

## Courses offered by the Biology Department during the spring semester of 2025

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. Highlighted courses are cross-listed classes that are controlled by other departments.

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

### Introduction and Core Courses

Number	Course	Professors	Prerequisites	Credit hours	Comments
53	Biotechnology: GMO to the Sequence of the Human Genome	J. Downen	None	(3)	FYS. Does not count for the major
75	Biodiversity and Citizen Science	Hurlbert	None	(3)	FYS. Does not count for the major
101	Principles of Biology	Claytor; Claytor	None	(3)	Gateway course
101L	Introductory Biology Lab	Stegenga	None	(1)	Gateway course
102L	Introductory Biology Lab Research	Stegenga	None	(1)	Gateway course
103	How Cells Function	Garland; Garland; Ott	101	(3)	Fundamental
104	Biodiversity	Claytor; Evans	101	(3)	Fundamental
105L	Biological Research Skills	Hastie; Nevil	101/L	(3)	Fundamental; CommBeyond
118	Pursuing Health Professions	Garland	None	(1)	For all pre-health students. Does not count for the major
119	Service-Learning for Pre-Health	Garland	117	(3)	For all pre-health students. Does not count for the major
220	Molecular Genetics	Zwemer; Zwemer	103	(3)	Intermediate core
220H	Molecular Genetics Honors	Bloom	103	(3)	Intermediate core
240	Cell Biology	Garland; Maddox	103	(3)	Intermediate core
240H	Cell Biology Honors	Goldstein & A. Maddox	103	(3)	Intermediate core
260	Introduction to Ecology	McCoy	104	(3)	Intermediate core

## Human Physiology, Neurobiology, Microbiology, and Disease

Number	Course	Professors	Prerequisites	Credit hours	Comments
204H	The Microbial World Honors	Gifford	101 or 103	(3)	Crosslisted as emes 204
243	The Cellular Agriculture Revolution	Phanstiel	Permission of the instructor	(3)	Crosslisted as CBPH 243
252	Human Anatomy & Physiology	Ott; Shemer	101/L	(3)	
252L	Human Anatomy & Physiology Lab	Johnson	101L, co-req 252	(1)	
253	Advanced Human Anatomy & Physiology	Hastie; 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
445	Cancer Biology	Shemer; Peifer	205 or (103+104+220+240)	(3)	
453	Molecular Control of Metabolism	R. Downen	202 + 261 or (103+104+220+240)	(3)	
466	Environmental Microbiology	McCoy	103+104	(3)	
481	Epidemic Diseases in History	Matthysse; Matthysse	422/mcro 251	(3)	
490-003	Glia – the other brain cells	Jiakun	205 or (103+104+240)	(3)	
490-004	Neuro-engineering	Yang	103+104	(3)	
523	Sex Differences in Human Disease	Conlon	202 or (103+104)	(3)	
454	Exploring Brain, Gut, and Immunity	Shiau	205 or (103+104+ 220 or 240)	(3)	
546	Biology of Aging	Ahmed	205 or (103+104+240)	(3)	
547	Synaptic Plasticity: Analysis of Primary Literature	Hige	202 or 103+104+(220 or 240)	(3)	
554	Introduction to Computational Neuroscience	Havens	103+104+(220 or 250); math 231; comp116/comp110	(3)	Qbiol

## Quantitative Biology

Number	Course	Professors	Prerequisites	Credit hours	Comments
214H	Mathematics of Evo. Processes	Servedio	101 + Math 231	(3)	QBiol
490-004	Neuro-engineering	Yang	103+104	(3)	QBiol
534	Mathematical Modeling in the Life Sciences	Griffith	Math 347 + 383	(3)	QBiol; crosslisted as math 564
554	Introduction to Computational Neuroscience	Havens	103 + 104+(220 or 250); math 231; comp116/comp110	(3)	Qbiol
Comp 555	Bioalgorithms	McMillan	Comp 401, 410; math 231/553/biol 525	(3)	QBiol
564	Population Ecology	Yitbarek	103+104 (260 recommended)	(3)	Qbio
564L	Population Ecology Lab	Yitbarek	Pre- or co-req 546	(1)	Qbiol w/L
590-2		Feng			

