

MICROBIOLOGY (MCB)

MCB 1000C - Microbes and Society (3 Credits)

This course examines microbiology as it affects our everyday lives. It is intended as a general education course for students interested in the impact of microorganisms on health, food, agriculture, environment, industry, and genetic engineering. The student will be introduced to the major groups of microorganisms. The role of infectious disease epidemics on people and societies throughout history will be examined. Classical experiments and discoveries that served as the foundation of modern microbiology and immunology will be presented.

Attribute(s): GENC - Gen. Ed -Natural Sci+Lab, Gen. Ed -Natural Sci+Lab, SCIQ - Scientific Inquiry, Scientific Inquiry

MCB 2010C - Microbiology with Lab (4 Credits)

Students study the biology of microorganisms. Structure, physiology and ecology of bacteria, algae, viruses, protozoa and lower fungi will be investigated.

Prerequisite(s): BSC 1020C or (BSC 1010C or (BSC 1010 and BSC 1010L))

Attribute(s): CRIT - GE Critical Think Competency, GE Critical Think Competency, GENC - Gen. Ed -Natural Sci+Lab, Gen. Ed -Natural Sci+Lab, SCIQ - Scientific Inquiry, SUSC - Sustainability Component, Scientific Inquiry

MCB 3020C - General Microbiology (4 Credits)

A study of the structure, function and genetics of microorganisms, their relationships in natural and controlled environments emphasizing pathogenic bacteria and their hosts. Laboratory includes isolation, identification and culture techniques of microorganisms and their properties.

Prerequisite(s): (CHM 2210C or (CHM 2210 and CHM 2210L)) and (BSC 1010C or (BSC 1010 and BSC 1010L))

Attribute(s): BIOE - Biology Elective, BPRO - BS Bio Pre-Pro Reqs, SUSC - Sustainability Component

MCB 3652C - Environmental Microbiology (3 Credits)

Interrelationships between the biological activities of microorganisms and their terrestrial and aquatic environments and the applied effects of microorganisms on the environment and on human activity, health, and welfare.

Prerequisite(s): MCB 3020C

Attribute(s): BIOE - Biology Elective, BPRO - BS Bio Pre-Pro Reqs, BTEL - Biotech Restricted Elect, SUSC - Sustainability Component

MCB 4203C - Pathogenic Microbiology (3 Credits)

Biologic basis of infectious disease associated with human microbial infections. Topics include host-parasite relationships, virulence mechanisms and antimicrobial agents. Laboratories cover methods of isolation, detection, enumeration and identification of human pathogenic microorganisms.

Prerequisite(s): MCB 3020C or MCB 2010C

Attribute(s): BIOE - Biology Elective, BPRO - BS Bio Pre-Pro Reqs

MCB 4223C - Food Microbiology (3 Credits)

A study of the fundamentals of food microbiology. Course topics will include the history, and the most common and serious pathogenic food microorganisms. Fermentation, spoilage and control methodology will also be discussed. Integrated lab activities that support lecture topics will be provided.

Prerequisite(s): MCB 3020C

Attribute(s): BIOE - Biology Elective, BPRO - BS Bio Pre-Pro Reqs, BTEL - Biotech Restricted Elect

MCB 4404C - Microbial Physiology (3 Credits)

The course will review the physiology of microorganisms, covering their structure, function, bioenergetics, central metabolic processes and survival within hosts.

Prerequisite(s): CHM 2210C and MCB 3020C

MCB 4502C - Virology (3 Credits)

Introduction to virology including nature, structure, and replication of bacterial, animal, and plant viruses and subviral particles and the molecular aspects of the viral life cycle that give rise to transmission and pathogenic characteristics in the context of the co-evolution of the virus and host. ~ Course replaced MCB 4502, effective 201308.

Prerequisite(s): MCB 3020C and PCB 3023C and PCB 3063C

Attribute(s): BIOE - Biology Elective, BPRO - BS Bio Pre-Pro Reqs, BTEL - Biotech Restricted Elect

MCB 6206C - Advanced Pathogenic Microbio (3 Credits)

This course encompasses a rigorous and dynamic curriculum that surveys host-microbe interactions in the context of disease for established and emerging pathogens in modern times. Students will explore pathogen mechanisms of disease by reviewing scientific literature about select pathogen varieties of bacteria, viruses, fungi, parasites, and other acellular pathogens. This course will also explore the philosophy of vaccine development, the molecular techniques used to study host-microbe interactions, and the evolution of drug resistance.

Prerequisite(s): BSC 6840