MEDICAL MICROBIOLOGY (MMIC)

MMIC 6010 Biological Safety 3 cr
Critical Analysis of biological safety in the research, diagnostic and hospital environment; assessment of the underlying causes of laboratory acquired infections and the administrative, engineering and personal protective control measures available; analysis of current and new bio-containment technologies, risk assessment tools, the need for scientific based decision making and the public perception versus real risk.

MMIC 7012 Fundamental Virology 3 cr
This is an introductory graduate-level course with a focus on virus gene organization, the different levels of regulated viral gene expressions, and their different replication mechanisms, covering experimental design and advanced knowledge and information on various ways in which viruses replicate in hosts and interact with cellular machinery to cause disease.

MMIC 7040 Clinical Bacteriology 6 cr
Scientific basis of routine laboratory methods used in the diagnosis of bacterial infection: specimen handling techniques; laboratory organization.

MMIC 7050 Microbial Pathogenicity 6 cr
Comparative structure of virulent and avirulent bacteria, biochemical basis of virulence; host defenses.

MMIC 7140 Clinical Parasitology 3 cr
The course will consist of a series of lectures on the epidemiology, molecular pathogenesis, clinical features, diagnosis (clinical and laboratory), treatment and prevention of human disease; each class is followed by a laboratory period in which the student obtains some practical experience.

MMIC 7160 Molecular Basis of Infection and Antibiotic Action 3 cr
Historical development, mechanism of action, principles of antimicrobial susceptibility testing and molecular and genetic basis for antibiotic resistance transfer as well as pathogenesis of infectious diseases. Prerequisite courses include Microbial Physiology or Biochemistry and at least an introductory course in Genetics and the consent of instructor.

MMIC 7170 Molecular Biology of Animal Viruses 3 cr
Lecture and conference course. Recent advances in molecular aspects of virus structure, replication, genetics, and spectrum of virus-host cell interaction.
PR/CR: A minimum grade of C is required unless otherwise indicated.
Prerequisites: MMIC 7010 or consent of instructor.

MMIC 7190 Readings in Infectious Diseases 3 cr
The student will conduct an appropriate in depth literature search on three aspects of a mutually agreed topic and present the "state of the science" and a critical review of it, to the instructor. This will be done as a series of interactive sessions.

MMIC 7210 Clinical Virology 3 cr
Each group of viruses will be presented in a lecture dealing with the General Virology and taxonomy, epidemiology, clinical aspects of the diseases, laboratory diagnosis, treatment options, anti-virals' classes with their mechanisms of action as well as susceptibility testing (where applicable), and prevention (including infection control measures, chemo- and immunoprophylaxis (where applicable). The course consists of lecture and optional laboratory component (non-mandatory rotation for Graduate students only at CPL, Virus Detection and Serology sections).

MMIC 7220 The Ecology of Infectious Diseases 6 cr
Explores the study of infectious diseases in a global context from the perspective of biomedical, clinical, heath systems/services and social, cultural and environmental determinants of health and disease. The course features didactic, self-directed reading and interactive small group sessions.