

MINISTRY OF EDUCATION AND SCIENCE OF THE RUSSIAN FEDERATION

PENZA STATE UNIVERSITY

MEDICAL INSTITUTE



APPROVED

Director of the Medical Institute
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WORKING PROGRAM OF DISCIPLINE

C1.1.23 Hygiene

Specialty: 31.05.01 General Medicine

Qualification (degree) of the graduate: Medical doctor

Type of study: full-time

Penza, 20 16

1. Subject mastering goals

The purpose of mastering the discipline "Hygiene" is the formation of readiness to implement a set of measures of primary and secondary prevention in the practical activities of the Medical doctor, with the goal of strengthening people's health.

The tasks of studying hygiene are: mastering the theoretical foundations of discipline for a proper understanding of the interaction of environmental factors and the human body in the conditions of professional activity and the population's living; mastering the methods of sanitary and hygienic research to obtain objective information about the living conditions of the population and the professional activities of individual professional groups; acquisition of skills of preventive and current sanitary supervision at various sites; hygienic education and the formation of a healthy lifestyle.

2. The place of discipline in the structure of the specialty

The discipline "Hygiene" is included in the basic part of the C1 block of the discipline.

Hygiene is one of the basic disciplines that is interconnected with disciplines: jurisprudence, biology, chemistry, biochemistry, anatomy, physiology, microbiology, virology.

The basic provisions of hygiene are necessary for the study of disciplines: public health and public health, therapy, surgery, obstetrics and gynecology, pediatrics, and infectious diseases.

3. Student competences developed as a result of subject mastering Hygiene

Studying of the subject is intended to develop elements of the following competences according to FSESHE in the given field:

Competence code	Title of competence	Structural elements of competence (having mastered the subject students should have knowledge, skills, working abilities)
1	2	3
SPC-1	be able to perform the scope of measures aimed at protecting and promoting the health and safety of the public, including fostering healthy lifestyle, prevention of the diseases and their treatment, early diagnostic of medical conditions, their causes and conditions of their development, elimination of harmful environmental factors	Knowledge: <ul style="list-style-type: none">– principles and measures of preventive medicine;– organization of preventive measures;– the basis of interaction between the body and the environment;– the role of hygiene in the scientific development of the problem of promoting health, improving efficiency;– hygienic characteristics of environmental factors, mechanisms of action on the body;– basics of evidence-based medicine in establishing the effect of environmental factors;– hygienic aspects of nutrition;– methods of health education.
		Skills: <ul style="list-style-type: none">– assess the likelihood of adverse effects on the body of environmental factors;– participate in the organization and provision of preventive, sanitary and anti-epidemic, medical and rehabilitation assistance to the population.
		Working abilities: <ul style="list-style-type: none">– interpretation of the results of a laboratory study of the microclimate of living quarters, educational institutions and medical institutions;– interpretation of the results of a laboratory study of water, food, evaluation of their suitability for use;– methods of assessing the individual and organized nutrition of the population, food status;

		<ul style="list-style-type: none"> – methods of assessing the health status of the population of different age and sex groups.
SPC-4	be ready to apply methods of public health monitoring and methods of medical statistical analysis of public health data	Knowledge: <ul style="list-style-type: none"> – methods of research of public health with the purpose of its preservation, strengthening and restoration; – methods of studying the influence of environmental factors on public health; – forms and methods of organization of hygienic education and education of the population; – principles for the development of prevention programs; – features of primary, secondary prevention.
		Skills: <ul style="list-style-type: none"> – use information on public health in the activities of medical organizations; – analyze information on public health; – make a list of activities that improve the quality and effectiveness of preventive care for the population.
		Working abilities: <ul style="list-style-type: none"> – method of research of public health with the purpose of its preservation, strengthening and restoration; – method of determining the impact of environmental factors on public health; – methods of organization of hygienic education and education of the population; – method of formation and implementation of preventive programs.
SPC-17	be ready to apply the standards of healthcare management in medical institutions of various levels	Knowledge: <ul style="list-style-type: none"> – organization of work of medical institutions; – a system of measures for the prevention of nosocomial infections in medical institutions; – the organization of an anti-epidemic regime in medical institutions; – the procedure for recruiting staff to work in various divisions of the medical organization; – personal hygiene of medical personnel; – microbiological monitoring in medical institutions; – system of epidemiological surveillance of the state of anti-epidemic regime in medical institutions.
		Skills: <ul style="list-style-type: none"> – assess precursors and the prerequisites of epidemiological ill-being in medical organizations; – to analyze the state of the anti-epidemic regime in medical organizations; – plan preventive measures, depending on the profile of the hospital.
		Working abilities: <ul style="list-style-type: none"> – methods of assessing precursors of epidemiological problems in medical organizations;

		<ul style="list-style-type: none"> – methods of analyzing the state of the anti-epidemic regime in medical organizations; – algorithm of organization of epidemiological surveillance in medical organizations.
SPC-18	be ready to assist in evaluating the quality healthcare services with the use of medical statistical indicators and data	Knowledge: <ul style="list-style-type: none"> – methods of analyzing the activities of medical organizations (sanitary and hygienic aspect of the activity); – methods of assessing the quality of medical personnel in the prevention of nosocomial infections in medical organizations; – methods for assessing the quality and effectiveness of preventive work of medical personnel of institutions.
		Skills: <ul style="list-style-type: none"> – evaluate the results of the activity of the medical organization on the basis of medical and statistical indicators; – apply the main theoretical provisions, methodological approaches to the analysis and assessment of quality; – apply knowledge on normative, resource, methodical maintenance of quality of medical aid at the decision of situational problems; – apply hygienic standards to assess and improve the quality of care.
		Working abilities: methods of assessing the quality of care.

4. Structure and contents of subject Hygiene

4.1. Subject's structure

General work load of the subject totals 7 credit units, 252 hours.

№	Subject's (module's) sections and topics	Semester	Semester's weeks	Types of learning, including students' out-of-class work and workload (in hours)									Current progress monitoring types (by semester's weeks)							
				Work in class				Out-of-class work					Interview	Spoken test	Test marking	Check work marking	Paper marking	Marking of essays and other creative works	Course work (project)	Skill check
				Total	Lecture	Practice	Laboratory work	Total	Preparing for class work	Papers, essays etc.	Course work (project)	Preparing for exams								
1.	Section 1. Introduction to the discipline. History of the development of hygiene, ecology	4		6	2	4		1	1											
1.1.	Topic 1.1. Introduction to the discipline.	4	1	4	2	2		0,5	0,5				1		1					
1.2.	Topic 1.2. History of the development of hygiene, ecology	4	1	2		2		0,5	0,5				1		1					
2.	Section 2. Hygiene of air environment.	4		12	4	8		4	2	2										
2.1.	Topic 2.1. Hygiene of air environment	4	2	4	2	2		0,5	0,5				2		2					
2.2.	Topic 2.2. Solar radiation	4	3	4	2	2		2		2							3			
2.3.	Topic 2.3. Hygienic value of the main parameters of the environment	4	3	2		2		0,5	0,5				3		3					
2.4.	Topic 2.4. Methods of study of the main parameters of the environment	4	4	2		2		1	1											4
3.	Section 3. Water hygiene and water supply of populated area	4		16	4	12		3	3											
3.1.	Topic 3.1. Assessment of the quality of	4	5	4	2	2		0,5	0,5				5		5					

	drinking water																		
3.2.	Topic 3.2. Methods to improve the quality of drinking water	4	5	2		2		0,5	0,5				5		5				
3.3.	Topic 3.3. Chemical significance of water	4	6	4	2	2		0,5	0,5				6		6				
3.4.	Topic 3.4. Epidemic significance of water	4	7	2		2		0,5	0,5				7		7				
3.5.	Topic 3.5. Seminar (interim assessment)	4	7,8	4		4		1	1				7		8				
4.	Section 4. Soil and sanitation of populated areas	4		4	2	2		3	1	2									
4.1.	Topic 4.1. Hygiene of soil	4		2	2														
4.2.	Topic 4.2. Sanitation soil of populated areas	4	9	2		2		3	1	2			9		9		9		
5.	Section 5. Climate and human health. Hygienic aspects of acclimatization	4		8	2	6		4	2	2									
5.1.	Topic 5.1. Natural geographic conditions of the environment and human	4	9	2		2		1	1				9		9				
5.2.	Topic 5.2. Acclimatization and human health	4	10	4	2	2		2		2							10		10
5.3.	Topic 5.3. Using climate for therapeutic purposes	4	11	2		2		1	1				11		11				
6.	Section 6. Nutrition and human health	4		30	5	25		17	13	4									
6.1.	Topic 6.1. The base of nutrition hygiene	4	11	4	2	2		1	1				11		11				
6.2.	Topic 6.2. Methods of nutrition studying	4	12	2		2		2		2									12
6.3.	Topic 6.3. Order of sanitary and hygienic examination of foodstuff	4	13	2		2		1	1				13		13				
6.4.	Topic 6.4. Therapeutic and preventive nutrition. Clinical nutrition.	4	13	4	2	2		1	1				13		13				
6.5.	Topic 6.5. Features of a delivery of separate groups of the population.		14	2		2		2		2							14		
6.6.	Topic 6.6. Hygienic requirements to the organization of work of catering	4	15	2		2		1	1				15		15				

	department of medical institution																			
6.7.	Topic 6.7. Food poisonings and their prophylaxis	4	15	4	1	2		1	1				15		15					15
6.8.	Topic 6.8. Examination of food poisonings	4	16	2		2		1	1				16		16					
6.9.	Topic 6.9. Prophylaxis of hypovitaminoses, hypervitaminoses	4	17	2		2		1	1				17		17					
6.10	Topic 6.10. Prevention of iodine-deficiency diseases: main directions and methods of monitoring	4	17	2		2		1	1				17		17					
6.11	Topic 6.11. Microelementoses: classification and main characteristics	4	18	2		2		1	1				18		18					
6.12	Topic 6.12. Seminar	4	18	3		3		4	4				19		19					19
7.	Section 7. Hygienic problems of cities. Hygiene of residential and public buildings	5		12	4	8		2	2											
7.1.	Topic 7.1. City-forming factors and structure of a modern city	5	1	4	2	2		0,5	0,5				1		1					
7.2.	Topic 7.2. Hygienic issues of planning and urban development	5	1	2		2		0,5	0,5				1		1					
7.3.	Topic 7.3. Hygienic assessment of dwellings	5	2	4	2	2		0,5	0,5				2		2					
7.4.	Topic 7.4. Hygiene of rural settlements	5	3	2		2		0,5	0,5				3		3					
8.	Section 8. Occupational hygiene	5		16	4	12		8	6	2										
8.1.	Topic 8.1. Basic physiology of labor. Changes in the human body in the course of employment	5	3	4	2	2		0,5	0,5				3		3					
8.2.	Topic 8.2. Occupational exposures and poisonings diseases	5	4	4	2	2		0,5	0,5				4		4					
8.3.	Topic 8.3. Prevention of occupational diseases of medical personnel	5	5	2		2		2,5	0,5	2							5			5
8.4.	Topic 8.4. Industrial hygiene of children and adolescents	5	5	2		2		0,5	0,5				5		5					

