



Syllabus of the discipline "Hygiene and Ecology"

1. General information	
Назва факультету	Медичний
Educational program (branch, specialty, higher education level, form of teaching)	22 Health, 221 Medicine, second (master's) higher education level, full time
Academic year	2023-2024
Name of the discipline, code (email address at Danilo Halytsky Lviv National Medical University)	Hygiene and Ecology MC 19
Department (<i>name, address, telephone, e-mail</i>) (https://new.meduniv.lviv.ua/kafedry/kafedra-zagalnoyi-gigiyeny-z-ekologiyeyu)	Department of General Hygiene with Ecology, address Zelena str., 12, Lviv, Ukraine, 79010, phone: +38 (032) 276-28-37, <i>e-mail</i> kaf_genhygiene@meduniv.lviv.ua)
Head of the department (<i>contact e-mail</i>)	Professor Fedorenko Vira Ilarionivna, MD, Doctor of Medical Sciences (<i>e-mail</i> kaf_genhygiene@meduniv.lviv.ua)
Year of study	Second year
Semester	III – IV semesters
Type of discipline / module (<i>required / optional</i>)	Required
Tutors (<i>names, names, degrees and titles of teachers who teach discipline, contact e-mail</i>)	Kozak L.P., Ph. D., assoc. prof., <i>e-mail</i> kozak.l.p.lnmu@gmail.com Sybirny A.V., Ph. D., assoc. prof., <i>e-mail</i> sybandrij@dr.com Yurchenko S.T assistant prof. <i>e-mail</i> zubsvitlana@gmail.com
<i>Erasmus yes / no (discipline availability for students at within the Erasmus + program)</i>	No
The person responsible for the syllabus (<i>e-mail</i>)	Kitsula L.M., M.D., Ph. D., assoc. prof., kitsula.l.m.@gmail.com Kozak L.P., Ph. D., assoc. prof., <i>e-mail</i> kozak.l.p.lnmu@gmail.com
Number of ECTS credits	6 credits
Number of hours	<u>180</u> hours ((20 hours of lectures / 70 hours of practical classes /90 hours of self-educational work of students)
Language of teaching	English
Consultation information	MISA system, VEB-site of the department, information stands of the department

2. Short summary of the course

The study discipline "Hygiene and ecology" is studied in the II course of study in the amount of 6 credits (180 hours). Students master the main issues of preventive medicine in the sections of propaedeutics of hygiene, communal hygiene, hygiene of children and adolescents, nutrition, work, treatment and prevention facilities, radiation hygiene, psychohygiene, personal hygiene, healthy lifestyle, human ecology and study theoretical foundations, methodology, methods and means of hygienic assessment of environmental factors and their impact on the state of human health, in particular children and adolescents, public health, as well as on the conditions of education and upbringing of children, work and rest, nutrition, treatment, etc. The acquired knowledge is necessary for future pediatricians, first of all, for substantiating, planning and carrying out preventive measures aimed at preventing diseases, ensuring optimal living conditions, strengthening health, in particular the physical development of children and adolescents, and increasing the duration of a person's active

life, conducting sanitary and educational work, diagnosis of diseases, etc. Types of educational activities - lectures, practical classes, independent work of students. The final control is an exam.

3. Purpose and goals of the course

1. The purpose of teaching the discipline "Hygiene and Ecology" is the formation of skills and competences for future specialists (masters) to provide preventive guidance in the practice of the physician, mastering by students the main provisions and priorities of hygienic science, applied aspects of its use in the everyday practical activities of medical workers who, in the course of their professional duties, are faced with questions and problems of a preventive nature and nature, which requires knowledge of basic laws, postulates, principles, methods and means of preventive medicine for a true and correct understanding and adequate assessment of the state of the environment and the degree of influence of its factors on the health of the population in order to preserve and strengthen the health of an individual, team, population, and society as a whole.

2. The main learning objectives of the discipline "Hygiene and Ecology" are:

- laying the theoretical foundations of health and the environment, as a science (terminology, laws, methods, principles of hygienic standardization, regulatory and methodological ensure the application of preventive measures) and practical skills related to: disease prevention infectious and non-infectious origin in accordance with the basis of current legislation of Ukraine;
- hygienic estimation of physical, chemical, microbiological factors and so on humans and the environment;
- use of favorable environmental factors of health to strengthen health, training the body and so on.

3. According to the requirements of the educational-professional program of the second level of higher education for the preparation of masters in the specialty 222 "Medicine" in the field of knowledge 22 Health. Qualification: Master of Medicine. Physician, the discipline provides students with the acquisition of competencies:

Integrated competencies: The ability to solve complex problems, including those of a research and innovation nature in the field of medicine. Ability to continue learning with a high degree of autonomy.

General competencies (GC):

GC-1. Ability to abstract thinking, analysis and synthesis;

GC-2. Ability to learn and master modern knowledge;

GC-3. Ability to apply knowledge in practical situations);

GC-4. Knowledge and understanding of the subject area and understanding of professional activity;

GC-5. Ability to adapt and act in a new situation;

GC-6. Ability to make informed decisions;

GC-7. Ability to work in a team;

GC-8. Ability to interpersonal interaction);

GC-9. Ability to communicate in a foreign language;

GC-10. Ability to use information and communication technologies;

GC-11. Ability to search, process and analyze information from various sources;

GC-12. Determination and persistence in relation to assigned tasks and assumed responsibilities;

GC-13. Awareness of equal opportunities and gender issues;

GC-14. The ability to realize one's rights and responsibilities as a member of society, to be aware of the values of civil (free, democratic) society and the need for its sustainable development, the rule of law, the rights and freedoms of a person and a citizen in Ukraine;

GC-15. The ability to preserve and multiply moral, cultural, scientific values and achievements of society based on understanding the history and patterns of development of the subject area, its place in the general system of knowledge about nature and society and in the development of society, technology and technologies, to use various types and forms of motor activity for active recreation and leading a healthy lifestyle.

Special (Professional, Subject) competencies:

SC-2. Ability to determine the necessary list of laboratory and instrumental studies and evaluate their results;

SC-4. The ability to determine the necessary regime of work and rest in the treatment and prevention of diseases;

SC-5. Ability to determine the nature of nutrition in the treatment and prevention of diseases;

SC-11. Ability to solve medical problems in new or unfamiliar environments in the presence of

incomplete or limited information, taking into account aspects of social and ethical responsibility;
 SC-13. Ability to carry out sanitary and hygienic and preventive measures;
 SC-14. Ability to plan and carry out preventive and anti-epidemic measures regarding infectious diseases;
 SC-17. Ability to assess the impact of the environment, socio-economic and biological determinants on the state of health of an individual, family, population;
 SC-21. It is clear and unambiguous to convey one's own knowledge, conclusions and arguments on health care problems and related issues to specialists and non-specialists, in particular to persons who are studying;
 SC-24. Adherence to ethical principles when working with patients and laboratory animals;
 SC-25. Adherence to professional and academic integrity, to be responsible for the reliability of the obtained scientific results.

Program learning outcomes:

Integrative final program learning outcomes (PLO), the formation of which is facilitated by the academic discipline "Hygiene and Ecology":

PLO-1. Have thorough knowledge of the structure of professional activity. To be able to carry out professional activities that require updating and integration of knowledge. To be responsible for professional development, the ability for further professional training with a high level of autonomy;

PLO-2. Understanding and knowledge of fundamental and clinical biomedical sciences, at a level sufficient for solving professional tasks in the field of health care;

PLO-3. Specialized conceptual knowledge, which includes scientific achievements in the field of health care and is the basis for conducting research, critical understanding of problems in the field of medicine and related interdisciplinary problems;

PLO-7. Assign and analyze additional (mandatory and optional) examination methods (laboratory, functional and/or instrumental) (according to list 4: study of the internal environment of premises (indicators of microclimate, natural and artificial lighting, bacteriological and chemical air pollution; chemical and bacteriological research of the human external environment (atmospheric air, water bodies, soil); measurement of radiation (sound, vibration, ionizing), individual radiometry; chemical, organoleptic, bacteriological research of food products and drinking water; measurement of ergonomic indicators of difficulty and intensity of work);

PLO-10. Determine the necessary mode of work, rest and nutrition on the basis of the final clinical diagnosis, observing the relevant ethical and legal norms, by making a reasoned decision according to existing algorithms and standard schemes;

PLO-19. Plan and implement a system of anti-epidemic and preventive measures regarding the occurrence and spread of diseases among the population;

PLO-21. Search for necessary information in professional literature and databases, other sources, analyze, evaluate and apply this information;

PLO-23. Assess the impact of the environment on the state of human health to assess the state of morbidity of the population;

PLO-25. It is clear and unambiguous to convey one's own knowledge, conclusions and arguments on health care problems and related issues to specialists and non-specialists;

PLO-27. Communicate freely in the national and English languages, both orally and in writing to discuss professional activities, research and projects.

