

MINISTRY OF HEALTH OF THE REPUBLIC OF BELARUS
Educational Institution
BELARUSIAN STATE MEDICAL UNIVERSITY

**Контрольный
экземпляр**

APPROVED

by First Vice-Rector, Professor

I.N.Moroz



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Reg # UD-L. 713 / 2223/edu.

GENERAL HYGIENE

**Curriculum of higher educational institution
in the academic discipline for the specialty:**

1-79 01 01 «General Medicine»

Curriculum is based on the educational program «General Hygiene», approved 01.07.2022, registration # УД-Л.713/2223/уч.; on the educational plan in the specialty 1-79 01 01 «General Medicine», approved 18.05.2022, registration # L 79-1-1/2223/mf.

COMPILERS:

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RECOMMENDED FOR APPROVAL:

by the Department of General Hygiene of the educational institution «Belarusian State Medical University»
(protocol # 12 of 27.05.2022);

by the Scientific and Methodological Council of the educational institution «Belarusian State Medical University»
(protocol # 6 of 29.06.2022)

EXPLANATORY NOTE

«General Hygiene» - the academic discipline of the Medical-prophylactic Module, which contains systematized scientific knowledge and techniques aimed at studying the influence of environmental factors on the human health, revealing the purpose, object, tasks and methods of hygiene as a science, the concept of risk factors as a basis of modern ideas about disease prevention, principles of prevention measures and regulations governing their conduct.

The aim of the discipline «General Hygiene» is the formation of basic professional competencies for organization of preventive, sanitary and hygienic measures in order to preserve and strengthen human health.

The objectives of the academic discipline «General Hygiene» are to form students' scientific knowledge about the patterns of the impact of environmental factors on human health, the concept of risk factors, prenosological hygienic diagnostics; skills and abilities necessary for the organization of preventive measures aimed at maintaining and strengthening health, increasing working capacity.

The knowledge, skills, and abilities acquired during the study of the academic discipline «General hygiene» are necessary for successful mastering of the following academic disciplines: «Radiation and Environmental Medicine», «Public Health and Health Care Management», module «Therapeutic Module # 1».

Studying the educational discipline «General Hygiene» should ensure the formation of students' basic professional competency:

BPC. Use knowledge about the laws of the environmental factors impact on human health, apply methods of hygienic assessment of the human environment to develop basic preventive health-preserving measures.

As a result of studying the discipline «General Hygiene» the student should

know:

theoretical and practical aspects of the problems of preserving and strengthening the health of the population, preventing premature aging and wear of the body, using the favorable influence of human environmental factors on the course and outcome of the disease, restoring health and working capacity;

physiological basics of a healthy lifestyle and the concept of risk factors as the basis of modern ideas about disease prevention;

the laws of rational nutrition, methods for assessing actual nutrition and nutritional status, the basics of therapeutic nutrition in healthcare organizations;

hygiene requirements for healthcare organizations, ways to prevent infections associated with the provision of medical care;

be able to:

to carry out hygienic education and upbringing,

to carry out the formation of a healthy lifestyle;

determine indicators of physical, mental and professional performance;

conduct hygienic health diagnostics, health assessment at the individual, collective and population levels;

identify the premorbid state of the human body;

identify adverse factors that affect the state of health and human performance and develop measures for their prevention;

analyze regulatory legal acts governing legal relations connected with the provision of medical care;

master:

skills in hygienic assessment of microclimate, ventilation, lighting, drinking water and food quality;

methods for determining indicators of physical development, physical fitness;

methods for assessing actual nutrition and nutritional status, compiling and analyzing food menus.

Total number of hours for the study of the discipline is 210 academic hours. Classroom hours according to the types of studies: lectures - 16 hours (including 5 hours of supervised student independent work), practical classes - 58 hours, student independent work (self-study) - 136 hours.

Intermediate assessment is carried out according to the syllabus of the specialty in the form of a credit (3 semester) and graded credit (4 semester).

Form of higher education – full-time.

**ALLOCATION OF ACADEMIC TIME
ACCORDING TO SEMESTERS OF STUDY**

Code, name of the specialty	semester	Number of academic hours						Form of intermediate assessment
		total	in-class	including			out-of-class self-studies	
				lectures (including supervised independent work)	supervised student independent work	laboratory studies (practical classes and seminars)		
1-79 01 01 «General Medicine»	3	108	40	8	2,5	32	68	credit
	4	102	34	8	2,5	26	68	graded credit