8.5.	Topic 8.5. Pre-fail exam	5	6,7	4		4		4	4				6		6				7
9.	Section 9. Hygiene of children and adolescents	5		12	2	10		7	5	2									
9.1.	Topic 9.1. Age-specific morpho-functional features of the child's organism as a basis for hygiene of children and adolescents in the mode of operation of pre-school educational institutions	5	7	4	2	2		3	1	2			7		7		7		
9.2.	Topic 9.2. Sanitary and epidemiological requirements for the design, content of the work of pre-school educational institutions	5	8	2		2		1	1				8		8		8		
9.3.	Topic 9.3. Hygiene of school activities at school. Hygienic basis of physical education and hardening	5	9	3		2		1	1				9		9				
9.4.	Topic 9.4. Hygienic requirements for the placement, planning and equipping of preschool and school institutions	5	9	2		2		1	1				9		9		9		
9.5.	Topic 9.5. The main directions of the work of the doctor of children's and adolescent institutions	5	10	2		2		1	1				10		10				
10.	Section 10. Hygiene of treatment and prevention facilities	5		28	6	22		11	9	2									
10.1.	Topic 10.1. General principles of planning of treatment and prevention facilities	5	11	4	2	2		0,5	0,5				11		11				
10.2.	Topic 10.2. Analysis of the project of a medical organization	5	11	2		2		0,5	0,5				11		11				11
10.3.	Topic 10.3. Planning and operating mode in an obstetric hospital	5	12	2		2		0,5	0,5				12		12				
10.4.	Topic 10.4. Planning and an operating mode in infectious unit of hospital	5	13	2		2		0,5	0,5				13		13				
10.5.	Topic 10.5. Sanitary and	5	13	2		2		0,5	0,5				13		13				

	epidemiological requirements for surgical departments																		
10.6.	Topic 10.6. Normative requirements for the organization of a linen regimen in a medical organization	5	14	2		2		0,5	0,5				14		14				
10.7.	Topic 10.7. Hygienic aspects of prophylaxis of intrahospital infections	5	15	4	2	2		3	1	2			15		15				15
10.8.	Topic 10.8. Prevention of nosocomial infections in a health facility	5	15	2		2		0,5	0,5				15		15			15	
10.9.	Topic 10.9. Hygienic requirements to the device and operation of X-ray apparatus and carrying out X-ray inspections	5	16	4	2	2		0,5	0,5				16		16				
10.10.	Topic 10.10. Seminar (interim assessment)	5	17	4		4		4	4				17		17				17
11.	Section 11. Hygiene of children and adolescents	5		8	3	5		4	2	2									
11.1.	Topic 11.1. Hygiene of extreme situations and disasters	5		2	2														
11.2.	Topic 11.2. Hygienic questions of accommodation of people at emergency situations	5	18	3	1	2		1		1							18		18
11.3.	Topic 11.3. Hygiene of water supply of organized collectives in extreme conditions. Medical control over the nutrition of organized groups in special circumstances	5	19	2		2		1		1							19		19
11.4.	Topic 11.4. Seminar (interim assessment)	5	19	1		1		2	2				19		19				
	<i>Preparing for examination</i>							36				36							
	General workload, in hours			152	38	114		100	45,0	19,0		36	Interim attestation						
													Type		Semester				
													Pre-fail exam		4				
													Exam		5				

4.2. Subject's contents

Section 1. Introduction to discipline. History of development of hygiene, bionomics

Topic 1.1. Introduction to discipline

Subject and content of hygiene. Communication of hygiene with other sciences. Value of hygienic actions in activity of the attending physician. A concept about primary and secondary prophylaxis of diseases. Communication and interaction of preventive and medical medicine. Methods of hygienic researches: sanitary, statistical and epidemiological analysis of state of environment and health of the population.

Structure, kinds of activity and tasks of sanitary and epidemiologic service. Sanitary legislation. Law "About Sanitary and Epidemiologic Wellbeing of the Population".

History of a becoming and development of hygiene.

Hygiene in a classical antiquity (Hippocrates), in the early Middle Ages and in Renaissance. Formation and development of experimental and scientific hygiene (M. Pettenkofer). Founders of domestic hygienic science (A.P. Dobroslavin, F.F. Erisman, etc.). Founders of domestic medicine: M.Ya. Mudrov, N.I. Pirogov, S.P. Botkin, G.A. Zakharyin, A.A. Ostroumov - active supporters of the preventive direction in medicine.

Contribution of scientists and organizers of health care to formation and development of hygienic science and sanitary matter in Russia (N.A. Xie-mashko, Z.P. Solovyov, G.V. Hlopin, A.N. Sysin, A.N. Marzeev, N.K. Ignatov, F.G. Krotkov, A.A. Minkh, etc.).

Hygiene problems in the conditions of scientific and technical progress. The main research establishments, their role in development of hygienic science and in the international cooperation in this area.

Topic 1.2. History of development of hygiene.

Environment as combination of natural, anthropogenic and social factors. Material and psychogenic (informative) factors of medium. A concept about the biosphere and its components.

Hygienic problems in a bionomics. A concept about a bionomics, fundamental laws of a bionomics. The reasons of ecological crisis and its distinctive features in modern conditions.

Ecological factors and health of the population.

Concept about ecologically caused population diseases. Problems of hygienic science and sanitary practice in management of The Person — the Environment system.

Pollution and protection of atmospheric air, the soil and water as an environmental problem in the conditions of scientific and technical progress.

The harmful factors of the physical, chemical and biological nature influencing health of the population in modern conditions. Deposition and accumulation of harmful substances in various objects of the environment.

Value of biological chains in transfer of harmful substances (carcinogens, allergens, etc.) from the environment to the person.

Features of action on an organism of harmful factors of the environment.

Value of the combined, combined, complex, consecutive and intermittent action of various chemical and physical factors on an organism.

The remote effects of action of harmful factors on an organism, reflection of this action in structure and incidence of the population.

Hygienic regulation and forecasting. Methodology and principles of hygienic regulation.

Use of achievements of scientific and technical progress for the purpose of protection and improvement of the environment and health of the population. Laboratory and tool methods of assessment of factors of the environment, complex assessment. System and factorial analysis of influence of the environment on the state of health of the population and demographic indicators. Forecasting of an ecological situation in the area, use of these data in work of the doctor of a medical profile. Social and hygienic monitoring.

Role and the place of the doctor in development of comprehensive programs within various administrative educations in the field of protection and improvement of the habitat of the person, maintaining his health.

Legislative documents concerning protection and to rational use of natural resources.

Section 2. Hygiene of the air environment. Solar radiation

Topic 2.1. Hygiene of the air environment

Physical properties of air and their value for an organism (temperature, humidity, barometric pressure and speed of the movement of air). Microclimate and its hygienic value. Types of a microclimate and influence of microclimate on heat exchange and health of the person (overcooling and overheating).

Electric conditions of the atmosphere (air ionization, electric field of Earth, geomagnetic field, electromagnetic fields of radio frequencies, etc.), its hygienic value. Natural radioactivity of air and its hygienic value.

Chemical composition of atmospheric air and its hygienic value. Pollution and protection of atmospheric air as social and hygienic problem. Hygienic characteristic of the main sources of pollution of atmospheric air. Qualitative and quantitative structure of emissions in the atmosphere on primary branches of the industry. Degree of danger of industrial emissions to the environment and state of health of the population. Main nature protection actions and their hygienic efficiency. Methods of cleaning of production emissions in atmospheric air. The legislation in the field of protection of atmospheric air.

Topic 2.2. Solar radiation

Solar radiation and its hygienic value. Light climate. Hygienic characteristic of infrared, ultra-violet and visible parts of a solar range. Biological effect of an ultra-violet part of a solar range depending on a wavelength. Ultra-violet failure, its implication and prophylaxis. Artificial sources of ultra-violet radiation, their hygienic assessment.

Topic 2.3. Hygienic value of the main parameters of the environment

Hygienic requirements to air thermal regimen, natural and artificial lighting.

Topic 2.4. Methods of study of the main parameters of the environment

Order and equipment for assessment of key parameters of the external environment: temperatures, humidities, rates of the movement of air, pressure

Section 3. Hygiene of water and water supply of the inhabited places

Topic 3.1. Hygienic assessment of quality of drinking water

Physiological, sanitary and hygienic and balneal value of water. Norms of water consumption for the population. Hygienic requirements to quality of drinking water at the centralized and local water supply. Zones of sanitary protection of water sources.

Comparative hygienic characteristic of sources of water supply. Methods of cleaning of production emissions in water. Waste-free and low-waste productions.

Sanitary protection of the reservoirs and coastal sea waters used for the recreational, recreational and medical purposes. The legislation in the field of protection of reservoirs and sources of water supply.

Topic 3.2. Methods of improvement of quality of drinking water

The sanitary characteristic of the centralized and decentralized system of water supply. Hygienic requirements to the device and operation of mine wells and other constructions of local water supply.

The centralized system of water supply, the main methods of cleaning of drinking water: clarification, decolouration, coagulation, upholding, filtration; decontamination (chlorination, ozonization, UF-radiation, etc.). General scheme of the device of a water supply system.

Special methods of improvement of quality of drinking water (fluorination, defluorination, deodorization, deactivation, deferrization, desalting, etc.).

Topic 3.3. Chemical significance of water

Chemical composition of water. The diseases bound to the use of the water containing chemical impurity. Principles of prophylaxis of diseases of water character.

Topic 3.4. Epidemic significance of water

Reasons of anthropogenic pollution of reservoirs. A water role in diffusion infectious and parasitic diseases.

Section 4. Soil and sanitation of populated areas

Topic 4.1. Hygiene of the soil

Hygienic value, structure and properties of the soil. Processes of a self-cleaning of the soil. Characteristic of natural and artificial biogeochemical provinces. Migration and a turnover of trace substances in the biosphere.

Endemic diseases and their prophylaxis. Modern methodical approaches to hygienic rationing of trace substances and other chemicals. Characteristic and sources of anthropogenic pollution of the soil. Pesticides, mineral fertilizers, biological effect, biotransformation. Epidemiological value of the soil.

Topic 4.2. Sanitation soil of populated areas

Actions for protection of the soil, their efficiency. The system of cleaning of the city and the rural inhabited point. Collecting, excision, neutralization and utilization of sewage and municipal solid waste by various methods. Methods of cleaning of production emissions in the soil, burial of high-toxic and radioactive waste. A concept about the small sewerage and its use. Hygienic requirements to places of burial of corpses. The nature protection legislation in the field of protection of the soil.

Section 5. Climate and health of the person. Hygienic aspects of acclimatization

Topic 5.1. Natural geographic conditions of the environment and human

Natural and geographical conditions of the habitat and health of the person. Weather, definition and medical classification of types of weather. Periodic and aperiodic changes of weather.

Biorhythm and health. A seasonal factor in pathology of the person. Influence of change of a complex of weather conditions, atmospheric pressure, fluctuation of solar activity, geomagnetic field on health and working capacity. Geliometotropny reactions and their prophylaxis. Climate, definition of a concept. Construction and climatic division into districts of the territory of Russia. Climate, health and working capacity.

Topic 5.2 Acclimatization and human health

Acclimatization and its hygienic value. Features of acclimatization in the conditions of Far North, an arid zone, highlands, dry and humid subtropics. Features of work, life, the dwelling, clothes, footwear, a delivery, hardening in various climatic districts, their value in acclimatization and formation of a healthy lifestyle.

Topic 5.3 Order of sanitary and hygienic examination of foodstuff

Use of climate in the medical and recreational purposes.

Section 6. Nutrition and human health

Topic 6.1. The base of nutrition hygiene

Value of food for health and physical development of the population. Biological and ecological problems of food. Concepts and principles of a balanced diet. Quantitative and qualitative full value of food, balance of a diet. Characteristic of physiological norms of food. A concept about the food status.

Analysis of various theories of food (vegetarianism, starvation, separate food, etc.). Whites of an animal and phytogenesis, their sources, hygienic value. Plain and complex carbohydrates, their sources, hygienic value. A concept about the refined products and the "protected" carbohydrates.

Food fibers, their role in food and digestion. New food on the basis of nonconventional sources of white. Diet. Sense of fullness, digestion of food, factors them defining.

Topic 6.2. Methods of nutrition studying

Topic 6.3. Order of sanitary and hygienic examination of foodstuff

Nutrition value and sanitary and hygienic assessment of the main food (grain, milk, vegetables and fruit). Hygienic assessment of the products preserved by various methods. A concept about good-quality, substandard and conditional and good products.

Indicators of quality of foodstuff. Sanitary protection of foodstuff as main part of environmental protection.

Topic 6.4. Therapeutic and preventive nutrition. Clinical nutrition.

Features of catering services of the persons which were affected by radionuclides in the levels exceeding admissible.

Topic 6.5. Features of a delivery of separate groups of the population.

Prevention of the diseases connected with irrational food. Alimentary dystrophy. Kvashior-kor. Excess food, its role in formation of cardiovascular and other pathology. The diseases connected with specific features of an organism, their prevention. Features of food of children and elderly people.

Topic 6.6. Hygienic requirements to the organization of work of catering department of medical institution

Hygienic requirements to planning, the equipment, the mode, operation of catering departments. Hygiene of personnel.

Topic 6.7. Food poisonings and their prophylaxis

Contaminants of foodstuff. Value of chains of migration of toxic and radioactive materials through food to the person.

Development of the actions referred on prevention of pollution of foodstuff taking into account toxicity, cumulative properties, fastness to environment factors.

Food poisonings and their classification. Food poisonings of the microbial nature. Toxinfection of various etiology. Botulism, staphylococcal toxicosis. Mikotoksikoza: ergotism, fusariosis, aflatoksi-goats. A role of food in developing of microbial food poisonings of various etiology. Food poisonings of not microbial nature: products, toxicant by the nature, the products containing residual amounts of chemicals in the doses exceeding maximum allowable concentration.

