

College of Science
Department of Biological Sciences
For Students Graduating in Calendar Year 2021
Bachelor of Science in Microbiology
Major: Microbiology

APPROVED
COMMISSION ON UNDERGRADUATE
STUDIES AND POLICIES

Curriculum for Liberal Education Requirements (38 credits)²

I. Writing and Discourse (6 credits)

ENGL 1105 First-Year Writing (3) _____ ENGL 1106 First-Year Writing (3) _____

II. Ideas, Cultural Traditions and Values (6 credits)

_____ (3) _____ _____ (3) _____

III. Society and Human Behavior (6 credits)

_____ (3) _____ _____ (3) _____

IV. Scientific Reasoning and Discovery (8 Credits): Completed within Biological Sciences Major Required Courses

BIOL 1105 Principles of Biology^{1*} (3) _____ BIOL 1106 Principles of Biology^{1*} (3) _____
BIOL 1115 Principles of Biol Lab^{1*} (1) _____ BIOL 1116 Principles of Biol Lab^{1*} (1) _____

V. Quantitative and Symbolic Reasoning (6 credits): Completed within Biological Sciences Major Required Courses

MATH 1025 Elementary Calculus* (3) _____ MATH 1026 Elementary Calculus* (3) _____

VI. Creativity and Aesthetic Experience (3 credits)

VII. Critical Issues in a Global Context (3 Credits)

_____ (3) _____ _____ (3) _____

Core Microbiology Requirements (29-31 credits)²

In accordance with State Council guidelines, courses used to fulfill the SCHEV approved degree core may not also be used to meet Curriculum for Liberal Education or major requirements.

1. Complete the following required courses:

BIOL 2004 Genetics	(3) _____	BIOL 4624 Microbial Genetics	(3) _____
BIOL 2134 Cell Function Differentiation*	(3) _____	BIOL 4634 Microbial Physiology	(3) _____
BIOL 2604 General Microbiology ^{1*}	(3) _____	BIOL 4764 Microbiology Senior Seminar	(2) _____
BIOL 2614 General Microbiology Lab ¹	(2) _____	BCHM 3114 Biochemistry for Biotech	(3) _____

2. Complete one of the following:

BIOL 3774 Molecular Biology (3) _____ & BIOL 3104 Cell Molecular Biol Laboratory (1) _____
BIOL 4644 Microbial Genetics & Physiol Lab (3) _____

3. Complete one of the following lecture & lab combinations:

BIOL 4674 Pathogenic Bacteriology (3) _____ & BIOL 4724 Pathogenic Bacteriology Lab (2) _____
BIOL 4704 Immunology (3) _____ & BIOL 4714 Immunology Laboratory (1) _____

Core Restricted Elective Courses (9-13 credits)²

1. Complete two of the following electives with lab (if not taken above):

BIOL 3254	Med and Vet Entomology [^]	(3)	_____	&	BIOL 3264	Med and Vet Ent Lab [^]	(1)	_____
BIOL 3454	Introductory Parasitology	(4)	_____					
BIOL 3604	Food Microbiology [^]	(4)	_____					
BIOL 4164	Environmental Microbiology [^]	(3)	_____					
BIOL 4644	Microbial Genetics & Physiol Lab	(3)	_____					
BIOL 4674	Pathogenic Bacteriology	(3)	_____	&	BIOL 4724	Pathogenic Bacteriology Lab	(2)	_____
BIOL 4704	Immunology	(3)	_____	&	BIOL 4714	Immunology Laboratory	(1)	_____
BIOL 4824	Bioinformatics Methods	(3)	_____					
BIOL 4994	Undergraduate Research ^{4*}	(4)	_____					
PPWS 4104	Plant Pathology	(4)	_____					

2. Complete one of the following electives (if not taken above):

BIOL 3254	Med and Vet Entomology [^]	(3)	_____
BIOL 3454	Introductory Parasitology	(4)	_____
BIOL 3604	Food Microbiology [^]	(4)	_____
BIOL 4164	Environmental Microbiology [^]	(3)	_____
BIOL 4644	Microbial Genetics & Physiol Lab	(3)	_____
BIOL 4664	Virology	(3)	_____
BIOL 4674	Pathogenic Bacteriology	(3)	_____
BIOL 4704	Immunology	(3)	_____
BIOL 4734	Inflammation Biology	(3)	_____
BIOL 4804	Prokaryotic Diversity	(3)	_____
BIOL 4824	Bioinformatics Methods	(3)	_____
BIOL 4994	Undergraduate Research ^{4*}	(4)	_____
FST 4634	Epidemiology Foodborne Disease	(3)	_____
PPWS 4104	Plant Pathology	(4)	_____
PPWS 4114	Microbe Forensics / Biosecurity	(3)	_____

Core Science and Math Requirements (28 Credits)²

BIOL 1004	Biology Orientation Seminar ³	(1)	_____				
CHEM 1035	General Chemistry ^{1*}	(3)	_____	CHEM 1036	General Chemistry ^{1*}	(3)	_____
CHEM 1045	General Chemistry Lab [*]	(1)	_____	CHEM 1046	General Chemistry Lab [*]	(1)	_____
CHEM 2535	Organic Chemistry [*]	(3)	_____	CHEM 2536	Organic Chemistry [*]	(3)	_____
CHEM 2545	Organic Chemistry Lab [*]	(1)	_____	CHEM 2546	Organic Chemistry Lab [*]	(1)	_____
PHYS 2205	General Physics [*]	(3)	_____	PHYS 2206	General Physics [*]	(3)	_____
PHYS 2215	General Physics Laboratory [*]	(1)	_____	PHYS 2216	General Physics Laboratory [*]	(1)	_____
STAT 3615	Biological Statistics	(3)	_____				