4. Prerequisites for the course

1. Prerequisites for the course. The study of the discipline "Hygiene and Ecology" is based on knowledge of basic natural sciences: medical biology, medical and biological physics, human anatomy, physiology, histology, cytology and embryology, biological and bioorganic chemistry, microbiology, virology and immunology and integrates with . Creates the basis for further study of epidemiology, infectious diseases, internal medicine and other clinical disciplines. Lays the foundations for the formation of knowledge, skills and abilities that are determined by the ultimate goals of the program, necessary for the next professional activity.

5. Program results of training

List of learning results

The learning result code	The content of the learning results	Reference to the code of the competence
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		matrix
<i>category: Kn- Knowledge, Sk - Skills, C-communication, AR – autonomy and responsibility.</i>		
Kn1 Specialized conceptual knowledge that includes modern scientific achievements in the field of professional activity or field of knowledge and is the basis for original thinking and conducting research		
Kn2 Critical understanding of problems in the field and on the border of the fields of knowledge		
Sk1 Specialized skills/problem-solving skills necessary for conducting research and/or carrying out innovative activities in order to develop new knowledge and procedures		
Sk2 Ability to integrate knowledge and solve complex problems in broad or multidisciplinary contexts		
Sk3 Ability to solve problems in new or unfamiliar environments in the presence of incomplete or limited information, taking into account aspects of social and ethical responsibility		
C1 Clear and unambiguous presentation of one's own knowledge, conclusions and arguments to specialists and non-specialists, in particular to students		
C2 Use of foreign languages in professional activities		
AR1 Management of work or learning processes that are unpredictable and require new strategic approaches		
AR2 Responsibility for contributing to professional knowledge and practice and/or evaluating the results of teams and collectives		
AR3 Ability to continue learning with a high degree of autonomy		
General competences		
<i>Kn1, Sk1, C1, AR1.</i>	Ability to abstract thinking, analysis and synthesis	PLO – 1,2,3,7,10,19, 21,23,25,27
<i>Kn1, Sk3, C2,AR3.</i>	Ability to learn and master modern knowledge	
<i>Kn1, Sk2, C1,AR1.</i>	Ability to apply knowledge in practical situations	
<i>Kn2, Sk2, C2,AR2.</i>	Knowledge and understanding of the subject area and understanding of professional activity	PLO – 1,2,3,7,10,19, 21,23,25,27
<i>Sk3, AR2.</i>	Ability to adapt and act in a new situation	
<i>Kn1, Sk3, C1,AR1.</i>	Ability to make informed decisions	
<i>Kn2, Sk3, C1,AR2.</i>	Ability to work in a team	
<i>Kn1, Sk3, C1,AR2.</i>	Ability to interpersonal interaction	
<i>C2.</i>	Ability to communicate in a foreign language	
<i>Kn2, Sk3, C2,AR3.</i>	Ability to use information and communication technologies	PLO – 1,2,3,7,10,19, 21,23,25,27
<i>Kn2, Sk2, C2,AR2.</i>	Ability to search, process and analyze information from various sources	
<i>Kn2, Sk3, AR3.</i>	Determination and persistence in relation to assigned tasks and assumed responsibilities	
<i>Kn2, Sk1, C1,AR1.</i>	Awareness of equal opportunities and gender issues	
<i>Kn1, Sk2, C1,AR3.</i>	The ability to realize one's rights and obligations as a member of society, to be aware of the values of civil (free, democratic) society and the necessity of its sustainable development, the rule of law, the rights and freedoms of a person and a citizen in Ukraine	PLO – 1,2,3,7,10,19, 21,23,25,27
<i>Kn2, Sk3, AR3.</i>	The ability to preserve and multiply the moral, cultural, scientific values and achievements of society based on an understanding of the history and patterns of development of the subject area, its place in the general system of knowledge about nature and society and in the development of society, technology and technologies, to use various types and forms of motor activities for active recreation and leading a healthy lifestyle	PLO – 1,2,3,7,10,19, 21,23,25,27
Professional competences		
<i>Kn2, Sk3, AR1.</i>	Ability to determine the necessary list of laboratory and instrumental studies and evaluate their results	PLO – 1,2,3,7,10,19, 21,23,25,27
<i>Kn2, Sk2, C1,AR1.</i>	The ability to determine the necessary regime of work and rest in the treatment and prevention of diseases	PLO – 1,2,3,7,10,19, 21,23,25,27
<i>Kn2, Sk2, C1,AR1.</i>	The ability to determine the nature of nutrition in the	PLO –

	treatment and prevention of diseases	1,2,3,7,10,19, 21,23,25,27
<i>Kn2, Sk3, C1,AR2.</i>	Ability to solve medical problems in new or unfamiliar environments in the presence of incomplete or limited information, taking into account aspects of social and ethical responsibility	PLO – 1,2,3,7,10,19, 21,23,25,27
<i>Kn2, Sk2, C1,AR2.</i>	Ability to carry out sanitary and hygienic and preventive measures	PLO – 1,2,3,7,10,19, 21,23,25,27
<i>Kn2, Sk3, C1,AR2.</i>	Ability to plan and carry out preventive and anti-epidemic measures regarding infectious diseases	PLO – 1,2,3,7,10,19, 21,23,25,27
<i>Kn2, Sk3, C1,AR1.</i>	The ability to assess the impact of the environment, socio-economic and biological determinants on the state of health of an individual, family, population	PLO – 1,2,3,7,10,19, 21,23,25,27
<i>Kn2, Sk3, C2,AR2.</i>	Clearly and unambiguously communicate own knowledge, conclusions and arguments on health care problems and related issues to specialists and non-specialists, in particular to people who are studying	PLO – 1,2,3,7,10,19, 21,23,25,27
<i>Kn1,Sk2, C1,AR2.</i>	Adherence to ethical principles when working with patients and laboratory animals	PLO – 1,2,3,7,10,19, 21,23,25,27
<i>Kn2, Sk2, C12,AR2.</i>	Adherence to professional and academic integrity, to be responsible for the reliability of the obtained scientific results	PLO – 1,2,3,7,10,19, 21,23,25,27

6. Course format and scope

Course format	Full-time course	
Kind of occupations	Number of hours	Number of groups
Lectures	20	42 (4 streams)
Practical classes	70	42
Self-training work	80	42

7. Topics and content of the course

Code of class type	Topic	Content of topic	Learnin g result code	Tutor
L-1 (lecture-1)	Hygiene as a science. Ecology as a science. Environment and human health. Biosphere, its hygienic value. Bioethical aspects of human impact on the environment. Scientific fundamentals of hygienic regulation.	Hygiene as a science, its purpose, tasks, content, connection with other sciences. Ecology as a science, its purpose, tasks, content, connection with other sciences. Determinants of health. Preventive orientation of domestic medicine, public and personal prevention, primary, secondary and tertiary, defining priorities. Basic prevention strategies in the world. The importance of hygiene for the formation of professional thinking and practice of doctors of various specialties. The concept of hygienic pre-nosological diagnosis. Environment and human health. Biosphere, its components, hygienic significance. Fundamentals of hygiene methodology. Methods and techniques of hygienic research, their classification. Methods of studying the state of the environment and its hygienic assessment, methods of studying the	<i>Kn 1-15,</i> <i>Sk 1-15</i> <i>C 1-15</i> <i>AR 1-15</i> <i>Kn 1-15,</i> <i>Sk 1-15</i> <i>C 1-15</i> <i>AR 1-15</i> <i>Profess ional</i> <i>Kn -13,19</i>	Kozak L.P.

