s. 2013

Curriculum Description

The BS Biology program is a 4- year degree program that is structured as a generalized framework of study with the end view of grounding students with the fundamental concepts, principles and theories of the biological, natural and physical sciences and the conduct of research. This includes the acquisition of appropriate skills, and training in the efficient processing and presentation of information in both written and oral form.

Program Objectives

The BS Biology program is structured to meet the needs of professional biologists who:

- a. can be employed in government/ private institutions and other agencies where scientists with biological expertise are needed;
- b. can engage in entrepreneurial activities;
- c. conduct research in the various areas of biology;
- d. undertake post graduate education in Biology and allied fields; and,
- e. pursue a career in teaching.

Program Outcomes

- a. Develop in-depth understanding of the basic principles governing the science of life.
- b. Develop and utilize techniques/procedures relevant to biological research work in laboratory or field settings.
- c. Carry out basic mathematical and statistical computations and use appropriate technologies in the analysis of biological data.
- d. Extend knowledge and critically assess current views and theories in various areas of the biological sciences.

Curriculum Components

Courses	Units	Total
A. General Education Courses (CMO No. 20, Series of 2013)		36 units
B. Biology Tool Courses (CMO No. 49, Series 2017)		18 units
C. Fundamental Courses (CMO No. 49, Series 2017)		50 units
C. Major Specialization Courses		25 units
Marine Biology	5	
Human Anatomy and Physiology	5	
Marine Biotechnology	5	
Food Microbiology	5	
Medical Histology	5	
D. Free Electives*		6 units
Human Genetics	3	
Qualitative and Quantitative Genetics	3	
Industrial Microbiology	3	
Microbial Ecology	3	
Marine Ecosystem	3	
Marine Macrophytes	3	
D. Mandated Courses		
Physical Education 1-4		8 units
NSTP 1 and 2		6 units
E. Undergraduate Thesis		6 units
F. On-the-Job Training		3 units
TOTAL		158 units

PROGRAM OF STUDY

FIRST YEAR						
FIRST SEMESTER						
Code	Course Title	Units	Lec	Lab	Prerequisite	Co-requisite
NSTP 111	National Service Training Program 1	3	3	-	-	-
PE 101	Physical Fitness, Gymnastics and Aerobics	2	2	-	-	-
BIO 102	General Botany lecture	3	3	-	-	BIO102L

BIO 102L	General Botany laboratory	2	0	2	-	BIO102
BIO 103	General Zoology	3	3	-	-	BIO103L
BIO 103L	General Zoology laboratory	2	0	2	-	BIO103
GEEd 109	Science, Technology and Society	3	3	-	-	-
GEEd 106	Purposive Communication	3	3	-	-	-
GEEd 102	Mathematics in the Modern World	3	3	-	-	-
TOTAL		24	20	4		

FIRST YEAR						
SECOND SEMESTER						
Code	Course Title	Units	Lec	Lab	Prerequisite	Co-requisite
NSTP 121	National Service Training Program 2	3	3	-	NSTP 111	
PE 102	Rhythmic Activities	2	2	-	PE 101	
BIO 104	Systematics lecture	3	3	-	BIO102 BIO103	BIO104L
BIO 104L	Systematics laboratory	2	0	2		BIO104
BIO 105	Chemical Biology I (Organic Molecules) lecture	2	2	-		BIO105L
BIO 105L	Chemical Biology I (Organic Molecules) laboratory	1	0	1		BIO105
BIO 106	Statistical Biology	3	3	-	-	
GEEd 105	Readings in Philippine History	3	3	-	-	
GEEd 101	Understanding the Self	3	3	-	-	
TOTAL		22	19	3		

SECOND YEAR						
FIRST SEMESTER						
Code	Course Title	Units	Lec	Lab	Prerequisite	Co-requisite
PE 103	Individual and Dual Sports	2	2	-	PE 101	
BIO201	Microbiology lecture	3	3	-	BIO102 BIO103	BIO201L
BIO201L	Microbiology laboratory	2	0	2		BIO201
BIO202	General Ecology lecture	3	3	-	BIO102 BIO103 BIO104	BIO202L
BIO202L	General Ecology laboratory	2	0	2		BIO202
BIO203	Chemical Biology II (Analytical Methods for Biology) lecture	2	2	-	BIO105	BIO203L
BIO203L	Chemical Biology II (Analytical Methods for Biology) laboratory	1	0	1		BIO203
Fili 101	KontekstwalisadongKomunikasyonsa Filipino	3	3	-	-	
GEEd 104	The Contemporary World	3	3	-	-	
TOTAL		21	16	5		