Curriculum for Liberal Education Requirements:

Core Microbiology Requirements:

Core Restricted Elective Courses:

Core Science and Math Requirements:

Total Free Electives:

Total Credits Required for Graduation

38 Credits

29-31 Credits

9-13 Credits

28 Credits

11-16 Credits

120 Credits

NOTE:

¹ Students must earn a grade of "C" or better in BIOL 1105, 1106, 1115, 1116, 2604, 2614, CHEM 1035, CHEM 1036, or the equivalent. Only two attempts, including course withdrawals with grade of "W", are allowed for each course.

² Some courses listed on this checksheet may have prerequisites; please consult the University Course Catalog or check with your advisor.

³ BIOL 1004 is required but will not count as major elective credit or be used to calculate in-major GPA.

⁴ To count, students must complete two semesters of BIOL 4994 for a combined total of at least 4 credits.

All BIOL courses and all courses taken to fulfill Core Microbiology, Core Restricted Elective, and Core Science and Math requirements (except BIOL 1004) will be used to calculate in-major GPA.

Students must have an in-major and overall GPA of 2.0 to graduate.

Informational notes for MICB students:

- a. if you are also enrolled as a BIOL (no option) student, you may count a maximum of 9 credits from the following courses toward the 22 required BIOL elective credits (section 2c of BIOL checksheet): BIOL 3104, 3774, 3454, 4164, 4604, 4624, 4634, 4644, 4664, 4674, 4704, 4714, 4734, 4804, 4824, 4994, BCHM 3114, PPWS 4114, and FST 4634.
- b. if you are also enrolled as a Biomedical (BIOM) Option student, you may count a maximum of 3 courses from the following courses as Biomedical Option electives: BIOL 3774, 3454, 4664, 4674, 4704, 4734, 4824, BCHM 3114.

*Acceptable Substitutions

BIOL 1105: BIOL 1005 General Biology
BIOL 1106: BIOL 1006 General Biology
BIOL 1115: BIOL 1015 General Biology Lab OR BIOL 1125 Biological Principles Lab
BIOL 1116: BIOL 1016 General Biology Lab OR BIOL 1126 Biological Principles Lab
BIOL 1105, 1115: BIOL 1205H Honors Biology (4)
BIOL 1106, 1116: BIOL 1206H Honors Biology (4)
BIOL 2134: BIOL 2104 Cell & Molecular Biology
BIOL 2604: BIOL 2604H Honors General Microbiology
CHEM 1035-1036: CHEM 1055 -1056 General Chemistry for Majors
CHEM 1045-1046: CHEM 1065-1066 General Chemistry Lab for Majors
CHEM 2535-2536: CHEM 2565-2566 Principles of Organic Chemistry
CHEM 2545-2546: CHEM 2555-2556 Organic Synthesis and Techniques Lab
PHYS 2205, 2215: PHYS 2305 Foundations of Physics I
PHYS 2206, 2216: PHYS 2306 Foundations of Physics I
MATH 1025: MATH 1016 Elem Calculus w/ Trig I OR MATH 1205 Calculus OR MATH 1225 Calculus of a Single Variable OR
MATH 1525 Elem Calculus w/Matrices
MATH 1026: MATH 2015 Elem Calculus w/ Trig II OR MATH 1206 Calculus OR MATH 1226 Calculus of a Single Variable OR
MATH 1526 Elem Calculus w/Matrices

^Cross-listed Courses on this Checksheet

CSES/ENSC/BIOL 4164: Environmental Microbiology
ENT/BIOL 3254: Medical and Veterinary Entomology
ENT/BIOL 3264: Medical and Veterinary Entomology Laboratory
FST/BIOL 3604: Food Microbiology

Satisfactory Progress Toward Degree
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1. Students must earn a grade of "C" or better in BIOL 1105, 1106, 1115, 1116, CHEM 1035, CHEM 1036 or equivalent upon attempting 45 credit hours (including transfer credit, advance placement or IB credit, advance standing credit, credit by examination, courses taken P/F, and courses completed with a grade of "W"). Only two attempts are allowed for each course.
2. Students must achieve an overall GPA of 2.0 and in-major GPA of 2.2 upon attempting 45 credit hours (including transfer credit, advance placement or IB credit, advance standing credit, credit by examination, courses taken P/F, and courses completed with a grade of "W").
3. All BIOL courses and all courses taken to fulfill Core Microbiology, Core Restricted Elective, and Core Science and Math requirements (except BIOL 1004) will be used to calculate in-major GPA.
4. These courses must be completed by the time the student has attempted 72 hours:
BIOL 1105, 1106, 1115, 1116 or Equivalent
CHEM 1035, 1036, 1045, 1046 or Equivalent
MATH 1025, 1026 or Equivalent

College of Science Foreign Language Requirement
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Students who did not successfully complete at least two years of a single foreign, classical, or sign language during high school must successfully complete six semester hours of a single foreign, classical, or sign language at the college level. Courses taken to meet this requirement do not count toward the hours required for graduation. Please consult the Undergraduate Catalog for details.