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/instructor 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
659	**Experimental Evolution and the Nature of Biodiversity**	Burch	Permission of the instructor	(2)	

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