

Courses offered by the Biology Department during the spring semester of 2020

Please note that this list does NOT replace the undergraduate catalog. 600-level courses are mainly geared towards graduate students and are open to exceptionally advanced undergraduates, with a special permission from the instructor

EE= Experiential Education requirement Organismal= Organismal structure and diversity requirement

Introduction Courses; First-Year Seminars; Others

Number	Course	Instructors	Prerequisites	Credit hours	Comments
101	Principles of Biology	Evans; Hogan	None	(3)	Gateway course
101L	Introductory Biology Lab	Stegenga	None	(1)	Gateway course
102L	Introductory Biology CURE Lab-Hunting for Microbes	Stegenga	None	(1)	CURE class (&EE credit). Counts same as 101L.
118	Pre-Health Thrive	DeSaix	None	(1)	For all pre-health students Does not count for the major

Core Courses

Number	Course	Instructors	Prerequisites	Credit hours	Comments
201	Ecology and Evolution	Vision & Evans; Vision & Evans	101+ chem 101 or 102 (Grade C or better)	(4)	
202	Molecular Biology and Genetics	Steinwand; Steinwand; Garland & Slep	101+ chem 101 or 102 (Grade C or better)	(4)	
205	Cellular and Developmental Biology	Steinwand & Gordon; Rogers & Nimchuk	202	(4)	
205H	Cellular and Developmental Biology- Honors	A. Maddox & Goldstein	202	(4)	

Cell Biology, Physiology, and Disease

Number	Course	Instructors	Prerequisites	Credit hours	Comments
455	Behavioral Neuroscience	Burmeister	205	(3)	
252	Human Anatomy and Physiology	Garland; Shemer	101; co-req 252L	(3)	
252L	Human A&P Lab	Alexander	101L; co-req 252	(1)	
253	Advanced Human Anatomy and Physiology	Johnson	252; co-req 253L	(3)	Does not count for the major
253L	Advanced Human A&P Lab	Johnson	252L; co-req 253	(1)	Does not count for the major
402	Infectious Disease in the Developing World	Duronio & Peifer	202 & 205	(3)	
426	Biology of Blood Diseases	Church	205	(3)	
445	Cancer Biology	Shemer	205	(3)	
447	Advanced Cell Biology	A. Jones & P. Maddox	205 (C+ or higher); co-req 447L	(3)	
447L	Advanced Cell Biology Lab	A. Jones & P. Maddox	205; co-req 447	(1)	
449	Introduction to Immunology	Garland	205	(3)	
451	Comparative Physiology	Hedrick & Kier	101/L; phys114/118; phys115/119	(3)	Counts as organismal when 451 & 451L are completed
451L	Comparative Physiology lab	Hedrick & Kier	Pre- or co- 451	(1)	
490-1	Biology of Aging	Ahmed		(3)	
490-3	Sex Differences in Human Disease	Conlon	205	(3)	
639-1	Plant Cell Biology	Nimchuk	Permission of the instructor	(2)	

Plant Biology

Number	Course	Instructors	Prerequisites	Credit hours	Comments
271	Plant Biology	Gensel	101 and 101L; corequisite 271L	(3)	Counts as organismal when 271 & 271L are completed
271L	Plant Biology- Lab	Gensel	101 and 101L; corequisite 271	(1)	
436H	Plant Genetics, Development, and Biotechnology Honors	Reed	202 or 271	(3)	
639-1	Plant Cell Biology	Nimchuk	Permission of the instructor	(2)	

Zoology and Animal Physiology

Number	Course	Instructors	Prerequisites	Credit hours	Comments
278	Animal Behavior	C. Lohmann	101 and 101L	(3)	Counts as organismal, when 278 & 278L are completed
278L	Animal Behavior lab	C. Lohmann	Pre- or co- 278	(1)	
350	Oceanography	TBA	None	(3)	Cross-listed as envr 417, geol 403, masc 401
451	Comparative Physiology	Hedrick & Kier	101/L; phys114/118; phys115/119	(3)	Counts as organismal when 451 & 451L are completed
451L	Comparative Physiology lab	Hedrick & Kier	Pre- or co- 451	(1)	
457	Marine Biology	Septer			Cross-listed as masc 442
475	Biology of Marine Animals	K. Lohmann	101; co-req 475L	(3)	Counts as organismal, when 475 & 475L are completed
475L	Biology of Marine Animals Lab	K. Lohmann	101L; co-req 475	(1)	
476	Avian Biology	Hurlbert & Sockman	101; co-req 476L	(3)	Counts as organismal, when 476 & 476L are completed
476L	Avian Biology Lab	Hurlbert & Sockman	101L; co-req 476	(1)	
657	Biological Oceanography	TBA	Permission of the instructor	(4)	Does not count as a lab. Cross-listed as masc 504

