ECOLOGY, EVOLUTION, AND ORGANISMAL BIOLOGY, EMPHASIS

Course Requirements

- General Education Course

- Milestone course: a key success marker for your major. See your advisor to discuss the importance of this course in your plan of study.

The Core Curriculum is designed to foster critical thinking skills and introduce students to basic domains of thinking that transcend disciplines. The Core applies to all majors. Information on specific classes in the Core can be found at https://www.marshall.edu/gened/.

Code	Title	Credit Hours
Core Curriculum		
Core 1: Critical Thinking		
FYS 100	First Yr Sem Critical Thinking	3
Critical Thinking Course		3
Critical Thinking Course		3
Core 2		
ENG 101	Beginning Composition	3
ENG 201	Advanced Composition	3
CMM 103	Fund Speech-Communication	3
Select one of the following math requirements:		3-5
MTH 140	Applied Calculus	
MTH 229	Calculus/Analytic Geom I (CT)	
BSC 120	Principles of Biology I	3
BSC 120L	Principles of Biology I Lab	1
Core II Humanities		3
Core II Social Science		3
Core II Fine Arts		3
Additional University Requirements		
Writing Intensive		3
Writing Intensive		3
Multicultural or International		3
BSC 491	Capstone Experience [1]	2
Major-Specific		
BSC 121	Principles of Biology [1]	3
BSC 121L	Prin of Biology II Lab	1
CHM 211	Principles of Chemistry I	3
CHM 217	Principles of Chem Lab I	2
CHM 212	Principles Chemistry II	3
CHM 218	Principles of Chem Lab II	2
Select one of the following organic chemistry requirements:		
CHM 327	Intro Organic Chemistry	
CHM 355	Organic Chemistry I	
PHY 201	College Physics I	3
PHY 202	General Physics I Laboratory	1
Area of Emphasis-Specific		
BSC 320	Principles of Ecology	4
BSC 340	Principles of Evolution	3
BSC 417	Biostatistics	3
BSC 324	Principles of Genetics	4
Select one of the following:		4-5
BSC 302	Principles of Microbiology (and BSC 304, Microbiology Lab)	
BSC 322	Principles Cell Biology	
BSC 332	Principles of Human Anatomy (and BSC 332L, Principles of Human Anatomy Lab)	
BSC 334	Principles of Human Physiology (and BSC 334L, Principles of Human Physiology Lab)	
Select a minimum of 18 credits from the following:		18
BSC 301	Vertebrate Embryology	
BSC 312	Invertebrate Zoology	
BSC 401	Ichthyology	
BSC 408	Ornithology	
BSC 409	Mammalogy	
BSC 410	Remote Sensing/GIS Appl	
BSC 411	Dgtl Image Proc/GIS Model	
BSC 416	Plant Taxonomy	
BSC 420	Plant Physiology	
BSC 421	Phycology	
BSC 422	Animal Physiology	
BSC 423	Comp Vertebrate Anatomy	
BSC 424	Animal Parasitology	
BSC 425	Systematics	
BSC 426	Medical Entomology	
BSC 430	Plant Ecology	
BSC 431	Limnology	
BSC 438	Emerging Infect Diseases	
BSC 443	Microbial Genetics	
BSC 445	Microbial Ecology	
BSC 450	Molecular Biology	
BSC 460	Conservation Biology	
BSC 465	Biology of Reptiles	
BSC 466	Biology of Amphibians	
CHM 365	Introductory Biochemistry	
BSC Technical Electives: Select a minimum of 12 credits of 300 or 400-level BSC or closely related courses for technical electives. The courses must be approved by the department chair.		12
Free Elective		3
Free Elective		3

[1] **Capstone Experience:** It is the responsibility of each student to consult his/her advisor regarding details of meeting the capstone requirement. The capstone may be a traditional independent study research project under the supervision of a faculty member selected by the student, participation in a classroom-based capstone course,

or the development and implementation of an internship, co-op, or community-based project. Students must have completed a minimum of 16 hours of BSC coursework before they will be permitted to register for Capstone.

