



DEPARTMENT OF PHYSICAL SCIENCES AND MATHEMATICS
COLLEGE OF ARTS AND SCIENCES
UNIVERSITY OF THE PHILIPPINES MANILA



Bachelor of Science in Biochemistry

First Year

1 st Semester			2 nd Semester		
Subject	Units	Prerequisites	Subject	Units	Prerequisites
Chem 19 (Principles of Chemistry)	5		Chem 33 (Organic Chemistry I)	5	
Math 83 (Essentials of Analysis I)	5		Math 84 (Essentials of Analysis II)	5	Math 83
Math 101 (Elementary Statistics)	3		Physics 71	4	Math 83 or equivalent
GE 1	3		Physics 71.1	1	Physics 71 (co-requisite)
GE 2	3		GE 3	3	
PE 1	(2)		GE 4	3	
NSTP 1	(3)		PE 2	(2)	
			NSTP 2	(3)	
Total	19		Total	21	

First Year Mid Semester

Subject	Units	Prerequisites
Chem 111 (Inorganic Chemistry I)	3	Chem 19
GE 5	3	
Total	6	

Second Year

1 st Semester			2 nd Semester		
Subject	Units	Prerequisites	Subject	Units	Prerequisites
Chem 36 (Organic Chemistry II)	5	Chem 33	Biochem 71 (Professional Ethics, Legal, and Social Issues in Chemistry and Biochemistry)	1	
Chem 43 (Biochemistry I)	5	Chem 19, Chem 33	Chem 46 (Biochemistry II)	4	Chem 43
Math 85 (Essentials of Analysis III)	3	Math 84	Chem 128 (Analytical Chemistry II)	5	Chem 29, Chem 33
Chem 29 (Analytical Chemistry I)	5	Chem 19	Physics 72 (Elementary Physics II)	4	Physics 71
PE 3	(2)		Physics 72.1 (Elementary Physics II Laboratory)	1	Physics 71.1, Physics 72 (co-requisite)
			Bio 110 (Integrated Principles of Biology)	5	
			PE 4	(2)	
Total	18		Total	20	

Second Year Mid Semester

Subject	Units	Prerequisites
GE 6	3	
GE 7	3	
Total	6	

Third Year

1 st Semester			2 nd Semester		
Subject	Units	Prerequisites	Subject	Units	Prerequisites
Bio 120 (Microbiology)	5	Bio 110	Biochem 121 (Biochemistry of the Gene)	3	Chem 43
Chem 161 (Physical Chemistry I)	5	Chem 19, Math 85, Physics 72, Physics 72.1	Biochem 122 (Techniques in Biochemistry and Molecular Biology)	2	Chem 43, Bio120, Biochem 121 (co-requisite)
Chem 129 (Analytical Chemistry III)	4	Chem 128	Biochem 198 (Seminar)	1	Junior Standing
GE 8	3		Chem 162 (Physical Chemistry II)	5	Chem 161
			Chem 163 (Physical Chemistry III)	3	Math 85, Physics 72, Physics 72.1
			CMSC 110 (Foundations of Biocomputing)	3	
Total	17		Total	17	

Third Year Mid Semester

Subject	Units	Prerequisites
Biochem 190 (Practicum)	3	Junior Standing
Total	3	

Fourth Year

1 st Semester			2 nd Semester		
Subject	Units	Prerequisites	Subject	Units	Prerequisites
Biochem 125 (Physical Biochemistry)	5	Chem 46, Chem 162	Biochem 168 (Environmental Biochemistry)	3	Chem 46
Biochem 180 (Biochemical Engineering)	4	Biochem 121, Biochem 122	Biochem 200 (Thesis)	3	Biochem 199
Biochem 181 (Introduction to Bioinformatics and Cheminformatics)	2	Biochem 121, CMSC 110	Elective 1	3	
Biochem 199 (Research Methods in Biochemistry)	3	Biochem 198	Elective 2	3	
Chem 112 (Inorganic Chemistry II)	3	Chem 111, Chem 163	PI 100 (The Life and Works of Jose Rizal)	3	
Total	17		Total	15	

Total Number of Units: 159 units

GE Courses

Students are required to take **eight (8) GE Courses**:

Six (6) CORE GEs

1. Critical Perspectives in Communication (Comm 10)
2. Ethics and Moral Reasoning for Everyday Life (Ethics 1)
3. Kasaysayan ng Pilipinas (Kas 1)
4. Mathematics, Culture and Society (Math 10)
5. Science, Technology and Society (STS 1)
6. Wika, Kultura at Lipunan (Wika 1)

Two (2) elective GEs from the following options:

1. Probing the Physical World (Science 10)
2. Self and Society (SAS 1)
3. Critical Perspectives in the Arts (Arts 1)
4. Living Systems: Concepts and Dynamics (Science 11)
5. Philippine Arts and Culture (PhilArts 1)

Electives

Subject	Units	Prerequisites
Biochem 158 (Introduction to Biochemical Complex Systems)	3	Chem 46, Math 101, Math 85
Chem 191 (Bioconjugate Chemistry)	3	Chem 36, Chem 43
Chem 192 (Nanochemistry)	3	Chem 128, Chem 112
Chem 137 (Nutraceutical and Cosmeceutical Chemistry)	3	Chem 29, Chem 33
Chem 154 (Management and Entrepreneurial Chemistry)	3	Chem 19
Chem 136 (Polymer Chemistry)	3	Chem 36, Chem 162
Chem 172 (Introduction to Medicinal Chemistry)	3	Chem 36
Chem 193 (Forensic Chemistry)	3	Chem 43, Chem 128
Biochem 130 (Nutritional Biochemistry)	3	Chem 46, Chem 36
Biochem 155 (Industrial Biochemistry)	2	Chem 46
Biochem 157 (Bioenergetics)	3	Biochem 125
Biochem 159 (Membrane Biochemistry)	3	Biochem 125, Chem 36
Biochem 170 (Computational Tools in Biochemistry)	2	Biochem 125, Chem 36
Biochem 175 (Immunobiochemistry)	3	Chem 46, Chem 36
Biochem 191 (Biochemical Evolution)	3	Bio 120, Biochem 121, Biochem 122
Chem 124 (Bioinorganic Chemistry)	3	Chem 46
Chem 135 (Chemistry of Natural Products)	3	Chem 46
Chem 155 (Industrial Chemistry)	3	Chem 162
Chem 197 (Special Topics in Applied Chemistry)	3	Chem 36, Chem 128