B.S. IN BIOLOGY (BY.BS)

Code	Title	Credits
Major Requirements/Biology (41 credits) [1]		
(Satisfies Natural Sciences in General Education)		
BY-119	Introductory Biology Major Seminar	1
BY-109	Introduction to Biodiversity and Evolution	4
BY-110	Introduction to Cell and Molecular Biology	4
BY-216	Introduction to Genetics	4
(Satisfies Technological Literacy (TL) in General Education)		
BY-495	Senior Seminar	1
(Satisfies Reasoned Oral Discourse (RD) in General Education)		
Advanced Biology Electives: Select 27 credits including a minimum of one course from each category listed below. Additional BY electives may be offered that do not fall into one of these categories and can be used for elective credit. [2, 3]		27
Pathways and Information Flow		
BY-201	Introduction to Biotechnology	
BY-310	Biochemistry and Lab (Satisfies Writing Intensive (WT) requirement)	
BY-370	Cell Biology	
BY-375L	Laboratory in Molecular and Cellular Biology (Satisfies Writing Intensive (WT) requirement)	
BY-406	Introduction to Neurosciences	
BY-410	Molecular Biology	
BY-427	Cancer Biology	
BY-430	Neuroscience Beyond Neurons	
BY-431	Immunology	
Organismal Structure & Function		
BY-205	Zoology	
BY-211	Physiology with Anatomy I	
BY-212	Physiology with Anatomy II	
BY-214	Botany	
BY-223	General Microbiology	
BY-322	Ichthyology	
BY-324	Applied Microbiology	
BY-341	Marine Biology	
BY-425	Principles of Developmental Biology	
Evolution & Ecological Systems		
BY-206	Introduction to Oceanography	
BY-209	Environment and Human Health	
BY-220	Environmental Biology and Policy	
BY-221	Introduction to Global Sustainability	
BY-317	Tropical Island Ecology	
BY-420	Applied Field Biology	
BY-424	Evolution	
BY-440	Ecology	
BY-442	Natural Resource Conservation and Management	
(BY-440 or BY-442) Satisfies Writing Intensive (WT) requirement		
Interdisciplinary Requirements (30 credits)		
Select one of the following:		3
MA-115	Pre-Calculus Modeling for the Biological Sciences	
MA-116	Calculus for the Biological Sciences	
MA-125	Calculus with Analytic Geometry I	
(MA-115, MA-116, or MA-125 satisfies Mathematics in General Education)		
MA-151	Statistics with Applications	3
CE-111	General Chemistry I	3
CE-111L	General Chemistry Laboratory I	1
CE-112	General Chemistry II	3
CE-112L	General Chemistry Laboratory II	1
CE-241	Organic Chemistry I	3
CE-241L	Organic Chemistry Laboratory I	1
CE-242	Organic Chemistry II	3
CE-242L	Organic Chemistry Laboratory II	1
PH-105	Physics for the Life Sciences I	3
PH-105L	Physics for the Life Sciences Laboratory I	1
PH-106	Physics for the Life Sciences II	3
PH-106L	Physics for the Life Sciences Laboratory II	1
Free Electives (18-19 credits)		
Complete 18 - 19 credits of free electives. [3]		18-19
General Education Requirements (30 credits)		
Complete 30 credits as outlined on the General Education table. [4]		30
Total Credits		**120**

1 *BY-102 Applications in Biotechnology (3 cr.), BY-104 Human Biology (3 cr.), BY-105 Introductory Biology and Human Development (3 cr.), and BY-106 The Brain - Highs and Lows (3 cr.) are not available to BY majors.*

2 *Two Writing Intensive courses (WT) must be selected and two courses (six credits of electives) must be at the 400-level. Take note of course prerequisites in the catalog descriptions. Writing intensive courses include BY-310, BY-342, BY-375L, BY-440, and BY-442.*

3 Except BY-262

4 *Please consult with your advisor regarding the required number of free electives that must be completed.*

5 *The General Education curriculum requires the completion of 45 credits. However, students may be able to share credits from within their major or interdisciplinary requirements. Please consult with your advisor to determine which* General Education *(*http://catalog.monmouth.edu/undergraduate-catalog/academic-programs-support-services-regulations/general-education-requirements/*) courses must be completed.*

Notes

- 54 credits must be completed at the 200 level or higher.

Sequence Chart

First Year

Fall	Credits	Spring	Credits
EN-101 College Composition I	3	EN-102 College Composition II	3
BY-110 Introduction to Cell and Molecular Biology	4	CE-112 & 112L (Gen*Ed Natural Science (NS)	4
BY-119 Introductory Biology Major Seminar	1	BY-109 Introduction to Biodiversity and Evolution	4
MA-115, MA-116 or MA-125 (Gen*Ed Mathematics)	3	FO-xxx Gen*Ed World Language	3
CE-111 & 111L (Gen*Ed Natural Science (NS)	4	Gen*Ed Aesthetics (AT) AR,DA,MU,TH	3
Semester Credits	**15**	**Semester Credits**	**17**

Second Year

Fall	Credits	Spring	Credits
CE-241 Organic Chemistry I	3	CE-242 Organic Chemistry II	3
CE-241L Organic Chemistry Laboratory I	1	CE-242L Organic Chemistry Laboratory II	1
BY-216 Introduction to Genetics (Gen*Ed Technological Literacy (TL)	4	MA-151 Statistics with Applications	3
Gen*Ed Historical Perspectives (HS.SV)	3	Biology Elective	4
Gen*Ed Cultural Diversity (CD) or Global Understanding (GU)	3	Biology Elective: Organismal Structure and Function	3
		Gen*Ed Historical Perspective (HS.SV) or Social Science Survey (SS.SV)	3
Semester Credits	**14**	**Semester Credits**	**17**

Third Year

Fall	Credits	Spring	Credits
PH-105 & 105L	4	Biology Elective: Pathways and Information Flow	3
BY WT Elective	4	PH-106 & 106L	4
Gen*Ed Literature (LIT)	3	Free Electives	4
Biology Elective: Evolution and Ecological Systems	3	BY WT Elective	3
Free Elective	3		
Semester Credits	**17**	**Semester Credits**	**14**

Fourth Year

Fall	Credits	Spring	Credits
Gen*Ed Social Science (SS.SV)	3	PR-4xx Gen*Ed Interdisciplinary Perspectives (ISP)	3
BY-xxx Biology Electives	4	BY-495 Senior Seminar	1
Free Electives (Gen*Ed Experiential Education (ExEd)	6	BY-xxx Biology Elective (See curriculum chart)	3
		Free Electives	6
Semester Credits	**13**	**Semester Credits**	**13**

Total Credits 120