

B. S. MICROBIOLOGY 2022-2023^a

FRESHMAN YEAR

<u>First Semester</u>		<u>Second Semester</u>	
BIOL 1010 Frontiers in Biol. I	1(1,0)	BIOL 1110 Prin. of Biol. II ¹	4(3,3)
BIOL 1100 Prin. of Biol. I ¹	4(3,3)	CH 1020 General Chemistry	4(3,3)
CH 1010 General Chemistry	4(3,3)	ENGL 1030 Composition and Rhetoric	3(3,1)
MATH 1060 Calculus of One Var. I	4(4,0)	Mathematical Sciences Requirement ³	<u>3</u>
SC REACH Act Requirement ²	<u>3</u>		14
	16		

SOPHOMORE YEAR

CH 2230 Organic Chemistry	3(3,0)	BCHM 3050 Essential Elements of Bioch ⁶	3(3,0)
CH 2270 Organic Chemistry Lab	1(0,3)	CH 2240 Organic Chemistry	3(3,0)
MICR 3050 General Microbiology ⁴	4(3,3)	CH 2280 Organic Chemistry Lab	1(0,3)
Oral Communication Requirement ⁵	3	GEN 3000 Fundamental Genetics ⁷	3(3,0)
Social Science Requirement ⁵	<u>3</u>	MICR 3070 Microbial Diversity	4(3,3)
	14	Elective ¹⁰	<u>2</u>
			16

JUNIOR YEAR

MICR 4040 Microbial Ecology	3(3,0)	MICR 4120 Bacterial Physiology	3(3,0)
PHYS 2070 General Physics I ^{8,9}	3(3,0)	MICR 4500 Advanced Micro Lab I	2(1,2)
PHYS 2090 General Physics Lab I ^{8,9}	1(0,3)	Global Challenges Course Requirement ^{5,9}	3
Arts and Humanities (Literature) Req. ⁵	3	Microbiology Requirement ¹⁰	3
Microbiology Requirement ¹⁰	<u>6</u>	Social Science Requirement ⁵	<u>3</u>
	16		14

SENIOR YEAR

BIOL 4610 Cell Biology	3(3,0)	BIOL 4930 Senior Seminar or	
BIOL 4620 Cell Biology Lab	2(1,2)	MICR 4930 Senior Seminar	2(2,0)
MICR 4150 Microbial Genetics	3(3,0)	Global Challenges Course Requirement ⁵	3
MICR 4510 Advanced Micro Lab II	2(1,2)	Microbiology Requirement ¹⁰	3
Arts and Humanities (Non-Literature) Req. ⁵	3	Elective	<u>6</u>
Virology Requirement ¹¹	<u>3</u>		14
	16		

Total Semester Hours = 120

^a **Bolded courses must be taken in the sequence listed above to ensure a punctual graduation.**

¹ BIOL 1100 and BIOL 1110 are strongly recommended; however, BIOL 1030/1050 may substitute for BIOL 1100 and BIOL 1040/1060 may substitute for BIOL 1110.

² See South Carolina REACH Act Requirement in the Academic Regulations section in the Undergraduate Catalog.

³ MATH 1080 or STAT 2300 or other approved coursework. See advisor. Medical and dental schools have different mathematics requirements. Statistics will be useful in either graduate study or professional school.

⁴ Enroll in the section of this course specifically for microbiology majors.

⁵ See General Education Requirements. The Medical Colleges Admissions Test (MCAT) includes questions on psychology and sociology.

⁶ BCHM 3010 may be substituted.

⁷ GEN 3020 may be substituted.

⁸ PHYS 1220/1240 may be substituted.

⁹ Students planning on applying to medical/dental schools should take PHYS 2080 and 2100 during the second semester junior year and complete the Global Challenges Requirement in the first semester of the junior year.

¹⁰ See advisor. Minimum of 12 credits is required. At least one course must be selected from each of the following fields:

Biomedicine—BIOL 4200, BIOL 4560, BIOL 4670, BIOL 4840, BIOL 4890, HLTH 3800, MICR 4000, MICR 4050, MICR 4110, MICR 4140, MICR 4170, MICR 4180, MICR 4190, MICR 4240

Environmental—BIOL 4250, MICR 4020, MICR 4030, MICR 4100

Food Safety, Industrial, and Technology—BCHM 4400, BIOL 4030, BIOL 4870, MICR 4070, MICR 4130

Remaining credits can be satisfied by any 4000 MICR course, any of the above listed courses or any of the following: BIOL 3150, BIOL 3160, BIOL 3940, BIOL 4910, BIOL 4940, MICR 3940

¹¹ Select BIOL 4540 or MICR 4160.