THEMATIC PLAN

Section (topic) name	Number of class hours	
	lectures	practical
1. Environment and it's hygienic importance	6	26
1.1. Structure of environment. Health assessment	1	2
1.2. The concept of risk factors as a basis of modern ideas about disease prevention. Models of the major noncommunicable diseases	1	-
1.3. Physical properties and chemical composition of the atmospheric air. Hygienic assessment of the impact of climate	2	8
1.4. Hygienic assessment of impact of placement on the human health	-	8
1.5. Hygienic assessment of the quality of drinking water	1	6
1.6. Hygienic assessment of the soil	1	2
2. Hygiene of nutrition	6	20
2.1. Food as an environmental factor	1	-
2.2. Nutrition-related diseases and their prevention	2	-
2.3. Hygienic assessment of the energy value and nutrient adequacy of the diet	1	8
2.4. Hygienic assessment of nutritional status and providing the body with vitamins	-	6
2.5. Prevention of food poisoning	2	4
2.6. Hygienic bases of human nutrition in the case of common somatic diseases	-	2
3. Hygiene of health care institutions	2	4
4. Occupational hygiene	2	6
4.1. Occupational factors	2	2
4.2. Hygienic characteristics of working conditions in industry and agriculture	-	4
5. Hygiene of children and adolescents	-	2
Total hours	16	58

CONTENT OF THE EDUCATIONAL MATERIAL

1. Environment and it's hygienic importance

1.1. Structure of environment. Health assessment

Definition, purpose, object, tasks and methods of hygiene. The role of hygiene among other medical sciences. The emergence and development of hygiene. Hygiene in the Ancient world, in the Middle Ages, the Renaissance. The development of experimental hygiene. Development of hygiene in Russia. The largest Belarusian hygienists - A.P.Dobroslavin, F.F.Erisman, G.V.Phopin, V.A.Uglov, A.N.Sysin, F.G.Krotkov, P.E.Kalmykov, SN Cherkinskaya, A.A.Pokrovsky, K.S.Petrovsky, N.F.Koshelev, M.N.Logatkin, G.I.Sidorenko. V.V.Pashutin, I.P.Pavlov, V.I.Vernadsky contribution to the development of hygienic science. Ideas of preventive measures in the writings of scientists and clinicians M.Ya.Mudrov, N.I.Pirogov, S.P.Botkin, G.A.Zaharin, A.A.Ostroumov. Hygiene in Western Europe: M.Pettenkofer, K.Foyt, M.Rubner, L.Pasteur, R.Koh, E.Adolf, G.Lemann, H.Mitchell, T.Mur. Prominent Belarusian hygienists Z.K.Mogilevchik, P.V.Ostapenya, I.A.Chakhovsky, Kh.Kh.Lavinsky, O.P.Shepelin, M.S.Omelyanchik. Hygiene tasks at the present stage. Differentiation of sanitary science.

Environment as a combination of natural (air, water, soil, radiation, food, biosphere) and social (work, family life, social and economic structure) elements. Properties (factors) of natural (mechanical, physical, chemical, biological) and social elements of the environment: work (severity, intensity, mode, external conditions), life (placement, clothing, food, water, rest), the socio-economic system (social and legal status, material security, education, culture).

Health as a state of complete physical, mental and social well-being, harmonious unity of physical, mental and productive functions, making the possibility of the full participation of the person in a variety of social and professional lives.

Assessment state of the health state at the individual, group (collective) and the population level. Criteria for assessing of an individual health: physical development parameters (somatometric, somatoscopic, physiometric), physical training (speed, strength, endurance), indicators of homeostasis (the functioning of the cardiovascular system, respiratory system, metabolism and energy), higher nervous activity, the immune status. Integral indicators of the individual health: capacity of work (physical, mental, professional), the duration of his employment (creative) activity. Methods and techniques used for solving scientific and practical problems. Hygienic diagnosis: definition, purpose, object, procedures. Prenosological hygienic diagnosis. Premorbid condition of the body, their symptoms, the evaluation criteria.

Preventive medicine. Types of prevention. Primary, secondary prevention, the third stage of prevention. Public health, infrastructure, course of action, the content and the role of inter-sectoral collaboration. Organization of providing sanitary and epidemiological wellbeing of the population.

The main regulatory documents of the Republic of Belarus regulating the issues of public health.

Hygienic standardization of environmental factors. Principles of valuation.

1.2. The concept of risk factors as a basis of modern ideas about disease prevention. Models of the major noncommunicable diseases

Classification of risk factors. External risk factors: food, housing, working conditions and occupational hazards, recreation, ethnic characteristics, standard of living and lifestyle, natural and geographical conditions. Internal risk factors (congenital and acquired): arterial hypertension, hypercholesterolemia, overweight, violation of endocrine regulation and others. Individual constitution as a set of morphological and functional characteristics of the organism determining the originality of its reactivity and the result of the genotype-specific environmental conditions. Classification of risk factors by Y.P.Lisitsyn: lifestyle; genetics (biology); environment, including natural and climatic conditions; health care.

The most productive trends of disease prevention in the field of public health: creating the conditions for a healthy lifestyle; improvement of the environment.

The main noncommunicable diseases and models of their development: environmental, accumulative, ontogenetic and genetic model. Prevention of major noncommunicable diseases. Model of development and nutritional prevention of atherosclerosis. Effect of smoking on homeostasis. Stress as a risk factor. Physical activity is an important factor in maintaining health and prevention of major noncommunicable diseases. The aging process and the associated major noncommunicable diseases.