		<p>impact of the environment on human health. Bioethical aspects of human impact on the environment. Hygienic and ecological rationing Sanitary legislation. The main stages of development of hygiene. History of development of the department of general hygiene of Danylo Halytsky LMNU.</p> <p>Hygienic standardization of environmental factors. Principles and methods of hygienic rationing. The concept of hygienic standardization in meteorology and climatology, hygienic standardization of physical factors of the biosphere (infrared, ultraviolet, electromagnetic, ionizing radiation, noise, vibration) and chemical factors of the biosphere. Limiting signs of harmfulness, threshold concentrations, the most ineffective doses, concentrations. Types of hygienic standards. Features of rationing of drugs in atmospheric air, water of reservoirs, the production environment, in separate foodstuff. The concept of express-experimental method of substantiation of MPC. The concept of combined, complex, joined action, evaluation methods. Scientific-methodical and normative-legislative documentation on hygienic standardization of xenobiotics.</p>	<p><i>Sk - 13,19</i> <i>C - 13,19</i> <i>AR - 13,19</i></p> <p><i>Kn - 13,19</i> <i>Sk - 13,19</i> <i>C-13,19</i> <i>AR - 13,19</i></p>	
P-1 (<i>practical class 1</i>)	Methods of hygienic research. Methods of determination and hygienic assessment of temperature, humidity, air velocity and their impact on heat transfer. Research of barometric pressure.	Methods of hygienic research of environmental parameters and the impact of the changed environment on human health. Hygienic value of physical properties of air (temperature, humidity and speed of movement). Microclimate, components, their influence on the ways of heat transfer of the organism. Determination of spatial and temporal temperature of the room, humidity by station and aspiration psychrometers. Heating, its types. The principle of the method of determining the barometric pressure using a mercury barometer, barometer-aneroid, barograph. Etiology and prevention of mountain, altitude, caisson diseases. Influence of air velocity. The principle of the method of determining the speed of air movement by anemometers and catathermometers. Wind rose, methods of its construction. Hygienic standards of temperature and humidity, speed of air movement in rooms of municipal objects and on production. Sources of infection with acute respiratory disease COVID-19 caused by coronavirus SARS-COV-2 and features of the spread of the pathogen among humans. Measures of general and individual prevention of coronavirus infection.	<p><i>Kn 1-15,</i> <i>Sk 1-15</i> <i>C 1-15</i> <i>AR 1-15</i></p> <p><i>Professional</i> <i>Kn - 2,13,19</i> <i>Sk - 2,13,19</i> <i>C - 2,13,19</i> <i>AR - 2,13,19</i></p>	Kozak L.P., Sybirny A.V., Yurchenko S.T.
SWS-1 (<i>self-training work 1</i>)	History of formation and development of hygiene. The modern period of hygiene development.	The main historical stages of development of hygiene. An empirical stage in the history of hygiene. Formation and formation of hygienic knowledge of primitive society. Hygienic traditions of the Ancient World (Ancient Egypt, India, Israel, China, Rome, Greece, Byzantium). Views of Hippocrates, Avicenna, Socrates on the role of prevention in maintaining and promoting health. Sanitary culture in Kievan Rus. The role of Eupraxia, Theodosius of Pechersk, Agapit of Pechersk, Peter Mohyla, Danylo Samoilovich, Yuri Kotermak in its development. The reasons for the decline of hygienic	<p><i>Kn 1-15,</i> <i>Sk 1-15</i> <i>C 1-15</i> <i>AR 1-15</i></p> <p><i>Professional</i> <i>Kn -</i></p>	Kozak L.P., Sybirny A.V., Yurchenko S.T.

		<p>knowledge in the Middle Ages. Epidemics, pandemics of infectious diseases in Western Europe during the Middle Ages. Scientific and experimental stage of hygiene development. The role of M. Pettenkofer, O.P. Dobroslavin, F.F. Erisman, V.A. Subbotin and other scientists in the formation of the scientific and experimental stage of hygiene. Formation of scientific hygienic schools (English, North American, French, Austro-Prussian. Views of prominent doctors G.A. Zakhar'in, M.I. Pirogov, etc. on the role of preventive medicine). Development of hygienic science in Ukraine. Establishment of hygiene departments in medical universities of Ukraine. Medical and sanitary service in the Ukrainian People's Republic, Western Ukrainian Republic. Marzeev, Gabovych, Goncharuk and others. in the development of hygienic science. The modern period of hygiene development. History of the Department of General Hygiene of Danylo Halytsky Lviv National Medical University. Lviv Scientific School of Hygienists. The main directions of scientific research of the department at the present stage. Stages of development of ecology as a science. Development of ecology in the countries of the world at different stages of development of society. International cooperation in hygienic and ecological sciences in the modern period.</p>	<p>13,19 Sk- 13,19 C-13,19 AR- 13,19</p>	
SWS-2	Hygienic regulation of chemicals in atmospheric air, air of a working zone, water of reservoirs, soil and foodstuff.	<p>Methodical schemes, principles and methods of hygienic standardization in different environments. Features of hygienic standardization of chemicals in air of a working zone, atmospheric air, water of reservoirs, foodstuff and soil. Methodical scheme of hygienic standardization of xenobiotics in water of reservoirs. Limiting signs of harmfulness at hygienic regulation of xenobiotics in water of reservoirs. Scheme of hygienic rationing of exochemicals in soil. Limiting signs of harmfulness in the standardization of EXP in the soil. Basic methodical scheme of hygienic standardization of harmful substances in food products. Limiting signs of harmfulness at hygienic rationing of xenobiotics in foodstuffs. The principle of complex rationing of pesticides. The principle of hygienic regulation of nitrates.</p>	<p>Kn 1- 15, Sk 1-15 C 1-15 AR 1- 15 Professional Kn - 13,19 УМ- 13,19 K-13,19 AB 13,19</p>	<p>Kozak L.P., Sybirny A.V., Yurchenko S.T.</p>
L-2	Solar radiation, its hygienic value. Hygiene of weather and climate. Acclimatization, helioteotropic reactions and their prevention.	<p>Physical bases of solar radiation. The concept of solar activity, "solar wind", interplanetary magnetic field. Interaction of components of solar radiation with the magnetic sphere and the Earth's atmosphere. Solar spectrum at the boundary of the atmosphere and the earth's surface. The value of the ozone layer of the atmosphere, ozone "holes". Impact of solar activity on the biosphere, the human body and human health. Hygienic value of infrared radiation of the Sun, pathology caused by its excessive action, its prevention. Infrared radiation of artificial origin and the use of its sources in medicine. Hygienic value of visible radiation of the Sun and its use in medicine, devices for determination. Issues of biosafety of solar radiation application. Hygienic value of ultraviolet radiation of the Sun. Hygienic value of ultraviolet radiation of the Sun and its use in medicine, devices for determination. Weather, definition. Basic laws of weather formation. Factors that shape and characterize the weather. Types of atmospheric circulation, main thermobaric</p>	<p>Kn 1- 15, УМ 1- 15 K 1-15 AB 1- 15 Professional Kn - 13,19 Sk- 13,19 C-13,19 AR- 13,19</p>	<p>Kozak L.P.</p>

		formations: anticyclones, cyclones, atmospheric fronts. Direct and indirect effects of weather on human health. Medical weather classifications. Climate, definition. Factors that shape and characterize the climate. General and applied (medical, construction) classifications of climate. Climatic features of different geographical regions. Climate, health and efficiency. The concept of medical geography and medical-geographical mapping. Acclimatization. Phases of acclimatization. Climatotropic reactions of healthy and sick people, their prevention.		
P-2	Methods for determining the intensity and prophylactic dose of ultraviolet (UV) radiation and its use for disease prevention and air sanitation.	Biogenic and abiogenic action of ultraviolet rays. Insufficient and excessive ultraviolet radiation, their negative impact on the body. The concept of erythema and prophylactic dose of ultraviolet radiation. Artificial sources of ultraviolet radiation and their comparative hygienic characteristics. The use of natural and artificial ultraviolet radiation for the prevention of human diseases, prevention of harmful effects of physical, chemical and biological factors. Issues of bioethics in the application of ultraviolet radiation.	<i>Kn 1-15, VM 1-15 K 1-15 AB 1-15</i> <i>Professional Kn - 13,19 VM-13,19 K-13,19 AB 13,19</i>	Kozak L.P., Sybirny A.V., Yurchenko S.T.
SWS-3	Hygienic value of biosphere components (atmosphere, hydrosphere, lithosphere).	Biosphere, its components (atmosphere, hydrosphere, lithosphere), their hygienic value. Functioning of the biosphere, the first and second laws of thermodynamics. Ecological systems. Structure and functioning of the biosphere. Biogeocenoses, biogeochemical cycles. The teachings of V.I. Vernadsky on the noosphere. The natural chemical composition of atmospheric air and the hygienic value of its individual components. Atmospheric pressure and its effect on the body. Electrical state of the atmosphere, its hygienic value. The main sources, types and consequences of anthropogenic pollution of air, water, soil. Greenhouse effect, smog, acid rain. Impact of polluted air, water and soil on the health and living conditions of the population. The role of transport in environmental pollution, its impact on human health. Direct effect on the body: acute poisoning, chronic specific and nonspecific diseases. Indirect action due to atmospheric circulation, attenuation of ultraviolet radiation, reduction of light levels, etc. Ways and means to prevent the negative impact of polluted air on health. Bioethical aspects and issues of biosafety of denaturation of the biosphere. Ecological situation in Ukraine. A set of measures to protect atmospheric air, water, soil from pollution.	<i>Kn 1-15, VM 1-15 K 1-15 AB 1-15</i> <i>Professional Kn - 13,19 VM-13,19 K-13,19 AB 13,19</i>	Kozak L.P., Sybirny A.V., Yurchenko S.T.
SWS-4	Methods of hygienic assessment of the impact of climatic conditions on human health. Prevention of meteorotropic reactions.	The impact of weather on human health (direct and indirect). Methods of hygienic assessment of direct and indirect effects of weather and climate on human health. Helio-meteorotropic reactions and helio-meteorotropic diseases, their prevention: permanent, seasonal, urgent .. Features of the impact of different types of weather and climate on human health. Manifestations of helio-meteorotropic reactions in people of different ages., Prevention. Bioethical aspects and biosafety issues of the impact of natural and anthropogenic factors on	<i>Kn 1-15, Sk1-15 C 1-15 AR 1-15</i> <i>Professional</i>	Kozak L.P., Sybirny A.V., Yurchenko S.T.