Topic 6.8. Examination of food poisonings

Prophylaxis of food poisonings and infections. A role of the attending physician in investigations of alimentary poisonings and the organization of preventive actions.

Topic 6.9. Prophylaxis of hypovitaminoses, hypervitaminoses

Vitamins, their sources, hygienic value. avitaminoses, hypovitaminoses, hypervitaminoses, their reasons, clinical implications, prophylaxis.

Topic 6.10. Prevention of iodine-deficiency diseases: main directions and methods of monitoring

Concept about the yoddefitsitnykh diseases. Epidemiology of iodscarce diseases in the Russian Federation. The strategy of elimination of iodscarce diseases in the Russian Federation.

Topic 6.11. Microelementoses: classification and main characteristics

Mineral salts, their sources, hygienic value. Macro - and trace substances. Acid and main condition of an organism. Control of the program of prophylaxis of general iodination of salt.

Section 7. Hygienic problems of the cities. Hygiene of residential and public buildings

Topic 7.1. City-forming factors and structure of the modern city

City-forming factors and structure of the modern city. Environmental problems at various types of infrastructures of the inhabited places. Features of formation of the environment in the cities. Pollution of atmospheric air, reservoirs and soil.

Hum as factor of the habitat of the person. Electromagnetic field of radio frequencies, its role as factor of the environment, measure of prophylaxis of influence of the microwave oven of radiation.

Topic 7.2. Hygienic issues of planning and urban development

The state of health of the population in the modern cities. Hygienic questions of planning and building of the cities, principle of functional zoning of the city. Actions for improvement of the cities. Role of green plantings, reservoirs, recreational zones, their hygienic value.

Topic 7.3 Hygienic assessment of planning of the dwelling

Hygiene of inhabited and public zdajniya. Hygienic characteristic of construction and finishing materials. Hygienic assessment of planning of the dwelling, microclimate and illuminating intensity of premises. Demands to ventilation, heating, orientation over the countries of light and arts to unlimited lighting of rooms.

Main sources of air pollution of the enclosed space. Role of polymeric materials. Chemical and bacteriological air pollution of rooms, sanitary and indicative value of content of carbon dioxide, a formic aldehyde, Phenolum, etc. in air of rooms.

Prophylaxis of an adverse effect of physical and chemical factors on an organism at operation of household appliances.

Topic 7.4 Hygiene of rural settlements

Hygiene of the rural inhabited places. Features of planning, building and improvement modern rural inhabited

Section 8. Occupational health

Topic 8.1. Basic physiology of labor. Changes in the human body in the course of employment

The main legislation on labor protection, precepts of law, labor protection of women and teenagers.

Fundamentals of physiology of work. Brainwork and physical work. Changes in a human body in the course of work. Fatigue and overwork, overstrain and their prophylaxis. Features of working conditions during the modern period.

Prophylaxis of the diseases bound to the high level of a psychological strain, an intensification of productions. Hygiene of brainwork.

Topic 8.2 Occupational exposures and poisonings diseases

Professional harmfulness, occupational diseases and poisonings. Influence of working conditions on a case rate of industrial workers. The general principles of holding recreational actions on production: technological, sanitary and treatment-and-prophylactic. Hygienic rationing of factors of production medium. Individual protection equipment.

Hygienic requirements to sanitary devices at the industrial enterprises (ventilation, lighting, heating, etc.).

Microclimatic conditions in various production rooms.

Professional harmfulness in hot shops. A professional harmfulness during the work in the open air. Measures of prophylaxis of overheatings and frigorisms of an organism.

Influence of the increased and lowered atmospheric pressure in conditions of production. Lacunar illness, its prophylaxis.

Production hum and vibration, influence on an organism. Noise and vibratory illnesses. Measures of prevention of harmful effects of hum and vibration.

Industrial dust. The occupational diseases bound to work on production with high dust content of air. Types of a pneumoconiosis and their prophylaxis. A concept about harmful substances and professional poisonings. General patterns of effect of industrial chemicals.

Acute and chronic poisonings. Professional poisonings with carbon monoxide, sulfurous gas, nitrogen oxides, lead, Hydrargyrum, beryllium, organic dissolvents. Prophylaxis measures

Topic 8.3 Prevention of occupational diseases of medical personnel

The shop doctor, the main directions in work. Organization and order of performing preliminary and periodic medical examinations. Treatment-and-prophylactic delivery of workers. Production traumatism. The main reasons for traumatism on production. Actions for injury prevention. Prophylaxis of eye traumatism and pustular diseases of a skin. Indicators of health of working.

Questions of occupational health of health workers.

General characteristic of a professional harmfulness of medical work of the physical, chemical and biological nature.

Occupational health of surgeons, obstetricians-gynecologists, anesthesiologists. Characteristic of working conditions: physical fatigue, psychological strain, microclimate of operating rooms, air pollution by anesthetics. Case rate, actions for improvement of working conditions. Occupational health of health workers in altitude chambers. Classification of altitude chambers to destination. Demands to equipment, the equipment and a microclimate of rooms of altitude chambers. Impact on an organism of an oxygenation and elevated pressure. Barotraumas and their complications. Prophylaxis measures. Regimen of a compression and decompression. Selection criteria of the persons allowed to work in altitude chambers.

Occupational health in physiotherapeutic offices. Influence of currents UHF and microwave oven, maximum-permissible sizes of intensity of radiation. Sources of infrared and ultra-violet radiation, their impact on an organism. Organization of protection of personnel. Occupational health in radiological departments of hospitals and laboratories. Occupational health of doctors of a stomatologic profile (therapists, surgeons, prosthetists) in the conditions of polyclinic reception.

Topic 8.4 Industrial hygiene of children and adolescents

Adaptation of teenagers to production factors. Hygienic principles of rationing of conditions and organization of labor training and work of children and teenagers. Hygienic requirements to conditions of labor training and work of children and teenagers.

Section 9. Hygiene of children and adolescents

Topic 9.1. Age-specific morpho-functional features of the child's organism as a basis for hygiene of children and adolescents in the mode of operation of pre-school educational institutions

Hygienic requirements to placement, planning and the equipment of child care preschool and school facilities (day nursery gardens, schools, boarding schools, summer the camp).

Hygienic requirements to air thermal regimen, an insolation, natural and artificial lighting.

Catering services.

Main areas of work of the doctor of child care and teenage facilities. Tasks of preschool and school unit of an out-patient department and teenage office. Medical and recreational and antiepidemic actions, control of keeping of a sanitary and hygienic regimen. Hygienic education.

Tasks of the doctor in preparation and carrying out summer recreational work. Efficiency indicators.

Topic 9.2 Sanitary and epidemiological requirements for the design, content of the work of pre-school educational institutions

Main problems of hygiene of children and teenagers. Age morfo-functional features of a children's organism as basis of hygiene of children and teenagers.

State of health of children and teenagers. Influence of social and ecological factors on the state of health.

Criteria and groups of health.

Physical development as indicator of health of the population. Methods of assessment of physical development (sigmalny, regression, tsentilny). Complex assessment of physical development. Acceleration, retardation, detseleration.

Social and hygienic value of change of rates of age development.

Hygienic bases of a day regimen. The main regime moments, their sequence and duration for children of prepreschool, preschool and school age.

Hygienic bases of physical training and hardening. Forms of physical training. Medical groups for occupation physical culture. The organization of occupations and the demand to creation of a physical education class.

Topic 9.3. Hygiene of school activities at school. Hygienic basis of physical education and hardening

Hygiene of studies at school. The factors contributing to the development of a fatigue, prophylaxis of a fatigue.

Hygienic requirements to the organization of a lesson, school day, educational week. A role of active recreation in prophylaxis of a fatigue. Definition of readiness for training in a complex of medical and psychophysiological criteria.

Topic 9.4. Hygienic requirements for the placement, planning and equipping of preschool and school institutions

Topic 9.5. The main directions of the work of the doctor of children's and adolescent institutions

Hygiene of labor and inservice training. Vocational guidance and medical and professional consultation.

Section 10. Hygiene of treatment and prevention facilities

Topic 10.1. General principles of planning of treatment and prevention facilities

Main objectives of hospital hygiene. Modern hygienic problems of hospital construction. Hygienic requirements to placement of hospitals and planning of the hospital site. Systems of building of hospitals, zoning of the hospital site.

Hygienic requirements to reception, to ward section, to the operational block and other structural divisions of hospitals.

Microclimate, indicators of natural and artificial illumination, types of the insolyatsionny mode, sources of air pollution of hospital rooms. Ways of sanitation of air.

Elements of sanitary improvement of hospitals - heating, ventilation, water supply, the sewerage, their hygienic assessment.

Health regulations of descent and purification of hospital sewage, collecting and removal of solid waste

Topic 10.2 Analysis of the project of a medical organization

Planning and operating mode in, obstetric office of hospitals.

System of sanitary and hygienic actions for creation of the guarding mode and favorable conditions for stay of patients in medical institution.

Topic 10.3. Planning and operating mode in an obstetric hospital

Topic 10.4. Planning and an operating mode in infectious office of hospital

Planning and operating mode in infectious office of hospitals.

System of sanitary and hygienic actions for creation of the guarding mode and favorable conditions for stay of patients in medical institution.

Topic 10.5. Sanitary and epidemiological requirements for surgical departments

Planning and operating mode in surgical office of hospitals.

System of sanitary and hygienic actions for creation of the guarding mode and favorable conditions for stay of patients in medical institution.

Topic 10.6. Normative requirements for the organization of a linen regimen in a medical organization

System of sanitary and hygienic actions for creation of a protective regimen and favorable conditions of stay of patients in medical institution.

Topic 10.7. Hygienic aspects of prophylaxis of intrahospital infections

Hygienic aspects of prophylaxis of intrahospital infections. Planning, sanitary and disinfection actions. Sanitary and hygienic and antiepidemic regimen of hospital.

Topic 10.8. Prevention of nosocomial infections in a health facility

Topic 10.9. Hygienic requirements to the device and operation of X-ray apparatus and carrying out X-ray inspections

Use of radioactive materials in the opened and closed look.

Biological effect of the ionizing radiation. Characteristic of main types of radiation (alpha, beta, gamma, x-ray). The factors defining radiation hazard. Radiotoxicity. Standards of radiative safety. Principles of protection against external ionizing radiation and incorporation of radioactive materials.

Radiative control. Hygienic requirements to placement, planning and the equipment of radiological departments of hospitals.

The collecting, excision and neutralization of radioactive materials, their transportation in radiological departments of hospitals.

Occupational health of medical personnel at X-ray inspections. Dozny fields in X-ray diagnostic offices and when using mobile X-ray apparatus.

Radial load of medical personnel at radiological procedures. Radiation control.

Occupational health of health workers when using lasers. Classification of lasers by physics and technology parameters and degree of danger of the generated radiation.

The harmful factors accompanying operation of lasers.

Biological effect of laser radiation on eyes, a skin, internals. Maximum-permissible levels of laser radiation. Providing safe working conditions.

Section 11. Hygiene of extreme situations and accidents

Sanitary and hygienic problems of medicine of accidents. Hygienic questions of accommodation of people at emergency situations. Hygiene of water supply of organized collectives in extreme conditions. Medical control of food of organized groups of the population in special conditions

5. Educational technologies

1. Traditional occupations with manuals, documents (orders, instructions, etc.)
2. Testing.
3. Multimedia lectures.
4. Solution of situational tasks.
5. Performance of written works (papers on the set or free subject, reports).
6. Independent work with literature.
6. Teaching and learning materials for students' individual work. Forms of current and interim assessment.

5.1. Active methods of training

Method of the analysis of concrete situations (case method)

Research and assessment of microclimatic conditions (semester of IV)

Research and assessment of quality of drinking water. (semester of IV)

Research and assessment of food (semester of IV)

Sanitary and hygienic examination of the hospital (semester of V)

Sanitary and hygienic examination of schools (semester of V)

5.2. Solution of situational tasks

Hygiene of food (semester of IV)

Hygiene of medical institutions (semester of V)

Hygiene of children and teenagers (semester of V)

Occupational health (semester of V)

In order to implement an individual approach to teaching students who carry out the learning process on their own trajectory within the framework of an individual work plan, the study of this discipline is based on the following possibilities: providing out-of-class work with students including in the electronic educational environment using appropriate software equipment, distance learning forms, the possibilities of Internet resources, individual consultations, etc.

6. Educational and methodological support of students' out-of-class work.

Assessment means for current progress monitoring, interim attestation of subject mastering results.

