

MICROBIOLOGY (B.S.MICROBIOL.)

To graduate in this program, students must earn a minimum grade of C in BIOL 1140, BIOL 1150, and BIOL 1150L. Required coursework includes the university requirements (see regulation J-3 (<https://catalog.uidaho.edu/general-requirements-academic-procedures/j-general-requirements-baccalaureate-degrees/>)) and:

Code	Title	Hours
BIOL 1010	Opportunities in Biological Sciences	1
BIOL 1140	Organisms and Environments	4
BIOL 1150 & 1150L	Cells and the Evolution of Life and Cells and the Evolution of Life Laboratory	4
BIOL 2500 & BIOL 2550	General Microbiology and General Microbiology Lab	5
BIOL 3100 & BIOL 3150	Genetics and Genetics Lab	4
BIOL 3120	Molecular and Cellular Biology	3
BIOL 3130 or BIOL 3820	Molecular and Cellular Laboratory or Biochemistry I Laboratory	1-2
BIOL 3800	Biochemistry I	4
BIOL 4000	Seminar	1
BIOL 4500	Microbiomes	3
CHEM 1111 & 1111L	General Chemistry I and General Chemistry I Laboratory	4
CHEM 1120 & 1120L	General Chemistry II and General Chemistry II Laboratory	5
CHEM 2770 & CHEM 2780	Organic Chemistry I and Organic Chemistry I: Lab	4
CHEM 3720	Organic Chemistry II	3
MATH 1170	Calculus I	4
STAT 2510 or STAT 3010	Statistical Methods or Probability and Statistics	3
Select one of the following Senior Experience courses:		2-3
BIOL 4010	Undergraduate Research	
BIOL 4070	Practicum in Biology Laboratory Teaching	
BIOL 4080	Human Anatomy and Physiology Laboratory Pedagogy	
BIOL 4110	Senior Capstone	
BIOL 4250	Experimental Field Ecology	
Select one of the following:		3
ENGL 2020	Technical Writing I	
ENGL 2070	Persuasive Writing	
ENGL 2080	Personal and Exploratory Writing	
ENGL 3170	Technical Writing II	
ENGL 3180	Science Writing	
ENGL 3200	Grant Proposal Writing	
Select one of the following:		4
PHYS 1111 & 1111L	General Physics I and General Physics I Lab	
PHYS 2110 & 2110L	Engineering Physics I and Laboratory Physics I	

Select three of the following:		9
BIOL 4190	Microbial Physiology	
BIOL 4470	Virology	
BIOL 4850	Prokaryotic Molecular Biology	
ENT 4760	Medical Parasitology	
BIOL 4320	Immunology	
BIOL 4330	Pathogenic Microbiology	
Select 6 credits of approved electives from the following: ¹		6
BIOL 3140	Ecology and Population Biology	
BIOL 3400	Pathophysiology	
BIOL 4190	Microbial Physiology	
BIOL 4210	Advanced Evolution	
BIOL 4320	Immunology	
BIOL 4330	Pathogenic Microbiology	
BIOL 4440	Genomics	
BIOL 4470	Virology	
BIOL 4560	Computer Skills for Biologists	
BIOL 4820	Protein Structure and Function	
BIOL 4850	Prokaryotic Molecular Biology	
BIOL 4870	Cellular and Molecular Basis of Disease	
ENT 4110	Veterinary & Medical Entomology	
ENT 4760	Medical Parasitology	
FS 4160 & FS 4170	Food Microbiology and Food Microbiology Laboratory	
MATH 4370	Mathematical Biology	
PHIL 3610 or PHIL 4500	Professional Ethics or Ethics in Science	
PLSC 4400	Advanced Laboratory Techniques	
PLSC 4760	Cell Biology	
PLSC 4880	Genetic Engineering	
SOIL 4250	Microbial Ecology	

Total Hours 77-79

Courses to total 120 credits for this degree

¹ Additional classes can be substituted with prior approval from advisor and chairperson.

