

# BIOLOGICAL SCIENCES CELL, MOLECULAR AND MEDICAL

## REQUIREMENTS

### CORE CURRICULUM

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 [marshall.edu/gened](http://marshall.edu/gened).

#### CORE 1: CRITICAL THINKING

CODE	COURSE NAME	HRS	GRADE
FYS 100	First Year Seminar	3	_____
_____	Critical Thinking Course	3	_____
_____	Critical Thinking Course	3	_____

#### Additional University Requirements

_____	Writing Intensive	3	_____
_____	Writing Intensive	3	_____
_____	Multicultural or International	3	_____
BSC 491	Capstone	2	_____

#### CORE 2:

CODE	COURSE NAME	HRS	GRADE
ENG 101	Beginning Composition	3	_____
ENG 201	Advanced Composition	3	_____
CMM 103	Fund Speech-Communication	3	_____
MTH 140 or MTH 229	Applied Calculus or Calculus/ Analytic Geom I (CT)	3-5	_____
BSC 120/L	Principles of Biology I / Lab	3/1	_____
_____	Core II Humanities	3	_____
_____	Core II Social Science	3	_____
_____	Core II Fine Arts	3	_____

### MAJOR-SPECIFIC

All Biological Sciences majors are required to take the following courses:

CODE	COURSE NAME	HRS	GRADE	CODE	COURSE NAME	HRS	GRADE
BSC 121/L	Principles of Biology II / Lab	3/1	_____	CHM 212	Principles of Chemistry II	3	_____
CHM 211	Principles of Chemistry I	3	_____	CHM 218	Principles of Chemistry II Lab	2	_____
CHM 217	Principles of Chemistry I Lab	2	_____	PHY 201	College Physics I	3	_____
				PHY 202	College Physics I Lab	1	_____

### AREA OF EMPHASIS-SPECIFIC

Students who wish to add an area of emphasis in Cell, Molecular and Medical Biology must take the following courses:

CODE	COURSE NAME	HRS	GRADE	CODE	COURSE NAME	HRS	GRADE
CHM 355	Organic Chemistry I	3	_____	_____	AoE Elective	3/4	_____
CHM 356	Organic Chemistry II	3	_____	_____	AoE Elective	3/4	_____
CHM 361	Organic Chemistry II Lab	3	_____	_____	AoE Elective	3/4	_____
PHY 203	College Physics II	3	_____	_____	AoE Elective	3/4	_____
PHY 204	College Physics II Lab	1	_____	_____	AoE Elective	3/4	_____
BSC 3__	BSC Core Course	3/4	_____	_____	AoE Elective	3/4	_____
BSC 3__	BSC Core Course	3/4	_____	_____	BSC Technical Elective	3	_____
BSC 3__	BSC Core Course	3/4	_____	_____	BSC Technical Elective	3	_____
BSC 3__	BSC Core Course	3/4	_____	_____	BSC Technical Elective	3	_____
				_____	Free Elective (MTH 122 recommended for PHY pre-req)	3	_____

### MAJOR INFORMATION

- Students must pass BSC 120 Principles of Biology I & BSC 120L Principles of Biology I Lab and earn a grade of C or better in BSC 121 Principles of Biology II & BSC 121L Principles 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 227/227L Human Anatomy, BSC 228/228L Human Physiology, and BSC 250 Microbiol and 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.
- 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 ACT Mathematics score of 24 or higher. Students with an ACT Mathematics score less than 24 will be placed in the appropriate prerequisite mathematics courses.

- All Biological Science majors are required to complete a minimum of 40 hours of credits in the Department of Biological Sciences.
- 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.
- BSC Core Courses can be chosen from: BSC302, 322, 324, 332/332L, or 334/334L.
- AoE Electives can be chosen from: BSC 301, 304, 340, 404, 417, 420, 422, 423, 424, 426, 428, 443, 448, 450, 451, 454, 456 or CHM 365
- BSC Technical Electives: Select three 300 or 400-level BSC or closely related courses for technical electives. The courses must be approved by the department chair.

