

DEGREE MAP

BACHELOR OF SCIENCE IN BIOLOGY

Purpose Statement: The mission of the biology program is to provide students with the theoretical knowledge and laboratory skills needed to engage the scientific community. Students will be challenged to think critically, analytically, and ethically allowing them to develop valuable problem solving skills. Our undergraduates will be technologically and intellectually prepared for entry into the workforce, a graduate Biology program, Healthcare related programs, or the field of Science Education.

DEGREE REQUIREMENTS	Credit Hours
University Graduation Requirements – BS	[6]
LE 100, First-Year Seminar (<i>first-time freshman only; waived for transfer students</i>)	3
EN 306, Professional Writing (<i>NS 306 will fulfill this requirement</i>)	3
University Liberal Education Requirements	[37]
EN 105, First-Year Writing Seminar I	3
EN 106, First-Year Writing Seminar II	3
CA 103, CA 105, or TH 105	3
CS 140, Introduction to Computers; or higher	3
MA 120, MA 135, or higher (<i>ie: MA150 will fulfill this requirement</i>)	3
Laboratory Science (<i>BIO 221 will fulfill this requirement</i>)	4
LE Natural and Physical Science Elective (<i>any laboratory course will fill this requirement</i>)	3
LE Social Science Elective	3
LE Social Science Elective	3
LE Arts & Humanities Elective	3
LE Arts & Humanities Elective	3
LE 300, Seminar in Integrative and Interdisciplinary Learning	3
Citizenship Requirement (PO 200, 210, HIS 111, 112, OR 113)	3
Ethics Requirement (<i>Fulfilled by BIO 306</i>)	3
Biology Major Requirements	[25]
BIO 221 Zoology	4
BIO 225 Botany	4
BIO 306 Biological Literature (<i>Fulfills Ethics Requirement</i>)	3
BIO 325 Introductory Molecular Cell Biology	3
BIO 327 Introductory Ecology and Evolution	4
BIO 340 Genetics	4
BIO 470 Capstone Internship - OR - BIO 498 Capstone Thesis - OR- BIO 499 Capstone Research	3
General Science Requirements	[29]
CH 107 General Chemistry I	3
CH 107L General Chemistry I Lab	1
CH 108 General Chemistry II	3
CH 108L General Chemistry II Lab	1
CH 317 Organic Chemistry I	3
CH 317L Organic Chemistry I Lab	1
CH 318 Organic Chemistry II	3
CH 318L Organic Chemistry II Lab	1
MA 160 Precalculus for Majors	5

PY 155	Concepts of Physics I	4
PY 156	Concepts of Physics II	4
Natural Sciences Core Requirements		[5]
NS 220	Applied Statistics & Experimental Design	3
NS 302	Current Literature in the Natural Sciences	1
NS 401	Natural Science Seminar	1
Approved Electives - General Requirements		[12]
BIO 211	Human Anatomy & Physiology I	4
BIO 212	Human Anatomy & Physiology II	4
BIO 326	Bioethics	3
BIO 330	Paleobiology	4
BIO 337	Biochemistry	4
BIO 350	Microbiology	4
BIO 375	Evolution	3
BI 378	Ecology	4
BIO 380	Issues in Biodiversity	3
BIO 400	Cell Biology	4
BIO 410	Comparative Anatomy	4
BIO 411	Animal Physiology	4
BIO 417	Developmental Biology	4
BIO 490	Advanced Topics in Biology	1-4
CH 321	Introduction to Medicinal Chemistry	3
CH 329	Analytical Chemistry	4
GGP 350	GIS I	3
GGP 370	Biogeography	3
A comprehensive Senior Examination is to be taken during the graduating semester.		

Recommended Schedule

The following is a sample schedule that would result in a student accumulating enough credit hours to earn a B.S. degree in Biology. It is designed for a student who plans to take courses face-to-face during the traditional academic schedule, does not bring in any transfer credit, and has not tested into higher level courses. The degree map will need to be adjusted for students who have previous college credit or who “test out” of introductory courses. The order of courses may be adjusted according to the student’s preferences and course availability, but this reflects the “ideal” order of completion using the program’s course rotation plan.

YEAR ONE			
Fall – Semester 1		Spring – Semester 2	
BIO 221 Zoology cr.	4	BIO 225 Botany	4 cr.
CH 107(L) Gen. Chemistry I + Lab	4 cr.	CH 108(L) Gen. Chemistry II + Lab	4 cr.
EN 105 First-Year Writing Seminar I	3 cr.	EN 106 First-Year Writing Seminar II	3 cr.
LE 100 First-Year Seminar	3 cr.	MA 160 ¹ Precalculus	5 cr.
Citizenship Requirement cr.	3		Total: 16 cr.
	Total: 17 cr.		
YEAR TWO			
Fall – Semester 3		Spring – Semester 4	
BIO 325 Intro. Molecular Cell Biology cr.	3	BIO 327 Intro Ecology and Evolution	4 cr.
CH 317(L) Organic Chemistry I + Lab cr.	4	CH 318(L) Organic Chemistry II + Lab	4 cr.
PY 155 Concepts of Physics I	4 cr.	PY 156 Concepts of Physics II	4 cr.
NS 220 Applied Statistics & Experimental Design	3 cr.	LE COURSE ²	3 cr.
	Total: 14 cr.		Total: 15 cr.
YEAR THREE			
Fall – Semester 5		Spring – Semester 6	
BIO 340 Genetics	4 cr.	NS 306 Writing and Ethical Practices in Science	3cr.
BIO ELECTIVE ³	4 cr.	BIO ELECTIVE ³	4 cr.
LE COURSE ²	3 cr.	LE COURSE ²	3 cr.
NS 302 Current Literature in the Natural Sciences	1 cr.	LE COURSE ²	3 cr.
ELECTIVE ⁴	3 cr.	ELECTIVE ⁴	3 cr.
	Total: 15 cr.		Total: 16 cr.
YEAR FOUR			
Fall – Semester 7		Spring – Semester 8	
BIO 470 Internship/498 Thesis/499 Research	3 cr.	NS 401 Natural Science Colloquium	1 cr.
BIO ELECTIVE ³	4 cr.	LE COURSE ²	3 cr.
LE COURSE ²	3 cr.	ELECTIVE ⁴	4 cr.

LE 300 Interdisciplinary Studies	3 cr.	ELECTIVE ⁴	3-4 cr.
ELECTIVE ⁴	3 cr.	ELECTIVE ⁴	3-4 cr.
	Total: 16 cr.	BIOLOGY EXIT EXAM	
			Total: 14-16 cr.

1. MA 160 Precalculus: this is the minimum math requirement for the B.S. in Biology. The pre-requisite for this course is MA125 or equivalent (i.e., ACT math score ≥ 23 , or SAT math score ≥ 510) which should be fulfilled in the summer prior to attending Park. MA125 is also a prerequisite for CH107.
2. LE COURSE: The Liberal Education (LE) courses should be selected from Communications (1), Computer Science (1), Humanities (2), and Social Science (2).
3. BIO ELECTIVE: the B.S. in Biology degree requires 12 hours of elective coursework with the BIO designation.
4. ELECTIVE: elective hours are included to complete the University's 120 credit hour degree requirement. Students can complete these hours by pursuing a professional track (i.e., pre-med, pre-vet, graduate studies, etc., where it is quite common to obtain more than 120 credit hours), or by pursuing a minor (i.e., chemistry, geo, etc., which are typically 18-20 credit hours).