BA/BS MAJOR IN BIOLOGY

Requirements for a Bachelor of Arts or Bachelor of Science Degree with a Major in Biology

Additional Graduation Requirements (https://catalog.una.edu/undergraduate/academic-procedures-requirements/graduation-requirements/)

Code	Title	Hours
General Education Component (https://catalog.una.edu/undergraduate/academic-procedures-requirements/general-education-component/)		
Area I (Written Composition)		6
Area II (Humanities and Fine Arts) [1]		12
Area III (Natural Sciences and Mathematics)		11
BI 111 & BI 112	Principles of Biology and Principles of Biology	
Select one from the following:		
MA 112	College Algebra	
MA 113	College Trigonometry	
MA 115	Pre-Calculus Algebra and Trigonometry	
MA 125	Calculus I	
Area IV (History, Social and Behavioral Sciences)		12
Major Core Requirements in Biology		
BI 111	Principles of Biology [2]	4
BI 112	Principles of Biology [2]	4
BI 200W	Biological Literature	2
BI 306	Genetics	4
BI 307	Microbiology	4
BI 312	Evolution	3
BI 375	Cell Biology	4
BI 498	Senior Assessment Seminar	1
Prescribed Supporting Courses		
CH 111	General Chemistry	3
CH 111L	General Chemistry Laboratory	1
CH 112	General Chemistry	3
CH 112L	General Chemistry Laboratory	1
CIS 125 or CS 135	Business Applications of Microcomputer Software Computer Skills for Problem-Solving	3
Major Concentration Requirements		**36-58**
Select one from the following Options:		
Option I: Professional Biology (https://catalog.una.edu/undergraduate/colleges-programs/arts-sciences/biology/biology-ba-bs/#professionalbiology)		
Option II: General Biology (https://catalog.una.edu/undergraduate/colleges-programs/arts-sciences/biology/biology-ba-bs/#generalbiology)		
Option III: Environmental Biology (https://catalog.una.edu/undergraduate/colleges-programs/arts-sciences/biology/biology-ba-bs/#environmental-biology)		
Option IV: Cellular and Molecular Biology (https://catalog.una.edu/undergraduate/colleges-programs/arts-sciences/biology/biology-ba-bs/#cellular-molecular-biology)		
Minor Requirements		
Option I: Professional Biology		
A minor is not required.		
Option II: General Biology		
A minor, second major or second degree is required		
Option III: Environmental Biology		
A minor is not required.		
Option IV: Cellular and Molecular Biology		
A minor is not required.		
General Electives		
General Elective hours, if required, to bring total to 120.		
Total Hours		**120-123**

[1] For BA degree, select six hours of a required foreign language at the introductory level.

[2] These courses are required in the major or minor if not completed as part of the General Education Component.

Concentration Options

Option I: Professional Biology

Code	Title	Hours
Ecology		
Select one from the following:		4
BI 421	Ecology	
BI 423	Aquatic Ecology	
Cellular and Molecular Biology Elective		
Select one of the following courses:		4
BI 406	Microbial Ecology and Evolution	
BI 409	Immunology	
BI 415	Molecular Biology	
BI 472	Histology	
Organismal Biology (Plants) Elective:		
Select one from the following:		3-4
BI 362	Non-Vascular Plants	
BI 363	Vascular Plants	
BI 460	Plant Physiology	
BI 463	Plant Taxonomy	
Organismal Biology (Animals) Elective		
Select one from the following:		4
BI 310	Comparative Vertebrate Morphology	
BI 311	Animal Physiology	
BI 340	Invertebrate Zoology	
BI 341	Natural History of the Vertebrates	
BI 433	Embryology	
BI 453	Southeastern Fishes	
BI 471	Parasitology	
Biochemistry		
CH 311	Organic Chemistry	4
CH 311L	Organic Chemistry Laboratory	1

BI 441	Biochemistry	3
Prescribed Supporting Courses		
BI 333	Biostatistics	
or MA 345	Applied Statistics I	
Select one of the following sequences or courses:		4-6
MA 121 & MA 122	Calculus for Business and Life Sciences I and Calculus for Business and Life Sciences II (and) [1]	
MA 125	Calculus I [1]	
Select one of the following sequences:		8-10
PH 241 & PH 242	General Physics I and General Physics II	
PH 251 & PH 252	Technical Physics I and Technical Physics II	
Total Hours		**35-40**

[1] These courses are required in the major or minor if not completed as part of the General Education Component.