1.3. Physical properties and chemical composition of the atmospheric air. Hygienic assessment of the impact of climate

The structure of the Earth atmosphere, characteristic of the basic properties of the atmosphere. Atmospheric effects on the human body. Electrical state of the air environment, characteristics of the main indicators, the impact on the human health. Air ionization. The notion of heavy and light ions, positive and negative ions. Effect of ionization on the human body. Natural radioactivity of the air, particularly effect on biological objects and human health.

The chemical composition of the air, its hygienic characteristics. Effect of various constituents of the air on the nature of biological processes and human health. Sanitary value of carbon dioxide of residential and public buildings. Anthrotoxins in the indoor air: factors promoting their accumulation and the impact on the human health. Hygienic characteristics of the main sources of air pollution in residential areas. Mechanical and gaseous impurities in the air. Features of quantitative and qualitative composition of the atmospheric air impurities and indoor air. Influence of air pollution on the human health. Measures to reduce air pollution. Organization of the atmospheric air monitoring.

Weather and Climate, features and definition. The notion of climatic factors. Climate classification, their hygienic characteristics. Seasonal changes in normal climatic and meteorological factors. The influence of climatic factors on the human body. The notion of seasonal and meteorodiseases. Weather dependence. The value of active prevention, taking into account the influence of weather conditions on the human body.

The notion of microclimate. Acclimatization and adaptation as a combination of socio-biological process of human adaptation to the new environment.

Physiological changes in the human body, developing during the acclimatization and adaptation to unusual conditions. Significance of terms and conditions of work, leisure, life, nature, nutrition, planning human settlements, physical training and hardening for a more rapid and complete acclimatization and adaptation. Hygienic characteristics of the physical factors of the air environment - temperature, humidity, air mobility, barometric pressure. Methods for measuring the performance and hygienic regulation of microclimate. Effects on the body high and low atmospheric pressure (decompression and altitude diseases). Windrose, methods of its preparation and hygienic evaluation.

Hygienic evaluation of combined action of meteorological factors on the human body. Assessment methods: catathermometry, effective and the resulting temperature. Methods of research and hygienic assessment of the thermal state of the human body. Measurement indicators characterizing the body's response to the impact of meteorological factors: heatfeelings, average body temperature, cold test, potassium iodide method of Minor.

1.4. Hygienic assessment of impact of placement on the human health

The notion of light climate. Hygienic characteristics of the visible part of the solar spectrum. General biological effects of the visible spectrum, a specific effect on eyesight. Influence of various factors on the state of natural light and open spaces indoors. Lighting and geometric method of estimating natural light.

Artificial lighting. Hygienic characteristics of the main types of artificial lighting. Methods of research and hygienic assessment of natural and artificial indoor lighting using luxmeter.

Placement as hygiene factors. The influence of the level of accomplishment and the sanitary condition of populated areas on the public health. Hygienic requirements for housing, building materials, designs and interior decoration.

Natural and mechanical ventilation. Types and their hygienic characteristics. Concentration of carbon dioxide as sanitary and chemical purity of the indoor air. Methods of research concentration of carbon dioxide in the air. The indicators characterizing the efficiency of ventilation: ventilation volume, ventilation rate, air cube – the principles of calculation and evaluation. Air-conditioning.

1.5. Hygienic assessment of the quality of drinking water

Physiological and hygienic importance of water. Water cycle and its hygienic characteristics. Sources of natural water and hygienic characteristics. Diseases associated with changes in salt water and microelement composition. The notion of endemic diseases, the role of various environmental factors in causing these diseases. Biological life of the reservoir, its hygienic characteristics. The notion of saprobic zones, saprobity reservoirs. Epidemic importance of water. Infectious diseases transmitted with water. Influence of household and industrial activity on the properties of natural waters. Hygienic requirements for drinking water quality.

Methodology for sanitary inspection of water sources. Water sampling. Methods of research and hygienic assessment of the physical and organoleptic characteristics. Methods of research and hygienic assessment of the content of substances in water, indifferent and positive physiological significance (carbonates, bicarbonates, calcium, magnesium, iron).

Methods of research and hygienic assessment of chemical indicators of organic pollution of water (pH, ammonia nitrogen, nitrite, chloride, oxidation).

Methods of water treatment: clarification and discoloration (coagulation and filtration), disinfection (physical methods: boiling, water treatment with ultraviolet rays, ultrasound; chemical methods: normal doses of chlorination, hyperchlorination, ozonation, oligodynamic action of silver). Advantages and disadvantages of water treatment methods.

1.6. Hygienic assessment of the soil

The notion of soil, soil-forming factors. Mechanical structure, physical properties of soil, water and air regime, their hygienic characteristics. Self-purification processes of soil, the factors that affect their intensity and completeness. The chemical composition of soil, the impact on the human body. Indicators of organic pollution of soil. Biogeochemical provinces. Sources of soil contamination and their hygienic characteristics. Soil as the main link in the cycle of xenobiotics in the environment. Types of xenobiotics (avoidable, time-preventable, purposely added) and their hygienic characteristics. Bacterial composition of soil. Soil as a reservoir and a factor of transmission of infectious and parasitic diseases. Indicators used in the hygienic assessment of soil. Measures for the protection of healthy soil condition. Modern trends in agrohygiene. Purpose, objectives, main achievements and prospects of development of agrohygiene

2. Hygiene of nutrition

2.1. Food as an environmental factor

Definition and content of nutritional hygiene. The impact of nutrition on health. Preventive and therapeutic role of nutrition. Contribution of national and foreign scientists to the development of the science of nutrition. Types of food.