		human health. Use of climate for medical and health purposes. Influence of weather on the dynamics of air pollution. The concept of temperature inversion. Features of the impact of tropical climate on living conditions, working capacity and health of the population. Human adaptation and acclimatization in hot and tropical climates.	<i>ional</i> <i>Kn - 13,19</i> <i>Sk- 13,19</i> <i>C-13,19</i> <i>AR 13,19</i>	
L-3	Hygiene of populated areas. Problems of urbanization. Housing hygiene. Water as a factor of health, its hygienic and epidemiological significance. Organization of drinking water supply. Soil and health.	<p>Urbanization as a socio-hygienic problem. Positive and negative aspects of urbanization. Basic principles and requirements for planning and construction of the settlement. Housing, social and hygienic problems of housing construction in Ukraine and other countries. Types of residential and public buildings. Adverse physical and chemical factors in the operation of household appliances. Hygiene and biosafety of housing. Urban transport and other adverse environmental factors in the settlement (noise, vibration, electromagnetic fields, air pollution, excessive psychogenic loads, etc.), their sources and measures to eliminate harmful effects. Hygienic and socio-hygienic problems of the modern village. Hygienic features of planning and development of rural settlements. Features of planning and development of settlements in the conditions of arid and humid tropical climate.</p> <p>Hygienic value of water. Norms of water consumption depending on the level of communal and sanitary improvement of the settlement, living conditions, stay and human activity. Scientific substantiation of drinking water quality standards. Water as an etiological factor of diseases of non-infectious nature. Danger to human health of excessive content in water of various chemicals of natural origin and chemical compounds that fall due to anthropogenic pollution into water sources and drinking water during its purification and other ways to improve quality. Epidemiological significance of water. The role of water and water supply conditions in the spread of infectious diseases. Classification of infectious diseases, the causative agents of which are transmitted by water (cholera, typhoid fever, dysentery, etc.). Centralized and decentralized water supply systems, Hygienic characteristics of water resources and water supply sources in arid (arid) and humid (humidified) areas of the tropics. Hygienic, epidemic and endemic importance of soil. The concept of geochemical provinces and geochemical endemic diseases. Sources of soil pollution in modern conditions The impact of contaminated soil on the health and sanitation of the population. Processes and indicators of soil self-cleaning.</p>	<i>Kn 1-15,</i> <i>Sk 1-15</i> <i>C 1-15</i> <i>AR 1-15</i> <i>Kn 1-15,</i> <i>Sk 1-15</i> <i>C 1-15</i> <i>AR 1-15</i> <i>Professional</i> <i>Kn - 13,19</i> <i>Sk- 13,19</i> <i>C-13,19</i> <i>AR 13,19</i> <i>Kn - 13,19</i> <i>Sk- 13,19</i> <i>C-13,19</i> <i>AR 13,19</i>	Kozak L.P., Sybirny A.V.,
P-3	Methods of determination and hygienic assessment of natural and artificial lighting.	Hygienic value of natural and artificial lighting in residential and public premises, their hygienic assessment. Health changes and diseases caused by violation of hygienic requirements for natural and artificial lighting. Prevention of adverse effects of	<i>Kn 1-15,</i> <i>Sk 1-15</i> <i>C 1-15</i> <i>AR 1-</i>	Kozak L.P., Sybirny A.V., Yurche nko

		insufficient and excessive lighting on human health and efficiency. Factors that affect the level of natural light in the premises. Methods for assessing the natural lighting of premises (geometric and lighting methods). Hygienic requirements for natural light in medical, children's institutions, residential premises and in production. Hygienic value of artificial lighting. Methods of hygienic assessment of artificial lighting, its indicators. Hygienic characteristics of artificial light sources, their comparative characteristics. Types and systems of artificial lighting. Lighting fixtures and their hygienic assessment. Hygienic requirements for artificial lighting in rooms for various purposes. Insolation of premises, types of insolation modes.	15 <i>Professional</i> <i>Kn - 2,13,19</i> <i>Sk- 2,13,19</i> <i>C- 2,13,19</i> <i>AR- 2,13,19</i>	S.T.
P-4	Methods for determining CO ₂ concentration and air oxidation as indicators of anthropogenic air pollution and room ventilation.	Hygienic value of separate components of atmospheric air and air exhaled by the person. Carbon dioxide and air oxidation as indicators of anthropogenic air pollution and ventilation, hygienic standards in premises for various purposes. Anthropogenic air pollution of premises and its influence on an organism. Methods of definition of carbon dioxide and calculation of efficiency of ventilation of premises on its maintenance. The concept of an air cube, the required and actual volume and frequency of ventilation. Hygienic value of air oxidation, principle of determination. Air conditioning. Ventilation of premises, hygienic characteristics. Basic concepts of types, hygienic value and indicators of ventilation	<i>Kn 1-15,</i> <i>Sk 1-15</i> <i>C 1-15</i> <i>AR 1-15</i> <i>Professional</i> <i>Kn - 2,13,19</i> <i>Sk- 2,13,19</i> <i>C- 2,13,19</i> <i>AR- 2,13,19</i>	Kozak L.P., Sybirny A.V., Yurchenko S.T.
P-5	Hygienic assessment of the complex influence of microclimate parameters on human heat transfer.	Hygienic assessment of the complex impact of microclimate on human heat transfer. Air cooling capacity, principle of determination. The concept of equivalent, equivalent-effective and resulting temperatures. Comfort zone, comfort line. Heat balance and heat exchange of the human body with the environment. The concept of thermal comfort and discomfort. Subjective and objective indicators of the thermal state of man. Physiological reactions and diseases caused by the cooling and heating microclimate. Prevention of overheating and hypothermia. Calculation methods for assessing the impact of tropical (arid and humid) climate on the thermal state of the organism.	<i>Kn 1-15,</i> <i>Sk 1-15</i> <i>C 1-15</i> <i>AR 1-15</i> <i>Professional</i> <i>Kn - 13,19</i> <i>Sk- 13,19</i> <i>C-13,19</i> <i>AR 13,19</i>	Kozak L.P., Sybirny A.V., Yurchenko S.T.
P-6	Methods of assessment of drinking water based on the results of laboratory analysis of samples.	Hygienic requirements for drinking water intended for human consumption: 1) indicators of epidemic safety of drinking water; 2) indicators of sanitary and chemical safety and quality of drinking water; 3) indicators of radiation safety of drinking water; 4) indicators of physiological completeness of mineral composition of drinking water. Organoleptic properties of water: odor, taste, color, turbidity, the principle of research methods,	<i>Kn 1-15,</i> <i>Sk 1-15</i> <i>C 1-15</i> <i>AR 1-15</i> <i>Professional</i>	Kozak L.P., Sybirny A.V., Yurchenko S.T.

		hygienic standards. Hygienic and economic significance of water hardness. The concept of general, permanent and temporary water hardness, the principle of the research method. Nitrogen-containing substances, hygienic value, principle of determination method. Hygienic requirements for drinking water quality and their features in tropical climates. International standard for drinking water quality and features of its use in the tropics.	<i>ional</i> <i>Kn -</i> <i>2,13,19</i> <i>Sk-</i> <i>2,13,19</i> <i>C-</i> <i>2,13,19</i> <i>AR-</i> <i>2,13,19</i>	
P-7,8	Methods and means of purification, disinfection of water at the centralized and decentralized water supply.	Classification of drinking water treatment methods. General and special (iron removal, softening, demineralization, deodorization, decontamination, fluorination, defluorination, etc.) methods of water treatment with a centralized water supply system. Hygienic value of drinking water disinfection. Comparative hygienic characteristics of chemical and physical methods of drinking water disinfection. Hygienic requirements for chlorinated lime. Active chlorine, its hygienic value, the principle of determination. Comparative characteristics of water chlorination methods. Chlorine water consumption. Disinfection of water by ozonation, irradiation with ultraviolet rays, their hygienic characteristics. General scheme of arrangement of the main structures of the water supply system from underground and surface water sources. Water supply network and its arrangement. Causes of water pollution and infection in the water supply network. Hygienic requirements for the arrangement and operation of mine wells and catchments of springs. "Rehabilitation" of mine wells, types, stages. Water conditioning in the tropics.	<i>Kn 1-</i> <i>15,</i> <i>Sk 1-15</i> <i>C 1-15</i> <i>AR 1-</i> <i>15</i> <i>Profess</i> <i>ional</i> <i>Kn -</i> <i>13,19</i> <i>Sk-</i> <i>13,19</i> <i>C-13,19</i> <i>AR</i> <i>13,19</i>	Kozak L.P., Sybirny A.V., Yurchenko S.T.
SWS-5	Endemic goiter as a hygienic problem, its etiology, prevention. Endemic fluorosis and caries as a hygienic problem, their prevention.	The concept of endemic diseases. Biological role and hygienic value of iodine and fluorine in the occurrence of endemic diseases. Endemic goiter, etiology, manifestations. Iodine content in water and food. Norms of daily physiological needs of iodine for different age groups of the population of Ukraine. Methods and means of prevention of iodine deficiency, its types. Endemic fluorosis, conditions and ways of prevention. Stages of dental fluorosis. Endemic caries, conditions of occurrence and ways of prevention. Hygienic standards of fluorine content in drinking water and their scientific substantiation depending on climatic region. Hygienic principles of fluoridation and defluoridation of water depending on geoclimatic conditions. Fluoride content in foods and daily diets. Safe levels of fluoride intake with food depending on age. Sources of fluoride pollution of the environment. The importance of toothpastes and powders for the prevention of caries in the population.	<i>Kn 1-</i> <i>15,</i> <i>Sk 1-15</i> <i>C 1-15</i> <i>AR 1-</i> <i>15</i> <i>Profess</i> <i>ional</i> <i>Kn -</i> <i>13,19</i> <i>Sk-</i> <i>13,19</i> <i>C-13,19</i> <i>AR</i> <i>13,19</i>	Kozak L.P., Sybirny A.V., Yurchenko S.T.
SWS-6	Sources and types of water supply Methodology of sanitary inspection of water supply sources and water sampling	Sources of water supply, their comparative hygienic characteristics. Sanitary protection zones. Centralized and de-centralized water supply systems, their comparative hygienic characteristics. Schematic diagrams of water mains when taking water from underground and surface reservoirs. Methods of	<i>Kn 1-</i> <i>15,</i> <i>Sk 1-15</i> <i>C 1-15</i> <i>AR 1-</i>	Kozak L.P., Sybirny A.V., Yurchenko