Area of Emphasis  
Major Requirement

College Requirement  
General Education Requirement

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

# BIOLOGICAL SCIENCES

## CELL, MOLECULAR AND MEDICAL

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 Cell, Molecular and Medical Biology will be prepared for a wide range of careers in fields including biotechnology, cell biology, medicine and/or medical research.

YEAR ONE	FALL SEMESTER					SPRING SEMESTER					
	CODE	COURSE NAME	HRS	GRADE		CODE	COURSE NAME	HRS	GRADE		
	BSC 120/L	Principles of Biology I / Lab		3/1	_____	BSC 121/L	Principles of Biology II / Lab		3/1	_____	
	CHM 211	Principles of Chemistry I		3	_____	CHM 212	Principles of Chemistry II		3	_____	
		CHM 217 Principles of Chemistry Lab I		2	_____		CHM 218 Principles of Chemistry Lab II		2	_____	
	MTH 140 or MTH 229	Applied Calculus or Calculus/ Analytic Geom I (CT)		3-5	_____		FYS 100 First Year Sem Crit Thinking		3	_____	
		ENG 101 Beginning Composition		3	_____		_____ Core II Fine Arts		3	_____	
		UNI 100 Freshman First Class		1	_____						
	<b>TOTAL HOURS</b>				<b>16-18</b>	<b>TOTAL HOURS</b>				<b>15</b>	

Summer Term (optional):

YEAR TWO	FALL SEMESTER					SPRING SEMESTER					
	CODE	COURSE NAME	HRS	GRADE		CODE	COURSE NAME	HRS	GRADE		
	BSC 3__	BSC Core Course		3/4	_____	BSC 3__	BSC Core Course		3/4	_____	
		CHM 355 Organic Chemistry I		3	_____		CHM 356 Organic Chemistry II		3	_____	
	ENG 201	Advanced Composition		3	_____		CHM 361 Organic Chemistry II Lab		3	_____	
		_____ Core II Social Science (PSY 201 or SOC 200 recommended) (CT)		3	_____		_____ AoE Elective (BSC 417 Recommended)		3/4	_____	
		_____ Free Elective (MTH 122 recommended for PHY pre-req)		3	_____		_____ Core I Critical Thinking		3	_____	
	<b>TOTAL HOURS</b>				<b>15-16</b>	<b>TOTAL HOURS</b>				<b>15-17</b>	

Summer Term (optional):

YEAR THREE	FALL SEMESTER					SPRING SEMESTER					
	CODE	COURSE NAME	HRS	GRADE		CODE	COURSE NAME	HRS	GRADE		
	BSC 3__	BSC Core Course		3/4	_____	BSC 3__	BSC Core Course		3/4	_____	
	PHY 201	College Physics I		3	_____		PHY 203 College Physics II		3	_____	
	PHY 202	College Physics I Lab		1	_____	PHY 204	College Physics II Lab		1	_____	
		_____ AoE Elective		3/4	_____		_____ Core II Humanities		3	_____	
		_____ AoE Elective (CHM 365 Recommended)		3/4	_____		_____ AoE Elective		3/4	_____	
		CMM 103 Fund Speech-Communication		3	_____						
	<b>TOTAL HOURS</b>				<b>16-19</b>	<b>TOTAL HOURS</b>				<b>13-15</b>	

Summer Term (optional):

YEAR FOUR	FALL SEMESTER					SPRING SEMESTER					
	CODE	COURSE NAME	HRS	GRADE		CODE	COURSE NAME	HRS	GRADE		
	_____	AoE Elective		3/4	_____		BSC 491 Capstone		2	_____	
		_____ AoE Elective		3/4	_____		_____ Writing Intensive		3	_____	
		_____ BSC Technical Elective		3	_____		_____ AoE Elective		3/4	_____	
		_____ Multicultural or International		3	_____		_____ BSC Technical Elective		3	_____	
		_____ Writing Intensive		3	_____		_____ BSC Technical Elective		3	_____	
	<b>TOTAL HOURS</b>				<b>15-17</b>	<b>TOTAL HOURS</b>				<b>14-15</b>	

Summer Term (optional):

Area of Emphasis

Major Requirement

College Requirement

General Education Requirement

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