6.1. Student self-study plan

Week №	Topic	Out-of-class work type	Task	Recommended literature	Amount of hours
Semester 4					
1	Topic 1.1. Introduction to the discipline.	Preparing for class work	<i>Learn materials, answer questions to materials, answer test</i>	a) 1,2,3 b) 1,2 c)1,2,3 List of Literature	0,5
1	Topic 1.2. History of the development of hygiene, ecology	Preparing for class work	<i>Learn materials, answer questions to materials, answer test</i>	a) 1,2,3 b) 1,2 c)1,2,3 List of Literature	0,5
2	Topic 2.1. Hygiene of air environment	Preparing for class work	<i>Learn materials, answer questions to materials, answer test</i>	a) 1,2,3 b) 1,2 c)1,2,3 List of Literature	0,5
3	Topic 2.2. Solar radiation	Preparing Papers	<i>Analyze the literature Make Paper</i>	a) 1,2,3 b) 1,2 c)1,2,3 List of Literature	2
3	Topic 2.3. Hygienic value of the main parameters of the environment	Preparing for class work	<i>Learn materials, answer questions to materials, answer test</i>	a) 1,2,3 b) 1,2 c)1,2,3 List of Literature	0,5
4	Topic 2.4. Methods of study of the main parameters of the environment	Preparing for class work	<i>Learn materials, answer questions to materials, answer test solve problems</i>	a) 1,2,3 b) 1,2 c)1,2,3 List of Literature	1
5	Topic 3.1. Assessment of the quality of drinking water	Preparing for class work	<i>Learn materials, answer questions to materials, answer test</i>	a) 1,2,3 b) 1,2 c)1,2,3 List of Literature	0,5
5	Topic 3.2. Methods to improve the quality of drinking water	Preparing for class work	<i>Learn materials, answer questions to materials, answer test</i>	a) 1,2,3 b) 1,2 c)1,2,3 List of Literature	0,5
6	Topic 3.3. Chemical significance of water	Preparing for class work	<i>Learn materials, answer questions to materials, answer test</i>	a) 1,2,3 b) 1,2 c)1,2,3 List of Literature	0,5
7	Topic 3.4. Epidemic significance of water	Preparing for class work	<i>Learn materials, answer questions to materials, answer test solve problems</i>	a) 1,2,3 b) 1,2 c)1,2,3 List of Literature	0,5
7,8	Topic 3.5. Seminar (interim assessment)	Preparing for seminar	<i>Learn materials, answer control questions to</i>	a) 1,2,3 b) 1,2 c)1,2,3	1

			<i>seminar</i>	List of Literature	
8	Topic 4.1. Hygiene of soil	Preparing for class work	<i>Learn materials, answer questions to materials, answer test</i>	a) 1,2,3 b) 1,2 c)1,2,3 List of Literature	
9	Topic 4.2. Sanitation soil of populated areas	Preparing for class work Preparing Papers	<i>Learn materials, answer questions to materials, answer test, Make Paper</i>	a) 1,2,3 b) 1,2 c)1,2,3 List of Literature	3
9	Topic 5.1. Natural geographic conditions of the environment and human	Preparing for class work	<i>Learn materials, answer questions to materials, answer test solve problems</i>	a) 1,2,3 b) 1,2 c)1,2,3 List of Literature	1
10	Topic 5.2. Acclimatization and human health	Preparing Papers	<i>Analyze the literature Make Paper make an intellectual map</i>	a) 1,2,3 b) 1,2 c)1,2,3 List of Literature	2
11	Topic 5.3. Using climate for therapeutic purposes	Preparing for class work	<i>Analyze the literature Paper marking</i>	a) 1,2,3 b) 1,2 c)1,2,3 List of Literature	1
11	Topic 6.1. The base of nutrition hygiene	Preparing for class work	<i>Learn materials, answer questions to materials, answer test</i>	a) 1,2,3 b) 1,2 c)1,2,3 List of Literature	1
12	Topic 6.2. Methods of nutrition studying	Preparing for class work Preparing Papers	<i>Learn materials, answer questions to materials, answer test make an individual diet</i>	a) 1,2,3 b) 1,2 c)1,2,3 List of Literature	2
13	Topic 6.3. Order of sanitary and hygienic examination of foodstuff	Preparing for class work	<i>Learn materials, answer questions to materials, answer test</i>	a) 1,2,3 b) 1,2 c)1,2,3 List of Literature	1
13	Topic 6.4. Therapeutic and preventive nutrition. Clinical nutrition.	Preparing for class work	<i>Learn materials, answer questions to materials, answer test</i>	a) 1,2,3 b) 1,2 c)1,2,3 List of Literature	1
14	Topic 6.5. Features of a delivery of separate groups of the population.	Preparing Papers	<i>Analyze the literature Make Paper</i>	a) 1,2,3 b) 1,2 c)1,2,3 List of Literature	2
15	Topic 6.6. Hygienic requirements to the organization of work of catering department of medical institution	Preparing for class work	<i>Learn materials, answer questions to materials, answer test</i>	a) 1,2,3 b) 1,2 c)1,2,3 List of Literature	1
15	Topic 6.7. Food poisonings and their prophylaxis	Preparing for class work	<i>Learn materials, answer questions to materials, answer test</i>	a) 1,2,3 b) 1,2 c)1,2,3 List of Literature	1

16	Topic 6.8. Examination of food poisonings	Preparing for class work	<i>Learn materials, answer questions to materials, answer test</i>	a) 1,2,3 b) 1,2 c)1,2,3 List of Literature	1
17	Topic 6.9. Prophylaxis of hypovitaminoses, hypervitaminoses	Preparing for class work	<i>Learn materials, answer questions to materials, answer test</i>	a) 1,2,3 b) 1,2 c)1,2,3 List of Literature	1
17	Topic 6.10. Prevention of iodine-deficiency diseases: main directions and methods of monitoring	Preparing for class work	<i>Learn materials, answer questions to materials, answer test</i>	a) 1,2,3 b) 1,2 c)1,2,3 List of Literature	1
18	Topic 6.11. Microelementoses: classification and main characteristics	Preparing for class work	<i>Learn materials, answer questions to materials, answer test</i>	a) 1,2,3 b) 1,2 c)1,2,3 List of Literature	1
18	Topic 6.12. Pre-fail exam	Preparing for Pre-fail exam	<i>Answer control questions</i>	a) 1,2,3 b) 1,2 c)1,2,3 List of Literature	4
Semester 5					
1	Topic 7.1. City-forming factors and structure of a modern city	Preparing for class work	<i>Learn materials, answer questions to materials, answer test</i>	a) 1,2,3 b) 1,2 c)1,2,3 List of Literature	0,5
1	Topic 7.2. Hygienic issues of planning and urban development	Preparing for class work	<i>Learn materials, answer questions to materials, answer test</i>	a) 1,2,3 b) 1,2 c)1,2,3 List of Literature	0,5
2	Topic 7.3. Hygienic assessment of dwellings	Preparing for class work	<i>Learn materials, answer questions to materials, answer test</i>	a) 1,2,3 b) 1,2 c)1,2,3 List of Literature	0,5
3	Topic 7.4. Hygiene of rural settlements	Preparing for class work	<i>Learn materials, answer questions to materials, answer test</i>	a) 1,2,3 b) 1,2 c)1,2,3 List of Literature	0,5
3	Topic 8.1. Basic physiology of labor. Changes in the human body in the course of employment	Preparing for class work	<i>Learn materials, answer questions to materials, answer test</i>	a) 1,2,3 b) 1,2 c)1,2,3 List of Literature	0,5
4	Topic 8.2. Occupational exposures and poisonings diseases	Preparing for class work	<i>Learn materials, answer questions to materials, answer test</i>	a) 1,2,3 b) 1,2 c)1,2,3 List of Literature	0,5
5	Topic 8.3. Prevention of occupational diseases of medical personnel	Preparing Papers	<i>Learn materials, answer questions to materials, answer test</i>	a) 1,2,3 b) 1,2 c)1,2,3 List of Literature	2,5
5	Topic 8.4. Industrial hygiene of children	Preparing for class work	<i>Learn materials, answer</i>	a) 1,2,3 b) 1,2	0,5

	and adolescents		<i>questions to materials, answer test</i>	c)1,2,3 List of Literature	
6,7	Topic 8.5. Seminar	Preparing for seminar	<i>Learn materials, answer control questions to seminar</i>	a) 1,2,3 b) 1,2 c)1,2,3 List of Literature	4
7	Topic 9.1. Age-specific morpho-functional features of the child's organism as a basis for hygiene of children and adolescents in the mode of operation of pre-school educational institutions	Preparing for class work Preparing Papers	<i>Learn materials, answer questions to materials, answer test Analyze the literature Make Paper</i>	a) 1,2,3 b) 1,2 c)1,2,3 List of Literature	3
8	Topic 9.2. Sanitary and epidemiological requirements for the design, content of the work of pre-school educational institutions	Preparing for class work	<i>Learn materials, answer questions to materials, answer test</i>	a) 1,2,3 b) 1,2 c)1,2,3 List of Literature	1
9	Topic 9.3. Hygiene of school activities at school. Hygienic basis of physical education and hardening	Preparing for class work	<i>Learn materials, answer questions to materials, answer test</i>	a) 1,2,3 b) 1,2 c)1,2,3 List of Literature	1
9	Topic 9.4. Hygienic requirements for the placement, planning and equipping of preschool and school institutions	Preparing for class work	<i>Learn materials, answer questions to materials, answer test</i>	a) 1,2,3 b) 1,2 c)1,2,3 List of Literature	1
10	Topic 9.5. The main directions of the work of the doctor of children's and adolescent institutions	Preparing for class work	<i>Learn materials, answer questions to materials, answer test</i>	a) 1,2,3 b) 1,2 c)1,2,3 List of Literature	1
11	Topic 10.1. General principles of planning of treatment and prevention facilities	Preparing for class work	<i>Learn materials, answer questions to materials, answer test</i>	a) 1,2,3 b) 1,2 c)1,2,3 List of Literature	0,5
11	Topic 10.2. Analysis of the project of a medical organization	Preparing for class work	<i>Learn materials, answer questions to materials, answer test</i>	a) 1,2,3 b) 1,2 c)1,2,3 List of Literature	0,5
12	Topic 10.3. Planning and operating mode in an obstetric hospital	Preparing for class work	<i>Learn materials, answer questions to materials, answer test</i>	a) 1,2,3 b) 1,2 c)1,2,3 List of Literature	0,5
13	Topic 10.4. Planning and an operating mode in infectious unit of hospital	Preparing for class work	<i>Learn materials, answer questions to materials,</i>	a) 1,2,3 b) 1,2 c)1,2,3 List of Literature	0,5

			<i>answer test</i>		
13	Topic 10.5. Sanitary and epidemiological requirements for surgical departments	Preparing for class work	<i>Learn materials, answer questions to materials, answer test</i>	a) 1,2,3 b) 1,2 c)1,2,3 List of Literature	0,5
14	Topic 10.6. Normative requirements for the organization of a linen regimen in a medical organization	Preparing for class work	<i>Learn materials, answer questions to materials, answer test</i>	a) 1,2,3 b) 1,2 c)1,2,3 List of Literature	0,5
15	Topic 10.7. Hygienic aspects of prophylaxis of intrahospital infections	Preparing for class work Preparing Papers	<i>Learn materials, answer questions to materials, answer test Analyze the literature Make Paper make an intellectual map</i>	a) 1,2,3 b) 1,2 c)1,2,3 List of Literature	3
15	Topic 10.8. Prevention of nosocomial infections in a health facility	Preparing for class work	<i>Learn materials, answer questions to materials, answer test</i>	a) 1,2,3 b) 1,2 c)1,2,3 List of Literature	0,5
16	Topic 10.9. Hygienic requirements to the device and operation of X-ray apparatus and carrying out X-ray inspections	Preparing for class work	<i>Learn materials, answer questions to materials, answer test</i>	a) 1,2,3 b) 1,2 c)1,2,3 List of Literature	0,5
17	Topic 10.10. Seminar (interim assessment)	Preparing for seminar	<i>Learn materials, answer control questions to seminar</i>	a) 1,2,3 b) 1,2 c)1,2,3 List of Literature	4
	Topic 11.1. Hygiene of extreme situations and disasters	Preparing for class work	<i>Learn materials, answer questions to materials, answer test</i>	a) 1,2,3 b) 1,2 c)1,2,3 List of Literature	
18	Topic 11.2. Hygienic questions of accommodation of people at emergency situations	Preparing Papers	<i>Analyze the literature Make Paper</i>	a) 1,2,3 b) 1,2 c)1,2,3 List of Literature	1
19	Topic 11.3. Hygiene of water supply of organized collectives in extreme conditions. Medical control over the nutrition of organized groups in special circumstances	Preparing Papers	<i>Analyze the literature Make Paper</i>	a) 1,2,3 b) 1,2 c)1,2,3 List of Literature	1
19	Topic 11.4. Seminar (interim assessment)	Preparing for class work	<i>Learn materials, answer questions to materials, answer test</i>	a) 1,2,3 b) 1,2 c)1,2,3 List of Literature	2
	<i>Preparing for</i>	Preparing for	<i>Learn materials,</i>	a) 1,2,3	36

	<i>examination</i>	class work	<i>answer questions to materials, answer test</i>	b) 1,2 c)1,2,3 List of Literature	
General load, in hours					100

6.2. Instructional guide lines on students' out-of-class work organization

By preparation for practical occupation the student has to get acquainted with a subject of the forthcoming occupation, know the purpose of occupation and a task which are set for it on this occupation, to study the list of control questions, standard test tasks.