	for bacteriological and sanitary-chemical research.	prevention of water pollution and infection in the water supply network. Methods of sanitary inspection of water supply sources. Rules, devices and utensils used in water sampling for research from open reservoirs, water supply networks, mine wells for sanitary-chemical and bacteriological analysis. Methods of conservation and transportation of water samples. Sources, causes and mechanisms of pollution of surface and groundwater. Hygienic characteristics of water resources and water supply sources in arid and humid zones of the tropics.	15 <i>Professional Kn - 13,19 Sk- 13,19 C-13,19 AR 13,19</i>	S.T.
P-9	Methods of hygienic assessment of the soil according to the sanitary inspection of the land site and the results of laboratory analysis of samples.	Soil, definition. Origin, formation, mechanical structure, physical properties and chemical composition of soil. Hygienic assessment of different types of soils. Geochemical, geoenvironmental characteristics of soils. Basic physical properties of soil (mechanical composition, humidity, porosity, permeability, filtration capacity, air permeability, capillarity, moisture capacity), their hygienic value and methods of determination. Indicators of soil sanitation. Hygienic standards governing the sanitary condition of the soil (chemical, bacteriological, helminthological, radiological). Assessment of sanitary condition of soil by chemical and biological indicators. The role of soil in the emergence and spread of infectious diseases and invasions, the principles of prevention. The concept of geochemical provinces and geochemical endemic diseases. Soil pollution by pesticides, mineral fertilizers, toxic elements, radioactive substances. Factors and mechanisms involved in soil self-cleaning.	<i>Kn 1-15, Sk 1-15 C 1-15 AR 1-15</i> <i>Professional Kn - 2,13,19 Sk- 2,13,19 C- 2,13,19 AR- 2,13,19</i>	Kozak L.P., Sybirny A.V., Yurchenko S.T.
SWS-7	Sanitary cleaning of settlements.	Principles of cleaning settlements. modern hygienic and bioethical problems. Systems and facilities for temporary storage, removal, disposal and utilization of solid and liquid waste of domestic and industrial origin. Liquid waste, their classification and sanitary-epidemiological significance. Sewerage of settlements, its importance in the prevention of infectious diseases. Influence of sewerage of settlements on sanitary condition of soil and living conditions of the population. General scheme and facilities for domestic wastewater treatment. Wastewater treatment and sanitary protection of reservoirs. Scientific bases of protection of open reservoirs. The concept of small sewerage and conditions of its use. Methods of disposal and utilization of industrial and radioactive waste. Hygienic requirements for places and types of burial of the dead. Hygienic characteristics of cremation.	<i>Kn 1-15, Sk 1-15 C 1-15 AR 1-15</i> <i>Professional Kn - 13,19 Sk- 13,19 C-13,19 AR 13,19</i>	Kozak L.P., Sybirny A.V., Yurchenko S.T.
L-4	Nutrition as a factor of health. Scientific bases of rational nutrition. Features of nutrition of the population of different age groups, professions. Biosafety issues in	Physiological and hygienic bases of nutrition. The importance of nutrition for health and physical development. Theories of nutrition (balanced, adequate nutrition, functional-homeostatic, genomic-proteomic paradigm of nutrition). Concepts of rational nutrition and alternative (non-traditional) types of food. Functions of food (energy, plastic, bioregulatory, adaptive-regulatory, immune-regulatory, rehabilitation, signal-	<i>Kn 1-15, Sk 1-15 C 1-15 AR 1-15</i> <i>Kn 1-15, Sk 1-15</i>	Kozak L.P.

	food hygiene.	<p>motivational) and types of food (rational, preventive, treatment-and-prophylactic, medical) Scientific bases of rational nutrition. Basic principles of rational nutrition. Norms of physiological needs of the population of Ukraine in the basic nutrients and energy "(order № № 1073 from 03.09.2017).</p> <p>Alimentary pathology, its prevalence and classification: alimentary diseases: primary and secondary, alimentary-conditioned, food intolerance, diseases associated with the consumption of epidemically and sanitary food (food infections, food infestations, food poisoning). Prevention of alimentary, alimentary-dependent diseases. Biosafety issues in food hygiene. Food poisoning, classification. Basic principles of prevention of microbial food poisoning Basic principles of prevention of non-microbial nature and poisoning by chemical substances.</p> <p>Principles of nutrition of people of different ages, mental and physical labor, students, athletes. Food in an environmentally unfavorable environment and harmful industries. Products and mixtures of baby food. Geroprotective products.</p> <p>Norms of physiological needs of the population of Ukraine in basic nutrients and energy "(order № № 1073 of 03.09.2017). Features of the body's energy needs, quantity and ratio of nutrients for different age groups.</p>	<p><i>C 1-15</i> <i>AR 1-15</i></p> <p><i>Professional</i> <i>Kn - 13,19</i> <i>Sk- 13,19</i> <i>C-13,19</i> <i>AR 13,19</i></p> <p><i>Kn - 13,19</i> <i>Sk-13,19</i> <i>C-13,19</i> <i>AR 13,19</i></p>	
P-10,11	Methods for calculating human energy consumption and nutrient needs. Assessment of food adequacy according to the menu shedule.	<p>Energy expenditure of the organism, components of the total daily expenditure of human energy, energy balance. Physical activity groups of the working population .. Norms of physiological needs of the population of Ukraine in basic nutrients and energy (2017). Features of the body's energy needs, quantity and ratio of nutrients in tropical climates. Methods for determining (calculation methods) average daily energy consumption (WHO, 1986) and individual needs for basic nutrients and energy, features of determining the daily energy needs for children and the elderly.</p> <p>Methods of hygienic assessment of nutrition in teams by the calculation method according to the menu layout. Methods for assessing the adequacy of the actual nutrition of the individual. Indicators of hygienic assessment of the quality of the diet, requirements for the daily diet, diet.</p>	<p><i>Kn 1-15,</i> <i>Sk 1-15</i> <i>C 1-15</i> <i>AR 1-15</i></p> <p><i>Professional</i> <i>Kn - 13,19</i> <i>Sk- 13,19</i> <i>C-13,19</i> <i>AR 13,19</i></p>	Kozak L.P., Sybirny A.V., Yurche nko S.T.
P-12, 13	Methods of studying and assessing the nutritional status of man and medical control over the provision of the body with vitamins.	<p>The concept of nutritional status of the organism. Methods of studying and assessing nutritional status. Methods of objective examination of the patient to study and assess nutritional status. Vitamin deficiency, microelementosis (hypomicroelementosis, hypermicroelementosis), causes, prevention. Criteria for assessing the energy adequacy of nutrition. Indicators of protein, fat, carbohydrate adequacy of the nutritional status of the organism. Classification of nutritional status by body mass index. Questionnaire survey of the nutritional status of the organism. Methods of medical control over</p>	<p><i>Kn 1-15,</i> <i>Sk 1-15</i> <i>C 1-15</i> <i>AR 1-15</i></p> <p><i>Professional</i> <i>Kn - 13,19</i></p>	Kozak L.P., Sybirny A.V., Yurche nko S.T.

