**General Microbiology & Immunology (MIC. 314)**

**Overall aims of the Course:**

This course aimed at giving students a solid knowledge in theoretical and practical aspects of Microbiology and Immunology. During the course, veterinary important pathogens and their interaction with the host will be studied. The course includes sections on beneficial and pathogenic microorganisms, cell structure, virulence determinants and molecular features. The immune response of the host and basic immunology will be focused on for better understanding of the host-microbe struggle and principles of prophylaxis and control.

**Course contents:**

* Introduction and historical aspects of Microbiology and microorganisms' types, differences, ranks, basic structures.
* Introductory Lab. Diagnosis and microscopes
* Bacterial cell structure, as compared to other pathogens.
* Lab safety and sterilization
* Bacterial growth, products, pathogenicity and virulence.
* Staining of bacteria
* Microbial Genetics, phylogeny
* Nucleic acid manipulation.
* Advanced techniques
* Fungi: yeasts, moulds and diphasic fungi.
* Cultivation and media
* Microbial virulence, the host-parasite relationship. Multiple drug resistance
* Biochemical identification
* Introductory Immunology and historical review.
* Types of immunity
* Diagnostic immunology
* Dilution methods and pipetting
* The immune system and cells
* Antigens, antibodies and agglutination tests
* Humoral immune response and the complement system
* Precipitation and complement fixation
* The cell-mediated immunity and the hypersensitivity
* Primary immunological tests and the lateral flow assay