



МЕДИЦИНСКИ УНИВЕРСИТЕТ – СОФИЯ
Medical University - Sofia
МЕДИЦИНСКИ ФАКУЛТЕТ
Faculty of Medicine – Deans's Office

EDUCATIONAL PROGRAM
ON
HYGIENE AND ECOLOGY

Annotation on the Studied Discipline:

Hygiene is a medical science that studies the interaction within the "human-environment" system with the aim of promoting proper development, preservation, strengthening, and improvement of human health and work capacity, as well as ensuring active longevity.

Hygiene is an independent branch of medical science with a multidisciplinary character, addressing the issues of the impact of the environment on the quality of life and the health of individuals in the community and workplace. Modern hygiene science, also known as preventive medicine, examines the causes and spread of socially significant diseases in human society and utilizes the acquired knowledge for primary, secondary, and tertiary prevention.

Primary areas of study within this discipline include communal hygiene, nutrition hygiene (nutritionology), occupational medicine, and school medicine. General hygiene issues and specific aspects of individual sections are examined, along with the application of hygiene methods in practice.

Epidemiology is an independent branch of medicine studying etiology and spreading of infectious diseases in a human community and is aimed at prevention, control, and final eradication of these diseases. The curriculum covers questions of general and applied epidemiology in order to examine contemporary knowledge of epidemic control and objective goals governing its occurrence, basic prophylaxis and infectious disease control, methods and disinfection means, disinsection and deratization.

Lectures

1. Introduction to environmental health and hygiene. Hygiene as a main prophylactic branch in medicine, main components and relation with the other sciences. Medical Ecology.
2. Hygienic characteristic of physical factors of the atmosphere. Climate and weather. Global ecological problems. Air pollution.
3. Hygienic requirement of water supply. Water pollution.
4. Hygiene of the soil. Soil pollution. Health effect of the soil pollution.
5. Food, nutrition, and diet therapy. Nutritional problems in public health. Macronutrients, vitamins, minerals. Food of animal and vegetable origin. Nutritional assessment, requirements, functions, sources.
6. Main principles of healthful nutrition.. Dietary nutrition, characteristic of different diets.
7. Nutrition among different population's groups. Food connected diseases. Food pollution.
8. Occupational medicine Unfavourable factors of working condition. Occupational diseases. Work physiology. Physical factors - noise, infra and - ultra sound, vibration, atmospheric pressure.

9. Occupational medicine. Chemical factors in working conditions - prophylactic measures.
10. Hygienic characteristic of industrial work. Industrial Technology of Drug Dosage Forms and Galenical Preparations.
11. Acceleration. School program. Healthful knowledge. Main diseases at school. Healthful way of lifestyle. Personal hygiene.
12. Epidemiological characteristics of Hepatitis B, C and HIV infection
13. Infectious process. Epidemic process. Principles and organization of prevention and control of infectious diseases.
14. Epidemiological characteristics of intestinal infections
15. Epidemiological characteristics of respiratory infections.

Thematic plan for exercises

1. Air pollution - main sources and health effects. General approaches to air monitoring. Sampling for determination of air pollution. Prevention and control of air pollution.
2. Thermal comfort - definition; main indices used to express thermal comfort and heat stress. General approaches to measurement of temperature, humidity and air velocity. Physiological methods for thermal comfort evaluation. Health effects of unfavourable thermal environment.
3. Surveillance of drinking water quality. Water quality – criteria and standards. Water sampling for physical and chemical examination and for bacteriological examination. Purification of water. Disinfection of water. Chlorination - principles and methods.
4. Dietary and Nutritional Assessment of the Individual. Nutritional Assessment by Clinical, Anthropometric and Biochemical Methods.
5. Food Surveillance. Sanitation of Eating Places and Food store. Foodborne diseases. Prevention of the Bacterial Diseases.
6. Industrial hygiene. Recognition, evaluation and control of physical and chemical occupational health hazards. Risk assessment.
7. Sterilization and disinfection - physical and chemical method. Rodent control. Insect control.
8. Vaccines - types, routes of administration. Contraindications for vaccines. Immunoglobulins and sera. Immunization schedule – Bulgaria.