1. Preparation for classroom occupations: using textbooks, lecture material, Internet resources the student answers control questions to occupation, repeats the practical skills necessary for development of this subject of occupation.

2. Preparation of papers: after delivery by the teacher of a task the student studies materials of the textbook, lectures on this subject, then passes to additional literature, the Internet to the resources and scientific publications recommended by the teacher of this subject.

On a subject of each occupation educational and methodical grants for students are prepared. The grant contains questions for preparation for occupation, the recommended literature, theoretical material, samples of the solution of tasks, a task for independent work, test questions. Students are provided with electronic option of an educational and methodical grant.

6.3. Materials to carry out current monitoring and interim attestation of students' knowledge

Competence mastering assessment

№	Assessment type	Monitored topics (sections)	Competences that include components under assessment
	Interview	Section 1-11	SPC-1,4,17,18
	Test marking	Section 1-11	SPC-1,4,17,18
	Paper marking	Topic 2.2, 4.2, 5.2, 6.2, 6.5, 8.3, 9.1, 10.7, 11.2, 11.3	SPC-1,4,17,18
	Marking creative works	Topic 10.8	SPC-1,4,17,18
	Skill check	Topic 2.4, 5.2, 6.2, 6.7, 6.12, 8.3, 8.4, 10.2, 10.10, 11.2, 11.3	SPC-1,4,17,18

Demonstrative check work variant

Task 1

Microclimatic conditions were studied in the 3-bed ward with an area of 21 m² (at a depth of 5.5 m and a height of 3.5 m) in the therapeutic department of the hospital, the following data were obtained: - the reading of the thermometer placed on the light-bearing (external) wall was 20.50C, located on the opposite (internal) wall 22.0C, on the inner side wall (at a distance of 3 m from the light-bearing wall) - 21.50C. All measurements were made at a height of 1 m from the floor. The vertical temperature drops were 10 ° C per meter of room height. The relative humidity measured by the aspirational psychrometer was 20%, the air velocity in the center of the chamber was 0.05 m / s.

Normative documents: SanPiN 2.1.3.1375 - 03 "Hygienic requirements for the placement, installation, equipment and operation of hospitals, maternity hospitals and other medical hospitals".

Give a hygienic conclusion on this situation.

Task2

There is the laboratory of the diagnostic department of the oncological hospital in the city of N. work with beta-emitting isotopes. With a surface area of 250 cm² of the laboratory floor, flushing

was carried out. After the radiometric study, radioactive contamination of the flushing was found equal to 5.5×10^5 particles / min.

Normative documents: "Norms of radiation safety-99 SP 2.6.1.758-99", Basic sanitary rules for ensuring radiation safety of SP 2.6.1.799-99.

Give an opinion on the level of contamination of the floor surface in the laboratory and, if necessary, recommendations for its reduction.

Task 3

30% of the examined individuals complained of excessive bleeding gums, at a medical examination of industrial workers of the metal work plant, conducted in March. On examination: edematous and loosened gums. After a small massage of the gums with your finger, scarlet blood appears on the mucous membrane. When measuring blood pressure, point hemorrhages were noted at the site of the cuff application.

Normative documents: "Norms of physiological needs in food substances and energy for different population groups." Ministry of Health of the USSR No. 5786-91, "Instruction on the work of the sanitary and epidemiological service for controlling the C-vitaminization of finished food, vitamin quality of diets, vitamin content in vitamin products of mass consumption and the issuance of vitamin preparations in industrial enterprises »Ministry of Health of the USSR No. 997-72 ..

Assess the situation and indicate the possible cause of complaints made by employees of the enterprise.

Evaluation criteria and decision of situational tasks

"Excellent" – grade is granted to a student, if the answer is complete, competent, logical; fluent terminology.

"Well" – grade is granted to a student, if the answer is logical enough with a single error in the particulars; a single error in terminology.

"Satisfactory" – grade is granted to a student, if the answer is not enough competent, incomplete, with errors in details; the error in terms.

"Unsatisfactory" – grade is granted to a student, if the answer illiterate, incomplete, with gross errors; lack of knowledge of terminology.

Demonstrative test variant

CHOOSE ONE CORRECT ANSWER:

1. Health - is:

- a) medical science that studies the influence of the environment on the health of certain population groups
- b) the branch of medicine that studies the impact of living and working conditions on human health, developing measures for disease prevention, ensuring optimum living conditions, health and prolong life.
- c) the field of medicine, which develops standards for hygiene.

2. Methods that do not apply hygiene:

- a) methods of sanitary inspection.
- b) description of the method of health
- c) the experimental method with volunteers.
- d) sanitary-statistical methods.
- e) hygienic experimental methods.

3. If any characteristics of the health condition of the sanitary-epidemiological situation is recognized as a sanitary-epidemiological safety:

- a) The process of accumulation of pathological changes in the organism.
- b) Changes in the body mainly at the level of pre-pathology.
- c) Lack of environment-related reactions.

4. If any characteristics of the environmental quality status of the sanitary-epidemiological situation is recognized as a sanitary-epidemiological trouble:

- a) Placement of residential areas and community facilities in the sanitary protection zones of intensive (excess) pollution.

- b) Accommodation of people in the zones of influence of industrial pollution are not above the standard of pollution.
- c) Accommodation of people in areas free from pollution.
5. If any characteristics of the socio-economic aspects of the sanitary-epidemiological situation recognized as well:
- a) The economic costs of increased morbidity exceeds the cost of prevention and treatment Ecopathology.
- b) The economic damage from the disease, due to the influence of environmental factors is comparable to the cost of prevention and treatment.
- c) The economic damage is not formed under the influence of environmental factors.
6. Habitat man - is:
- a) a set of social and economic factors that have (or can have) a certain impact on the health and disease of a certain group of people (the population of the territory), the effect of which is a major public health challenge.
- b) collection of objects, phenomena and environmental factors (natural and artificial) environment, which determines the conditions of human life.
- c) factors of the environment, defining the conditions for the existence and functioning of the human community.
7. Give an official definition of "environmental factors":
- a) biological, chemical, physical, social and other environmental factors that affect or may affect the rights and (or) on the health of future generations.
- b) the environmental factors that contribute to the development of various types of pathological conditions or diseases in certain population groups.
- c) a set of social, biological, genetic and medical records, determining the state of illness and health.
8. Among the risk factors that have a definite impact on the health and morbidity of the population occupies a leading position:
- a) the state of the external (environmental) environment.
- b) the genetic and biological characteristics of humans.
- c) lifestyle.
- d) the level of health care.
9. The leading federal legislative document defining basic concepts, requirements and provisions of the sanitary-epidemiological well-being is:
- a) the Constitution of the Russian Federation.
- b) The laws and other normative legal acts of the Russian Federation.
- c) the Federal Law "On sanitary and epidemiological welfare of population" from March 30, 1999 №52-FZ.
- d) Federal Law of 4 May 1999 №96-FZ "On Air Protection".
- e) Federal Law of January 10, 2002 № 7-FZ "On Environmental Protection".
- f) Federal Law of 2.01.2000g. №29-FZ "On quality and food safety."
10. The State Sanitary and Epidemiological Service of the Russian Federation - is:
- a) a single centralized system of federal bodies and agencies exercising state sanitary - epidemiological supervision in the Russian Federation.
- b) the system of bodies and establishments that execute the state sanitary and epidemiological supervision in the Russian Federation and members of the health care system.
- c) centers of state sanitary and epidemiological supervision in the Russian Federation constituting a network of institutions that carry out state sanitary and epidemiological supervision in the Russian Federation and under the Ministry of Health of the Russian Federation.
11. The direct management of the State Sanitary - Epidemiological Service of the Russian Federation shall:
- a) The Minister of Health of the Russian Federation.
- b) First Deputy Minister of Health of the Russian Federation - the chief state sanitary doctor of the Russian Federation.
- c) Department of Sanitary Inspection of the Ministry of Health of the Russian Federation.
- d) Federal Centre for Sanitary Inspection Ministry of Health of the Russian Federation.

12. Day of Education of the State Sanitary and Epidemiological Service of Russia officially considered:

- a) October 8, 1927.
- b) December 23, 1933.
- c) September 15th, 1922.
- d) 30 March 1999.

13. The risk to health - it is:

- a) the possibility (probability) of occurrence of harmful effects for the population (or individual) health, damage to health in a particular direction with a certain danger (the so-called risk factors).
- b) the possibility of the appearance of harmful effects to health of damage to health in a particular direction with a certain danger (the so-called risk factors).
- c) the likelihood (or lack thereof) of occurrence of symptoms of defects for the population (or individual) health damage (explicit or indirect) to health in a particular direction when exposed to certain risk factors.

14. The system does not include the notion of risk:

- a) health and criteria for its evaluation.
- b) environment and its hygienic characteristics;
- c) assessment of public awareness about the state of their health.
- d) the identification of risk factors;
- e) socio-hygienic monitoring.

15. The methodological basis of the analysis of risk factors are:

- a) the socio-hygienic monitoring.
- b) morbidity data in dynamics.
- c) evaluation of individual environmental factors in relation to the incidence of various types of diseases.
- d) hygienic ranking residential areas as a result of a comprehensive assessment of the quality of the environment and population health status.

16. Hygienic norm - is:

- a) qualitative indicator content of certain substances in the main components of the natural environment.
- b) set research permissible maximum or minimum quantitative and (or) the qualitative value of the index, characterizing a particular environmental factors in terms of its safety and (or) harmlessness for human beings.
- c) set the permissible quantitative and (or) the qualitative value of the index, characterizing a particular environmental factors in terms of its safety and harmlessness to humans.

17. The maximum allowable concentration - is:

- a) concentration, which when exposed to a person directly or indirectly causes abnormalities in the condition of the body detected by modern methods of research at once or in remote periods of life of present and future generations.
- b) the maximum concentration, which when exposed to a person directly or indirectly causes abnormalities in the body beyond the physiological reactions detected by the methods of research in terms of the life of the present and future generations, and does not worsen the conditions of life and work.
- c) the maximum concentration, which when exposed to a person throughout his life, directly or indirectly, does not cause deviations in the body beyond the adaptive physiological responses, detectable by modern methods of research at once or in remote periods of life of present and future generations, and not impairs the living and working conditions.

18. Give the definition of state sanitary - epidemiological rules and norms:

- a) legal acts establishing sanitary - epidemiological requirements (including safety criteria and (or) harmlessness of environmental factors for humans, hygienic and other standards), failure of which poses a threat to human life or health, as well as the threat of the emergence and spread of diseases .
- b) regulations establishing sanitary-epidemiological requirements (including safety criteria and (or) harmlessness of environmental factors for humans.

c) The documents issued by the Ministry of Health of the Russian Federation in the field of sanitary and epidemiological welfare.

19. The sanitary and epidemiological welfare of the population is defined as:

a) the state of health and the human environment in which there is no harmful effect of environmental factors on human and provided favorable conditions for its life.

b) the prevention of diseases in accordance with the sanitary - epidemiological situation and forecast of its change.

c) implementation of sanitary - epidemiological (preventive) measures organizational, administrative, engineering, health, veterinary and other measures aimed at eliminating or reducing harmful effects on human habitat factors, preventing the occurrence and spread of infectious diseases and mass non- diseases (poisoning) and their elimination.