Major Information

- Students must pass BSC 120 Principles of Biology I and BSC 120L Principles of Biology I Lab and earn a grade of *C* or better in BSC 121 Principles of Biology and BSC 121L Prin of Biology II Lab , CHM 211 Principles of Chemistry I, and CHM 212 Principles Chemistry II before they can enroll in any upper-level BSC course except BSC 227 Human Anatomy, BSC 228 Human Physiology and BSC 250 Microbiol & Human Disease.
- BSC 104 Introduction to Biology, BSC 105 Human Biology, BSC 227 Human Anatomy and BSC 227L Human Anatomy Lab, BSC 228 Human Physiology and BSC 228L Human Physiology Lab, and BSC 250 Microbiol & Human Disease do not count towards a BSC major and cannot substitute for any required or elective BSC courses.
- A minimum of 15 hours of 400-level credit is required.
- Students are required to know and track their degree requirements for graduation or for entrance to a professional school.
- In addition to the Core General Education requirements, the College of Science requires 3-5 hours of Calculus, and 40 hours of upper-level credit.
- The CHM coursework provides a Chemical Sciences minor.
- Coursework listed as “elective” may vary for each student. Students are encouraged to use elective hours toward a 2nd minor or toward prerequisites.
- Students are strongly encouraged to select courses that meet two or more core or college requirements. For example, a writing intensive literature course could satisfy the Core II Humanities requirement as well as the university writing intensive requirement.
- Course offerings and course attributes are subject to change. Please consult each semester’s schedule of courses for availability and attributes.
- MTH 140 Applied Calculus requires an ACT Mathematics score of 24 or higher. Students with an ACT Mathematics score of less than 24 will be placed in the appropriate prerequisite mathematics courses.
- All Biological Sciences majors are required to complete a minimum of 40 hours of credits in the Department of Biological Sciences.

Semester Plan

The Department of Biological Sciences is committed to teaching students about the science of life from molecular to global scales. A degree in Biological Sciences prepares students for careers and graduate study in diverse fields such as human and veterinary medicine, dentistry, biomedical and pharmaceutical research, environmental consulting, wildlife ecology, and K12 or higher education. Students completing the Area of Emphasis in Ecology and Evolutionary Biology will be prepared for a wide range of careers including ecology, paleontology, environmental education, and may take positions with universities, museums, state or federal government agencies (USFS, USFWS, USGS, DNR, EPA); environmental consulting firms; conservation agencies; and non-governmental organizations.

- General Education Course

- Milestone course: a key success marker for your major. See your advisor to discuss the importance of this course in your plan of study.

First Year		
First Semester		**Credit Hours**
BSC 120	Principles of Biology I	3
BSC 120L	Principles of Biology I Lab	1
MTH 140 or MTH 229	Applied Calculus or Calculus/Analytic Geom I (CT)	3-5
ENG 101	Beginning Composition	3
Core I Critical Thinking		3
UNI 100	Freshman First Class	1
	Credit Hours	**14-16**
Second Semester		
BSC 121	Principles of Biology	3
BSC 121L	Prin of Biology II Lab	1
FYS 100	First Yr Sem Critical Thinking	3
Core II Fine Arts		3
CMM 103	Fund Speech-Communication	3
Free Elective (MTH 122 recommended for PHY prerequisite)		3
	Credit Hours	**16**
Second Year		
First Semester		
BSC 320	Principles of Ecology	4
CHM 211	Principles of Chemistry I	3
CHM 217	Principles of Chem Lab I	2
ENG 201	Advanced Composition	3
Core II Social Science (CT)		3
	Credit Hours	**15**
Second Semester		
CHM 212	Principles Chemistry II	3
CHM 218	Principles of Chem Lab II	2
BSC 417	Biostatistics	3
Core I Critical Thinking		3
BSC 324 or BSC 340	Principles of Genetics or Principles of Evolution	3-4
	Credit Hours	**14-15**
Third Year		
First Semester		
CHM 327 or CHM 355	Intro Organic Chemistry or Organic Chemistry I	3
BSC 324 or BSC 340	Principles of Genetics or Principles of Evolution	3-4

Free Elective		3
Area of Emphasis Elective		3
Area of Emphasis Elective		3
	Credit Hours	**15-16**
Second Semester		
Area of Emphasis Elective		4
Area of Emphasis Elective		4
Technical Elective		3
Core II Humanities		3
	Credit Hours	**14**
Fourth Year		
First Semester		
PHY 201	College Physics I	3
PHY 202	General Physics I Laboratory	1
Writing Intensive		3
Technical Elective		3
Technical Elective		3
Multicultural or International		3
	Credit Hours	**16**
Second Semester		
BSC 491	Capstone Experience (C)	2
Writing Intensive		3
Area of Emphasis Elective		3
BSC Core Course		4-5
Technical Elective		3
	Credit Hours	**15-16**
	Total Credit Hours	**119-124**