

MICROBIOLOGY (B.S.MICROBIOL.)

To graduate in this program, students must earn a minimum grade of 'C' in BIOL 114, BIOL 115, and BIOL 115L. 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 101	Opportunities in Biological Sciences	1
BIOL 114	Organisms and Environments	4
BIOL 115 & 115L	Cells and the Evolution of Life and Cells and the Evolution of Life Laboratory	4
BIOL 250 & BIOL 255	General Microbiology and General Microbiology Lab	5
BIOL 310 & BIOL 315	Genetics and Genetics Lab	4
BIOL 312	Molecular and Cellular Biology	3
BIOL 350	Microbiomes	3
BIOL 380	Biochemistry I	4
BIOL 400	Seminar	1
Suggested elective lab components:		
BIOL 313 or BIOL 382	Molecular and Cellular Laboratory or Biochemistry I Laboratory	
CHEM 111 & 111L	General Chemistry I and General Chemistry I Laboratory	4
CHEM 112 & 112L	General Chemistry II and General Chemistry II Laboratory	5
CHEM 277 & CHEM 278	Organic Chemistry I and Organic Chemistry I: Lab	4
CHEM 372	Organic Chemistry II	3
MATH 170	Calculus I	4
STAT 251 or STAT 301	Statistical Methods or Probability and Statistics	3
Select one of the following Senior Experience courses:		2-3
BIOL 401	Undergraduate Research	
BIOL 407	Practicum in Biology Laboratory Teaching	
BIOL 408	Human Anatomy and Physiology Laboratory Pedagogy	
BIOL 411	Senior Capstone	
BIOL 425	Experimental Field Ecology	
Select one of the following:		3
ENGL 207	Persuasive Writing	
ENGL 208	Personal & Exploratory Writing	
ENGL 317	Technical Writing II	
ENGL 318	Science Writing	
Select one of the following:		4
PHYS 111 & 111L	General Physics I and General Physics I Lab	
PHYS 211 & 211L	Engineering Physics I and Laboratory Physics I	
Select three of the following:		9

BIOL 419	Microbial Physiology	
BIOL 447	Virology	
BIOL 485	Prokaryotic Molecular Biology	
ENT 476	Medical Parasitology	
BIOL 432	Immunology	
BIOL 433	Pathogenic Microbiology	
Select 6 credits of Approved Electives from the following: ¹		6
ENT 476	Medical Parasitology	
BIOL 432	Immunology	
BIOL 314	Ecology and Population Biology	
FS 465	Wine Microbiology and Processing	
FS 466	Wine Microbiology and Processing Lab	
BIOL 421	Advanced Evolution/Population Dynamics	
BIOL 433	Pathogenic Microbiology	
BIOL 456	Computer Skills for Biologists	
BIOL 444	Genomics	
BIOL 447	Virology	
BIOL 482	Protein Structure and Function	
BIOL 485	Prokaryotic Molecular Biology	
BIOL 487	Cellular and Molecular Basis of Disease	
ENT 411	Veterinary & Medical Entomology	
FS 416 & FS 417	Food Microbiology and Food Microbiology Laboratory	
BIOL 419	Microbial Physiology	
MATH 437	Mathematical Biology	
PHIL 361 or PHIL 450	Professional Ethics Ethics in Science	
PLSC 476	Cell Biology	
PLSC 488	Genetic Engineering	
SOIL 425	Microbial Ecology	

Total Hours **76-77**

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 101	Opportunities in Biological Sciences	1
BIOL 114	Organisms and Environments	4
ENGL 101	Writing and Rhetoric I	3
MATH 143	College Algebra	3
Oral Communication Course		3
Humanistic and Artistic Ways of Knowing Course		3
Hours		17
Spring Term 1		
CHEM 111L	General Chemistry I Laboratory	1
CHEM 111	General Chemistry I	3
ENGL 102	Writing and Rhetoric II	3
MATH 144	Analytic Trigonometry	1
MATH 170	Calculus I	4
(PHYS 111 AND PHYS 111L) OR (PHYS 211 AND PHYS 211L)		4
Hours		16
Fall Term 2		
BIOL 115L	Cells and the Evolution of Life Laboratory	1
BIOL 115	Cells and the Evolution of Life	3

CHEM 112L	General Chemistry II Laboratory	1
CHEM 112	General Chemistry II	4
Social and Behavioral Ways of Knowing Course		3
STAT 251 OR STAT 301		3
Hours		15
Spring Term 2		
CHEM 277	Organic Chemistry I	3
CHEM 278	Organic Chemistry I: Lab	1
American Diversity Course		3
Humanistic and Artistic Ways of Knowing Course		3
International Course		3
Hours		13
Fall Term 3		
BIOL 250	General Microbiology	3
BIOL 255	General Microbiology Lab	2
BIOL 310	Genetics	3
BIOL 315	Genetics Lab	1
BIOL 380	Biochemistry I	4
Suggested Optional Laboratory Requirement BIOL 382, Elective Course		2
Hours		15
Spring Term 3		
BIOL 312	Molecular and Cellular Biology	3
Suggested Optional Laboratory Requirement BIOL 313, Elective Course		1
CHEM 372	Organic Chemistry II	3
BIOL 350	Microbiomes	3
Microbiology, Major Elective Course		3
ENGL 207 or ENGL 208 or ENGL 317 or ENGL 318		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 400	Seminar	1
Microbiology, Major Elective Course		3
Microbiology, Major Elective Course		3
Elective Course		3
Elective Course		2
BIOL 401 OR BIOL 407 OR BIOL 408 OR BIOL 411		2
Hours		14
Total Hours		120

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.

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.

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.
2. Think and create: Students will be able to use multiple thinking strategies to examine issues in microbiology, including the proposal