Modern problems of human nutrition. Genetically modified foods. Functional foods. Biologically active food supplements.

Qualitative nutritional imbalance, its causes and consequences. Modern views on the importance of proteins in human diet. The notion of a reference protein and biological value proteins. Norms of physiological requirements in proteins recommendations of the Food and Agriculture Organization and the World Health Organization (FAO / WHO). The content and quality of proteins in the basic foodstuff. Fats in human nutrition. Polyunsaturated fatty acids, cholesterol, phosphatides and their biological role. The consequences of inadequate intake of essential components of fats. Excessive intake of fat and its consequences, prevention. Standards of consumption of fats and their essential components. Carbohydrates in human nutrition. The role of fiber and pectin.

Sources and norms of physiological requirements in carbohydrates. Vitamins and their role in human nutrition. Prevention of vitamin deficiency and hypervitaminosis. Sources of vitamins. Minerals in human nutrition. Lack and excess of mineral substances in the diet, preventive measures.

The laws of rational nutrition. The law of energy adequacy of nutrition. Methods of energy expenditure determination and methods of determining the actual consumption of nutrient energy. The law of nutrient adequacy of nutrition. Classification of nutrients on the basis of functional purpose and essential principle.

The formula of a balanced diet. The law of biorythmological adequacy of nutrition, rational diet and its physiological basis. The law of enzyme adequacy of nutrition. Disorders associated with a change in the chemical composition of food products due to the influence of modern agricultural technologies. Consequences resulting from using hormones, antibiotics, genetic engineering. Changes in the chemical composition of food caused by conserving and food supplements. Hereditary and acquired enzymopathies. The law of biotic adequacy (safety) of food.

2.2. Nutrition-related diseases and their prevention

Nutrition-related diseases: definition, causes, classification. Diseases of protein- energy malnutrition: classification, diagnostic, clinical manifestations, prevention. Inadequate nutritional status. Malnutrition: clinical symptoms, prevention.

Malnutrition and dwarfism. Excess nutritional status. Obesity as a social problem: the relationship of overweight with morbidity and mortality. Diagnostic, prevention and diet therapy of obesity. Syndrome of excess protein in the diet: causes, clinical manifestations, prevention. Methods of assessing protein provision of the organism.

Micro-elementoses: definition, classification. Hyposelenosis: clinical manifestations, prevention. Iodine deficiency disorders: clinical manifestations, prevention. Iron deficiency anemia: causes, clinical manifestations, nutritional prevention.

2.3. Hygienic assessment of the energy value and nutrient adequacy of the diet

Criteria on physiological needs of the organism in nutrition, physiological nutritional standards of the population. Methods of determination of the body's energy: colorimetric, chronometer-table, calculated using the coefficient of physical activity. Determination of individual requirements in the body's energy (as described by WHO using the coefficient of physical activity) and nutrients (due to a balanced megacalorie). Calculation of the actual consumption of nutrients and energy value of the diet menu-layout of food, method of 24-hour recall (interviewing). Hygienic assessment of adequacy of dietary requirements of an organism, the development of recommendations for optimizing nutrition.

2.4. Hygienic assessment of nutritional status and providing the body with vitamins

Hygienic assessment of nutritional status (somatometric, somatoscopic, physiometric and biochemical parameters). Hygienic assessment of provision the body with vitamins. Methods of studying the vitamin value of diets: a questionnaire, calculation, weight, chemical-analytical. Methods of studying the body's vitamin status: somatometric, physiometric, clinical, somatoscopic, physiological and biochemical tests, hematological and immunological. Optimization of nutritional status and vitamin provision of an organism.

2.5. Prevention of food poisoning

Classification of food poisoning. Microbial food poisoning: types, clinical manifestations, prevention. Botulism and staphylococcal toxicosis: factors of

transmission, clinical manifestations and prevention. Mycotoxicoses and phycotoxicoses.

Non-microbial food poisoning. Chemical intoxication: clinical manifestation, prevention. Food poisoning by food of vegetable and animal origin. Poisoning by poisonous mushrooms: clinical manifestations, prevention. Technique of investigation of food poisoning.

2.6. Hygienic bases of human nutrition in the case of common somatic diseases

Hygienic principles of dietary and therapeutic human nutrition. Characteristics of the main therapeutic diets. Catering in healthcare organizations. Features of nutrition in coronavirus infection.

