Microbiology

In the program "Microbiology" special attention is paid to the practical skills necessary for junior medical specialists in their work: taking the material from the patient and transporting it to the laboratory for research, registration of accompanying documentation, sowing of material on nutrient environments, observance of safety during work with Pathogens of infectious diseases.

The program of discipline consists of two sections - general and special. During the study of general microbiology, much attention is paid to the morphology and physiology of microorganisms. The topic "Microbes and the environment" examines the impact of various environmental factors on microorganisms, as well as antimicrobial measures that are widely used in medicine.

In topic "Genetics and variability of microorganisms. Bacteriophages Antibiotics "highlights the role of modern biotechnology and genetic engineering in the manufacture of prophylactic, medical and diagnostic drugs. The attention was paid to modern microscopic, bacteriological, virological, serological, immunological, allergic and biological methods of research, their priority and specific use in laboratory practice was explained.

The topic "The doctrine of infection" deals with various types of relationships between pathogenic microorganisms and the human body, mechanisms and ways of infection, periods and forms of infectious diseases.

Considerable attention is paid to the study of the significance of opportunistic microorganisms in the development of a variety of human pathology. In recent years, domestic infectious diseases have become widespread. A deep study of the topic "The doctrine of immunity," provides an understanding of the mechanisms and laws of the immune system, knowledge of the types of immunity and mechanisms of development of allergies.

Study of the section "Special microbiology", we recommend starting with the general characteristics of the group of pathogenic microorganisms, and then proceed to the most characteristic features of pathogens. Knowledge of the basic biological properties of pathogens, their resistance in the environment, sensitivity to disinfectants and chemotherapeutic drugs will enable the medical officer to provide qualified assistance to patients, to properly carry out care products.

Having mastered the discipline "Microbiology", students receive the necessary knowledge for further study of genetics, epidemiology, infectious diseases and other clinical disciplines.

Teaching should be conducted at the level of modern achievements in the relevant field of medicine, using the latest information technologies, from the standpoint of the doctrine of the integrity of the organism, the impact of the

environment on the human body, paying attention to the environmental education of students.

For studying the discipline "Microbiology" the program provides for 81 hours, among them: 18 hours - lectures; 32 - practical classes, 31 - independent work of students.

After studying the discipline students must to know:

 the main morphological and biological properties of pathogens of infectious diseases;

 the timing of survival of pathogens in the environment;

 application of sterilization and disinfection;

 genotypic and phenotypic variability of microorganisms, the role of bacteriophages, antibiotics;

 sources, mechanism and factors of transmission of pathogens of infectious diseases;

 pathogenesis of infectious diseases;

 methods of laboratory diagnostics of infectious diseases;

 the basic principles of specific prevention and treatment of various infectious diseases;

 the use of vaccines and serums;

 the rules of work in the bacteriological laboratory.

Students should be able to:

 work with a microscope;

 select material for research in various infectious diseases;

 to transport infected (contagious) material to the laboratory;

 to complete the accompanying documentation;

 carry out primary sowing of the pathological material on the nutrient medium (bacteriological loop, spatula, tampon);

 to make smears from pathological material and culture of microorganisms;

 to dye preparations simple and complex methods;

 disinfect infected material, workplace, overalls, hands;

 prepare the material for sterilization, carry out sterilization control;

 determine the sensitivity of microorganisms to antibiotics by disc method.

Students should be informed about:

 achievement of microbiology in overcoming infectious diseases;

 interactions of microbes and the environment;

 the types and forms of the infectious process;

 the factors of immunity;

- allergy and anaphylaxis;
- serological reactions;
- methods of virological research.