

Microbiology (Minor)

A minor in Microbiology is available to undergraduates majoring in any field, but may be especially appropriate for students in biological or agricultural sciences, physical sciences or science education. This minor will be useful to students who want to strengthen their understanding of either basic cellular processes or applied areas such as the role of microorganisms in industry, agriculture or health.

Admissions

To be admitted to the program, a student must have a GPA of at least 2.0. Application for admission to any University minor program is now available via MyPack Portal. Admission will be based upon the student's academic record, and in most cases no longer requires departmental review. Review how to Add a Minor (<https://studentservices.ncsu.edu/academics/degrees/coda/>).

Certification

The student's minor advisor will review the student's record and certify that the student has completed the requirements for the minor by signing the "Application for Minor" form. Copies of the signed form will be forwarded to the student's major department and the Dean's office of the college in which the student is completing the requirements for a major. Upon certification, the student's transcript will include the statement "Minor in Microbiology." The minor must be completed no later than the semester in which the student expects to graduate from his or her degree program. Paperwork for certification should be completed no later than during the registration period for the student's final semester at NC State.

Contact Person

Jonathan Olson
Biological Sciences
4544B Thomas Hall
919-515-7860
jwolson@ncsu.edu

Plan Requirements

- A grade of 'C-' or better will be required for all courses taken to fulfill the minor requirements

Code	Title	Hours
Required Courses		7
MB 251	General Microbiology	
MB 252	General Microbiology Laboratory	
or MB 254	Inquiry-Guided Microbiology Lab	
MB 311	Medical Microbiology	
Lab Elective Courses ²		1
BIT/MB 210	Phage Hunters	
MB 312	Medical Microbiology Laboratory	
MB 360	Scientific Inquiry in Microbiology: At the Bench	
MB 420/520	Fundamentals of Microbial Cell Biotransformations	
MB 452	Microbial Diversity Lab	
Elective Courses		7
AEC 437	Gut Microbial Ecology	
BBS/FS 426	Upstream Biomanufacturing Laboratory	
BEC/CHE 463	Fermentation of Recombinant Microorganisms	

BEC 480	cGMP Fermentation Operations
BIT/MB 211	Phage Genomics
BIT 410	Manipulation of Recombinant DNA
BIT 466	Animal Cell Culture Techniques
BSC 493	Research Experience ¹
BSC 495	Special Topics in Biological Sciences ¹
MB 200	The Fourth Horseman: Plagues that Changed the World
MB 210	Phage Hunters
MB/FS 405	Food Microbiology
MB 406/ FS 506	Food Microbiology Lab
MB 414	Microbial Metabolic Regulation
MB 435	Bacterial Pathogenesis
MB 441	Immunology
MB 451	Microbial Diversity
MB 455	Microbial Biotechnology
MB 461	Molecular Virology
MB 470	Emerging and Re-emerging Infectious Diseases
MB 479	Microbial Symbiosis & Microbiomes
MB 480	Current Issues in Microbiology
MEA 468	Aquatic Microbiology
MB/SSC 532	Soil Microbiology

Total Hours **15**

¹ These courses require prior approval of the minor advisor: Jonathan Olson, 4544B Thomas Hall, 919-515-7860, jwolson@ncsu.edu.

² 1 credit of lab elective is required for the minor, excess credits in the lab elective category can be applied in elective courses