3. Hygiene of health care institutions

Hygienic requirements for the planning, construction and operation of healthcare organizations. Ambulatory polyclinic organizations, their role in providing medical care to the population. Sanitary and anti-epidemic measures. Organization and implementation of disinfection in healthcare organizations. Hygienic aspects of the prevention of infections associated with the provision of medical care.

Hygienic requirements for the land plot allocated for the construction of a healthcare organization: choice of location, size, zoning of the territory, landscaping. Hygienic assessment of the general plan of the healthcare organization. Hygienic expertise of the healthcare organization project. Hygienic assessment of the internal layout of a healthcare organization. Hygienic requirements for the device and equipment of the ward section of the healthcare organization department.

Sanitary and epidemiological requirements for the treatment of medical waste.

4. Occupational hygiene

4.1. Occupational factors

Goals and objectives of occupational hygiene. Physiological and hygienic and socio-economic notion of labor. Classification of types of labor.

Optimal working conditions, the definition of their biological and social role, Factors determining the nature and conditions of labor. Optimal, maximum permissible and maximum tolerable levels of factors that determine the conditions of labor. Regime, the severity and labor intensity of work. Classification of labor by severity and intensity. The indicators characterizing the severity and intensity of work process.

Harmful occupational factors in the health system, the basic preventive measures. Tiredness and its positive and negative role. Measures to reduce labor intensity, prevention of tiredness and overwork. Emotional burnout syndrome and its prevention.

Work and rest: the impact on the health, capacity for work and person's nervous and mental state. Hygienic role of dynamic stereotype. Physiological and hygienic evaluation of work and rest.

Harmful occupational factors in the healthcare system. The main directions of prevention of occupational diseases of medical workers.

4.2. Hygienic characteristics of working conditions in industry and agriculture

The main harmful occupational factors. Acute and chronic occupational diseases. Preventive medical examinations and their role in the prevention of occupational diseases.

Industrial dust: classification; physical and chemical properties of dust. Research methods of investigation of the dusty air in industrial premises. Dust-related occupational diseases and their prevention.

Chemical factor at work. Ways of penetration of poisons in the body, their hygienic characteristics. General regularities of industrial poisons on the human body. Professional poisoning, their prevention. Lead, mercury, benzene, nitrogen oxides in the industry. Clinical manifestations of poisoning, their prevention. Investigation of toxic substances in the air. Methods of air sampling. Methods of investigation the quantitative determination of toxic substances in the air.

Industrial noise, its physical and hygienic characteristics. Classification of noise. The notion of levels of intensity, sound pressure, sound volume. Measurement of the overall sound pressure level. Specific and non-specific effect of noise on the human health. Hygienic standardization of noise. Personal protective equipment. Types of vibration, their hygienic characteristics. The impact of general and local vibration on the human body. Prevention of noise- and vibration-related diseases.

The infrared radiation in industry: sources; methods of measurement; valuation. Measures of prevention the adverse action of thermal radiation.

5. Hygiene of children and adolescents

Hygiene of children and adolescents: the definition, purpose, objectives. Basic laws of growth and development of the child's body. Biological and chronological age. Age periods of children and adolescents life and their characteristics.

The structure of the chronic children and adolescents diseases. Methods for assessing the physical development of children and adolescents. Indicators are used to assess the health of children and adolescents. Factors influencing the formation of children's health. Health groups. School maturity, definition, evaluation criteria. The Kern-Jirasek test.

ACADEMIC DISCIPLINE CURRICULAR CHART

Section, topic #	Section (topic) name	number of hours				Self-studies	Form of control
		lectures	supervised student work	practical (laboratory or seminars)			
	3 semester						
1.	Environment and its hygienic importance	6	2	26	52		
1.1.	Structure of environment. Health assessment. The concept of risk factors as a basis of modern ideas about disease prevention. Models of the major noncommunicable diseases	2	0,5	-	18		interviews; tests; control questioning; final tests
1.2.							
1.3.	Physical properties and chemical composition of the atmospheric air. Hygienic assessment of the impact of climate	2	0,5	8	8		
	Physical properties and chemical composition of atmospheric air. Hygienic assessment of microclimate influence	2	0,5	-	2		
	Physical properties of atmospheric air. Research methods and hygienic assessment of microclimate parameters in residential premises and medical institutions (temperature, humidity)	-	-	2	2		interviews; tests; final tests
	Physical properties of atmospheric air. Research methods and hygienic assessment of microclimate parameters in residential premises and medical institutions (air velocity, atmospheric pressure)	-	-	2	2		interviews; tests; written classroom (home) practical exercises
	Physical properties of atmospheric air. Hygienic assessment of the combined action of meteorological factors on the human body	-	-	2	1		interviews; tests; final tests