Current Assessment:

- Oral questioning before conducting the practical session;
- Test examination during the training.
- Written development on a given topic.
- Verification of the student markbook.

Outlines

1. Introduction to environmental health and hygiene. Hygiene as a primary prophylactic branch in medicine, its main components, and its relationship with other sciences.
2. Medical Ecology. Contemporary hygiene-ecological issues concerning environmental conservation.
3. Hygienic requirements for pharmacies.
4. Hygienic characteristics of atmospheric physical factors. Global ecological problems.
5. Climate and weather.
6. Air pollution - sources, characteristics of pollutants, impact on health. Methods for assessing atmospheric pollution.
7. Thermal comfort - definition; primary indices used to express thermal comfort and heat stress. Health effects of unfavorable thermal environments.
8. Methods for assessing microclimate - temperature, humidity, and air velocity. Physiological methods for evaluating thermal comfort.
9. Surveillance of drinking water quality. Water quality criteria and standards. Sampling water

- for physical, chemical, and bacteriological examination.
10. Water purification. Water disinfection. Principles and methods of chlorination. Water pollution.
 11. Soil hygiene. Soil pollution. Health effects of soil pollution.
 12. Hygiene-ecological problems in urban areas. Urbanization.
 13. Main principles of healthy nutrition. Dietary habits, characteristics of different diets.
 14. Macronutrients, vitamins, minerals. Foods of animal and plant origin.
 15. Nutrition among different population groups.
 16. Dietary and nutritional assessment of individuals. Nutritional assessment through clinical, anthropometric, and biochemical methods.
 17. Food surveillance. Sanitation of eateries and food storage.
 18. Foodborne diseases. Prevention of bacterial diseases.
 19. Occupational medicine. Adverse factors in working conditions.
 20. Workability. Fatigue and exhaustion. Prevention of fatigue.
 21. Physical factors - noise, infra and ultrasound, vibration, atmospheric pressure.
 22. Occupational medicine. Chemical factors in working conditions - prophylactic measures.
 23. Hygienic characteristics of industrial work.
 24. Acceleration. School programs. Healthy knowledge.
 25. Main diseases in schools. Healthy lifestyle practices.
 26. Ecology of living parasitarian system. Infectious process. Epidemic process.
 27. Sources of infection: the patient and the carrier of infection. Animals as a source of infection.
 28. Mode of transmission of infection – phases, types. Vehicles of transmission. Routes of transmission. Classification of infectious diseases.
 29. Vehicles of transmission – air, water, soil, food, insects.
 30. Susceptibility of the population. Immunity.
 31. Significance of the social and environmental factors as driving forces of the epidemiological process. Seasons and cycles of the infectious diseases.
 32. General prophylaxis and basic antiepidemiological measures. Measures in the epidemic centre.
 33. Disinfection and sterilization – methods and characteristics of agents used.
 34. Disinsection – methods and characteristics of agents used.
 35. Derratization – methods and characteristics of agents used.
 36. Specific prophylaxis. Immunizing agents. National Immunization Schedule.
 37. Ecological and epidemiological characteristics of shigellosis.
 38. Ecological and epidemiological characteristics of salmonellosis.
 39. Ecological and epidemiological characteristics of viral hepatitis A and E.
 40. Ecological and epidemiological characteristics of scarlet fever.
 41. Ecological and epidemiological characteristics of measles.
 42. Ecological and epidemiological characteristics of rubella and varicella.
 43. Ecological and epidemiological characteristics of influenza.
 44. Ecological and epidemiological characteristics of HIV infection and AIDS.
 45. Ecological and epidemiological characteristics of viral hepatitis type B, C and D.
 46. Ecological and epidemiological characteristics of tetanus.
 47. Ecological and epidemiological characteristics of rabies.

Educational literature:

- Hygiene and Medical ecology – Textbook and handbook for pharmacy students, Prof. P. Gatseva, 2018

- Lecture Course In Epidemiology, 2014-2017
- Park's Textbook of PREVENTIVE AND SOCIAL MEDICINE 24th Edition 2017 by K. Park
- <http://www.who.int/medicines/topics/en/>
- <https://www.cdc.gov/niosh/topics/default.html>