

«Approved»
 Head of department
 microbiology, virology,
 immunology with a course of
 clinical microbiology
 Stepanenko I.S.

Protocol № 1 от 29.08.2023.

**Calendar-thematic lesson plan of lecture type
 in the discipline "Microbiology, Virology"
 for students in the educational program
 specialist in the specialty 31.05.01 General Medicine,
 focus (profile) General Medicine,
 Full-time form of education
 for 2024-2025 academic year
 (3rd semester, stream 5)**

End of semester – 25.12.2024

№	Lecture-type topics	Лектор	Даты
1.	Microbiology as a science, stages of development of microbiology. Prokaryotic cell structure. ¹ The subject and problems of medical microbiology and value of microbiology at the practical activities of the doctor. The basic stages of development of microbiology. The systematization and nomenclature of microorganisms. The basic groups of the bacteria. Classification categories (family, a sort, a kind, a variant). Taxonomic systems of classification. Concept about a kind, a variant, populations, culture, a colony, culture, a clone. Morphology of bacteria. Structures of prokaryotic cells: cell wall, cytoplasmic membrane, nucleoid, ribosomes, cytoplasm, mesosomes, capsules and loose slime, flagella, pili and fimbriae, spores, intracellular inclusions, plasmids. The chemical composition and functions. The main differences between Gram-positive cell wall and Gram-negative cell envelope. Microscopic method for study of microorganisms. ²	Head of department Stepanenko I.S.	2 13.09
2.	Physiology of microorganisms. ¹ Chemical analysis of cell contents. Pathways of bioenergetics. The metabolism of microbes: catabolism and anabolism. Biosynthesis and the crossing pathways of metabolism. Microbial nutrition. Forms, sources and functions of essential nutrients. Classification of nutritional types. Transport: movement of substances across the cell membrane. Diffusion and molecular motion. Bacteriological method for study of microorganisms. ²	Head of department Stepanenko I.S.	2 27.09

3.	Morphology and physiology of viruses. ¹ Their structure, cultivation methods. Interaction of a virus with a cell. Distinctive properties and features of viruses. reproduction of viruses. Methods for cultivating viruses, their indication and identification. ²	Head of department Stepanenko I.S.	2 11.10
4.	Ecology of microorganisms and sanitary microbiology. ¹ Microflora of water, air, soil. Sanitary-indicative microorganisms. Microorganisms of the environment. The role of water, soil and air in the spread of infectious diseases. Methods and methods for assessing the sanitary state of the environment. ²	Head of department Stepanenko I.S.	2 25.10
5.	The doctrine about antibiotics. ¹ Concept of chemotherapeutic drugs. What does term «antibiotics» mean? Characteristics of the ideal antimicrobial drug. Classification of antibiotics according their origin, action spectrum, mechanism of action, chemical structure. Antibiotics and mechanisms of their action. Main principles of a rational chemotherapy. Side effects of antibiotics, complications of chemotherapy. Resistance of microbes to antibiotics. Methods of warning of formation of resistant causative agents. Methods for the study of sensitivity of microorganisms to antimicrobial drugs. ²	Head of department Stepanenko I.S.	2 08.11
6.	The doctrine about infectious process. ¹ A history of a question. Concept about infectious process. Concept about pathogenicity and virulence. Factors of pathogenicity. Pathogenicity and type of a feed. Conditions of realization of pathogenic properties. Properties of toxins. The doctrine about infectious process. Forms of infections: exogenic, endogenic, focal, generalized, mixed, a mono infection, relapse, sharp, chronic, persistent. The mechanism of transfer of an infection. Biological method for the study of microorganisms and infectious process. ²	Head of department Stepanenko I.S.	2 22.11
7.	The doctrine of immunity. ¹ The concept of immunity. The main types of immunity. Innate and acquired immunity: cells and mechanisms of action. The immune system of the human body. Serological research method. ²	Head of department Stepanenko I.S.	2 06.12

¹ - theme

² - essential content