Option II: General Biology

Code	Title	Hours
Ecology		
Select one from the following:		4
BI 411	Coastal Wetlands Ecology (at Dauphin Island Sea Lab)	
BI 412	Marine Ecology (at Dauphin Island Sea Lab)	
BI 413	Marine Behavioral Ecology (at Dauphin Island Sea Lab)	
BI 421	Ecology	
BI 423	Aquatic Ecology	
Organismal Biology (Plants) Elective		
Select one from the following:		3-4
BI 362	Non-Vascular Plants	
BI 363	Vascular Plants	
BI 429	Marine Botany (at Dauphin Island Sea Lab)	
BI 460	Plant Physiology	
BI 463	Plant Taxonomy	
Organismal Biology (Animals) Elective		
Select one from the following:		4
BI 310	Comparative Vertebrate Morphology	
BI 311	Animal Physiology	
BI 340	Invertebrate Zoology	
BI 341	Natural History of the Vertebrates	
BI 403	Marine Invertebrate Zoology (at Dauphin Island Sea Lab)	
BI 408	Marine Vertebrate Zoology (at Dauphin Island Sea Lab)	
BI 453	Southeastern Fishes	
BI 471	Parasitology	
BI 472	Histology	
Additional 300-/400-level BI Elective		
One course selected from the following (not already used to satisfy the above elective category requirements):		3-4
BI 310	Comparative Vertebrate Morphology	
BI 311	Animal Physiology	
BI 340	Invertebrate Zoology	
BI 341	Natural History of the Vertebrates	
BI 362	Non-Vascular Plants	
BI 363	Vascular Plants	
BI 403	Marine Invertebrate Zoology	
BI 406	Microbial Ecology and Evolution	
BI 408	Marine Vertebrate Zoology	
BI 409	Immunology	
BI 415	Molecular Biology	
BI 429	Marine Botany	
BI 433	Embryology	
BI 453	Southeastern Fishes	
BI 460	Plant Physiology	
BI 463	Plant Taxonomy	
BI 472	Histology	
Minor		
A minor in another discipline is required.		18-21
Total Hours		**32-37**

Option III: Environmental Biology

Code	Title	Hours
Organismal Biology (Plants)		**8**
BI 362	Non-Vascular Plants	
or BI 363	Vascular Plants	
BI 463	Plant Taxonomy	
Organismal Biology (Animals)		**12**
BI 311	Animal Physiology	
BI 340	Invertebrate Zoology	
BI 341	Natural History of the Vertebrates	
or BI 453	Southeastern Fishes	
or BI 499	Special Topics in Biology	
Population Biology		**11**
BI 421	Ecology	
BI 406	Microbial Ecology and Evolution	
or BI 412	Marine Ecology	
or BI 423	Aquatic Ecology	
Required Supporting Courses		**13**
ES 131	Earth Science/Physical Geology	
ES 301	Water Resources	
BI 333	Biostatistics	
or MA 345	Applied Statistics I	
OHS 465	Environmental Regulations	
Select one of the following blocks of courses:		**9-10**
Environmental GIS Certificate		
GE 384	Geographic Information Systems	
GE 487	Geography Capstone Project	
GE 474	Web GIS	
or GE 484	Advanced GIS	
or GE 485	GIS Applications	
Earth Science Coursework:		
ES 302	Energy	

ES 303	Sustainable Food and Agriculture
ES 320W	Environmental Justice
ES 410	Tectonics
ES 455W	Paleobiology
ES 481	Topics in Earth Science
Hospitality and Events Management Micro-credential:	
HEM 202	Lodging Systems
HEM 308	Food and Beverage Operations Management
HEM 306	Conventions, Meetings and Trade Show Management II
or CAM 335	Event Planning
or HEM 203	Sustainability in Hotel, Restaurant, and Event Operations
Media Writing Micro-credential:	
COM 215	Media Writing
COM 356	Advanced Reporting
COM 368	Copy Editing
or COM 370	Feature Writing
Public Relations for Non-Profits Micro-credential:	
COM 390	Public Relations Writing
COM 475	Crisis Management and Community Relations
COM 243	Aural-Visual Production
or COM 410	Layout and Design I
Marine Science [1]	
BI 343	Marine Geology (Marine Geology)
BI 405	Advanced Marine Technical Methods (Adv. Marine Technical Methods)
BI 426	Experimental Oceanography (Experimental Oceanography)
Total Hours	**53-54**

[1] BI 412 (4) Marine Ecology is required for the Population Biology Elective.

Option IV: Cellular and Molecular Biology

Code	Title	Hours
Molecular Biology & Biochemistry		
BI 415	Molecular Biology	4
BI 441	Biochemistry	3
Organismal Biology		
Select one from the following:		3-4
BI 340	Invertebrate Zoology	
BI 341	Natural History of the Vertebrates	
BI 463	Plant Taxonomy	
BI 471	Parasitology	
Ecology		
Select one from the following:		4
BI 406	Microbial Ecology and Evolution	
BI 421	Ecology	
BI 423	Aquatic Ecology	
Cellular/Molecular Biology		
Select a minimum of 8 hours from the following:		8
BI 311	Animal Physiology	
BI 409	Immunology	
BI 433	Embryology	
BI 460	Plant Physiology	
BI 472	Histology	
BI 495	Research/Internship	
BI 499	Special Topics in Biology	
Prescribed Supporting Courses		
CH 311 & 311L	Organic Chemistry and Organic Chemistry Laboratory	5
MA 345	Applied Statistics I	3
or BI 333	Biostatistics	
Select one of the following sequences or courses:		4-6
MA 121 & MA 122	Calculus for Business and Life Sciences I and Calculus for Business and Life Sciences II [1]	
MA 125	Calculus I [1]	
Select one of the following sequences:		8-10
PH 241 & PH 242	General Physics I and General Physics II	
PH 251 & PH 252	Technical Physics I and Technical Physics II	
Total Hours		**42-46**

[1] These courses are required in the major and minor if not completed as part of the General Education component.