## Genetics, Molecular, and Cellular Biology

Number	Course	Professors	Prerequisites	Credit hours	Comments
221	Seafood Forensics	Bruno	Pre- 101; Co-req 221L	(3)	Counts as EE & Research; FY only
221L	Seafood Forensics Lab	Bruno	Co-requisite 221	(1)	
405	Good Genes: Human Reproduction in the Social Context	Zwemer	220	(3)	
430	Introduction to Biochemistry	TBA	101, chem262 or 262H	(3)	Cross-listed as chem 430
436H	Plant Genetics, Development, and Biotechnology Honors	Reed	202 or 271 or (103+104+220)	(3)	
439	Introduction to Signal Transduction	Kieber	205 or (103+104+240)	(3)	
440	Stem Cell Biology	Gordon	202 or (103+104)+(220 or 240)	(3)	
443	Developmental Biology	McKay	205 or (103+104)+(220 or 240)	(3)	
445	Cancer Biology	Shemer	205 or (103+104+220+240)	(3)	
490-001	Human genetic variation	Matute	103 + 104 + any course in evolution	(3)	
490-003	Glia – the other brain cells	Jiakun	205 or (103+104+240)	(3)	
590-001	The Genome Editing Revolution	Nimchuk	202 or (103+104+220)	(3)	
625	Seminar in Genetics: Meiosis, Recombination, and Sex	Jones, Copenhaver & Sekelsky	Permission of the instructors	(2)	Cross-listed as gnet 625
649	Seminar in Cell Biology	P. Maddox	205 or 240	(2)	

631	Advanced Molecular Biology		Permission of the instructors	(3)	Cross-listed as bioc 631
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## Zoology and Animal Physiology

Number	Course	Professors	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 emes 401 or envr 417
451	Comparative Physiology	Hedrick	101/L; phys114/118; phys115/119	(3)	Counts as organismal when 451 & 451L are completed
451L	Comparative Physiology lab	Hedrick	Pre- or co- 451	(1)	
455	Behavioral Neuroscience	Burmeister	205 or (103+104+240)	(3)	
457	Marine Biology	Septer			Cross-listed as emes 442
475	Biology of Marine Animals	K. Lohmann	Old curriculum- 101/L new curriculum 103+104	(3)	Counts as organismal when 475 & 475L are completed
475L	Biology of Marine Animals Lab	K. Lohmann	Pre- or corequisite: 475	(1)	
657	Biological Oceanography	Marchetti	Permission of the instructor	(4)	Does not count as a lab. Cross-listed as emes 507/envr 520

## Ecology, Botany, and Evolution

Number	Course	Professors	Prerequisites	Credit hours	Comments
436H	Plant Genetics, Development, and Biotechnology Honors	Reed	202 or 271 or (103+104+220)	(3)	
455	Behavioral Neuroscience	Burmeister	205 or (103+104+240)	(3)	
271	Plant Biology	Vision	101/L corequisite 271L	(3)	Counts as organismal when 271 & 271L are completed
271L	Plant Biology - Lab	Vision	corequisite 271	(1)	
466	Environmental Microbiology	McCoy	103+104	(3)	
471	Evolutionary Mechanisms	Kingsolver & D. Pfennig	201 + 202 or (103+104); corequisite 471L	(3)	Counts as organismal when 471 & 471L are completed
471L	Evolutionary Mechanisms- Lab	D. Pfennig	corequisite 471	(1)	
474	Evolution of Vertebrate Life	Sockman	201 or 202 or (103+104);	(3)	Counts as organismal when 474 & 474 are completed
474L	Evolution of Vertebrate Life - Lab	Johnson	474 (pre- or co-)	(1)	
490-001	Human genetic variation	Matute	103 + 104 + any course in evolution	(3)	
564	Population Ecology	Yitbarek	103+104 (260 recommended)	(3)	Qbio
564L	Population Ecology Lab	Yitbarek	Pre- or co-req 546	(1)	Qbiol w/L
568H	Disease Ecology and Evolution Honors	Mitchell	math 231 + 201 or (103+104+260)	(3)	
669-001	Seminar in Ecology- Ecoevolution. dynamics in micro. Comm.	Yitbarek	Background in ecology and evolution	(2)	
669-002	Seminar in Ecology- Plant Conservation Garden	Waitt		(2)	
669-003	Seminar in Ecology-	K. Pfennig		(1)	

## Research, Teaching, and Professional Development

Number	Course	Professors	Prerequisites	Credit hours	Comments
291/292	Teaching Apprentice/Teaching Assistant in Biology	Faculty members	GPA $\geq$ 3.0 Application required	(1)	Does not count for the major. Counts as EE and as HI.
293	Internship in Biology	Burmeister	201 or 202 or 103 or 104 Application required	(3)	Does not count for the major. Counts as EE and HI.
295	Educational and Social Research in Biology	Ott & Hastie	101 Application required	(1-3)	Does not count for the major. Counts as Research.
395/495 and 395H	Undergraduate Research in Biology	Faculty members	201 or 202 or a core biol (220/240/250/260/or organismal). Application required	(1-3)	Majors only. Bio w/L. Counts as EE and Research
635	Careers in Biotechnology	Salmeron		(1)	Does not count for the major
692H	Senior Honors Thesis in Biology	Nevil	395; Application required	(3)	Senior bio majors only.