

MICROBIOLOGY UNDERGRADUATE PROGRAM

Program of Study: Micro & Genetics Major

Degree: BS, Microbiology (Catalog: 2016-2017)

I) Communications (13 credits)

- _____ Engl 150 (3) and _____ Engl 250 (3)
- _____ Sp Com 212 (3)
- _____ Engl 302 (3) or Engl 309 (3) or Engl 314 (3) or Engl 312 (3)
- _____ Lib 160 (1)

II) Mathematical Sciences (11-12 credits)

- _____ Stat 101 (4) or _____ Stat 104 (3)

- _____ Math 160 (4) or Math 165 (4) or Math 181 (4)
- _____ Stat 301 (4) or Math 166 (4) or Math 182 (4)

III) Physical Sciences (32 credits)

General Chemistry (8 credits)

- _____ Chem 177(4), 177L(1) Gen. Chem I
- _____ Chem 178 (3), **178L (1)** Gen Chem II

Physics (10 Credits)

- _____ Phys 111 (5) Gen. Physics I
- _____ Phys 112 (5) Gen. Physics II

Organic Chemistry (8 credits)

- _____ Chem 331 (3), 331L (1) Organic Chem I
- _____ Chem 332 (3), **332L (1)** Organic Chem II

Biochemistry (6 credits)

- _____ BBMB 404 (3) Biochemistry I
- _____ BBMB 405 (3) Biochemistry II

IV) Personal Development, Human Relations, and Global Awareness (Total of 15 credits)

- _____ Three credits in [humanities](#)
- _____ Three credits in [social sciences](#)
- _____ Three credits in [ethics \(See list\)](#)
- _____ Three credits in [international diversity \(See list\)](#)
- _____ Three credits in [US diversity \(See list\)](#)

Lists available:

<http://www.ag.iastate.edu/student/curriculum/>

V) Biological Sciences (18 credits)

- _____ Biol 211 (3) & Biol 211L (1) Principles of Bio I
- _____ Biol 212 (3) & Biol 212L (1) Principles of Bio II
- _____ Biol 313 (3) & Biol 313L (1) General Genetics
- _____ Biol 314 (3) Mol. Cell Bio.
- _____ **Biol 315 (3)** Evolution

VI) Microbiology (Total of 31 credits)*

Core Microbiology Courses (16) credits

- _____ F MICRO 110 (1) Orientation
- _____ F/S MICRO 302 (3) Biology of Micro
- _____ F MICRO 310 (3) Medical Microbiology
- _____ S MICRO 320 (4) Molecular and Cellular Bact.
- _____ S* MICRO 430 (3) Microb Diversity & Ecology or S* MICRO 477 (3) Bact-Plant Interactions or F Micro 456 (3) Mycology
- _____ S MICRO 450 (2) Senior Seminar
- _____ F MICRO 451 (R) Senior Survey

Core Laboratory Courses (6 Credits)

- _____ F/S MICRO 302L (1) General Micro Lab
- _____ F MICRO 310L (1) Medical Micro Lab
- _____ F/S MICRO 440 (4) Microbial Genetics & Physiology & Diversity & Ecology Lab

Microbiology Electives – (9 credits required) with no more than 3 credits from laboratory courses

Common Clinical Electives

- _____ S MICRO 374 (3) Insects & Our Health
- _____ F MICRO 408 (3) Virology
- _____ S MICRO 475 (3) Immunology
- _____ S MICRO 475L (1) Immunology Lab
- _____ F Ent 478 (3) Global Protozoology
- _____ F MICRO 586 (3) Medical Bacteriology

Common Environmental Electives

- _____ F* MICRO 410 (2) Insect-Virus Interactions
- _____ S* MICRO 430 (3) Microb Diversity & Ecology
- _____ F MICRO 456 (3) Mycology
- _____ S MICRO 477 (3) Bacteria-Plant interactions
- _____ S MICRO 485 (3) Soil Micro Ecology
- _____ S MICRO 487 (3) Microbial Ecology

Common Physiology/Genetics Electives

- _____ F* MICRO 402 (3) Microbial Genetics
- _____ F* MICRO 410 (2) Insect-Virus Interactions
- _____ S* MICRO 430 (3) Microb Diversity & Ecology

Common Food Microbiology Electives

- _____ S MICRO 407 (3) Micro Food Safety
- _____ S* MICRO 419 (3) Foodborne Hazards
- _____ F MICRO 420 (3) Food Microbiology
- _____ F MICRO 421 (3) Food Microbiology Lab

- _____ F/S/SS MICRO 490 (1-3) Independent Study

VII) Courses for Genetics Major (12-13)

- _____ F **GEN 409** (3) Molecular Genetics
- _____ S **GEN 410** (3) Analytical Genetics
- _____ F **GEN 462** (3) Evol Genetics or
_____ S **EEOB 563** (3) Mole. Phylogenetics
- _____ F **GEN 322** or GEN 444 or S GEN 349
(one course in Bioinformatics)
- _____ F **GEN 491** (1) Senior Seminar or
MICRO 451 (R) Senior Survey

*F=offered fall semester, S=offered spring semester,
F*/S* = offered alternate fall or spring

Iowa State University
College of Agriculture
Microbiology & Genetics One Example of an Eight Semester Plan
16-17 Catalog

Fall			Spring		
Chem 177/177L	General Chemistry & Lab	5	Chem 178, L	General Chemistry & Lab	4
Biol 211/211L	Principles of Biology & Lab	4	Biol 212/212L	Principles of Biology & Lab	4
Engl 250 or 150	Written Oral Visual and Electronic Comm	3	Stat	Statistics 101 or 104	3-4
Micro 101	Microbes in Society	3	Micro 302/302L	Biology of Microorganisms & Lab	4
Micro 110	Orientation in Microbiology	1			
Lib 160	Library Instruction	1			15-16
		17			
Fall			Spring		
Chem 331/331L	Organic Chemistry I & Lab	4	Chem 332/332L	Organic Chemistry II & Lab	4
Micro 310/310L	Medical Microbiology & Lab	4	Micro	Micro Environmental or Elective	3
Math 165 or 181	Calculus I	4	Biol 314	Cell Biology	3
Biol 313/313L	Genetics & Lab	4	Math 166 or 182 or Stat 301	Calculus II or Intermediate Stats	4
		16	Social	Social Science	3
					17
Fall			Spring		
Ethics	Ethics	3	Micro 320	Molecular and Cellular Bacteriology.	4
Micro Choice	Micro Environmental or Micro Elective	3	Phys 112	General Physics II	5
Phys 111	Physics	5	Engl Choice	Advanced English – 302, 309, 312 or 314	3
Sp Cm 212	Fundamentals of Public Speaking	3	Biol 315	Biological Evolution	3
Gen 409	Molecular Genetics	3	Gen 322 or 444	Bioinformatics course	3
		17			18
Fall			Spring		
Micro 440	Lab in Microbial Phys, Gen & Div.	4	US Diversity	US Diversity (from list)	3
Micro Choice	Microbiology Elective	3	Micro Choice	Microbiology Elective	3
Micro 451	Micro Senior Survey	R	Micro 450	Undergraduate Seminar	2
Int. Perspective	International perspectives	3	BBMB 405	Biochemistry II	3
BBMB 404	Biochemistry I	3	Gen 410	Analytical Genetics	3
Gen 462	Evolutionary Genetics	3	Humanities	Humanities	3
		16			17