Fall Term 1		Hours
BIOL 1010	Opportunities in Biological Sciences	1
BIOL 1140	Organisms and Environments	4
ENGL 1101	Writing and Rhetoric I	3
MATH 1143	Precalculus I: Algebra	3
Oral Communication Course		3
Humanistic and Artistic Ways of Knowing Course		3
Hours		17
Spring Term 1		Hours
CHEM 1111	General Chemistry I	3
CHEM 1111L	General Chemistry I Laboratory	1
ENGL 1102	Writing and Rhetoric II	3
MATH 1144	Precalculus II: Trigonometry	1
MATH 1170	Calculus I	4
(PHYS 1111 AND PHYS 1111L) OR (PHYS 2110 AND PHYS 2110L)		4
Hours		16
Fall Term 2		Hours
BIOL 1150	Cells and the Evolution of Life	3

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BIOL 1150L	Cells and the Evolution of Life Laboratory	1
CHEM 1120	General Chemistry II	4
CHEM 1120L	General Chemistry II Laboratory	1
Social and Behavioral Ways of Knowing Course		3
STAT 2510 OR STAT 3010		3
Hours		15
Spring Term 2		
CHEM 2770	Organic Chemistry I	3
CHEM 2780	Organic Chemistry I: Lab	1
American Experience Course		3
Humanistic and Artistic Ways of Knowing Course		3
International Course		3
Hours		13
Fall Term 3		
BIOL 2500	General Microbiology	3
BIOL 2550	General Microbiology Lab	2
BIOL 3100	Genetics	3
BIOL 3150	Genetics Lab	1
BIOL 3800	Biochemistry I	4
Laboratory Requirement Option BIOL 3820, Elective Course		2
Hours		15
Spring Term 3		
BIOL 3120	Molecular and Cellular Biology	3
Laboratory Requirement Option BIOL 3130, Elective Course		1
CHEM 3720	Organic Chemistry II	3
BIOL 4500	Microbiomes	3
Microbiology, Major Elective Course		3
ENGL 2020 or ENGL 2070 or ENGL 2080 or ENGL 3170 or ENGL 3180 or ENGL 3200		3
Hours		16
Fall Term 4		
Microbiology, Major Elective Course		3
Microbiology, Major Elective Course		3
Social and Behavioral Ways of Knowing Course		3
Elective Course		3
Elective Course		2
Hours		14
Spring Term 4		
BIOL 4000	Seminar	1
Microbiology, Major Elective Course		3
Microbiology, Major Elective Course		3
Elective Course		3
Elective Course		2
BIOL 4010 OR BIOL 4070 OR BIOL 4080 OR BIOL 4110		2
Hours		14
Total Hours		120

2. Think and create: Students will be able to use multiple thinking strategies to examine issues in microbiology, including the proposal of biological hypotheses and the design and analysis of biological experiments capable of testing hypotheses. Students will be able to apply microbiological knowledge to real world challenges, such as those that may be encountered in medicine or environmental microbiology.
3. Communicate: Students will be able to acquire and analyze biological information from the scientific literature. Students will be able to communicate biological information via verbal, written, and other non-verbal methods such as appropriate graphics.
4. Clarify purpose and perspective: The program will allow students to explore microbiology as a career as well as to apply microbiological and biological perspectives to novel issues or problems within microbiology, medicine, or other disciplines.
5. Practice citizenship: Students will understand and accept their roles as educated biologists and scientists in society. Students will be able to communicate with others, including non-scientists, from the special perspective of an educated microbiologist on issues related to medicine and other topics.

The degree map is a guide for the timely completion of your curricular requirements. Your academic advisor or department may be contacted for assistance in interpreting this map. This map is not reflective of your academic history or transcript and it is not official notification of completion of degree or certificate requirements. Please contact the Registrar's Office regarding your official degree/certificate completion status.

1. Learn and integrate: Through independent learning and collaborative study, students will attain, use, and develop knowledge in biology, chemistry, and related disciplines with specialization in microbiology. Students will be able to integrate biological and chemical information to understand microbiological systems from the molecular to population level with relevance to some applied issues such as medicine or environmental microbiology.