		the nutrition of the population of the tropical region. Calculated methods of nutrition assessment and correction.	<i>Sk-13,19</i> <i>C-13,19</i> <i>AR</i> <i>13,19</i>	
P-14	Hygienic assessment of food and ready meals based on the results of their laboratory analysis.	The concept of quality and safety of food. The concept of State standards for food. Hygienic requirements for the quality of bread, flour, milk, meat, canned food. Quality indicators and signs of spoilage of meat and meat products, milk and dairy products, fish, vegetables and fruits, flour, bread and other cereals. Standard requirements for bread. Definitions: food of low quality, product suitable for consumption without restrictions, conditionally suitable product, "surrogate product", counterfeit food. Diseases transmitted through products of animal and plant origin Storage conditions and terms of sale of perishable products and ready meals. The concept of genetically modified organisms and genetically modified products. State hygienic rules and norms "Regulations of maximum levels of certain contaminants in food products" № 368 dated 13.05.2013.	<i>Kn 1-15,</i> <i>Sk 1-15</i> <i>C 1-15</i> <i>AR 1-15</i> <i>Professional</i> <i>Kn -13,19</i> <i>Sk-13,19</i> <i>C-13,19</i> <i>AR</i> <i>13,19</i>	Kozak L.P., Sybirny A.V., Yurchenko S.T..
P-15, 16	Prevention of food poisoning.	The concept of food poisoning. Classification of food poisoning by etiological and pathogenetic characteristics. Modern views on classification. Food poisoning of microbial nature. Food toxicoinfections, bacterial toxicosis (botulism, staphylococcal toxicosis, mycotoxicosis), etiology, pathogenesis, prevention Microbiological food safety criteria. Food poisoning of non-microbial nature. Food poisoning by products of plant and animal origin, their prevention. Food poisoning caused by chemical impurities (heavy metals - lead, cadmium, mercury, arsenic, pesticides, nitrates, food and feed additives, dioxins, polychlorinated biphenyls, etc.), their prevention. Food poisoning of unknown etiology (Urovsky, Gaf, Sortland disease). The role of aerogenic, purulent diseases, healthy carriers of intestinal pathogens among the staff of food units in the occurrence of food poisoning of microbial nature and infections. Importance of food chains in migration of toxic and radioactive substances from various objects of environment to a human body. General scheme of investigation of food poisoning cases. Responsibilities of the medical physician in the investigation of food poisoning and prevention. Storage of perishable products. Basic principles of prevention of food poisoning of microbial and non-microbial etiology. Toxicological and epidemiological problems of nutrition of the population of tropical regions.	<i>Kn 1-15,</i> <i>Sk 1-15</i> <i>C 1-15</i> <i>AR 1-15</i> <i>Professional</i> <i>Kn -13,19</i> <i>Sk-13,19</i> <i>C-13,19</i> <i>AR</i> <i>13,19</i>	Kozak L.P., Sybirny A.V., Yurchenko S.T.
SWS-8	Methods of food preservation, their hygienic characteristics. Food additives, their hygienic characteristics.	Classification of canning methods (physical, chemical, biological). Physical methods of canning (sterilization, pasteurization, tindalization). Chemical methods of preservation based on increasing the osmotic pressure. Hygienic assessment of canning methods. The concept of "food additives". The concept of dietary supplements. Importance of food and biologically active additives. Classification of food additives by purpose. Functional classes of food additives.	<i>Kn 1-15,</i> <i>Sk 1-15</i> <i>C 1-15</i> <i>AR 1-15</i> <i>Professional</i> <i>Kn-13,19</i>	Kozak L.P., Sybirny A.V., Yurchenko S.T.

			<i>Sk-13,19</i> <i>C-13,19</i> <i>AR 13,19</i>	
SWS-9	Physiological and hygienic value of nutrients. Nutritional and biological value of food products.	<p>Physiological and hygienic role of proteins. Scientific substantiation of protein needs. Hygienic characteristics of proteins of animal and vegetable origin. Protein quality indicators. Sources of proteins and essential amino acids. Physiological and hygienic role of fats. Quality indicators of fats of different origin. Physiological and hygienic role of polyunsaturated fatty acids, phosphatides, sterols. Scientific substantiation of the body's needs for fats. Sources of fats. Cooking fats. "Overheated fats". Physiological and hygienic role of carbohydrates. Scientific substantiation of the body's needs for simple and complex carbohydrates. Carbohydrate quality indicators. Sources of carbohydrates. The concept of refined and "protected" carbohydrates. Vita-mines, mineral salts, flavors, their physiological and hygienic role. Sources of vitamins and minerals</p> <p>The concept of energy, nutritional and biological value of food. Nutritional and biological value of products of vegetable (flour, bread, cereals, vegetables, fruits, berries) and animal (milk, meat) origin, fish and fish products. Hygienic characteristics of the most common food products in the tropics.</p>	<i>Kn 1-15,</i> <i>Sk 1-15</i> <i>C 1-15</i> <i>AR 1-15</i> <i>Professional Kn - 13,19</i> <i>Sk-13,19</i> <i>C-13,19</i> <i>AR 13,19</i>	Kozak L.P., Sybirny A.V., Yurchenko S.T.
SWS-10	Prevention of alimentary and alimentary-caused diseases.	Alimentary diseases, classification, prevention. Protein, protein-energy deficiency, clinical signs, causes, prevention. Hypo- and hypervitaminosis, causes, clinical signs of the main types of insufficiency, prevention. The concept of trace elements, clinical signs of the main types of deficiency of micro- and macronutrients, causes, prevention. The concept of alimentary - conditioned diseases, prevalence in Ukraine. The importance of nutrition in the prevention of cardiovascular, oncological diseases, diseases of the digestive tract, diabetes, bone system, etc. General characteristics of diseases of alimentary origin among the population of tropical regions and methods and means of their prevention.	<i>Kn 1-15,</i> <i>Sk 1-15</i> <i>C 1-15</i> <i>AR 1-15</i> <i>Professional Kn - 13,19</i> <i>Sk-13,19</i> <i>C-13,19</i> <i>AR 13,19</i>	Kozak L.P., Sybirny A.V., Yurchenko S.T.
L-5	Current issues of hygiene of children and adolescents. Issues of bioethics and biosafety in the hygiene of children and adolescents.	Environmental factors and social living conditions that affect the formation of the health of children and adolescents. General patterns of growth and development of children and adolescents. Evaluation criteria and health indicators for children and adolescents. Features of the distribution of children and adolescents by health groups. Physical development as an important criterion for assessing health. Medical, physiological and psychological-pedagogical criteria for assessing the level of development of the child. Methods of studying age psychophysiological features of an organism of children and teenagers. Shifts in a state of health and the diseases caused by the irrational	<i>Kn 1-15,</i> <i>Sk 1-15</i> <i>C 1-15</i> <i>AR 1-15</i> <i>Professional Kn - 13,19</i> <i>Sk-13,19</i>	Sybirny A.V..

		organization of educational process. Tasks of the doctor on the organization and carrying out of improving actions in children's collectives. The role of the family doctor in the formation of favorable hygienic conditions for the upbringing and education of the child.	<i>C-13,19 AR 13,19</i>	
P-17	Methods for assessing the health and physical development of children and adolescents.	The concept of "physical development". Health indicators and criteria for its evaluation in children. Health groups. Rules of anthropometry. Somatometry, physiometry, somatoscopy. Acceleration, deceleration (retardation). Standards of physical development of children and adolescents. The main methods of assessing the physical development of the individual and the team (sigma deviations, regression analysis according to evaluation tables - regression scales, centile). Comprehensive assessment of physical development by morphological and biological status. The concept of harmonious and disharmonious, proportional and disproportionate physical development. The concept of biological and calendar age. Indicators of the level of biological development of children and adolescents .. Methods for determining the biological age of the child.	<i>Kn 1-15, Sk 1-15 C 1-15 AR 1-15 Professional Kn -13,19 Sk-13,19 C-13,19 AR 13,19</i>	Kozak L.P., Sybirny A.V., Yurchenko S.T..
P-18	Hygienic assessment of the daily routine and educational process of children of different ages.	The concept of school maturity. Hygienic bases and methods of determining the functional readiness of the child to study at school. Assessment of physical and mental performance of students. The concept of regime and the main regime elements. Features of hygienic rationing of daily activities of students. Hygienic principles of compiling and evaluating the daily routine of children and adolescents of different age groups according to the chronocard. Hygienic requirements for the organization of the educational process in modern secondary schools. Features of the educational process in gymnasiums, lyceums, children's sanatoriums and health facilities. Hygienic requirements for the organization of extracurricular activities and free time of students. Hygienic requirements for school schedules and methods of its evaluation. Hygienic requirements for the organization and methods of the lesson. Hygienic assessment of lesson construction. Hygienic requirements for school textbooks and manuals. Hygienic evaluation of the school textbook.	<i>Kn 1-15, Sk 1-15 C 1-15 AR 1-15 Professional Kn -13,19 Sk-13,19 C-13,19 AR 13,19</i>	Kozak L.P., Sybirny A.V., Yurchenko S.T.
P-19	Methods of hygienic assessment of planning, equipment and maintenance of children's preschool institutions, educational institutions for children and adolescents.	Hygienic requirements for the land plot, building and group section of the children's preschool institution. The principle of group isolation and its significance. Hygienic requirements for the land plot and the building of the general educational institution. The principle of functional zoning and its significance. Hygienic requirements for planning, arrangement, equipment, microclimate, ventilation, lighting and sanitation of the main premises of educational institutions. Hygienic requirements for educational furniture and their physiological justification. Rules for marking desks, other primary furniture and seating students. Hygienic requirements for the placement of school furniture in the school classroom. Basic preventive measures to improve	<i>Kn 1-15, Sk 1-15 C 1-15 AR 1-15 Professional Kn -13,19 Sk-13,19 C-13,19</i>	Kozak L.P., Sybirny A.V., Yurchenko S.T.

