CURRICULUM PLAN COLLEGE OF SCIENCE 2020-2021

BIOLOGICAL SCIENCE MICROBIOLOGY

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.

ORE 1: CRITICAL THINKING					COF	RE 2:					
COD	E COURSE NAME		HRS	GRADE		CODE	COURSE NAME		HRS	GRADE	
FYS 1	100 First Year Sem Crit Thinking	•	3			ENG 101	Beginning Composition	•	3		
	Critical Thinking Course	•	3			ENG 201	Advanced Composition	•	3		
	Critical Thinking Course	•	3			CMM 103	Fund Speech-Communication	•	3		
						MTH 140	Applied Calculus	• •	3		
Addi	tional University Requirements				***	BSC 120	Principles of Biology I	• •	4		
	Writing Intensive		3				Core II Humanities	•	3		
	Writing Intensive		3				Core II Social Science	•	3		
	Multicultural or International		3				Core II Fine Arts	•	3		
BSC 4	91 Capstone		2								

MAJOR-SPECIFIC

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

	CODE	COURSE NAME		HRS	GRADE	CODE	COURSE NAME		HRS	GRADE
***	BSC 121	Principles of Biology II	\	4		CHM 361	Organic Chemistry II Lab	•	3	
***	CHM 211	Principles of Chemistry I	\	3		PHY 201	College Physics I	•	3	
**	CHM 217	Principles of Chemistry I Lab	\	2		PHY 202	College Physics I Lab	♦	1	
***	CHM 212	Principles of Chemistry II	\	3		PHY 203	College Physics II	♦	3	
	CHM 218	Principles of Chemistry II Lab	•	2		PHY 204	College Physics II Lab	♦	1	
***	CHM 355	Organic Chemistry I	•	3		BSC 491	Capstone (C)	• •	2	
	CHM 356	Organic Chemistry II	•	3						

AREA OF EMPHASIS-SPECIFIC

CODE COURSE NAME

Students who wish to add an area of emphasis in Microbiology must take the following courses:

₱ BSC 324	Principles of Genetics	•	3	 AoE Elective	•	4
BSC 302	Principles of Microbiology	•	3	 AoE Elective	•	3
BSC 304	Microbiology Lab	•	2	 AoE Elective	•	3
BSC 443	Microbial Genetics	•	3	 Free Elective (MTH 122		3
BSC 320	Ecology or Cell Biology	•	4	recommended for PHY pre-req)		
or 322				 Free Elective		3
BSC 442	Advanced Microbiology	•	4	 Free Elective		3
CHM 365	Introduction to Biochemistry	•	3	 Free Elective		3
				 Free Elective		2

HRS GRADE

MAJOR INFORMATION

- Students must earn a grade of C or better in BSC 120 and BSC 121 before they can enroll in any upper-level BSC course. BSC 104, 105, 227, 228 and 250 do not count as electives.BSC 104 and 105 will not substitute for BSC 120 and 121 for a major in the Department of Biological Sciences.
- AoE Elective Pick 3 of the following: BSC 417, 424, 438, 448 or CHM 467
- 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.
- In addition to the Core General Education requirements, the College of Science requires 3 hours of Calculus, and 40 hours of upper level credit.
- The CHM coursework provides a Chemical Sciences minor.
- 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.

HRS GRADE

MY ADVISOR'S NAME IS:

• Physic prerequisites are MTH 140 and MTH 122 or MTH 127/130 and MTH

COURSE NAME

- Course offerings and course attributes are subject to change semesters. Please consult each semester's schedule of courses for availability and
- Applied Caldulus (MTH 140) 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.
- Electives may count only once toward the required 40-hour BSC credits.

FOUR YEAR PLAN COLLEGE OF SCIENCE 2020-2021

BIOLOGICAL SCIENCE **MICROBIOLOGY**

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 Microbiology will be prepared for a wide range of careers including environmental, pharmaceutical, and industrial microbiology. Students will also be prepared to continue specialization at the graduate level in medical, food and dairy, and industrial microbiology, as well as soil and sanitary bacteriology.

