

MICROBIOLOGY 1 - SYLLABUS OF LECTURES FOR 2nd YEAR STUDENTS OF GENERAL MEDICINE ACADEMIC YEAR 2023/2024

Lecture No. 1 **doc. MUDr. Adriána Liptáková, PhD., MPH** **21.2.2024**

Introduction to the study of microbiology. Basic characteristics of microorganisms. Interaction of microorganisms and humans. The human microbiota. Establishment and course of microbial diseases.

General bacteriology:

Morphology and anatomy of bacteria. Metabolism, growth and multiplication of bacteria. Taxonomy and categorization of bacteria.

Lecture No. 2 **Mgr. Marek Straka, PhD.** **28.2.2024**

General bacteriology:

Genetics of bacteria; bacteriophages. Molecular basis of bacterial pathogenicity and virulence; bacterial biofilm. The basic information on bacterial interaction with the human immune system.

Lecture No. 3 **MUDr. Ján Koreň, PhD.** **6.3.2024**

Antimicrobial strategies. Decontamination, disinfection and sterilisation. Antimicrobial drugs. Side-effects of antimicrobial drugs.

Lecture No. 4 **MUDr. Ján Koreň, PhD.** **13.3.2024**

Antibacterial drugs. Resistance mechanisms of bacteria to antibacterial drugs.

Lecture No. 5 **RNDr. Martina Dubinová, PhD.** **20.3.2024**

Special bacteriology: Medically important grampositive bacteria -

Staphylococcus, Streptococcus, Enterococcus and Corynebacterium genera.

Individual study: Arcanobacterium, Bacillus, Listeria, Erysipelothrix, Nocardia and the other genera of grampositive bacteria.

Lecture No. 6 **Mgr. Marek Straka, PhD.** **27.3.2024**

Special bacteriology: Medically important gramnegative bacteria -

Vibrionaceae - Vibrio cholerae. Enterobacteriaceae - the genera Salmonella, Shigella,

Escherichia, Yersinia. Helical microaerophilic bacteria - the genera Campylobacter and

Helicobacter. Gramnegative nonfermenting bacteria - the genus Pseudomonas.

Individual study: the other Vibrio species, Plesiomonas, Aeromonas; the other genera of the Enterobacteriaceae family; Acinetobacter and the other genera of gramnegative nonfermenting bacteria; Bordetella, Brucella, Francisella, Pasteurella; Gardnerella, Spirillum

Lecture No. 7 **RNDr. Livia Slobodníková, CSc.** **10.4.2024**

Special bacteriology: Medically important gramnegative bacteria - the genera Legionella,

Haemophilus and the bacteria of the HACEK-group, Neisseria.

Medically important anaerobic bacteria.

Lecture No. 8 **RNDr. Livia Slobodníková, CSc.** **17.4.2024**

Special bacteriology: Medically important bacteria not stainable according to Gram -

Spirochaetes - Treponema, Borrelia; Mollicutes - Mycoplasma, Ureaplasma; Chlamydia;
Acid-fast bacteria - Mycobacterium tuberculosis, M. bovis.
Individual study: Leptospira, Rickettsia, Orientia, Coxiella, Bartonella, Ehrlichia, Anaplasma, Mycobacterium leprae and the other mycobacteria; Tropheryma.

Lecture No. 9 **RNDr. Livia Slobodníková, CSc.** **24.4.2024**

General virology - structure and classification of viruses, replication of viruses. Antiviral agents. The viral infection at the cell level and organism level. Pathogenesis of viral infections and the basic information about interaction of viruses with the immune system of humans.

Special virology: DNA viruses - herpetic viruses, adenoviruses, papillomaviruses.

Individual study: viral genetics prions, polyomaviruses, parvoviruses, poxviruses.

Lecture No. 10 **RNDr. Livia Slobodníková, CSc.** **1.5.2024**

Special virology: RNA viruses - orthomyxoviruses, paramyxoviruses, picornaviruses, coronaviruses, viral agents of diarrhoea, retroviruses (HIV).

Hepatitis viruses.

Individual study: rubellavirus, HTLV-1, HTLV-2, rhabdoviruses, arboviruses (from the Togaviridae, Flaviviridae, Bunyaviridae and Reoviridae family), non-arboviral haemorrhagic fever agents (from the Bunyaviridae, Arenaviridae and Filoviridae family)

Lecture No. 11 **RNDr. Hana Dibalová, PhD.** **8.5.2024**

General mycology: Taxonomy and classification of micromycetes - a short overview.

Morphology and physiology of medically important micromycetes. Pathogenicity and virulence of micromycetes. Pathogenesis of mycotic infections and the interaction of micromycetes with the human immune system. Antimycotic agents.

Special mycology: agents of superficial, subcutaneous and systemic mycoses.

Lecture No. 12 **RNDr. Martina Dubinová, PhD.** **15.5.2024**

General parasitology: Taxonomy and classification of medically important parasites - a short overview. General characteristics of human parasitoses agents. Epidemiology and prevention of parasitoses. Interaction of parasites with the human immune system. Antiparasitic agents.

Special parasitology: Overview of the medically important parasitic protozoa and worms.