


Department of Microbiology

APPROVE

Department head

 I.E. Tretyakova
February 09, 2022

Thematic plan of practical classes

Discipline **microbiology, virology, immunology**

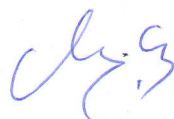
Course **2**

Faculty **of Medicine (partially implemented in English)**
for the spring semester of 2021-2022 academic year

| Topic number | Topic name | Lesson duration |
|--------------|--|-----------------|
| 1 | General microbiology. Research methods in microbiology. Microscopic research method. | 2 |
| 2 | Morphology of bacteria. A simple method for staining microorganisms. | 2 |
| 3 | The structure of a bacterial cell. Chemical composition and functions of the structural elements of the cell. | 2 |
| 4 | Sophisticated methods of staining microorganisms. | 2 |
| 5 | Morphology, structure and methods of microscopy of rickettsia, chlamydia, mycoplasmas, spirochetes, actinomycetes. | 2 |
| 6 | <u>Delivery of module No. 1 on the topic:</u> "General microbiology. Structure and methods of microscopy of prokaryotic microorganisms. Simple and complex coloring methods. | 2 |
| 7 | Physiology of microorganisms. Principles of cultivation of microorganisms. Sterilization. Disinfection. | 2 |
| 8 | Nutrient media, obtaining, classification. | 2 |
| 9 | Nutrition of bacteria. | 2 |
| 10 | Bacteriological method of laboratory diagnostics, its stages. Methods for isolating a pure culture of microorganisms (stage 1). | 2 |
| 11 | Bacterial respiration. | 2 |
| 12 | Cultural properties of microorganisms (stage 2). | 2 |
| 13 | Bacterial enzymes, classification. | 2 |
| 14 | Identification of microorganisms (stage 3). | 2 |
| 15 | Antibacterial chemotherapy. Determination of antibiotic susceptibility of bacteria. Antibiotic resistance of microorganisms, mechanisms of occurrence. | 2 |
| 16 | <u>Delivery of module No. 2 on the topic:</u> "Physiology of microorganisms. Principles of cultivation and identification of microbes. Sterilization. Disinfection. Antibiotics". | 2 |

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| 17 | The doctrine of infection. Ways and mechanisms of pathogen transmission. forms of infection. | 2 |
| 18 | infectious immunology. The human immune system. properties of antigens. | 2 |
| 19 | Forms of the immune response. Structure and functions of antibodies. | 2 |
| 20 | Serological method of laboratory diagnostics. Serological reactions. Diagnosticums. Diagnostic sera. Mechanism of reactions of agglutination, precipitation. | 2 |
| 21 | The mechanism of immune lysis reactions, complement fixation reactions. | 2 |
| 22 | Immunofluorescence reaction, enzyme immunoassay, radioimmunoassay. | 2 |
| 23 | Immunoprophylaxis. Immunotherapy. | 2 |
| 24 | <u>Delivery of module No. 3 on the topic: "Infection. Immunity. Serological method of laboratory diagnostics."</u> | 2 |
| 25 | Symbiosis of microorganisms. Residents and pathogens. Normal human microflora. Dysbiosis. | 2 |
| 26 | Genetics of microorganisms. Types of variability of microorganisms. genetic recombination. polymerase chain reaction. | 2 |
| 27 | General virology. Morphology and ultrastructure of viruses. Prions. Viroids. | 2 |
| 28 | Bacteriophages, phage typing of bacteria. | 2 |
| 29 | Virus cultivation. Methods of indication and identification of viruses. Methods for laboratory diagnosis of viral infections. | 2 |
| 30 | <u>Delivery of module No. 4 on the topic: "Genetics of microorganisms. Symbiosis of microorganisms. General Virology."</u> | 2 |

Head teacher of the department of microbiology,
associate professor, candidate of medical sciences



/M.G. Chertkoeva/

09.02. 2022