Quantitative Biology

Number	Course	Instructors	Prerequisites	Credit hours	Comments
214H	Mathematics of Evolutionary Processes Honors	Servedio	Math 231	(3)	QBiol
226	Mathematical Methods for Quantitative Biology	Miller	201 or 202; Math 232 corequisite 226L	(3)	Counts as Qbiol w/lab when 226 & 226L are completed
226L	Mathematical Methods for Quantitative Biology- lab	Miller	corequisite 226	(1)	
290	Intro to Programming with Biological Data	Umbanhowar			Does not count as a QBiol elective.
534	Mathematical Modeling in the Life Sciences	Boyd	Math 383	(3)	QBiol; Crosslisted as math 564
551	Comparative Biomechanics	Dickerson	101/L, Phys 114/118	(3)	QBiol
563	Statistical Analysis in Ecology & Evol.	Umbanhower	math231; stor155	(4)	QBiol; Counts as Qbiol w/Lab; Crosslisted as enec 563
590	Introduction to Computational Neuroscience	Taylor	201/202; math 231; biol 226/comp 116/comp110/instructor permission	(3)	Qbiol
Comp 555	Bioalgorithms	McMillan	Comp 401, 410; math 231/553/biol 525	(3)	QBiol

Neurobiology and Behavior

Number	Course	Instructors	Prerequisites	Credit hours	Comments
252	Human Anatomy and Physiology	Garland; Shemer	101/L	(3)	
252L	Human Anatomy and Physiology Lab	Alexander	101L, co-req 252	(1)	
278	Animal Behavior	C. Lohmann	101/L	(3)	Counts as organismal, when 278 & 278L are completed
278L	Animal Behavior lab	C. Lohmann	Pre- or co- 278	(1)	
455	Behavioral Neuroscience	Burmeister	205	(3)	
490	Synaptic Plasticity: Analysis of Primary Literature	Hige		(3)	
590	Introduction to Computational Neuroscience	Taylor	201/202; math 231; biol 226/comp 116/comp110/instruct or permission	(3)	Qbiol

Genetics, Molecular Biology, and Biochemistry

Number	Course	Instructors	Prerequisites	Credit hours	Comments
423	Genetics Experiments	Grant	202; corequisite 423L	(3)	Counts as EE
423L	Genetics Experiments Lab	Grant	Corequisite 423	(1)	
430	Introduction to Biochemistry	B. Hogan	101, chem262 or 262H	(3)	Cross-listed as chem 430
436H	Plant Genetics, Development, and Biotechnology Honors	Reed	202 or 271	(3)	
620	Bacterial Genetics	Matthysse	Microbiology/ advanced molecular biology	(3)	
625	Seminar in Genetics	C. Jones, Copenhaver & Sekelsky	Permission of the instructor	(2)	Cross-listed as gnet 625
632	Advanced Molecular Biology II	TBA	Permission of the instructor	(3)	Cross-listed as gnet 632

Teaching, Research and Others

Number	Course	Instructors	Prerequisites	Credit hours	Comments
291/292	Teaching Apprentice/Teaching Assistant in Biology	Faculty members	GPA biology 3.0 or higher; Permission of the instructor	(1)	Does not count for the major
293	Internship in Biology	Coble	201 or 202; Permission of the instructor	(3)	Does not count for the major; Counts as EE
296	Directed Reading in Biology	Faculty members	Permission of the instructor	(1-3)	Does not count for the major
395/495 and 395H	Undergraduate Research in Biology	Faculty members	201 or 202; Permission of the instructor	(1-3)	Counts as a lab if taken for 6 hr. or 3hr +biol 692H; Counts as EE; Majors only
410	Principles and Methods of Teaching Biology	Coble	201 and 202 or 201 and 205	(4)	Counts as EE
692H	Senior Honors Thesis in Biology	A. Maddox	395; Permission of the instructor	(3)	Seniors and majors only

Ecology and Evolution

Number	Course	Instructors	Prerequisites	Credit hours	Comments
255H	The Evolution of Extraordinary Adaptations Honors	Willet	Pre- 101 (B or higher); Coreq 255L	(3)	Counts as EE
255HL	The Evolution of Extraordinary Adaptations Lab Honors	Willet	Co-requisite 255	(1)	
471	Evolutionary Mechanisms	Kingsolver & D. Pfennig	201 and 202; corequisite 471L	(3)	Counts as organismal when 471 & 471L are completed
471L	Evolutionary Mechanisms- Lab	Kingsolver & D. Pfennig	corequisite 471	(1)	
476	Avian Biology	Hurlbert & Sockman	101; co-req 476L	(3)	Counts as organismal, when 476 & 476L are completed
476L	Avian Biology Lab	Hurlbert & Sockman	101L; co-req 476	(1)	
563	Statistical Analysis in Ecology and Evolution	Umbanhower	MATH 231 and STOR 151	(4)	QBiol; Counts as Qbiol w/Lab; Crosslisted as enec 563
568	Disease Ecology and Evolution	Mitchell	201; math 231	(3)	
602	Professional Development Skills for Ecologists and Biologists	K. Pfennig		(3)	Crosslisted as enec 602

For additional information on research and honors thesis, please check the Biology website