	Physical properties and chemical composition of atmospheric air. Final class	-	-	2	1	tests; final tests
1.4.	Hygienic assessment of local conditions on the human health	-	-	8	10	
	Hygienic assessment of the impact of placement conditions on human health. Research methods and hygienic assessment of natural lighting in enclosed premises	-	-	2	3	interviews; tests; written classroom (home) practical exercises
	Hygienic assessment of the impact of placement conditions on human health Research methods and hygienic assessment of artificial lighting in enclosed premises	-	-	2	3	interviews; tests; final tests
	Hygienic assessment of the impact of placement conditions on human health. Natural and artificial ventilation, types and their hygienic characteristics. Research methods and hygienic assessment of carbon dioxide concentration. Hygienic assessment of ventilation indicators: air cube, ventilation volume, air exchange rate	-	-	2	2	interviews; tests; written classroom (home) practical exercises
	Hygienic assessment of the impact of placement on human health. Final class	-	-	2	2	tests; final tests
1.5.	Hygienic assessment of the quality of drinking water	2	1	6	10	
1.5.	Hygienic assessment of drinking water quality. Hygienic assessment of soil	2	1	-	3	
1.6.	Hygienic assessment of drinking water quality. Research methods and hygienic assessment of physical, organoleptic and chemical indicators of water quality	-	-	2	3	interviews; tests; final tests
	Hygienic assessment of drinking water quality. Methods for improving water quality	-	-	2	2	interviews; essays ; tests
	Hygienic assessment of drinking water quality. Final class	-	-	2	2	tests; final tests
1.6.	Hygienic assessment of the soil	-	-	2	6	interviews; control questioning; accounts of classroom practical

								exercises with oral defense; tests
3.	Hygiene of health care institutions	2	0,5	4	6			
	Hygiene of healthcare organizations. Sanitary and epidemiological requirements for the treatment of medical waste	2	0,5	-	2			interviews; tests
	Hygiene of healthcare organizations. Hygienic assessment of the general plan of the healthcare organization	-	-	2	2			interviews; tests; accounts of classroom practical exercises with oral defense
	Hygiene of healthcare organizations. Hygienic requirements for the device and equipment of the ward section of the healthcare organization department	-	-	2	2			interviews; tests; control questioning
5.	Hygiene of children and adolescents	-	-	4	10			interviews; tests; credit
	Hygiene of children and adolescents. Assessment of physical development of children and adolescents	-	-	2	5			
	Final class on topics «The structure of the human environment and it's hygienic significance», «Hygiene of healthcare organizations», «Hygiene of children and adolescents»	-	-	2	5			
	4 semester							
2.	Hygiene of nutrition	6	2	20	52			
2.1.	Food as a factor of the environment. Hygienic assessment of the energy value and nutrient adequacy of the diet	2	0,5	-	6			
2.3.	Hygienic assessment of the energy value and nutrient adequacy of the diet	-	-	6	6			interviews; written classroom (home) practical exercises
	Hygienic assessment of energy value and nutritional adequacy of the diet. Criteria for rationing the body's needs for nutrition, physiological requirements for the nutrition of the population. Methods for determining the body's needs for energy and nutrients	-	-	2	2			

	Hygienic assessment of the energy value and nutrient adequacy of the diet. Calculation of the actual nutrient intake and energy value of the diet according to the 24-hour re-call method	-	-	2	2	2	interviews; tests; written classroom (home) practical exercises
	Hygienic assessment of the energy value and nutrient adequacy of the diet. Assessment of the adequacy of actual diet to the needs of the human body, recommendations for rationalizing nutrition	-	-	2	2	2	interviews; tests; essays
2.2.	Nutrition-related diseases and their prevention	2	0,5	-	-	10	interviews
2.4.	Hygienic assessment of nutritional status and providing the body with vitamins	-	-	6	6	10	
	Hygienic assessment of nutritional status. Determination of somatometric, somatoscopic, physiometric indicators	-	-	-	2	3	interviews; control questioning; accounts of home practical exercises with oral defense
	Hygienic assessment of nutritional status. Determination of nutritional status. Recommendations for optimizing nutritional status	-	-	-	2	3	interviews; control questioning; tests
	Hygienic assessment of the provision of the human body with vitamins. Recommendations for optimizing the vitamin supply of the human body	-	-	-	2	4	interviews; control questioning; accounts of home practical exercises with oral defense
2.5.	Prevention of food poisoning	2	1	4	4	10	
	Prevention of food poisoning	2	1	-	-	4	
	Prevention of food poisoning of microbial etiology	-	-	2	2	3	interviews; tests; final tests
	Prevention of non-microbial food poisoning	-	-	2	2	3	interviews; tests; essays
2.6.	Hygienic bases of human nutrition in the case of common somatic diseases	-	-	4	4	10	

	Hygienic basics of human nutrition in case of major somatic diseases. Hygienic principles of medical and dietary nutrition	-	-	2	5	interviews; tests;
	Hygiene of nutrition. Final class	-	-	2	5	interviews; tests; control questioning
4.	Occupational hygiene	2	0,5	6	16	interviews
4.1.	Occupational factors	2	0,5	-	10	interviews; tests; control questioning; final tests
	Factors of the working environment. Dust-related occupational diseases, their prevention. Methods for studying the dust content of air. Chemical substances as an occupational hazard. Hygienic assessment of the impact of occupational noise and vibration on the body. Prevention measures. Infrared radiation as an occupational hazard. Measures to prevent the adverse effects of thermal radiation	-	-	2	10	
4.2.	Hygienic characteristics of working conditions in industry and agriculture	-	-	4	6	
	Hygienic characteristics of working conditions in industry and agriculture. The procedure for conducting preventive medical examinations at work. Investigation of occupational diseases. The role of preventive medical examinations in the prevention of occupational diseases	-	-	2	2	interviews; final tests; written classroom (home) practical exercises; tests
	Final class on topics «Hygiene of nutrition» and «Occupational hygiene»	-	-	2	4	interviews; tests; examinations
		16	5	58	136	

