

## Courses offered by the Biology Department during the spring semester of 2021

Please note that this list does NOT replace Connect Carolina. 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 and First-Year Seminars

Number	Course	Instructors	Prerequisites	Credit hours	Comments
53	Biotechnology: GMO to the Sequence of the Human Genome	J. Dowan		(3)	FYS. Does not count for the major
89	Good Genes	Zwemer		(3)	FYS. Does not count for the major
101	Principles of Biology	Evans; Hogan	None	(3)	Gateway course
101L	Introductory Biology Lab	Stegenga	None	(1)	Gateway course
118	Pursuing Health Professions ( <i>not counting towards the major</i> )	Reside & Garland	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	Evans & Willett; Evans & Willett	101+ chem 101 or 102 (Grade C or better)	(4)	
202	Molecular Biology and Genetics	Zwemer; Ott & Slep	101+ chem 101 or 102 (Grade C or better)	(4)	
202H	Molecular Biology and Genetics- Honors	Kieber; Matson	101+ chem 101 or 102 (Grade C or better)	(4)	
205	Cellular and Developmental Biology	Garland& Gordon; Garland	202	(4)	

## Research, Teaching, and Professional Development

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
604	Laboratory Practices for New Investigators	A. Jones		(1)	Does not count for the major
635	Careers in Biotechnology	Salmeron		(1)	Does not count for the major
692H	Senior Honors Thesis in Biology	A. Maddox	395; Permission of the instructor	(3)	Seniors and majors only

## Cell and Developmental Biology

Number	Course	Instructors	Prerequisites	Credit hours	Comments
442	Self Assembly in Cell Biology	Gladfelter	205	(3)	
445	Cancer Biology	Shemer; Duronio & Peifer	205	(3)	
448	Advanced Cell Biology	Ott	205	(3)	
545	Exploring Brain, Gut, and Immunity	Shiau	205	(3)	
649	Seminar in Cell Biology	P. Maddox	205	(2)	

## Physiology, Microbiology, and Disease

Number	Course	Instructors	Prerequisites	Credit hours	Comments
252	Human Anatomy and Physiology	Ott; Shemer; Zwemer	101; co-req 252L	(3)	
252L	Human A&P Lab	Alexander	101L; co-req 252	(1)	
253	Advanced Human Anatomy and Physiology ( <i>not counting towards the major</i> )	Hastie; Hastie	252; co-req 253L	(3)	Does not count for the major
253L	Advanced Human A&P Lab ( <i>not counting towards the major</i> )	Hastie	252L; co-req 253	(1)	Does not count for the major
426	Biology of Blood Diseases	Church	205	(3)	
449	Introduction to Immunology	Garland	205	(3)	
453	Molecular Control of Metabolism and Metabolic Disease	R. Dowan	202; chem 261	(3)	
455	Behavioral Neuroscience	Burmeister	205		
490-1	Biology of Aging	Ahmed		(3)	
490-2	Epidemic Diseases in History	Matthysse	202; 422/mcro 251	(3)	
545	Exploring Brain, Gut, and Immunity	Shiau	205	(3)	

## Genetics, Molecular Biology, and Biochemistry

Number	Course	Instructors	Prerequisites	Credit hours	Comments
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)	
454	Evolutionary Genetics	Matute	201 & 202	(3)	QBiol
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 instruct.	(3)	Cross-listed as gnet 632
680	Seminar- Genome Editing	Nimchuck	202	(1)	
704	Seminars in Biophysics	Slep	Permission of the instr.	(2)	Cross-listed as bioc 704

## 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	Teske	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
473	Mammalian Morphology and Adaptation	Johnson	101; co-req 473L		Counts as organismal when 473 + 473L are completed
473L	Mammalian Morphology and Adaptation- Lab	Johnson	101L; co-req 473		
474	Evolution of Vertebrate Life	Sockman	201 or 202	(3)	Counts as organismal when 474 + 474L are completed
474L	Evolution of Vertebrate Life Lab	Johnson	Pre- or co- 474	(1)	
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)	
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
224H	Mathematics of Life	Servedio & Vision	Math 231; co-requisite 224L	(3)	QBiol w/L
224L	Mathematics of Life	Servedio & Vision	Math 231; co-requisite 224H	(1)	
290	Intro to Programming with Biological Data	Umbanhowar			Does not count as a QBiol elective.
454	Evolutionary Genetics	Matute	201 & 202	(3)	QBiol
528	Quantitative personalized genomics	Laederach	Corequisite 528L; Pre- biol 202, comp 116/biol226	(3)	QBiol w/L
528L	Quantitative personalized genomics Lab	Laederach	Corequisite 528	(1)	
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
554	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
563	Statistical Analysis in Ecol. & Evol.	Umbanhowar	math231; stor155	(4)	QBiol w/Lab; Crosslisted as enec 563

## Plant Biology

Number	Course	Instructors	Prerequisites	Credit hours	Comments
274	Plant Diversity	Gensel	101 and 101L; corequisite 274L	(3)	Counts as EE. Counts as organismal when 274 & 274L are completed
274L	Plant Diversity Lab	Gensel	101 and 101L; corequisite 274	(1)	
436H	Plant Genetics, Development, and Biotechnology Honors	Reed	202 or 271	(3)	

## Neurobiology and Behavior

Number	Course	Instructors	Prerequisites	Credit hours	Comments
252	Human Anatomy and Physiology	Ott; Shemer; Zwemer	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)	
545	Exploring Brain, Gut, and Immunity	Shiau	205	(3)	
554	Introduction to Computational Neuroscience	Taylor	201/202; math231; biol226/comp110/comp116/inst. permission	(3)	Qbiol

## Ecology and Evolution

Number	Course	Instructors	Prerequisites	Credit hours	Comments
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)	
473	Mammalian Morphology and Adaptation	Johnson	101; co-req 473L		Counts as organismal when 473 + 473L are completed
473L	Mammalian Morphology and Adaptation- Lab	Johnson	101L; co-req 473		
474	Evolution of Vertebrate Life	Sockman	201 or 202	(3)	Counts as organismal when 474 + 474L are completed
474L	Evolution of Vertebrate Life Lab	Johnson	Pre- or co- 474	(1)	
563	Statistical Analysis in Ecology and Evolution	Umbanhower	MATH 231 and STOR 151	(4)	QBiol w/Lab; Crosslisted as enec 563
669	Seminar in Ecology	Hurlbert; K. Pfennig		(1-3)	Cross-listed as enec 669

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