
Course title: MICROBIOLOGY

ECTS credit allocation (and other scores): 5

Semester: autumn

Level of study: ISCED-7 - second-cycle programmes (EQF-7)

Branch of science: Medical and health sciences

Language: English

Number of hours per semester: 55

Course coordinator/ Department and e-mail: Tomasz Antonowski, tomasz.antonowski@uwm.edu.pl

Type of classes: classes and lectures

Substantive content

CLASSES: The importance of microbiological preparation in diagnostic microbiology. Types of bacteriological media and principles of bacterial cultures. The growth of bacteria on liquid and solid culture media. Principles of the Streak-Plate Technique. Microbiological diagnostic of Streptococcus, Staphylococcus, gramnegative rods. The influence of physical and chemical factors on bacteria. Hand washing and disinfection –microbiological monitoring. Environmental monitoring of microbial flora. Anaerobic microorganisms. Mechanisms of antimicrobial resistance in bacteria. Antibiotics susceptibility testing methods: Agar Disk Diffusion Technique, E-test.

LECTURES: Characterization and classification of viruses and viroids, Viral infection and infectious diseases. Role of viruses in cancer, the novel properties of viruses, diagnosis of viral diseases. Innate and adaptive immunity, defense mechanism and protection against viral infections. Cell-mediated and humoral immune responses in viral diseases, immune prevention and therapy of viral infections. Clinical virology: families of human viruses AIDS and other immune disorders, viral diseases of the skin and wounds, viral diseases of the nervous system, viral cardiovascular and systems diseases, viral diseases of Upper and lower respiratory system, viral diseases of digestive system.

Learning purpose: Acquaintance with biological properties of microorganisms, rules of their classification and practical consequences related with diagnostics and therapy.

On completion of the study programme the graduate will gain:

Knowledge: knows epidemiology of viruses, bacteria, molds and parasites infections.

Skills: can interpret results of microbiological research

Social Competencies: Student understands the need of systematic study of the knowledge progress and scientific findings in Microbiology.

Basic literature: Murray P.R., Rosenthal K.S., Pfaller M.A., Medical Microbiology. Sixth edition., wyd. Elsevier, 2009

Supplementary literature: 1). Baumann R.W., Microbiology with diseases by body system; 2). BURRELL C.J., HOWARD C.R., MURPHY F.A., Fenner and White's Medical Virology, 2017; 3). Wang-Shick, Molecular Virology of Human Pathogenic Viruses, 2017

The allocated number of ECTS points consists of:

Contact hours with an academic teacher: 60

Student's independent work: 65