INFORMATION AND INSTRUCTIONAL UNIT

LITERATURE

Basic (relevant):

1. Hygiene and ecology : textbook for students of higher medical schools / ed. by V. G. Bardov. - Vinnytsia : Nova Knyha, 2018. - 688 p.

Additional:

2. Бортновский, В. Н. Общая гигиена = General hygiene : учеб.-метод. пособие для студентов по подготовке специалистов для зарубежных стран. с англ. яз. обучения мед. вузов.- Гомель : ГомГМУ, 2017.- 224с.

3. General hygiene : the educational methodical text-book for 2-3nd year English medium medical students of the Faculty of preparation of experts for foreign countries of medical higher educational institutions / V. N. Bortnovsky, A. A. Labuda. – Gome l: GomSMU, 2015. - 224 p.

4. Miklis, N. I. Laboratory classes on hygiene : manual / N. I. Miklis, O. A. Cherkasova. – Vitebsk : VSMU, 2015. – 240 p.

METHODOLOGICAL RECOMMENDATIONS FOR THE ORGANIZATION AND PERFORMANCE OF SUPERVISED STUDENT INDEPENDENT WORK IN THE ACADEMIC DISCIPLINE

Main forms of supervised student independent work:

- preparation and presentation of abstracts;
- presentation of reports;
- studying topics and problems that have not been discussed at the lectures;
- taking notes of original sources (sections of anthologies, collections of documents, monographs, textbooks);
- computer testing;
- preparation of tests for the organization of mutual assessment;
- preparation of didactic materials;
- participation in active forms of education.

Control of supervised student independent work is carried out in the form of:

- test paper;
- final class, colloquium in the form of an oral interview, written work, testing;
- discussion of abstracts;
- defense of educational assignments;
- assessment of an oral reply to a question, presentation, report or problem solving;
- checking up abstracts, written reports, accounts, prescriptions;
- checking up notes of original sources, monographs and articles;
- individual interview.

LIST OF AVAILABLE DIAGNOSTIC TOOLS

The following forms are used for competences assessment:

Oral form:

- interviews;

examinations.

Written form:

tests;

control questioning;

final tests;

written classroom (home) practical exercises;

essays.

Oral-written form:

accounts of home practical exercises with oral defense;

credit.

Technical form:

electronic tests.

LIST OF AVAILABLE TEACHING METHODS

Traditional method (lecture, laboratory practicals);

Active (interactive) methods:

Problem-Based Learning (PBL);

Team-Based Learning (TBL).

LIST OF PRACTICAL SKILLS

1. Hygienic assessment of indicators of physical development, physical training.
2. Hygienic assessment of actual diet and nutritional status.
3. Hygienic assessment of indicators, physical and professional working capacity.
4. Hygienic assessment of health at the individual, collective and population levels.
5. Hygienic diagnostics of human health.
6. Hygienic prenosological diagnostics of the premorbid state of the human body.
7. Carrying out hygienic education and upbringing, development of activities, focus of life on the education of a healthy lifestyle.

LIST OF EQUIPMENT USED

1. Multimedia equipment.
2. Instruments:
 - «August Psychrometer»;
 - «Thermo-anemometer»;
 - «Aneroid barometer»;
 - «Temperature and Relative Humidity Meter» (TKA-PKM/20).
3. Sets for determining the color, transparency of water.
4. Laboratory glassware; chemical reagents.
5. Visual aid «Product Portions».

6. Tables: «Occurrence of groundwater», «Zones of saprobity of water bodies», «Chemical composition and calorie content of fish, meat, milk and dairy products», «Chemical composition and calorie content of fruits and berries, vegetables», «Industrial microclimate», «Means personal protection of the hearing organ», «Special clothing against the impact of adverse production factors», «Industrial dust».

LIST OF LECTURES

3 semester

1. The structure of the human environment. The concept of risk factors as the basis of modern concepts of disease prevention. Models for the development of major noncommunicable diseases.
2. Physical properties and chemical composition of atmospheric air. Hygienic assessment of microclimate influence.
3. Hygienic assessment of drinking water quality. Hygienic assessment of soil.
4. Hygiene of healthcare organizations. Sanitary and epidemiological requirements for the treatment of medical waste.

4 semester

1. Hygiene of nutrition. Nutrition-related diseases and their prevention.
2. Food as a factor of the environment. Hygienic assessment of the energy value and nutrient adequacy of the diet.
3. Prevention of food poisoning.
4. Occupational hygiene. Harmful professional in the health care system. Main strategies for preventing.

