

COLLEGE OF AG, FOOD SYSTEMS & NATURAL RESOURCES

MAJOR: MICROBIOLOGY

ACADEMIC YEAR: 2013-2014

DEGREE TYPE: B.S.

REQUIRED DEGREE CREDITS TO GRADUATE: 128

GENERAL EDUCATION REQUIREMENTS – 40 CREDITS

Lower Division Requirements – 37 Credits

First Year Experience (F) - 1 Credit

AGRI 189 Skills for Academic Success 1 cr

Students transferring in 24 or more credits do not need to take AGRI 189.

Communication (C) - 9 Credits

ENGL 110 College Composition I 3 cr

ENGL 120 College Composition II 3 cr

COMM 110 Fund of Public Speaking 3 cr

Quantitative Reasoning (R) - 3 Credits

STAT 330 Introductory Statistics 3 cr

Science & Technology (S) - 10 Credits

CHEM 121/L General Chemistry I/Lab 3/1 cr

CHEM 122 General Chemistry II 3 cr

PHYS 211 College Physics I 3 cr

Humanities & Fine Arts (A) - 6 Credits

Select from current general education courses www.ndsu.edu/registrar/gened/

Social & Behavioral Sciences (B) - 6 Credits

Select from current general education courses www.ndsu.edu/registrar/gened/

Wellness (W) - 2 Credits

Select from current general education courses www.ndsu.edu/registrar/gened/

Cultural Diversity (D)

Select from current general education courses www.ndsu.edu/registrar/gened/

Global Perspectives (G)

Select from current general education courses www.ndsu.edu/registrar/gened/

Upper Division Requirements - Writing – 3 Credits

MICR 354 Scientific Writing 3 cr

REQUIRED COURSES FOR MICROBIOLOGY – 33 CREDITS

MICR 350/L General Microbiology I/Lab 3/2 cr

MICR 450/L Infectious Disease Pathogenesis/ Lab 3/2 cr

MICR 470 Basic Immunology 3 cr

MICR 471 Immunology & Serology Lab 2 cr

MICR 475 Animal Virology 3 cr

MICR 480 Bacterial Physiology 3 cr

MICR 482 Bacterial Genetics & Phage 3 cr

MICR 486 Capstone Experience 3 cr

Elective Credit – Select 6 Credits from the following:

BIOC 487 Molecular Biology of Gene Expression 3 cr

MICR 463 Clinical Parasitology 2 cr

MICR 379 Study Abroad 3 cr

MICR 445 Animal Cell Culture Tech (LAB) 2 cr

MICR 452 Microbial Ecology 3 cr

MICR 453 Food Microbiology 3 cr

MICR 472 Clinical Immunology 3 cr

MICR 474 Epidemiology 3 cr

MICR 561 Micro Lab for Pharmacy 1 cr

MLS 435 Hematology 2 cr

PPTH 460 Fungal Biology 3 cr

No more than 3 elective credits may come from the following:

MICR 491 Seminar 1 cr

MICR 494 Individual Study 1-3 cr

MICR 496 Field Experience 1-3 cr

MICR 499 Special Topics 1-3 cr

MICR 370-399 1-3 cr

MICR 491-499 1-3 cr

RELATED REQUIREMENTS – 36-38 CREDITS

AGRI/ANSC/VETS 150 Agriculture Orientation 1 cr

Students transferring in 24 or more credits do not need to take AGRI 150.

BIOC 460/L Foundations Biochem/Molecular Biology I/Lab 3/1 cr

BIOC 461 Foundations Biochem/Molecular Biology II 3 cr

BIOL 150/L General Biology I/Lab 3/1 cr

CHEM 122L General Chemistry II Lab 1 cr

CHEM 341/L Organic Chemistry I/Lab 3/1 cr

CHEM 342 Organic Chemistry II 3 cr

MATH 146 or Applied Calculus or higher level math

103 & 105 College Algebra & Trigonometry 4 or 6 cr

PHYS 211L College Physics I Lab 1 cr

PHYS 212/L College Physics II/Lab or higher 3/1 cr

PLSC 315/L Genetics/Lab 3/1 cr

BIOL/BOT/ZOO Elective 3 cr

DEGREE REQUIREMENTS – 20-22 CREDITS TO REACH 128

Degree Requirements and Notes:

- A grade of 'C' or better is required for the core and elective requirements.
- A cumulative 2.50 GPA is required for graduation.
- A pre-veterinary medicine track is available in the microbiology major.