		the sanitary and hygienic conditions of students in modern educational institutions.	<i>AR</i> <i>13,19</i>	
SWS-11	Research methods and assessment of the impact of environmental factors on the health of children and adolescents.	Methods for assessing the state of health and physical development of organized children's groups. Leading environmental factors and social living conditions that affect the health of children and adolescents. Criteria and indicators for the health of children and adolescents. Features of the distribution of children and adolescents by health groups. Methods of comprehensive assessment of the health of children and adolescents.	<i>Kn 1-15,</i> <i>Sk 1-15</i> <i>C 1-15</i> <i>AR 1-15</i> <i>Professional Kn -</i> <i>13,19</i> <i>Sk-13,19</i> <i>C-13,19</i> <i>AR 13,19</i>	Kozak L.P., Sybirny A.V., Yurchenko S.T.
SWS-12	Methods of hygienic control over the organization of physical education and labor training of children and adolescents. Medical and professional consultation and medical professional selection of adolescents in the school and clinic.	Hygienic requirements for the organization and conduct of lessons of physical education and labor training in schools. Hygienic requirements for equipment, planning, gym equipment, workshops. Basic principles of organization and construction of lessons of physical culture and labor training. Methods of hygienic assessment of the organization and conduct of physical education lessons and labor training of children and adolescents. Physical education groups and methods of dividing children into groups. Methods of studying the functional state and efficiency of the child's body. Features of the organization and content of treatment-and-prophylactic and hygienic measures in children's preschool and educational institutions. Procedure, measures, stages of medical and professional consultation and professional selection of children and adolescents. Medical contraindications to choosing a profession with certain industrial hazards. Content and principles of medical and professional consultation. Control of conditions and mode of work and study, development of recommendations for their optimization.	<i>Kn 1-15,</i> <i>Sk 1-15</i> <i>C 1-15</i> <i>AR 1-15</i> <i>Professional Kn -</i> <i>13,19</i> <i>Sk-13,19</i> <i>C-13,19</i> <i>AR 13,19</i>	Kozak L.P., Sybirny A.V., Yurchenko S.T.
L-6	Current issues of occupational health, biosafety in occupational health. Occupational health of physicians of different specialties.	Work and labor, definition of concepts, socio-hygienic significance of labor. Physiology of labor, harmful factors of the labor process. Changes in physiological processes in the human body during work and their physiological and hygienic assessment. Fatigue and overfatigue, measures to prevent fatigue. The concept of occupational hazards and occupational diseases, their classification. Diseases associated with high levels of mental stress, intensification of production processes. Workplace organization. Monotony of work, its prevention. Forced posture, stress on individual organs and systems, and prevention of related diseases. The concept of difficulty and intensity of work. Ergonomics. Physiological and hygienic features of the work of an elderly person. Indicators of the severity and intensity of work of the elderly and their changes during employment. The influence of adverse factors of the production environment on the rate of aging of the employee. Occupational health and health of medical workers. Harmful and dangerous factors of professional activity of medical workers. Hygienic features of working conditions and state of health of specialists of surgical, therapeutic profile, infectious disease specialists,	<i>Kn 1-15,</i> <i>Sk 1-15</i> <i>C 1-15</i> <i>AR 1-15</i> <i>Kn 1-15,</i> <i>Sk 1-15</i> <i>C 1-15</i> <i>AR 1-15</i> <i>Professional Kn -</i> <i>13,19</i> <i>Sk-13,19</i> <i>C-13,19</i> <i>AR 13,19</i> <i>Kn -</i> <i>13,19</i> <i>Sk-13,19</i>	Kozak L.P.

		psychoneurologists, doctors of polyclinic departments, dentists, family doctors. Occupational and occupational diseases of medical workers. Measures to improve the working conditions of medical workers.	<i>C-13,19 AR 13,19</i>	
P-20	Methods of hygienic assessment of the tension and intensity of work in order to prevent fatigue and improve working ability. Hygienic requirements for the mode of day.	Hygienic classification of labor according to the indicators of harmfulness and danger of factors of the production environment, the severity and intensity of the labor process. The concept of optimal, acceptable, harmful and dangerous working conditions. The impact of physical and mental work on the body, fatigue and overwork The concept of difficulty and intensity of work. Ergonomic, physiological, psychophysiological indicators of severity and intensity of work, methods of their determination, hygienic assessment of work by the degree of severity and intensity. Hygienic requirements for the organization of work and rest, the organization of the workplace, work posture, measures to prevent fatigue and overfatigue. Sanitary legislation on labor protection. Features of the organization and mode of work in the arid and humid climate of the tropical zone.	<i>Kn 1-15, Sk 1-15 C 1-15 AR 1-15 Professional Kn - 2,13,19 Sk- 2,13,19 C- 2,13,19 AR- 2,13,19</i>	Kozak L.P., Sybirny A.V., Yurchenko S.T.
P-21,22	Methods of hygienic assessment of dangerous and harmful factors of the production environment and the body's response to their impact. Industrial dust, effects on the body, prevention of dust pathology. Industrial toxicology. Issues of bioethics and biosafety in occupational health.	Hygienic classification and assessment of labor on the indicators of harmfulness and danger of factors of the production environment. The concept of occupational diseases. Features of adverse effects of the production microclimate on the body of workers. Hygienic value of industrial dust, impact on the body, types of dust pathology and its prevention. The principle of research of dustiness of air of industrial premises. Hygienic rationing of dust in the air of the production area. Industrial poisons, their classification, impact on the body .. The principle of studying the content of industrial poisons in the air of industrial premises. Types of occupational poisoning and their prevention Occupational poisoning by lead, mercury, carbon monoxide, manganese, ammonia, benzene, nitro compounds, their pathogen. Prevention of occupational pathology of chemical etiology. Carcinogenic, mutagenic, allergenic factors in production, prevention of their harmful effects. Industrial toxicology. The concept of toxicity and danger of chemicals. toxicokinetics, toxicodynamics, toxicometry, material, functional, mixed accumulation. Complex, combined, joint action of industrial hazards. Biological factors in production, prevention of their adverse effects. Hygienic requirements for heating, ventilation and lighting of industrial premises. Issues of bioethics and biosafety in the prevention of harmful and dangerous factors of the production environment.	<i>Kn 1-15, Sk 1-15 C 1-15 AR 1-15 Professional Kn - 2,13,19 Sk- 2,13,19 C- 2,13,19 AR- 2,13,19</i>	Kozak L.P., Sybirny A.V., Yurchenko S.T.
P-23	Methods of hygienic assessment of physical factors of the production environment.	Harmful and dangerous factors of working conditions and production environment. Influence of physical factors of the production environment (noise, vibration, high-frequency electromagnetic oscillations, etc.) on the health of workers. Specific and nonspecific effect of noise on the body. Noise disease. "Noise" disease and its prevention. Hygienic requirements for the noise regime of industrial facilities. Features of adverse effects of ultrasound and infrasound and hygienic assessment	<i>Kn 1-15, Sk 1-15 C 1-15 AR 1-15 Profess</i>	Kozak L.P., Sybirny A.V., Yurchenko S.T.

