BIOLOGY, BACHELOR OF SCIENCE (B.S.)

Program Requirements

CIP Code: 26.0101

Major

Code	Title	Hours
University Graduation Requirements		
General Education (http://catalogs.eku.edu/undergraduate/general-academic-information/general-education-requirements/)		36
Foundations of Learning		
GSD 101	Foundations of Learning	3
Upper division courses (42 hrs. distributed throughout Major/ Supporting/Gen Ed/Free Electives categories)		
Major Requirements		
Core Courses		
BIO 111 & 111L	Cell and Molecular Biology and Cell and Molecular Biology Lab	4
BIO 112 & 112L	Ecology and Evolution and Ecology and Evolution Lab	4
BIO 315	Genetics	4
BIO 316	Ecology	4
BIO 318	General Botany	4
BIO 319	General Zoology	4
BIO 320	Principles of Microbiology	4
BIO 495	Evolutionary Application and Theory	1
CHE 112 & 112L	General Chemistry II and General Chemistry Lab	4
CHE 361 & 361L	Organic Chemistry I and Organic Chemistry Lab I	4
STA 215	Introduction to Statistical Reasoning	3-4
or STA 270	Applied Statistics	
Concentrations		
Students must select at least one of the following Concentrations:		12-50
Courses used for one concentration may not count toward another concentration.		
Aquatic Biology		
Biodiversity and Conservation		
General Biology		
Biology Teaching		
Free Electives		
Choose from 27-28 hours of free electives		27-28
Total Hours		**120**

Aquatic Biology Concentration

Code	Title	Hours
Concentration Courses		
BIO 525	Aquatic and Wetland Plants	3
BIO 542	Freshwater Invertebrates	3
BIO 557	Ichthyology	3
BIO 558	Freshwater Ecology	3
Choose from one of the following:		3
BIO 556	Herpetology	
BIO 561	Fish Biology and Management	
GLY 315	Hydrology	
Supporting Course Requirements		
CHE 111 & 111L	General Chemistry and General Chemistry Lab I (Element 4) [G]	
MAT 234	Calculus I (Element 2) [G]	
or MAT 211	Applied Calculus	
PHY 131	College Physics I (Element 4) [G]	
or PHY 201	University Physics I	
Total Hours		**15**

Biodiversity and Conservation Concentration

Code	Title	Hours
Concentration Courses		
BIO 514	Evolution	3
BIO 532	Conservation Biology	3
Choose from six hours of the following:		6
BIO 335	Plant Systematics	
BIO 342	Comparative Vertebrate Anatomy	
BIO 525	Aquatic and Wetland Plants	
BIO 528	Virology	
BIO 536	Dendrology	
BIO 542	Freshwater Invertebrates	
BIO 548	Insect Diversity	
BIO 553	Mammalogy	
BIO 554	Ornithology	
BIO 556	Herpetology	
BIO 557	Ichthyology	
BIO 595	Topics in Field Biology:___	
Choose from three hours of the following:		3
BIO 349	Applied Learning in Biology	
BIO 520	Invasive Species Management	
BIO 521	Plant Ecology	
BIO 550	Animal Behavior	
BIO 555	Behavioral Ecology	
BIO 558	Freshwater Ecology	
BIO 561	Fish Biology and Management	
BIO 598	Special Problems	
Supporting Course Requirements		
CHE 111 & 111L	General Chemistry and General Chemistry Lab I (Element 4) [G]	
MAT 234	Calculus I (Element 2) [G]	
or MAT 211	Applied Calculus	
PHY 131	College Physics I (Element 4) [G]	
or PHY 201	University Physics I	
CSC 174	Introduction to Programming for Science & Engineering	3
or GEO 353	Geographic Information Systems	
AGR 215 & AGR 216	Principles of Soils and Principles of Soils Laboratory	4
Choose from one of the following:		3

GEO 302	Global Environmental Problems	
GEO 325	Environment Land Use Planning	
GLY 303	Environmental Geoscience	
GLY 315	Hydrology	
Total Hours		**25**

Biology Teaching Concentration

Code	Title	Hours
Concentration Courses		
BIO 348	Vertebrate Physiology	3
Supporting Course Requirements		
CHE 111 & 111L	General Chemistry and General Chemistry Lab I (Element 4) [G]	
CHE 362 & 362L	Organic Chemistry II and Organic Chemistry Lab II	4
PHY 131	College Physics I (Element 4) [G]	
or PHY 201	University Physics I	
Choose from one of the following:		
MAT 120	Trigonometry (Element 2) [G]	
MAT 122	Precalculus Mathematics (Element 2) [G]	
MAT 211	Applied Calculus (Element 2) [G]	
MAT 234	Calculus I (Element 2) [G]	
Choose from one of the following:		3-5
PHY 132	College Physics II	
PHY 202	University Physics II	
GLY 108	Earthquakes and Volcanoes	
Professional Education Requirements		
EDC 300	Differentiation in Inclusive Classrooms	3
EDF 203	Educational Foundations	3
EDF 204	Emerging Instructional Technologies	2
EDF 219	Human Development and Learning	3
EDF 413	Assessment in Education	3
SED 104	Special Education Introduction (Element 6) [G]	
EMS 300	Curriculum and Instructional Design	3
EMS 474	Disciplinary Literacy	3
EMS 490	Classroom & Behavior Management	3
ESE 561	Teaching Science in Secondary School	3
Clinical Experiences:		
CED 100	Clinical I: Introduction to the Education Profession	.5
CED 200	Clinical II: Understanding the Learner	.5
CED 300	Clinical III: Curriculum and Instructional Design	0.5
CED 400	Clinical IV: Diagnosis and Prescription	0.5
CED 450	Clinical V: Practicing Teaching	1
CED 499	Clinical VI: The Professional Semester	9
Exit Requirements		
PRAXIS Examination		
Students must register for and take the PRAXIS exam which correlates to their degree program, per College of Education requirements. Refer to Degree Works for exam details. The PRAXIS exam must be taken prior to student teaching.		
Total Hours		**48-50**

General Biology Concentration

Code	Title	Hours
Concentration Courses		
Choose from 12 hours of the following: [1]		12
Any 300, 400, or 500 level BIO, CHE, or PHY course not included in Biology Core or from which Biology majors are not excluded		
PHY 132	College Physics II	
or PHY 202	University Physics II	
Supporting Course Requirements		
CHE 111 & 111L	General Chemistry and General Chemistry Lab I (element 4) [G]	
MAT 234	Calculus I (Element 2) [G]	
or MAT 211	Applied Calculus	
PHY 131	College Physics I (Element 4) [G]	
or PHY 201	University Physics I	

[1] Students applying to graduate school are strongly advised to include CHE 362 Organic Chemistry II/CHE 362L Organic Chemistry Lab II and PHY 132 College Physics II or PHY 202 University Physics II as part of the 12 hours.

G Course also satisfies a General Education element. Hours are included within the 36 hr. General Education requirement above.