20. The definition of social and hygienic monitoring includes:

a) assessment of the impact of environmental factors on the health of the population in order to create management decisions at the level of legislative and executive power.

b) a system of organizational, social, medical, sanitary-epidemiological, scientific and technical activities aimed at the organization of monitoring of the state sanitary and epidemiological welfare of the population, its evaluation and forecasting of changes setting, prevention, elimination or reduction factors of the harmful effects of the environment on health human.

c) the state system of observations of the state of public health and the environment, analysis, evaluation and forecasting, as well as determining the cause - effect relationship between the state of health and the influence of environmental factors.

21. To the state sanitary-epidemiological situation does not apply:

a) sanitary and epidemiological welfare.

b) sanitary-epidemiological trouble.

c) sanitary and epidemiological norms.

d) sanitary-epidemiological security.

Criteria of estimation of the test

"Perfectly" ("5") – grade is granted to a student, if 91% and more correct answers to test tasks.

"Well" ("4") – grade is granted to a student, if 81-90% of the correct answers to test tasks.

"Satisfactorily" ("3") – grade is granted to a student, if 71-80% of the correct answers to test tasks.

"Unsatisfactorily" ("2") – grade is granted to a student, if 70% and less correct answers to test tasks.

Interview questions

1. Sanitary product. Definition. The research methods applied in hygiene.

2. Sanitary and epidemiologic wellbeing population, definition, maintenance.

3. Evaluation criteria at various levels of sanitary and epidemiologic situations.

4. Habitat factors. Group of factors on influence on health of the population.

5. Sanitary legislation of the Russian Federation, definition, main documents.

6. Hygienic standards, maximum allowable concentration, state sanitary - epidemiological rules and standards.

7. Hygienic value of physical properties of air.

8. Complex impact of the air environment on an organism.

9. Influence on an organism of atmospheric pressure.

10. Solar radiation and its hygienic value.

11. Natural lighting. Concept. Main requirements.

12. Artificial lighting. Concept. Main requirements.

13. Optimum microclimatic conditions.

14. Admissible microclimatic conditions.

15. Requirements to the organization of control and methods of measurement of a microclimate.

16. Classification of the noise influencing the person. The normalized parameters and extremely admissible noise levels in workplaces.

17. Classification of an infrasound.

18. Determination of insolation.
19. Determination of illumination in a workplace.
20. Devices for determination of size of atmospheric pressure and the rule of carrying out measurements.
21. Devices for determination of temperature and humidity of air.
22. Devices for determination of speed of the movement of air.
23. Characteristic of the main parts of atmospheric air.
24. Characteristic of anthropogenic pollution of atmospheric air. The main sources of entering of contaminants in atmospheric air.
25. Influence of pollution of atmospheric air on a state health of the population of the industrial cities. Influence of pollution of atmospheric air on sanitary living conditions of the population.
26. Adjustments of quality of atmospheric air of the inhabited places. The limiting (defining) indicator of a harmfulness of contaminants.
27. Planning, sanitary, technological actions for protection from pollution of atmospheric air.
28. Methods of assessment of health of the population in connection with pollution of atmospheric air.
29. Physiological value of water for the person. Economic and household (hygienic) value of water for the population.
30. Characteristic of underground sources of water supply.
31. Characteristic of superficial sources of water supply.
32. Characteristic of economic and household and production drains, as polluters of water sources. Characteristic of other polluters of water sources.
33. Basic principles of the choice of a water source.
34. Protection of underground and superficial sources from pollution. Organization of zones of sanitary protection.
35. Influence of chemical composition of water on health of the person.
36. Definition of the basic concepts used at assessment of a water factor of transfer of infectious diseases.
37. Characteristic of processes of a self-cleaning of reservoirs.
38. General characteristic of a water factor of transfer of infectious diseases. Distribution of water sources on degree of sanitary reliability.
39. A general characteristic and classification of the diseases transmitted by a water factor. Survival of pathogenic microorganisms in the external environment.
40. Groups of "risk" of developing of the infections bound to a water factor of transfer. Main ways of contamination of water pathogenic microorganisms.
41. Characteristic signs of water epidemic flashes. Options of water flashes.
42. Characteristic of the waterway of transfer of a typhoid and cholera.
43. Shigelloses and role of the waterway of transfer of this group of intestinal infections.
44. Features of the waterway of diffusion of a viral hepatitis And.
45. Characteristic of the waterway of diffusion enteroviral, rotavirus infection and lambliasis.
46. Epidemiological value of water in transfer of a hay fever and a tularemia. Ratio water and other ways of data transmission of infections.
47. Hygiene of a delivery, task and principles. Main feedstuffs.
48. The concept of state policy in the field of a healthy delivery of the population of the Russian Federation.
49. Bases of a balanced diet. Demands to a diet and a diet.
50. Proteins, their sources, hygienic value.
51. Fats, their sources, hygienic value.
52. Carbohydrates, their sources, hygienic value.
53. Mineral salts, their sources, hygienic value.
54. Classification and characteristic of microelementosis.
55. A concept about iodine-deficient diseases. Reasons. Organization of biological monitoring of security of the population with an iodine.
56. Group and individual prophylaxis of iodine-deficient diseases.

57. Vitamins, their sources, hygienic value.
58. Hypervitaminoses. Characteristic. Prophylaxis.
59. Hypovitaminoses. Reasons. Signs. Prophylaxis.
60. Methods of assessment of adequacy of a delivery.
61. Features of a delivery of children.
62. Features of a delivery of elderly people.
63. A delivery of people of brainwork on the example of students.
64. Features of a delivery of pregnant women and nursing mothers.
65. Hygienic requirements to planning, the equipment, a regimen, operation of catering departments of medical institutions. Personal hygiene of personnel.
66. Characteristic of diets of a treatment-and-prophylactic delivery.
67. Planned and unplanned sanitary and hygienic examination.
68. Principles and directions of sanitary and hygienic examination of milk and dairy products.
69. Principles and directions of sanitary and hygienic examination of meat.
70. Principles and directions of sanitary and hygienic examination of fish.
71. Principles and directions of sanitary and hygienic examination of grain products.
72. Principles and directions of sanitary and hygienic examination of vegetables and fruit.
73. Principles and directions of sanitary and hygienic examination of can canned food.
74. Tasks, principles and character of a treatment-and-prophylactic delivery.
75. Tasks, principles and character of clinical nutrition. Characteristic of diets of clinical nutrition.
76. Food poisonings and their classification.
77. Typhoid: etiology, clinical features, ways and factors of transfer. Prophylaxis.
78. The food poisonings caused by opportunistic flora.
79. Order of investigation of food poisonings.

Paper topicsetc.

1. Hygienic assessment of an academic load in educational institutions
2. Hygienic requirements to the collecting, excision, neutralization and utilization of sewage and municipal solid waste by various methods
3. Impact of factors of educational medium and training on the state of health of pupils
4. Hygienic requirements to the organization and carrying out microbiological researches in medical institutions
5. The hygienic principles of a healthy lifestyle of persons taking into account age
6. Acclimatization and its hygienic value
7. Medico-social assessment of traumatism as component of social and hygienic monitoring
8. Environmental problems of the industrial city and approaches to optimization of the urban environment
9. Prophylaxis of an adverse effect of electromagnetic radiations on patients and personnel of medical institutions
10. Formation of favorable internal medium of preschool institution – the main objective of prophylaxis of a disease among children
11. Hygienic parameters of the structure of medical institutions
12. Hygienic assessment of various ways of processing of drinking water
13. Monitoring of a condition of a delivery of students
14. Value and catering services of school students in educational institutions from positions of primary prophylaxis
15. Hygienic actions for the address of a medical wastage in treatment-and-prophylactic institutions
16. Problem of utilization of a medical wastage
17. Scientific and methodical approaches to hygienic rationing of publishing production
18. Hygiene of studies at school
19. Hygienic bases of physical training and hardening in children's collectives
20. Changes in health and a case rate of children and teenagers in connection with training in institutions of the general education
21. Hygienic assessment of influence of the computer equipment on health of working

22. Topical issues of hygiene of inhabited medium
23. Value of vitamins B delivery of separate groups of the population
24. A delivery at brainwork
25. Hygienic aspects of prophylaxis of a failure of fluorine in a population ration
26. Hygienic importance of pollution of the habitat pesticides
27. Organization and methods of performing prevention of an iodine deficiency
28. The organization and methods of performing prevention of deficiency of a selenium in the territory of the Penza region
29. A factor of radio uneasiness of the population in the system of hygienic monitoring
30. Hygienic assessment of impact of a radon on health of the population, prophylaxis measure
31. Monitoring of quality of food staples and foodstuff in the territory of the Penza region
32. Medico-social assessment of an infectious case rate as component of social and hygienic monitoring
33. Sanitary and hygienic assessment of sources of drinking water supply of the Penza region
34. Hygienic bases of cleaning of the inhabited places
35. Social and hygienic monitoring of objects of the territories used for storage and destruction of chemical weapon
36. Hygienic aspects by production and turnover of dietary supplements to a nutrition (dietary supplement)
37. Social and hygienic monitoring in the Penza region
38. Monitoring of congenital malformations as component of social and hygienic monitoring
39. Retrospective analysis of a mortality of the population as component of social and hygienic monitoring
40. Social and hygienic assessment of structure of a delivery of the population of the small cities of the Penza region
41. About the concept of development and reforming of laboratory service of the public sanitary and epidemiologic service
42. The main directions of implementation of the Regional action plan for hygiene of the environment in the territory of the Penza region
43. Regional indicators of hygienic monitoring of quality of water
44. Hygienic assessment of structure of the contaminants coming to atmospheric air (on an example)
45. Hygienic problems of the centralized drinking water supply of the population
46. Public sanitary and epidemiologic service of the Penza region: history development stages, modern problems and perspective tasks. (as option - across the certain territory of the Penza region)
47. Development of hygiene as the fields of medicine during the Soviet period and modern Russia
48. Hygienic requirements for production of milk and dairy products
49. Efficiency of improvement of children in the conditions of country recreational institutions
50. Hygienic aspects of monitoring of production and the product sales received from genetically modified sources
51. Legislative ensuring sanitary and epidemiologic wellbeing of the population.
52. A role of a nutritional factor in prophylaxis of negative impact of alcohol on a human body
53. Hygienic assessment of base stations of cellular communication as source of electromagnetic impact on the environment and health of the population
54. State of health of children and teenagers of the Penza region
55. Medico-social problems when forming at the population of installations on a healthy lifestyle
56. The organization and conducting sanitary and epidemiologic examinations of foodstuff and food staples in modern conditions
57. Organization of medical care of the children's population as important direction of prophylaxis of diseases
58. History of a becoming and development of hygienic science in pre-revolutionary Russia
59. A role of periodic medical examinations in the system of medical prophylaxis of diseases
60. Obesity as medical and social problem
61. Hygienic aspects in work of sectionings of service of a blood in medical institutions

62. Health protection of workers and prophylaxis of occupational diseases in modern conditions
63. Hygienic bases of a day regimen for children of preschool and school age
64. Food poisonings in the Russian Federation: condition of a problem and tendency
65. Problem of mercurial environmental pollution
66. Ecological situation and state of health of the population of the Penza region
67. Problem of pollution of atmospheric air by the motor transport and ways of its decision
68. Realization of system of assessment of risks for health of the population as the most important stage of social and hygienic monitoring
69. Iron deficiency diseases: problem, epidemiology and principles of prophylaxis
70. Modern problems of a delivery of children and teenagers
71. Formation and development of sanitary and epidemiologic service of the Russian Federation
72. Professional case rate of health workers
73. Influence of chemical composition of water on the state of health of the population
74. Formation and development of sanitary and hygienic monitoring in the Russian Federation
75. Main directions of scientific providing system of social and hygienic monitoring
76. Hygienic criteria of establishment and change of sanitary protection zones of the enterprises, constructions or other objects
77. Hygienic assessment of exposure doses of the population through medical procedures

Criteria for evaluating the paper

"Excellent" - grade is granted to a student, if the author is familiar with the main literature of the issue, knows how to highlight the problem and determine the methods for solving it, is able to consistently state the essence of the issues under consideration, owns the corresponding conceptual and terminological apparatus, demonstrates an acceptable level of language literacy.

"Good" - grade is granted to a student, if the statement is not logical enough with single errors in details; single errors in the terminology; the topic as a whole is disclosed.

"Satisfactory" - grade is granted to a student, if the presentation is not literate, incomplete, with errors in details; uncertain knowledge of the main provisions and documentation; Errors in terminology; the topic is partially disclosed.

"Unsatisfactory" - grade is granted to a student, if the presentation is illiterate, incomplete, with gross errors; errors in assessing the situation; ignorance of terminology; the topic is not disclosed.

