

# 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

[Print](#)