COURSE DETAIL

GENERAL VIROLOGY AND MICROBIOLOGY:
Country Italy
Host Institution University of Bologna
Program(s) University of Bologna
UCEAP Course Level Upper Division
UCEAP Subject Area(s) Biological Sciences
UCEAP Course Number 140
UCEAP Course Suffix
UCEAP Official Title GENERAL VIROLOGY AND MICROBIOLOGY:
UCEAP Transcript Title GEN VIROLG&MICROBIO
UCEAP Quarter Units 6.00
UCEAP Semester Units 4.00

Course Description

The course focuses on the fundamental concepts that define the organization and metabolism of prokaryotes as well as the main phylogenetic and physiological correlations of Bacteria and Archaea in natural environments and in biotechnological applications. Emphasis is placed on basic concepts of virus structure and replication as well as bacterial growth and exchanges of genetic material between prokaryotic cells in order to understand the recombination mechanisms. The first part of the course is devoted to microbiology. Topics in the first part include basic principles of microbiology; principles of microscopy; evolutionary history and microbial diversity; structure and functions of prokaryotic cell; metabolism, regulation, and growth of microbial; phototrophy, chemolithtrophy, and major biosynthesis; catabolism of organic compounds; symbiosis and pathogenicity; antimicrobial agents; and groups of pathogenic bacteria. The second part of the course is devoted to virology. Topics in the second part include structure, composition, and classification of animal, plant, and bacterial viruses; genome, capsid, and viral envelope, and structure-function relationship; different entry mechanisms of viruses into host cells (bacteriophages, plant, and animal viruses); different steps in viral replication cycle; virus-cell interactions, outcomes of infection, and cultivation and quantification of viruses; and replication strategies of RNA viruses, DNA viruses, and retroviruses such as HIV and AIDS. Assessment is based on a written exam with essay and multiple-choice questions covering the two parts, the assigned readings, and the biotechnology section.

Language(s) of Instruction
Italian

Host Institution Course Number
67006

Host Institution Course Title
MICROBIOLOGIA E VIROLOGIA GENERALE

Host Institution Course Details

Host Institution Campus SCIENZE BIOLOGICHE, GEOLOGICHE E AMBIENTALI
Host Institution Faculty
Host Institution Degree
Host Institution Department Scienze Biologiche
Course Last Reviewed

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