### MICROBIOLOGY UNDERGRADUATE PROGRAM

#### Program of Study

**Degree:** BS, Microbiology  
**Catalog:** 2020-2021

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**I) ISU Requirements (Total of 13 credits)**

- [ ] International Perspective (3) (see approved CALS list)
- [ ] US Diversity (3) (see approved CALS list)
- [ ] Communications
  - _____ Engi 150 (3) and _____ Engl 250 (3)
  - _____ Lib 160 (1)

**II) CALS Requirements (Total of 12 credits)**

- [ ] Humanities (3) see CALS approved list
- [ ] Social Science (3) see CALS approved list
- [ ] Ethics (3) see CALS approved list

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**III) ISU or CALS & Microbiology (Total of 50 credits)**

#### Scientific Communication

- [ ] Speech 212 (3)
- [ ] English 302, 309, 312, 314 (3) Choose 1

#### Math

- [ ] Stat 101 (4) or 104 (3)
- [ ] Math 143 (pre-cal) or 145 (3/Trig)
- [ ] Stat 301 (4) or Math 165 (4/Calculus 1)
- [ ] Math 160 (Surv Cal) or 165 (4/Calculus 1)
  - or Math 166 (4/Calculus 2)

#### Physical Science (23 credits)

- [ ] Chem 177/177L (5) and 178 (3) Inorganic
- [ ] Phys 111/111L (5) and Phys 112/112L (5)
  - General Physics (recommended) OR
  - only if not doing further schooling
- [ ] Chem 331/331L (4), and 332 (3) Organic
- [ ] BBMB 301 (3) or BBMB 316 (3) OR
  - BBMB 404 (3) AND BBMB 405 (3)

#### Biological Sciences (15 credits)

- [ ] Biol 211 (3) & Biol 211L (1) **or** Micro 115X (2/F)
- [ ] Biol 212 (3) and Biol 212L (1)
- [ ] Biol 313 (3) and Biol 313L (1) Genetics
- [ ] Biol 314 (3/F) **or** Biol 328 (3/F) Molecular Bio.

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Minors to Consider: Pharmacology & Toxicology, Food Safety, Genetics, Emerging Global Diseases

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**IV) Microbiology (Total of 31 credits)**

#### Core Microbiology Courses (16 credits)

- [ ] MICRO 110 (1/F) Orientation
- [ ] MICRO 302 (3) Biology of Microorganisms
- [ ] MICRO 310 (3/F) Medical Microbiology
- [ ] MICRO 320 (4/S) Molecular and Cellular Bact.
- [ ] MICRO 430 (3/E) MicroDiversity&Ecology
  - or Micro 456 (3/F) Mycology
  - or MICRO 477 (3/S) Bact-Plant Interactions
- [ ] MICRO 450 (2/S) Capstone - Senior Seminar
- [ ] MICRO 451 (R/F) Micro - Junior Survey

#### Core Laboratory Courses (6 credits)

- [ ] MICRO 302L (1) General Micro Lab
- [ ] MICRO 310L (1/F) Medical Micro Lab
  - Or MICRO 475L (1/S) Immunology Lab
- [ ] MICRO 440 (4) Lab in Microbial Physiology, Diversity & Genetics

#### Microbiology Electives – (9 credits)

- [ ] Choose from the list below (Max 3 cr of lab)

**Common Clinical Electives**

- [ ] MICRO 353 (3/S) Intro Parasitology
- [ ] MICRO 374 (3/S) Insects & Our Health
- [ ] MICRO 374L (1/S) Insects/Health Lab
- [ ] MICRO 408 (3/F) Virology
- [ ] VDPAM 428 (3/S) Principles of Epidemiology
- [ ] MICRO 475 (3/F) Immunology
- [ ] MICRO 475L (1/S) Immunology Lab
- [ ] MICRO 517 (3/F) Gut Microbiome
- [ ] MICRO 586 (4/F) Medical Bacteriology

**Common Environmental Electives**

- [ ] PLP 408 (3) Principles of Plant Pathology
- [ ] MICRO 430 (3/S) Micro Diversity & Ecology
- [ ] MICRO 456 (3/F) Mycology
- [ ] MICRO 477 (3/S) Bacteria-Plant interactions
- [ ] MICRO 487 (3/F) Microbial Ecology

**Common Physiology/Genetics Electives**

- [ ] MICRO 402 (3/F) Microbial Genetics
- [ ] MICRO 408 (3/F) Virology
- [ ] MICRO 430 (3/S) Micro Diversity & Ecology

**Common Food Microbiology Electives**

- [ ] MICRO 407 (3/S) Micro Food Safety
- [ ] MICRO 420 (3/F) Food Microbiology
- [ ] MICRO 421 (3/F) Food Microbiology Lab

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Other courses upon written request & review by the Undergrad Micro Supervisory Committee.

- [ ] MICRO 490 (1-3) Research, Lit Rev, TA

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**V) Electives (8-16 credits)**

Courses to obtain 128 total credit hours

- [ ] Micro 101 (3/F) Microbial World
- [ ] Micro 116X (2/S) Phage Genome Lab
- [ ] Micro 265X (2) Predicting the next epidemic