Microbiology

Microbiology is the study of microorganisms, a large and diverse group of organisms that exist as single cells or cell clusters. The science of microbiology includes the study of microbial growth, biochemistry, genetics and ecology and the relationship of microorganisms to other organisms including humans. As a basic biological science, microbiology provides some of the most accessible research tools for probing the nature of life processes. Our sophisticated understanding of the chemical and physical principles governing life has developed from studies of microorganisms. As an applied biological science, microbiology deals with many important practical problems in medicine, agriculture, biodegradation and food industries, and is at the heart of biotechnology industries. Students pursuing a major in microbiology will have an opportunity to take coursework related to these important areas. Chemistry is also an integral part of modern microbiology. Therefore, general and organic chemistry are required for the microbiology major. A minor in chemistry can be achieved by completing both the chemistry requirements and MICR 425 with grade of C or better. In addition, opportunities for undergraduate research in microbial biochemistry, genetics and diversity, as well as in immunology and molecular biology are available for outstanding undergraduate students. The microbiology major, chemistry minor and undergraduate research options are strong assets for students who seek careers in health care professions or industrial microbiology, or who seek graduate training in microbiology or related disciplines.

The following program of study prepares students for research or teaching positions after the bachelor's degree or for advanced study in graduate programs in microbiology, molecular biology or cell biology. A grade of C or better must be earned in MICR 301 and MICR 302 to fulfill degree requirements. Transfer courses used for MICR 301 and MICR 302 equivalencies must have a C grade or better. An overall grade point average of 2.00 or better for all microbiology courses is required to satisfy degree requirements. A student cannot repeat a course or its equivalent in which a grade of B or better was earned without the consent of the program.

Bachelor of Science (B.S.) in Microbiology Degree Requirements

Degree Requirements	Credit Hours
University Core Curriculum Requirements	39
Microbiology Major Requirements	63
BIOL 211, BIOL 212 (3 hours included in the UCC Life Science hours)	5
MICR 301, MICR 302, MICR 403, MICR 460, MICR 480, MICR 481 and MICR 495	22
Microbiology Electives - Upper-division work consisting of lecture courses selected from: MICR 406, MICR 421, MICR 423, MICR 425, MICR 441, MICR 453, MICR 454, MICR 470	12
CHEM 200, CHEM 201, CHEM 202, CHEM 210, CHEM 211, CHEM 212, CHEM 340, CHEM 341 and CHEM 442 (3 hours included in the UCC Physical Science hours)	15
MATH 141, MATH 150 or MATH 151 (3 hours included in the UCC Quantitative Reasoning hours)	1
PHYS 203A, PHYS 253A, PHYS 203B, PHYS 253B	8

Degree Requirements	Credit Hours
Electives	12
Additional School of Biological Sciences Academic Requirements	6
Supportive Skills - CS 200B or CS 201 or CS 202; ENGL 290, ENGL 291, ENGL 491; MATH 282 or PLB 360 or ZOOL 360; or any two-semester sequence of one of the following foreign languages: 200-level French, German, Japanese, or Spanish	6
Total	120

Microbiology Minor

A minor in Microbiology consists of 16 credit hours, to include MICR 301, MICR 302, and other courses determined by the student in consultation with the Microbiology advisor.

Technology Fee

The College of Agricultural, Life, and Physical Sciences assesses undergraduate majors a technology fee of $4.58 per credit hour up to 12 credit hours. The fee is charged Fall and Spring semesters.

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