# Microbiology (MIC)

MICROBIOLOGY (MIC)

205 [105]. General Microbiology. Credit 3 hours. Prerequisites: GBIO 151 and 153 or permission of Department Head and registration for or prior credit for MICL 207. A survey of the fundamental principles and concepts of the biology of microorganisms including biochemistry, cell biology, metabolism, photosynthesis, cell division, reproduction, genetics, molecular biology, development, evolution, ecology, and diversity as well as a survey of microbial infections and immunity to infectious diseases. Students majoring or minoring in Biology cannot receive degree credit for both MIC 205 and MIC 223. Three hours of lecture per week.

207 [107]. General Microbiology Laboratory. Credit 1 hour. Prerequisite: Registration for or prior credit for MIC 205 [105]. A survey of laboratory techniques used to study cellular morphology, growth, metabolism, and identification of bacteria. Students majoring or minoring in Biology cannot receive degree credit for both MICL 207 and MICL 224. Two hours of laboratory per week.

223. Medical Microbiology. Credit 3 hours. Prerequisite: GBIO 151 and 153 or permission of Department Head and registration in or prior credit for Microbiology 224. An introductory course in microbiology with emphasis on the medically important microorganisms and their relationship to disease and immunity. This course is designed primarily for students in Nursing and Allied Health curricula. Students majoring or minoring in Biology cannot receive degree credit for both Microbiology 205 and 223.

224. Medical Microbiology Laboratory. Credit 1 hour. Prerequisite: Registration in or prior credit for Microbiology 223. A series of laboratory exercises designed to illustrate the material studied in Microbiology 223. Two hours of laboratory per week.

225. Advanced General Microbiology. Credit 4 hours. Prerequisite: Microbiology 205-207 or 223-224 or permission of Department Head. Advanced microbiological techniques; practices used in determinative microbiology. Two hours of lecture and four hours of laboratory per week.

303. Immunology. Credit 3 hours. Prerequisite: Microbiology 205-207 or 223-224 or permission of Department Head and Chemistry 102 or 122. Recommended: General Biology 312. A study of basic immunological phenomena with emphasis on the importance and distinctiveness of cell-mediated and humoral immune responses. The biochemistry, genetics, and cellular components of the immune system will be stressed.

327. Hematology. Credit 3 hours. Prerequisite: Microbiology 205-207 or 223-224 or permission of Department Head. Cytology of normal human blood and marrow, and consideration of disease states.

One hour of lecture and four hours of laboratory per week.

336/536. Pathogenic Bacteria. Credit 4 hours. Prerequisite: Microbiology 205-207 or 223-224 and Junior standing or consent of Department Head. A study of the major bacterial pathogens and their relationship to disease and immunity. The laboratory stresses techniques used in the isolation and identification of pathogenic bacteria. Two hours of lecture and four hours of laboratory per week.

338/538. Soil Microbiology. Credit 4 hours. Prerequisite: 205-207 or 223-224 and Junior standing. A study of soil microorganisms, the impact of environmental factors, and survey of the major nutrient transformations occurring in soil. Two hours of lecture and four hours of laboratory per week.

362/562. Public Health Laboratory Methods in Immunology and Serology. Credit 4 hours. Prerequisite: Microbiology 205-207 and Junior standing or consent of the Department Head. An introduction to the biology, chemistry, and genetics of the immune system. The laboratory stresses modern serological and immunological techniques. Two hours of lecture and four hours of laboratory per week.

368/568. Dairy Microbiology. Credit 4 hours. Prerequisites: Microbiology 225 and Junior standing. A study of beneficial, pathogenic, and spoilage microorganisms associated with dairy microbiology. Two hours of lecture and four hours of laboratory per week.

376/576. Food Microbiology. Credit 4 hours. Prerequisites: Microbiology 225 and Junior standing. A study of beneficial, pathogenic, and spoilage microorganisms associated with food microbiology. Two hours of lecture and four hours of laboratory per week.

422/522. Microbiology of Water and Wastewater. Credit 4 hours. Prerequisite: Microbiology 225 and Junior standing. Survey of microorganisms associated with water quality and wastewater treatment processes. Emphasis on current chemical and microbial techniques employed by Public Health Laboratories and environmental testing laboratories for assurance of water quality and compliance with federal guidelines for pollution standards. Two hours of lecture and four hours of laboratory per week.

453/553. Bacterial Physiology. Credit 4 hours. Prerequisite: Microbiology 225 and at least one semester of Organic Chemistry (261-263 or 361-363). Introduction to concepts of bacterial nutrition, metabolism, and adaption as related to growth and environment. Two hours of lecture and four hours of laboratory per week.

463/563. Virology. Credit 4 hours. Prerequisite: Microbiology 225 and Junior standing or consent of the Department Head. An introduction to principles of virology, including plant, bacterial, and animal viruses. Two hours of lecture and four hours of laboratory per week.

610. Industrial Microbiology. Credit 4 hours. Prerequisite: Microbiology 453/553 or equivalent. The use of microbes in industrial processes such as production of antibiotics, vitamins, and chemicals. Two hours of lecture and four hours of laboratory per week.

615. Determinative Microbiology. Credit 4 hours. Prerequisite: Microbiology 225 or consent of the Department Head. A study of the classification, identification and nomenclature of the 19 groups of bacteria. One hour of lecture and six hours of laboratory per week.

625. Experimental Microbiology for Teachers. Credit 4 hours. A course designed for secondary and/or elementary school science teachers. Emphasis will be placed on the design of laboratory experiments which are applicable to the elementary and secondary levels. Lecture topics will include experimental design, equipment and subject preparation, procurement and preservation of specimens. Three hours of lecture and two hours of laboratory per week. May not be used as credit toward a major in Biological Sciences.

640. Microbial Physiology. Credit 4 hours. Prerequisite: Microbiology 453/553 or equivalent. A study of the relationships between structure and function of bacteria and allied organisms. Two hours of lecture and four hours of laboratory per week.

650. Microbial Genetics. Credit 3 hours. Prerequisite: Microbiology 453/553 or equivalent. The genetics of microorganisms with special emphasis on the molecular level.

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