

COURSE DETAIL

MICROBIOLOGY

Country

Netherlands

Host Institution

Maastricht University - University College Maastricht

Program(s)

University College Maastricht

UCEAP Course Level

Upper Division

UCEAP Subject Area(s)

Biological Sciences

UCEAP Course Number

112

UCEAP Course Suffix**UCEAP Official Title**

MICROBIOLOGY

UCEAP Transcript Title

MICROBIOLOGY

UCEAP Quarter Units

6.00

UCEAP Semester Units

4.00

Course Description

The four main topics covered in this course are bacteriology, virology, epidemiology of infectious diseases and outbreak management, and environmental and applied microbiology. The course begins with an introduction in bacteriology covering the principles of replication, classification, and identification. The presence of bacteria in humans, animals and plants and composition of the endogenous flora is discussed. Also covered are bacterial infections, including adhesion, virulence, biofilms and antibacterial resistance and tuberculosis is used as the main example of a worldwide bacterial infection. The acquisition of antimicrobial resistance and the epidemiology of worldwide antimicrobial resistance is discussed. In the virology section of the course general principals of replication, classification, and pathogenesis of viruses and classes antivirals are discussed. The two main viruses covered are influenza and HIV including the unique characteristics of the structure of these viruses and its importance for epidemiology. This section of the course also focuses on viral outbreaks, the host response to infection, and prevention of infection by vaccination. In the epidemiology of infectious disease section of the course the general principals of transmission, latency, and infectiveness are discussed including the basic principles of outbreak management, the use of epidemic curves of disease for outbreak management and prevention of the spread of infectious diseases. The final section of the course covers the role of microbes in biogeochemical cycles, such as the carbon and nitrogen cycles, in the environment and adaptation to the environment, as well as the use of micro-organisms in food-production, waste treatment and bioremediation. Prerequisites for this course include introduction to biology.

Language(s) of Instruction

English

Host Institution Course Number

SCI2040

Host Institution Course Title

MICROBIOLOGY

Host Institution Campus

Maastricht University

Host Institution Faculty

University College Maastricht

Host Institution Degree

Host Institution Department

Sciences

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