SECOND YEAR						
SECOND SEMESTER						
Code	Course Title	Units	Lec	Lab	Prerequisite	Co-requisite
PE 104	Team Sports	2	2	-	PE 101	
BIO204	Chemical Biology III (Biomolecules) lecture	3	3	-	BIO105 BIO203	BIO204L
BIO204L	Chemical Biology III (Biomolecules) laboratory	2	0	2		BIO204
BIO205	Evolutionary Biology lecture	3	3	-	BIO102 BIO103	BIO205L
BIO205L	Evolutionary Biology laboratory	2	0	2		BIO205
BIO206	Genetics lecture	3	3	-	BIO102 BIO103	BIO206L
BIO206L	Genetics laboratory	2	0	2		BIO206
Fili 102	Filipino saIba'tIbangDisiplina	3	3	-		Fili 101
TOTAL		23	23	6		

THIRD YEAR						
FIRST SEMESTER						
Code	Course Title	Units	Lec	Lab	Prerequisite	Co-requisite
BIO301	Cell and Molecular Biology lecture	3	3	-	BIO102 BIO103 BIO 204	BIO301L

					BIO206	
BIO301L	Cell and Molecular Biology laboratory	2	0	2		BIO301
BIO302	General Physiology lecture	3	3	-	BIO102 BIO103	BIO302L
BIO302L	General Physiology laboratory	2	0	2	-	BIO302
GEd 107	Ethics	3	3	-	-	-
GEd 108	Art Appreciation	3	3	-	-	-
GEd 103	Life and Works of Rizal	3	3	-	-	-
Litr 102	ASEAN Literature	3	3	-	-	-
	TOTAL	22	18	4		

THIRD YEAR SECOND SEMESTER						
Code	Course Title	Units	Lec	Lab	Prerequisite	Co-requisite
BIO303	Biophysics lecture	3	3	-		
BIO303L	Biophysics laboratory	1	0	1		
BIO304	Developmental Biology lecture	3	3	-	BIO102 BIO103 BIO301	BIO304L
BIO304L	Developmental Biology laboratory	2	0	2		BIO304
BIO305	Specialization Course I (Marine Biology) lecture	3	3	-	BIO102 BIO103 BIO202	BIO305L
BIO305L	Specialization Course I (Marine Biology) laboratory	2	0	2		BIO305
BIORES1	Thesis I: Introduction to Research	2	2	-		
	TOTAL	16	11	5		

THIRD YEAR SUMMER						
Code	Course Title	Units	Lec	Lab	Prerequisite	Co-requisite
BIO306	On-the-Job Training / Practicum (200 hours)	3	-	-	Finished all major subjects from First year to Third Year	
	TOTAL	3	-	-		

FOURTH YEAR FIRST SEMESTER						
Code	Course Title	Units	Lec	Lab	Prerequisite	Co-requisite
BIO 401	Specialization Course II (Human Anatomy and Physiology)	3	3	-	BIO102 BIO302	BIO401L
BIO 401L	Specialization Course II (Human Anatomy and Physiology Laboratory)	2	0	2		BIO401
BIO 402	Specialization Course III (Marine Biotechnology) lecture	3	3	-	BIO 204 BIO 301	BIO402L
BIO 402L	Specialization Course III (Marine Biotechnology) laboratory	2	0	2		BIO402
BIO 403	Free Elective *	2	2	-		
BIO 403L	Free Elective Lab	1	0	1		
BIO RES2	Thesis II: Thesis Experimentation	2	1	-	BIORES1	
	TOTAL	15	9	5		

FOURTH YEAR SECOND SEMESTER						
Code	Course Title	Units	Lec	Lab	Prerequisite	Co-requisite
BIO404	Specialization Course IV (Food Microbiology) lecture	3	3	-	BIO201	BIO404L
BIO404L	Specialization Course IV (Food Microbiology) laboratory	2	0	2		BIO404
BIO405	Specialization Course V (Medical Histology)	3	3	-	BIO101 BIO102 BIO302	BIO405L

BIO405L	Specialization Course V (Medical Histology)	2	0	2		BIO405
BIO406	Free Elective *	2	2	-	(refer to attached table on electives)	BIO406L
BIO406L	Free Elective Lab	1	0	1		BIO406
BIORES3	Thesis III: Oral Defense	2	2	-	BIORES2	
TOTAL		15	10	5		

Free Electives (6 units). Students are required to choose 6 units from the following courses:

	Units	Prerequisite
Human Genetics	3	BIO206, BIO404
Qualitative and Quantitative Genetics	3	BIO206, BIO404
Industrial Microbiology	3	BIO201, BIO401
Microbial Ecology	3	BIO101, BIO201, BIO401
Marine Ecosystem	3	BIO 202, BIO402
Marine Macrophytes	3	BIO 102, BIO 301, BIO 402