MY ADVISOR'S NAME IS:

			FALL SEMESTER						SPRING SEMESTER			
		CODE	COURSE NAME		HRS	GRADE		CODE	COURSE NAME		HRS	GRADE
	**	BSC 120	Principles of Biology I	• •	4		**	BSC 121	Principles of Biology II	•	4	
		MTH 140	Applied Calculus	• •	3			FYS 100	First Year Sem Crit Thinking	•	3	
臼		ENG 101	Beginning Composition	•	3				Core II Fine Arts	•	3	
ONE			Free Elective		3			CMM 103	Fund Speech-Communication	•	3	
R		UNI 100	Freshman First Class		1				Free Elective (MTH 122		3	
YEAR									recommended for PHY pre-req)			
Y												
		TOTAL HO	DURS		14			TOTAL HO	DURS		16	
	Sumi	mer Term (op	otional):									

Summer Term (optional):

	FALL SEMESTER							SPRING SEMESTER					
	CODE	COURSE NAME		HRS	GRADE		CODE	COURSE NAME		HRS	GRADE		
	BSC 302	Principles of Microbiology	•	3		***	CHM 212	Principles of Chemistry II	•	3			
	BSC 304	Microbiology Lab	•	2			CHM 218	Principles of Chemistry II Lab	•	2			
₹	CHM 211	Principles of Chemistry I	•	3		***	BSC 324	Principles of Genetics	•	3			
₹	CHM 217	Principles of Chemistry I Lab	•	2				Core I Critical Thinking	•	3			
	ENG 201	Advanced Composition	•	3				Free Elective		3			
		Core II Social Science (PSY 201 or	•	3									
		SOC 200)											
	TOTAL HOURS			16			TOTAL HO	DURS		14			
Sumi	mer Term (op	otional):											

	FALL SEMESTER						SPRING SEMESTER					
		CODE	COURSE NAME		HRS	GRADE		CODE	COURSE NAME		HRS	GRADE
		BSC 443	Microbial Genetics	•	3			CHM 356	Organic Chemistry II	•	3	
rea .	**	CHM 355	Organic Chemistry I	•	3			CHM 361	Organic Chemistry II Lab	•	3	
			AoE Elective	•	4				Core II Humanities	•	3	
HRE			Multicultural or International (CT)	•	3			BSC 320	Ecology or Cell Biology	•	4	
			Free Elective		3			or 322				
AR									Free Elective		2	
YΕ												
		TOTAL HO	DURS		16			TOTAL HO	DURS		15	

		FALL SEMESTER	-			-	SPRING SEME	STER		
	CODE	COURSE NAME		HRS	GRADE	CODE	COURSE NAME		HRS	GRADE
	BSC 442	Advanced Microbiology	•	4		BSC 491	Capstone (C)	• •	2	
	CHM 365	Introduction to Biochemistry	•	3			Writing Intensive	•	3	
UR	PHY 201	College Physics I	•	3			AoE Elective	•	3	
FOI	PHY 202	College Physics I Lab	•	1			AoE Elective	•	3	
R		Writing Intensive	•	3		PHY 203	College Physics II	•	3	
YEAR						PHY 204	College Physics II Lab	•	1	
X										
	TOTAL HO	DURS		14		TOTAL HO	OURS		15	
	Summer Term (op	otional):								

INVOLVEMENT OPPORTUNITIES

- · Student Government Association
- Campus Activity Board
- JMFII
- · Commuter Student Advisory Board
- Club Sports
- Religious Organizations
- Political Organizations
- Residence Hall Association
- Cultural Organizations
- National Society of Leadership and Success

RELATED MAJORS

- Biomechanics
- · Athletic Training
- Education
- Geology Geography
- Environmental Science

GRADUATION REQUIREMENTS

- · Have a minimum of 120 credit hours (some colleges or majors require more);
- Have an overall and Marshall Grade Point Average of 2.00 or higher;
- Have an overall Grade Point Average of 2.00 or higher in the major area of study;
- · Have earned a grade of C or better in English 201 or 201 H:
- Have met all major(s) and college requirements;
- Have met the requirements of the Core Curriculum;
- · Have met the residence requirements of Marshall University, including 12 hours of 300/400 level coursework in the student's college (see section entitled "Residence Requirements" in the undergraduate catalogue):
- Be enrolled at Marshall at least one semester of the senior year;
- Have transferred no more than 72 credit hours from an accredited West Virginia twoyear institution of higher education.