NOTE: A transfer course may not be used to satisfy the General Education Global Challenges Requirement. While a transfer course may fulfill other degree requirements, students must enroll in a Clemson course(s) on the Global Challenges list to fulfill the Global Challenges Requirement.

2022/2023 B.S. MICROBIOLOGY CURRICULUM

MICR Core Requirement: (32 cr.)	SEM/Yr	Grade
BIOL 1010	1(1,0)	_____
BIOL 1100/1101	4(3,3) ¹	_____
BIOL 1110/1111	4(3,3) ¹	_____
MICR 3050/3051 (Fall, SO)	4(3,3)	_____
MICR 3070/3071 (Sp., SO)	4(3,3)	_____
MICR 4040 (Fall, JR)	3(3,0)	_____
MICR 4120 (Sp., JR)	3(3,0)	_____
MICR 4150 (Fall, SR)	3(3,0)	_____
MICR 4500/4501 (Sp., JR)	2(1,2)	_____
MICR 4510/4511 (Fall, SR)	2(1,2)	_____
MICR or BIOL 4930 (Sp., SR)	2(2,0)	_____
MICR Requirement (12 cr.) ²		
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

Virology Requirement (3 cr.) ³

Required Science Courses (38 cr.)	SEM/Yr	Grade
BCHM 3050 OR 3010	3(3,0)	_____
BIOL 4340/4341 or BIOL 4620	2(1,2)	_____
BIOL 4610	3(3,0)	_____
CH 1010/1011	4(3,3)	_____
CH 1020/1021	4(3,3)	_____
CH 2230, 2270	3(3,0) & 1(0,3)	_____
CH 2240, 2280	3(3,0) & 1(0,3)	_____
GEN 3000	3(3,0)	_____
MATH 1060	4(4,0)	_____
MATH 1080	4(4,0)	_____
OR STAT 2300	3(3,0) ⁴	_____
PHYS 2070, 2090	3(3,0), 1(0,2) ^{5,6}	_____

Required Non-Science Courses (18 cr.)	SEM/Yr	Grade
ENGL 1030/1031	3(3,1)	_____
Arts and Humanities – Literature	3(3,0) ⁷	_____
Arts & Humanities – Non-Lit	3(3,0) ⁷	_____
Oral Communication	3(3,0) ⁷	_____
SC REACH Act	3(3,0) ⁹	_____
Social Sciences		
_____	3(3,0) ^{7,8}	_____
_____	3(3,0) ^{7,8}	_____

Electives (8 cr.) ⁶	SEM/Yr	Grade
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

- ¹ BIOL 1030/1050 may substitute for BIOL 1100 and BIOL 1040/1060 may substitute for BIOL 1110.
- ² See advisor. Minimum of 12 credits is required. At least one course must be selected from each of the following fields:
Biomedicine: BIOL 4200, 4560, 4670, 4840, 4890, HLTH 3800, MICR 4000, 4050, 4110, 4140, 4170, 4180, 4190, 4240
Environmental: BIOL 4250, MICR 4020, 4030, 4100
Food Safety, Industrial, and Technology: BCHM 4400, BIOL 4030, 4870, MICR 4070, 4130.
 Remaining credits can be satisfied by any 4000-level MICR course, any of the above listed courses, or any of the following: BIOL 3150, 3160, 3940, 4910, 4940, MICR3940
- ³ BIOL 4540 OR MICR 4160
- ⁴ Statistics will be useful in both graduate school and professional school.
- ⁵ PHYS 1220, 1240 (MATH 1060 pre-req.) may be substituted.
- ⁶ Students planning on applying to medical/dental schools should take PHYS 2080/2100 or 2210/2230 (MATH 1080 pre-req.) during the second semester junior year.
- ⁷ See General Education Requirements.
- ⁸ The Medical Colleges Admissions Test (MCAT) includes questions on psychology and sociology.
- ⁹ HIST 1010, POSC 1010, or POSC 1030

Other Courses	SEM/Yr	Grade
CU 1000	_____	_____
GCC	_____	_____
GCC	_____	_____