Test questions and tasks

Section 1. Introduction to the discipline. The history of development of hygiene and ecology

1. The subject and content of hygiene. The linkage of hygiene with other Sciences. The value of hygienic measures in the activities of the attending physician. Communication and interaction between preventive and curative medicine.
2. Development of hygiene in Russia.
3. Structure, activities and tasks of sanitary-epidemiological service. Federal law "On sanitary and epidemiological welfare of the population".
4. Action features on the body of harmful environmental factors. Risk factors, their classification.
5. Biological pollution of the external environment as an important sanitary and environmental issue.
6. Hygienic rationing. Methodology and principles of hygienic standardization as a basis of sanitary legislation.

Section 2. Hygiene of the air environment. Solar radiation

7. Microclimate and its hygienic significance. Types of microclimate and influence uncomfortable micro-climate for heat exchange and human health (hypothermia, overheating).
8. Hygienic significance of the physical properties of air.
9. Solar radiation and its hygienic importance.
10. Atmospheric air as the external environment. Complex influence of meteorological factors on the human body.
11. Chemical composition of atmospheric air and its hygienic importance.
12. Pollution and air protection as a social and ecological-hygienic problem.

13. Hygienic characteristics of the main sources of air pollution and composition of emissions by key industries. Main environmental measures and their hygienic efficiency.

Section 3. Hygiene of water and water supply of populated areas

14. Hygienic requirements to quality of drinking water at the centralized and local water supply.

15. Comparative hygienic characteristics of water supply sources. The choice of sources of water supply. Causes of anthropogenic pollution of water sources.

16. Requirements for the organization of centralized water supply system, the main methods of cleaning to drink water.

17. Epidemiological significance of water.

18. Special methods to improve the quality of drinking water.

Section 4. Hygiene of soil and sanitary cleaning of populated areas

19. Hygienic value of, composition and properties of the soil.

20. Endemic diseases, caused by chemical composition of the soil, and their prevention.

Section 6. Hygienic problems of cities. Hygiene of residential and public buildings

21. Features of formation of the environment in cities. Air pollution, Noise, and soils.

22. The health status of the population in modern cities. Hygiene issues-plan and insured in key cities.

Section 7. Nutrition and health of the population

23. Food hygiene, tasks and principles. The main nutrients.

24. The concept of the state policy in the field of healthy nutrition of the population of the Russian Federation.

25. Fundamentals of nutrition. The requirements for dietary intake and diet.

26. Proteins, their sources, hygienic value.

27. Fats, their sources, hygienic value.

28. Carbohydrates, their sources, hygienic value.

29. Minerals, their sources, hygienic value.

30. Classification and characteristics of microelementoses.

31. The concept of the iodine deficiency diseases. Reasons. The organization of the biological monitoring of the progress provision of the population with iodine.

32. Vitamins, their sources, hygienic value.

33. The hypervitaminoses. Feature. Prevention.

34. The hypovitaminosis. Reasons. Signs. Prevention.

35. Methods of assessment of adequacy of nutrition.

36. Food poisoning and their classification. Food poisoning of microbial nature.

37. Diseases of various etiologies.

38. Botulism. Reasons. Signs. Diagnosis. Prevention.

39. Mycotoxicoses.

40. Food poisoning non-microbial nature.

41. Prevention of food poisoning and infections. The role of a physician in investigations of food poisoning and prevention.

42. The peculiarities of nutrition of children and the elderly.

43. Hygienic requirements to planning, equipment, regime, exploitation of the hospital kitchens.

Personal hygiene of staff.

44. Characteristics of food rations preventive nutrition.

45. Principles and directions of the sanitary-hygienic examination of food products.

46. Objectives, principles and nature of therapeutic nutrition.

47. Objectives, principles and nature of clinical nutrition. Characteristics of the diets of clinical nutrition.

48. Over-nutrition and its role in the formation of cardiovascular and other diseases.

Section 8. Occupational health and safety worker health and

49. Fundamentals of physiology of labor. Changes in the human body in the course of employment.

50. Prevention of occupational diseases in the Russian Federation.

51. Industrial poisons, their classification. General regularities of action of industrial poisons.

52. The General principles of the health measures in the workplace: technological, sanitary-technical and medical.
 53. Industrial noise and vibration, effects on the body.
 54. Industrial dust. Occupational diseases, work-related on the production of high dustiness.
 55. Occupational injuries. The main causes of occupational injuries. Measures for the prevention of injuries.
- Section 9. Hygiene of children and adolescents
56. The health of children and adolescents. The impact of social and environmental factors on health.
 57. Physical development as an indicator of the health of the child population. Methods of estimation of physical development of children and adolescents.
 58. Criteria and groups of health of children and adolescents.
 59. Hygienic bases of physical education and hardening.
 60. Acceleration of physical development.
 61. Functions and tasks of a health worker in the school.
 62. Functions and tasks of the medical worker in a preschool institution.
 63. Hygienic requirements to organization of educational process.
 64. Hygienic requirements to placing, planning and equipment of school facilities.
 65. Hygienic requirements to placing, planning and equipment of preschool institutions.
 66. Hygienic requirements to the air-heating mode, exposure, natural and artificial lighting in the educational institutions.
 67. The task of the doctor in the preparation and conduct of the summer health work. Performance indicators.
 68. Goals of preschool - school Department clinics, and adolescent Cabinet.
 69. Hygienic requirements for catering in schools.
 70. The hygienic principles of a healthy lifestyle of persons based on age.
 71. Physical inactivity, its consequences and prevention.
- Section 10. Hygiene of treatment-and-prophylactic institutions
72. Hygienic requirements to location of hospitals and the planning of the hospital precinct. System for the construction of hospitals, the zoning of the hospital site.
 73. General principles of planning of medical institutions. The basic structural unit of a multidisciplinary hospital.
 74. Layout and mode of operation in an obstetric clinic.
 75. Layout and mode of operation in the infectious Department of the hospital.
 76. Health, surgeons, obstetricians-gynecologists, anesthesiologists.
 77. Hygienic requirements to organization to organization regime and labor protection of the staff of dent-logical units (physicians, surgeons, prosthetists).
 78. The main requirements to the internal planning and sanitary-hygienic regime in polyclinica-ing offices. Features of the mode of operation of the clinic during the period of quarantine for infectious disease-Yam.
 79. The concept of nosocomial infections. The prevalence in health care institutions. Problems of prevention at the present stage.
 80. Hygienic assessment of microbial air contamination in hospitals.
 81. The microclimate of the MPI indicators of natural and artificial light, types insulating regime, the sources of air pollution the hospital premises. Methods of sanation of air.
 82. Research methods the main physical parameters of the environment, their assessment and regulation.
- Section 11. Hygiene of extreme situations and accidents
83. Hygienic placement of people in emergency situations
 84. Hygiene of water supply organized collectives in extreme conditions
 85. Medical control over the nutrition of organized groups in special circumstances

Criteria of estimation of an interview on offset

"Perfectly" – grade is granted to a student, if the story full, competent, logical; free possession of terminology; sure knowledge of hygienic standards, medical documentation; answers to additional questions accurate short.

"Well" – grade is granted to a student, if the story insufficiently logical with single mistakes in particulars; single mistakes in terminology; answers to additional questions correct, insufficiently accurate.

"Satisfactorily" – grade is granted to a student, if the story insufficiently competent, incomplete, with mistakes in details; uncertain knowledge of the main hygienic standards and documentation; mistakes in terminology; answers to additional questions insufficiently accurate, with mistakes in particulars.

"Unsatisfactorily" – grade is granted to a student, if the story illiterate, incomplete, with gross blunders; mistakes at estimation of a situation; ignorance of terminology; answers to additional questions wrong.

Exemplary list of examination questions and tasks

Section 1. Introduction to discipline. History of development of hygiene, ecology

1. The subject and content of hygiene. Relationship of hygiene with other sciences. The importance of hygiene in the activities of the attending physician. Communication and interaction of preventive and curative medicine.
2. Development of hygiene in Russia.
3. Structure, types of activity and tasks of the sanitary-epidemiological service. Federal Law "On Sanitary and Epidemiological Welfare of the Population".
4. Features of the action on the body of harmful environmental factors. Risk factors, their classification.
5. Biological contamination of the external environment as an important hygienic and environmental problem.
6. Hygienic rationing. Methodology and principles of hygienic rationing as the basis of sanitary legislation.

Section 2. Air hygiene. Solar radiation

7. Microclimate and its hygienic meaning. Kinds of a microclimate and influence of an uncomfortable microclimate on heat exchange and human health (supercooling and overheating).
8. Hygienic value of physical properties of air.
9. Solar radiation and its hygienic value.
10. Atmospheric air as an external environment. Complex effect of meteorological factors on the human body.
11. Chemical composition of atmospheric air and its hygienic value.
12. Pollution and protection of atmospheric air as a social and ecological-hygienic problem.
13. Hygienic characteristics of the main sources of atmospheric air pollution and the composition of emissions into the atmosphere by major industries. Main environmental measures and their hygienic efficiency.

Section 3. Water hygiene and water supply of populated areas

14. Hygienic requirements to the quality of drinking water in centralized and local water supply.
15. Comparative hygienic characteristics of water supply sources. Selection of sources of water supply. Causes of anthropogenic pollution of water sources.
16. Requirements for the organization of a centralized water supply system, basic methods for purifying drinking water.
17. Epidemiological significance of water.
18. Special methods for improving the quality of drinking water.

Section 4. Soil hygiene and sanitation of populated areas

1. Hygienic value, composition and properties of the soil.
2. Endemic diseases caused by the chemical composition of the soil and their prevention.

Section 6. Hygienic problems of cities. Hygiene of residential and public buildings

3. Features of the formation of the environment in cities. Pollution of atmospheric air, reservoirs and soil.

4. State of health of the population in modern cities. Hygienic issues of planning and development of cities.

Section 7. Nutrition and public health

5. Food hygiene, tasks and principles. The basic food substances.

6. The concept of state policy in the field of healthy nutrition of the population of the Russian Federation.

7. Fundamentals of rational nutrition. Requirements for food ration and diet.

8. Proteins, their sources, hygienic value.

9. Fats, their sources, hygienic value.

10. Carbohydrates, their sources, hygienic value.

11. Mineral salts, their sources, hygienic value.

12. Classification and characteristics of trace elements.

13. The concept of iodine deficiency disorders. Causes. Organization of biological monitoring for the provision of population with iodine.

14. Vitamins, their sources, hygienic value.

15. Hypervitaminosis. Characteristic. Prevention.

16. Hypovitaminosis. Causes. Symptoms. Prevention.

17. Methods for assessing the adequacy of nutrition.

18. Food poisoning and their classification. Food poisoning of microbial nature.

19. Toxic infections of various etiologies.

20. Botulism. Causes. Symptoms. Diagnostics. Prevention.

21. Mycotoxicosis.

22. Food poisoning of non-microbial nature.

23. Prevention of food poisoning and infections. The role of the attending physician in the investigation of food poisoning and the organization of preventive measures.

24. Features of nutrition of children and the elderly.

25. Hygienic requirements for planning, equipment, regime, operation of food units of medical institutions. Personal hygiene of staff.

26. Characteristics of food rations of therapeutic and preventive nutrition.

27. Principles and directions of sanitary-hygienic examination of food products.

28. Tasks, principles and nature of therapeutic and preventive nutrition.

29. Tasks, principles and nature of therapeutic nutrition. Characteristics of diets for therapeutic nutrition.

30. Excess nutrition, its role in the formation of cardiovascular and other pathologies.

Section 8. Occupational Health and Safety at Work

1. Fundamentals of labor physiology. Changes in the body in the process of work.

2. Prophylaxis of occupational diseases in the Russian Federation.

3. Industrial poisons, their classification. General regularities of the action of industrial poisons.

4. General principles of conducting recreational activities at the production: technological, sanitary and medical and preventive.

5. Production noise and vibration, the effect on the body.

6. Industrial dust. Occupational diseases associated with work on production with high dust content of air.

7. Occupational injuries. The main causes of injury at work. Measures to prevent injuries.

Section 9. Hygiene of children and adolescents

8. Health status of children and adolescents. The impact of social and environmental factors on health.

9. Physical development as an indicator of the health of the child population. Methods for assessing the physical development of children and adolescents.