LIST OF LABORATORY (PRACTICAL) STUDIES

3 semester

1. Physical properties of atmospheric air. Research methods and hygienic assessment of microclimate parameters in residential premises and medical institutions (temperature, humidity).
2. Physical properties of atmospheric air. Research methods and hygienic assessment of microclimate parameters in residential premises and medical institutions (air velocity, atmospheric pressure).
3. Physical properties of atmospheric air. Hygienic assessment of the combined action of meteorological factors on the human body.
4. Physical properties and chemical composition of atmospheric air. Final class.
5. Hygienic assessment of the impact of placement conditions on human health. Research methods and hygienic assessment of natural lighting in enclosed premises.
6. Hygienic assessment of the impact of placement conditions on human health. Research methods and hygienic assessment of artificial lighting in enclosed premises.

7. Hygienic assessment of the impact of placement conditions on human health. Natural and artificial ventilation, types and their hygienic characteristics. Research methods and hygienic assessment of carbon dioxide concentration. Hygienic assessment of ventilation indicators: air cube, ventilation volume, air exchange rate.
8. Hygienic assessment of the impact of placement on human health. Final class.
9. Hygienic assessment of drinking water quality. Research methods and hygienic assessment of physical, organoleptic and chemical indicators of water quality.
10. Hygienic assessment of drinking water quality. Methods for improving water quality.
11. Hygienic assessment of drinking water quality. Final class.
12. Hygienic assessment of soil.
13. Hygiene of healthcare organizations. Hygienic assessment of the general plan of the healthcare organization.
14. Hygiene of healthcare organizations. Hygienic requirements for the device and equipment of the ward section of the healthcare organization department.
15. Hygiene of children and adolescents. Assessment of physical development of children and adolescents.
16. Final class on topics «The structure of the human environment and its hygienic value», «Hygiene of healthcare organizations», «Hygiene of children and adolescents».

4 semester

1. Hygienic assessment of the energy value and nutrient adequacy of the diet. Criteria for rationing the body's needs for nutrition, physiological requirements for the nutrition of the population. Methods for determining the body's needs for energy and nutrients.
2. Hygienic assessment of the energy value and nutrient adequacy of the diet. Calculation of the actual nutrient intake and energy value of the diet according to the 24-hour re-call method.
3. Hygienic assessment of the energy value and nutrient adequacy of the diet. Assessment of the adequacy of actual diet to the needs of the human body, recommendations for rationalizing nutrition.
4. Hygienic assessment of nutritional status. Determination of somatometric, somatoscopic, physiometric indicators.
5. Hygienic assessment of nutritional status. Recommendations for optimizing nutritional status.
6. Hygienic assessment of the provision of the human body with vitamins. Recommendations for optimizing the vitamin supply of the human body.
7. Prevention of food poisoning of microbial etiology.
8. Prevention of non-microbial food poisoning.
9. Hygienic basics of human nutrition in case of major somatic diseases. Hygienic principles of medical and dietary nutrition.

10. Hygiene of nutrition. Final class.

11. Factors of the working environment. Dust-related occupational diseases, their prevention. Methods for studying the dust content of air. Chemical substances as an occupational hazard. Hygienic assessment of the impact of occupational noise and vibration on the body. Prevention measures. Infrared radiation as an occupational hazard. Measures to prevent the adverse effects of thermal radiation.

12. Hygienic characteristics of working conditions in industry and agriculture. The procedure for conducting preventive medical examinations at work. Investigation of occupational diseases. The role of preventive medical examinations in the prevention of occupational diseases.


13. Final class on topics «Hygiene of nutrition» and «Occupational hygiene».

**PROTOCOL OF THE CURRICULUM APPROVAL
BY OTHER DEPARTMENTS**

Title of the discipline requiring approval	Department	Amendments to the curriculum in the academic discipline	Decision of the department, which designed the curriculum (date, protocol #)
1. Normal physiology	Department of Normal physiology	No amendments	Recommend for approval (protocol # 12 of 27.05.2022)
2. Biological chemistry	Department of Biological chemistry	No amendments	Recommend for approval (protocol # 12 of 27.05.2022)

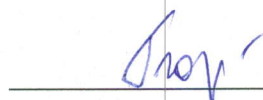
COMPILERS/AUTHORS:

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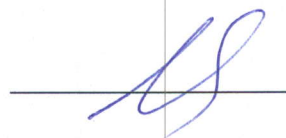
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Senior Lecturer of the Department of General Hygiene of the educational institution «Belarusian State Medical University»



E.I.Tsimberova

Curriculum content, composition and the accompanying documents comply with the established requirements.

Dean of the Medical Faculty for International Students of the educational institution «Belarusian State Medical University»

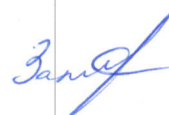
28.06. 2022



O.S.Ishutin




Methodologist of the educational institution «Belarusian State Medical University»

28.06. 2022



S.V.Zaturanova

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