

**SILLIMAN UNIVERSITY**  
**INSTITUTE OF ENVIRONMENTAL AND MARINE SCIENCES**  
**BACHELOR OF SCIENCE IN ENVIRONMENTAL SCIENCE**  
(2018 CURRICULUM)

**FIRST YEAR**

**First Semester**

Subject Code	Course Title	Units	Lec	Lab	PreReq
CHS 1 (2018)	Reading and Interpreting the Hebrew Scriptures	3	3	0	
GE 3 (2018)	The Contemporary World	3	3	0	
GE 5 (2018)	Purposive Communication	3	3	0	
GE 8 (2018)	Ethics	3	3	0	
Math 11 (2018)	College Algebra	3	3	0	
ES 11A (2018)	Ecological Concepts	3	2	1	SHS ELS
PE 1 (2018)	Physical Fitness and Swimming	2	2	0	
NSTP 1 (2018)	National Service Training Program	(3)	3	0	
PEP 1 (2018)	Personality Enhancement Program				
	TOTAL	20(23)	22	1	
	Contact hours/week	25	22	3	

**Second Semester**

Subject Code	Course Title	Units	Lec	Lab	PreReq
CHS 2 (2018)	Reading and Interpreting the Christian Scriptures	3	3	0	CHS 1
GE 1 (2018)	Understanding the Self	3	3	0	
Chem 18 (2018)	Analytical Chemistry*	5	3	2	SHS Chem
Math 12 (2018)	Plane Trigonometry	3	3	0	
ES 12A (2018)	Introduction to Environmental Science	3	3	0	
ES 14A (2018)	General Physiology	3	2	1	
PE 2 (2018)	Physical Education	2	2	0	
NSTP 2 (2018)	National Service Training Program	(3)	3	0	
PEP 2 (2018)	Personality Enhancement Program				PE 1
	TOTAL	22(25)	22	3	
	Contact hours/week	37	22	15	

**SECOND YEAR**

**First Semester**

Subject Code	Course Title	Units	Lec	Lab	PreReq
GE 4 (2018)	Mathematics in the Modern World	3	3	0	
GE 6 (2018)	Art Appreciation	3	3	0	
Chem 19 (2018)	Organic Chemistry*	5	3	2	SHS Chem
ES 21A (2018)	Scientific Writing**	3	2	1	SHS Research
ES 23A (2018)	Reproductive & Developmental Biology**	3	2	1	ES 14A
PE 3 (2018)	Physical Education	2	2	0	PE 2
	TOTAL	19	15	4	
	Contact hours/week	27	15	12	

**Second Semester**

Subject Code	Course Title	Units	Lec	Lab	PreReq
GE 7 (2019)	Science, Technology & Society	3	3	0	
GE 9 (2018)	The Life and Works of Jose Rizal	3	3	0	
Chem 20 (2018)	Biochemistry*	5	3	2	Chem 19
Math 18 (2018)	Calculus**	4	4	0	Math 11 & 12
ES 22A (2018)	Inferential Statistics & Biometry	3	2	1	SHS Stat
ES 24A (2018)	Cell & Molecular Biology**	4	3	1	ES 23A
PE 4 (2018)	Physical Education	2	2	0	PE 3
	TOTAL	24	20	4	
	Contact hours/week	32	20	12	

### THIRD YEAR

#### First Semester

Subject Code	Course Title	Units	Lec	Lab	PreReq
GE 10 (2018)	Whole Person Education	3	3	0	
GE 12 / CHS 3 (2018)	Christianity and Peace-Building	3	3	0	
ES 31A (2018)	Human-Environment Interactions	3	2	1	
ES 33A (2018)	Elements of Environmental Management	3	3	0	ES 12A
ES 35A (2018)	Mechanics, Electromagnetism & Gravitational Theory	3	2	1	SHS Physics
ES 37A (2018)	Climate Change & Inter-connectivity	3	2	1	ES 11A
ES 39A (2018)	Conservation Ecology	3	2	1	ES 11A
	TOTAL	21	17	4	
	Contact hours/week	29	17	12	

#### Second Semester

Subject Code	Course Title	Units	Lec	Lab	PreReq
GE 11 (2018)	Applied Software in Environmental and Marine Sciences (Free Elective)	3	3	0	
GE 2 (2018)	Readings in Philippine History	3	3	0	
ES 30A (2018)	Biogeography	3	2	1	
ES 32A (2018)	Oceanography**	3	2	1	
ES 34A (2018)	Integrated Natural Resource Management	3	2	1	
ES 36A (2018)	Land Use with CLUP	3	3	0	
ES 38A (2018)	Waves, Optics & Thermodynamics	3	2	1	
ES 40A (2018)	Elements of Research	3	3	0	
	TOTAL	24	20	4	
	Contact hours/week	32	20	12	

### FOURTH YEAR

#### First Semester

Subject Code	Course Title	Units	Lec	Lab	PreReq
ES 41A (2018)	Systematics, Biodiversity & Conservation	3	2	1	ES 24A
ES 43A (2018)	Environmental Monitoring	5	3	2	ES31A & ES32A
ES 45A (2018)	The EIA System	3	2	1	ES31A & ES32A
ES 47A (2018)	Mapping and GIS	3	2	1	
ES 49A (2018)	Natural Hazards & Mitigation	3	3	0	ES31A & ES32A
ES 51A (2018)	Ecosystem Remediation and Restoration	3	2	1	
ES 97A (2018)	Undergraduate Thesis I	3	1	2	ES 40A
	TOTAL	23	15	8	
	Contact hours/week	39	15	24	

#### Second Semester

Subject Code	Course Title	Units	Lec	Lab	PreReq
ES 42A (2018)	Waste and Pollution	3	3	0	ES31A & ES32A
ES 44A (2018)	Env. Health & Toxicology	3	2	1	
ES 46A (2018)	Agriculture and the Environment	3	3	0	
ES 48A (2018)	Water and Wastewater Management	3	3	0	
ES 50A (2018)	Special Topics in Environmental Science	3	2	1	
ES 52A (2018)	Environmental Policies	3	3	0	
ES 98A (2018)	Undergraduate Thesis II	3	2	1	ES 97A
	TOTAL	21	18	3	
	Contact hours/week	27	18	9	

\* May be replaced by GE electives under Mathematics, Science and Technology of CM0 20 s2013

\* Taken with BS Biology students

\*\* Can be "slashed" with BS Marine Biology subjects if students number is below 20 pax

1 **Lecture unit** = 1 contact hour; 1 **Laboratory unit** = 3 contact hours

**GENERAL EDUCATION SUBJECTS (Includes University GE Requirements CHS)**

GE 1. Understanding the Self

GE 2. Readings in Philippine History

GE 3. The Contemporary World

GE 4. Mathematics in the Modern World

GE 5. Purposive Communication

GE 6. Art Appreciation

GE 7. Science, Technology & Society

GE 8. Ethics

GE 9. The Life and Works of Jose Rizal

GE 10. Whole Person Education

GE 11. Applied Software in Environmental and Marine Sciences

GE 12/CHS 3. Christianity and Peace- Building

CHS 1 - Reading & Interpreting the Hebrew Scriptures

CHS 2 - Reading & Interpreting the Christian Scriptures