10. Criteria and health groups for children and adolescents.

11. Hygienic basis of physical education and hardening.

12. Acceleration of physical development.

13. Functions and tasks of the medical worker in school.
14. Functions and tasks of a medical worker in a pre-school institution.
15. Hygienic requirements for the organization of the educational process.
16. Hygienic requirements for the placement, planning and equipment of school institutions.
17. Hygienic requirements for the placement, planning and equipping of preschool institutions.
18. Hygienic requirements for air-thermal regime, insolation, natural and artificial illumination in educational institutions.
19. Doctor's tasks in preparing and conducting summer health work. Performance indicators.
20. Tasks of preschool and school department of a polyclinic and a teenage cabinet.
21. Hygienic requirements for catering in school establishments.
22. Hygienic principles of a healthy lifestyle of individuals with age.
23. Hypodinamy, its consequences and prevention.

Section 10. Hygiene of treatment and prophylactic institutions

24. Hygienic requirements for the accommodation of hospitals and the layout of the hospital site. Hospital building systems, zoning of the hospital site.
25. General principles of planning of treatment and prevention institutions. The main structural subdivisions of the multidisciplinary health facility.
26. Planning and mode of work in the obstetric hospital.
27. Planning and operating mode in the infectious disease department of the hospital.
28. Occupational hygiene of surgeons, obstetrician-gynecologists, anesthesiologists.
29. Hygienic requirements for the organization of the organization of the regime and labor protection of personnel of dental units (therapists, surgeons, prosthetists).
30. The main requirements for internal planning and sanitary and hygienic conditions in outpatient departments. Features of the mode of work of the polyclinic during the period of quarantine for infectious diseases.
31. The notion of nosocomial infections. Prevalence in health care facilities. Problems of prevention at the present stage.
32. Hygienic assessment of microbial air pollution in medical institutions.
33. Microclimate of health facilities, indicators of natural and artificial illumination, types of insolation regime, sources of air pollution in hospital premises. Ways of air sanitation.
34. Methods of studying the basic physical parameters of the external environment, their evaluation and rationing.

Section 11. Hygiene of extreme situations and disasters

35. Hygienic issues of placing people in emergency situations
36. Hygiene of water supply of organized collectives in extreme conditions
37. Medical control over the nutrition of organized groups in special circumstances

Tasks

1. Determine the atmospheric pressure.
2. Determine the average air temperature in the room and the difference in its horizontal and vertical.
3. Determine the relative humidity in the room.
4. Determine the speed of air movement in the room.
5. Draw up a health report on the state of the air in this room and the sensations of the people in it.
6. To give recommendations on improvement of microclimate conditions in the room.
7. Assess the insolation regime.
8. Assess the state of natural and artificial lighting in the room.

Nutrition and public health.

1. Calculate the energy value and qualitative composition of the diet.
2. Calculate the distribution of energy values for individual meals.
3. Give a hygienic assessment of the diet for energy value
4. Give a hygienic assessment of the quality of the diet.
5. Evaluate the diet.
6. Make recommendations for the elimination of malnutrition.

7. To estimate the daily set of products for the content of vitamins in it.
 8. To put and justify the diagnosis of the disease associated with vitamin deficiency.
 9. To give the conclusion of good quality of foodstuff (on an example of milk, cottage cheese, meat, fish, bread).
 10. Investigate the case of food poisoning.
 11. Establish a diagnosis of food poisoning, identify the product that caused it, and propose specific prevention measures.
 12. Evaluate the design of the kitchen.
 13. Carry out ready-made meals at the food unit.
 14. Identify violations in the operating mode of the food unit, which can lead to food poisoning.
- Hygiene of labor and protection of labor and workers' health.
1. Give a hygienic assessment of production noise.
 2. Give a hygienic evaluation of the vibration record.
 3. To give the toxicological characteristics of substances on the basis of physicochemical constants.
 4. To give an opinion on the degree of air pollution with industrial dust on the basis of the survey map.
 5. To evaluate the results of dosimetric measurements.
 6. Create a workplace passport.
- Hygiene of children and adolescents.
1. Make anthropometric measurements and evaluate the result.
 2. On the map of the medical examination of the child determine the group of health.
 3. Assess the level of biological development of the child.
 4. Determine the presence of medical indications for delaying admission to school.
 5. To determine and assess the degree of fatigue of the central nervous system of children in the course of school classes at school
 6. To sew hygienic assessment of school furniture.
 7. Evaluate the school schedule.
 8. To carry out sanitary-hygienic examination of the school project.
 9. To carry out sanitary-hygienic examination of the preschool institution project.
 10. Draw up a plan for carrying out tempering procedures for children, depending on age and health status.
 11. Draw up a plan of measures for the formation of a healthy lifestyle in adolescents.
 12. Draw up a plan of conversation with parents on the prevention of morbidity in children.
- Hygiene of medical and preventive institutions.
1. To carry out examination of the hospital project.
 2. Conduct a hygienic assessment of the design of the reception and discharge facilities.
 3. To conduct a hygienic assessment of the layout of the ward section.
 4. Conduct a hygienic assessment of the layout of the treatment unit.
 5. To conduct a hygienic assessment of the layout of the surgical department.
 6. To conduct a hygienic assessment of the planning of the operating unit.
 7. Carry out a hygienic assessment of the internal planning of the obstetric ward.
 8. To conduct a hygienic assessment of the internal planning of the gynecological department.
 9. To conduct a hygienic assessment of the internal planning of the children's non-infectious department.
 10. To conduct a hygienic assessment of the internal planning of the infectious disease department.
 11. Conduct a hygienic assessment of the location and internal planning of the outpatient clinic for adults.
 12. To conduct a hygienic assessment of the location and internal planning of the polyclinic for children.
 13. To assess the microbial contamination of the air in health-care facilities.
- Hygiene of extreme situations and disasters
1. Draw up a plan for anti-epidemic and preventive measures aimed at reducing losses among the local population in the event of an extreme situation.
 2. Conduct a comprehensive assessment of the state of the air in the premises when placing people.

3. Implement the treatment of drinking water in the field.
4. To draw up an opinion on the adequacy of feeding the personnel with the norms of contentment and to give recommendations on correcting the menu-layout.

Evaluation criteria of the interview in the exam

"Excellent" – the story complete, competent, logical; fluent terminology; strong knowledge of health standards, medical documentation, answers to additional questions, a clear brief.

"Good" – grade is granted to a student, if the lack of a coherent story with a single error in the particulars; a single error in the Ter-terminology; answers to additional questions correct, is not clear.

"Satisfactory" – grade is granted to a student, if the story is competent enough, incomplete, with errors in details; an uncertain knowledge of the basic hygienic standards and documentation; errors in terminology; answers to the additional questions is not clear, with errors in the particulars.

"Unsatisfactory" – grade is granted to a student, if the story of an illiterate, incomplete, with gross errors; errors in assessing a situation; ignorance of terminology; answers to supplementary questions wrong.

Evaluation criteria and decision of situational tasks

"Excellent" – grade is granted to a student, if the answer is complete, competent, logical; fluent terminology.

"Well" – grade is granted to a student, if the answer is logical enough with a single error in the particulars; a single error in terminology.

"Satisfactory" – grade is granted to a student, if the answer is not enough competent, incomplete, with errors in details; the error in terms.

"Unsatisfactory" – grade is granted to a student, if the answer illiterate, incomplete, with gross errors; lack of knowledge of terminology.

7. Educational, methodological and informational means provided for subject (module) Hygiene

a) basic literature:

1. Hygiene [Electronic resource] / Melnichenko PI, Arkhangelsky VI, Kozlova TA, Prokhorov NI, Semenovikh GK, Semenovikh L. N-M: GEOTAR-Media, 2014. – <http://www.studmedlib.ru/book/ISBN9785970430835.html>
2. "Human hygiene and ecology [Electronic resource]: textbook / Arkhangel'skii VI, Kirillov VF - M.: GEOTAR-Media, 2013. - (Series" SPO ")."- <http://www.studmedlib.ru/book/ISBN9785970425305.html>
3. Hygiene [Electronic resource] / G.I. Rummyantsev - M.: GEOTAR-Media, 2009.- <http://www.studmedlib.ru/book/ISBN9785970411698.html>

b) additional literature:

1. Hygiene with the basics of human ecology [Electronic resource]: a textbook / Ed. Melnichenko P.I. - M.: GEOTAR-Media, 2013. - <http://www.studmedlib.ru/book/ISBN9785970426425.html>
2. Occupational health. A Guide to Practical Studies [Electronic resource]: a tutorial / Kiryushin VA, Bolshakov AM, Motalova T.V. - M.: GEOTAR-Media, 2011.- <http://www.studmedlib.ru/book/ISBN9785970418444.html>

c) software and Internet resources:

1. A single window of access to educational resources - <http://window.edu.ru/>
2. Scientific electronic library eLibrary.ru - <http://elibrary.ru/>
3. ELS "Student consultant" - <http://www.studmedlib.ru>

8. Material and technical means provided for subject (module) Hygiene

No	Name of special rooms and premises for independent work	Equipment of special rooms and premises for independent work	Software
1.	Premises in accordance with the agreement with medical establishment (ME) (Rospotrebnadzor, Penza, Lermontov 36) Lecture hall: 6-1	Set of furniture: armchairs, tables, chair Multimedia projector A laptop Video (films, presentations)	«Microsoft Windows» (subscription DreamSpark/Microsoft Imagine Standart); registration number 00037FFEBACF8FD7, agreement № СД-130712001 от 12.07.2013; - « Kaspersky Anti-Virus » 2016-2017, registration number KL4863RAUFQ, agreement № XII-567116 29.08.2016; <u>free software</u> : Open Office; Mozilla Firefox; Google Chrome; Adobe Acrobat Reader; 7zip.
2.	Premises in accordance with the agreement with medical establishment (ME) (Rospotrebnadzor, Penza, Lermontov 36) classroom 205	A set of educational furniture: tables, chairs, training board. A computer with training CDs, Normative documents, educational literature	«Microsoft Windows» (subscription DreamSpark/Microsoft Imagine Standart); registration number 00037FFEBACF8FD7, agreement № СД-130712001 от 12.07.2013; - « Kaspersky Anti-Virus » 2016-2017, registration number KL4863RAUFQ, agreement № XII-567116 29.08.2016; <u>free software</u> : Open Office; Mozilla Firefox; Google Chrome; Adobe Acrobat Reader; 7zip.
3.	Premises in accordance with the agreement with medical establishment (ME) (Rospotrebnadzor, Penza, Lermontov 36) classroom 205 № 205a	A set of educational furniture: tables, chairs.	
4.	Audiences for self-study: PGU 10-204:	A set of educational furniture: tables, chairs, training board, computers with educational CDs	«Microsoft Windows» (subscription DreamSpark/Microsoft Imagine Standart); registration number 00037FFEBACF8FD7, agreement № СД-130712001 от 12.07.2013; - « Kaspersky Anti-Virus » 2016-2017, registration number KL4863RAUFQ, agreement № XII-567116 29.08.2016; <u>free software</u> : Open Office; Mozilla Firefox; Google Chrome; Adobe Acrobat Reader; 7zip.

The work program of subject Hygiene was composed in compliance with requirements of FSES HE and academic plan for educational program 31.05.01 "General Medicine"

The program was compiled by:

N.S. Zubriyanova , Associate Professor, PhD



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The program was approved at a meeting of sub-department Hygiene, Public Health and Health Care

Report № 6

from « 4 » 03 2016

Head of sub-department H,PHaHC



A.P.Dmitriev

The program was approved by the head of The Medical Faculty
Dean of MF



E.Ya. Moiseeva

(sub-department's title)

(signature, Full name, date)

The program was approved by the methodological committee of The Medical institute

Report № 7

from « 5 » 03 2016

Head of the methodological committee of
The Medical institute



O.V.Kalmin

**Data on re-approval of the program for consecutive academic years
and record of alterations**

Academic year	Decision of the Department (№ protocol, date, signature of the head of the department)	Changes made	Number pages		
			changed	new	canceled
2016-2017 Academic year	Protocol No. 1, August 30, 2016 /Head of the Department <i>gna</i>	Reaffirmation for a new school year			
2017-2018 Academic year	Protocol No. 1, June 9, 2017 /Head of the Department <i>gna</i>	A change was made to the front page " Physician - General Practice" on the "Medical doctor"	1	1	1
2017/2018 Academic year	Protocol No. 1, August 30, 2017 /Head of the Department <i>gna</i>	Added in paragraph 5 description of the application of educational technologies to students with disabilities and disabled people	18	18	18
2017/2018 Academic year	Protocol No. 1, August 30, 2017 /Head of the Department <i>gna</i>	Reaffirmation for a new school year			
2018/2019 Academic year	Protocol No. 13, July 2, 2018 /Head of the Department <i>gna</i>	Reaffirmation for a new school year			