Colleges and specific programs may have unique requirements that are more stringent than those noted above. Students are responsible for staying informed about and ensuring that they meet the requirements for graduation.

This academic map is to be used as a guide in planning your coursework toward a degree. Due to the complexities of degree programs, it is unfortunate but inevitable that an error may occur in the creation of this document. The official source of degree requirements at Marshall University is DegreeWorks available in your myMU portal. Always consult regularly with your advisor.

BIOLOGICAL SCIENCE MICROBIOLOGY — 2020-2021

YEAR ONE



Have guestions? Need to talk? You already have a Friend-At-Marshall ready to help you succeed. Find your FAM Peer Mentor here: www.marshall.edu/fam

Develop relationships with professors

who can serve as future references by

attending their office hours.

In order to graduate on time, you

need to take an average of 15

credits per semester. Are you on

track? Take 15 to Finish.

Are you completing enough credits

to graduate on time? Dropping or

failing a class can put you behind.

Use summer terms to quickly get

back on track.

Join or create a club or organization

related to your interests or career

goals. Biology students are

members of at least 20 different

campus clubs.

Have you considered adding a minor?

Think about personal areas of interest

you'd like to explore or how you might

enhance your major with a related skill

set.



Stay on the Herd Path and come to class! Class attendance is more important to your success than your high school GPA, your class standing, or your ACT/SAT scores.



Talk with your professors to enhance your study skills and build your critical thinking abilities.



Take a pulse check. Know what you need to do every year to keep your grants, scholarships, or federal financial aid.

Did you do really well in a hard

course? Become a Tutor or a

Supplemental Instructor.

Look ahead and be aware of

what will be required to apply to

graduate or professional schools,

and be sure that you are on track.



Take an elective course that links diversity to your field of study.

No need to wait until graduate

school. Discuss undergraduate

research opportunities with

faculty in your major right now.

Start looking for volunteer

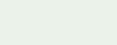
experiences in fields related to

your career choice or interest. Talk

to professors about what makes a

good opportunity.

YEAR TWO



Think about who can help you grow as a student and a professional (professors, advisors, alumni, etc) and ask at least one to be your mentor.



College is a great time to experience the world! Consider studying abroad in the summer, during Spring Break, or for an entire semester.



Does admission to your chosen graduate or professional school require career shadowing? Start looking for opportunities now.



YEAR THREE

Complete admissions exams (GRE, MCAT, PCAT, LSAT, etc) the summer before your senior year.





Are you on track to graduate? Meet with your advisor for your Junior Eval to make sure you know what requirements you have left.



Make sure that you stand out. If you are entering a competitive field, ensure that you can highlight challenging courses and experiences.



Want to continue your education and increase your opportunities? Talk to a faculty member about whether graduate school fits your career goals.



YEAR FOUR



graduate? Meet with your advisor for your Senior Eval to see what requirements you have left.





scholarship like Fulbright, Rhodes, or Gates Cambridge. Contact the Office of National Scholarships at Marshall.



Prepare to present at the CoS Research Expo in April.



Make sure that you stand out. If you are entering a competitive field, ensure that you can highlight challenging courses and experiences.



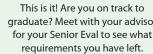
Talk to faculty about pursuing optional professional certifications.



Be at the top of your professional game! Prepare a final resume and practice your interview skills with a career coach in Career Education.



Marshall University College of Science 1 John Marshall Drive Huntington, WV 25755 1-304-696-3170 cos@marshall.edu marshall.edu/cos





Strengthen your resume and enhance your presentation skills. Present what you've learned at an academic conference off campus.



Apply for a nationally competitive







TRANSFERABLE SKILLS

Scientific Knowledge

· Communication Skills

Technology Literacy

ASSOCIATED CAREERS

· Research and Development

Adaptability

Grant Writing

Conservation

Microbiology

• Food Science

· Data Analysis

· Technical Writing

· Pharmaceutical Sales

Education

Lobbying

Advocacy

Consulting

Marketing

Law

· Information Management

Medicine

Genetics

Ecology

· Quality Control

ASSOCIATED WITH THIS MAJOR

· Ability to Work as Part of a Team