		<p>indicators. The concept of vibration and its effect on the human body. Vibration disease and its prevention. Criteria for hygienic assessment and normalization of vibration at municipal and industrial facilities. Electromagnetic fields of radio frequencies and industrial frequency. Prevention of adverse effects of electromagnetic fields. Laser radiation. Impact on human health of computer equipment, mobile phones, hygienic rules of their operation. Characteristics of the effect of laser radiation. Ultraviolet and infrared radiation as adverse factors in production conditions. Features of biological action. Industrial microclimate, factors that determine it, the impact of adverse microclimate on the health of workers, preventive measures. Features of occupational hygiene at low and high atmospheric pressure. Altitude, mountain, decompression, caisson diseases, their prevention. Measures to prevent the harmful effects of physical factors of the production environment on the body of workers.</p>	<p><i>ional</i> <i>Kn -</i> <i>2,13,19</i> <i>Sk-</i> <i>2,13,19</i> <i>C-</i> <i>2,13,19</i> <i>AR-</i> <i>2,13,19</i></p>	
SWS-13	Features of occupational health in various industries and agriculture.	<p>Occupational hygiene in the main industries (underground mining of ore minerals, working conditions of mine workers). Morbidity of metallurgical workers and the main directions of optimization of their working conditions. Prevention of general morbidity of employees of thermal shops. Hygienic characteristics of working conditions in mechanical assembly shops. Production-related and occupational morbidity of chemical industry workers. Working conditions of machine operators in agricultural production. Characteristics of unfavorable production factors in closed vegetable growing. The structure of morbidity of workers in livestock complexes and agricultural production. Features of production activities of women, adolescents, the elderly and the disabled. Means of individual protection against harmful and dangerous factors of the production environment (protection of skin, respiratory organs, sight, hearing)</p>	<p><i>Kn 1-</i> <i>15,</i> <i>Sk 1-15</i> <i>C 1-15</i> <i>AR 1-</i> <i>15</i></p> <p><i>Professional</i> <i>Kn -</i> <i>13,19</i> <i>Sk-</i> <i>13,19</i> <i>C-13,19</i> <i>AR</i> <i>13,19</i></p>	<p>Kozak L.P., Sybirny A.V., Yurchenko S.T..</p>
SWS-14	Pesticides, agrochemicals and biosafety of the population.	<p>The concept of pesticides and agrochemicals. Classifications of pesticides by chemical structure and purpose. Hygienic classification of pesticides according to the degree of danger. Mineral macro- and microfertilizers. Ways of pesticide migration in the environment. Contamination of soil and water sources with components of nitrogen fertilizers. Receipt of pesticides and components of mineral fertilizers in the body. Impact of pesticides and agrochemicals on the environment and public health. Long-term effects of pesticides. Prevention of acute and chronic pesticide poisoning. The essence of the concept of integrated hygienic standardization of pesticides and a single hygienic standardization of nitrates in water and food. The concept of permissible daily dose and permissible daily intake, maximum permissible level (MDR) of pesticides in food and permissible level (DR) of nitrates in plant products. Requirements for pesticides and agrochemicals with regard to environmental biosafety. The main directions of solving the problem of biosphere pollution by pesticides and agrochemicals.</p>	<p><i>Kn 1-</i> <i>15,</i> <i>Sk 1-15</i> <i>C 1-15</i> <i>AR 1-</i> <i>15</i></p> <p><i>Professional</i> <i>Kn -</i> <i>13,19</i> <i>Sk-</i> <i>13,19</i> <i>C-13,19</i> <i>AR</i> <i>13,19</i></p>	<p>Kozak L.P., Sybirny A.V., Yurchenko S.T..</p>

L-7	Hygiene of medical and preventive institutions and prevention of nosocomial infections. Biosafety issues in the activities of treatment and prevention facilities.	<p>The importance of the optimal hygienic regime of treatment and prevention facilities to increase the effectiveness of treatment of patients, prevention of nosocomial infections, creating safe working conditions for staff and their improvement. Ways to ensure the hygienic regime of hospitals: architectural and construction, sanitary and hygienic regime, anti-epidemic regime, organizational and support. Hygiene of medical staff. Hygiene and mode of the patient. Modern hospital building systems (centralized, block, decentralized, pavilion, mixed), their comparative hygienic assessment, prospects for improvement. The structure of the general hospital. Nosocomial infections, features at the present stage, the source of the pathogen, routes of transmission. Measures to prevent nosocomial infections. Nonspecific and specific prevention.</p> <p>Features of collection, temporary storage, removal and disposal of waste from treatment and prevention facilities (wastewater, waste surgical, infectious and other departments). State sanitary and anti-epidemic rules and norms on medical waste management Order of 08.06.2015 № 325. Categories of medical waste. Stages of the waste management system of different categories.</p>	<i>Kn 1-15, Sk 1-15 C 1-15 AR 1-15</i> <i>Professional Kn -13,19 Sk-13,19 C-13,19 AR 13,19</i>	Kozak L.P..
P-24	Hygienic assessment of the location and planning of individual structural units of the hospital according to the project materials.	Hygienic requirements for land plots of hospitals. The concept of situational and general development plans of hospitals, hygienic requirements for the main indicators of development (distance from sources of air pollution, soil, area, density of buildings and landscaping, mutual placement of buildings, sanitation), functional zoning. Hygienic requirements for the planning, equipment and mode of operation of the therapeutic department, reception departments (for somatic, infectious, children's departments). Ward section, its composition, hospital ward, options for its planning and equipment for somatic patients. Hygienic requirements for the area, cubature of chambers, their scientific substantiation. Requirements for the orientation of the windows of the chambers, microclimate, air environment, lighting, heating, ventilation, noise. Standards of lighting, microclimate, carbon dioxide content as an indicator of chemical air pollution, bacterial contamination.	<i>Kn 1-15, Sk 1-15 C 1-15 AR 1-15</i> <i>Professional Kn -13,19 Sk-13,19 C-13,19 AR 13,19</i>	Kozak L.P., Sybirny A.V., Yurchenko S.T.
P-25,26	Peculiarities of planning and arrangement of specialized hospitals and departments.	Hygienic requirements for the land plot of specialized hospitals (infectious, children's, psychiatric) and dispensaries (tuberculosis, oncology, etc.). Hygienic requirements for the construction, planning and operation of infectious, pediatric, obstetric, surgical and outpatient departments of the hospital. Zoning of the operating room, a set of premises included in each zone. Features of planning of boxes, semi-boxes in infectious, children's departments of hospital. Location and structure of the ward section of the somatic department for children of different ages. Location and structure of the obstetrics and gynecology department and maternity hospital, Peculiarities of admission of patients to somatic departments for adults and children, infectious, obstetric departments and the planning features of reception departments caused by them.	<i>Kn 1-15, Sk 1-15 C 1-15 AR 1-15</i> <i>Professional Kn -13,19 Sk-13,19 C-13,19 AR 13,19</i>	Kozak L.P., Sybirny A.V., Yurchenko S.T..

P-27,28	Hygienic assessment of the conditions of stay of patients and occupational hygiene of medical workers in treatment and prevention facilities. Prevention of nosocomial infections.	The role of the doctor of medical profile in the implementation and observance of sanitary and anti-epidemic regime in the hospital and its departments. Hygienic requirements for personal hygiene of patients. Mode, methods and means of wet cleaning with the use of antiseptics, ventilation, isolation of patients. Hygienic requirements for sanitary equipment, mode of operation of therapeutic and surgical departments, operating rooms, children's, infectious and other specialized departments. Hygienic criteria of microclimate, heating, ventilation, lighting of hospital premises, water supply, sewerage. Criteria for assessing chemical and microbial air pollution in hospitals. Measures to prevent nosocomial infections. Physiological and hygienic features of working conditions of medical workers of different specialties, professional and occupational diseases of medical workers. Hygienic requirements for personal hygiene of medical staff. Prevention of nosocomial infections. The concept of epidemic surveillance (infection control), epidemiological surveillance. Basic principles of organization of the system of infection control. The management structure of the infection control system in the hospital. Means and measures of individual protection of medical workers from infection with the causative agent of coronavirus infection COVID-19.	<i>Kn 1-15, Sk 1-15 C 1-15 AR 1-15</i> <i>Professional Kn - 13,19 Sk- 13,19 C-13,19 AR 13,19</i>	Kozak L.P., Sybirny A.V., Yurchenko S.T.
SWS-15	Sources of pollution in medical and pharmaceutical waste, ways of their disposal.	Sources of environmental pollution by medical and pharmaceutical waste, danger to the environment and humans. Medical waste, their classification. Waste collection, disposal and disposal in medical institutions. General requirements for methods and techniques of category A, B, C and D waste disposal. Main methods of category B disinfection (disinfection) of waste. Requirements for arrangement of premises for storage and disinfection of waste. Sources and routes of entry of drugs into the environment. Drugs as pollutants for the environment, their utilization The concept of pharmacological (drug) pollution. Chains of drug migration in the environment. The problem of drug biotransformation. Medicines as a source of heavy metal pollution. Danger of drugs (antibiotics, hormones, cytostatics, etc.) and chemosynthesizers for different ecosystems. The concept of photoallergy and phototoxicosis, drugs as photosensitizers. The concept of hygienic regulation of drugs in the environment. Measures to protect the environment from pollution by medical and pharmaceutical waste.	<i>Kn 1-15, Sk 1-15 C 1-15 AR 1-15</i> <i>Professional Kn - 13,19 Sk- 13,19 C-13,19 AR 13,19</i>	Kozak L.P., Sybirny A.V., Yurchenko S.T.
SWS-16	Primary prevention of HIV infection.	The place of HIV infection in the infectious morbidity of the population. Sources. Pathogens. Ways and factors of transmission and HIV infection. Contin-gentry risk of disease. Incidence of HIV infection (AIDS) in Ukraine. Primary prevention of HIV infection. Measures to prevent HIV infection in medical institutions. Prevention of HIV infection due to injecting drug use. Methods of prevention work among schoolchildren, adolescents and young people in relation to HIV prevention. The role of sanitary and educational work.	<i>Kn 1-15, Sk 1-15 C 1-15 AR 1-15</i> <i>Professional Kn - 13,19</i>	Kozak L.P., Sybirny A.V., Yurchenko S.T.

			<i>Sk-13,19</i> <i>C-13,19</i> <i>AR</i> <i>13,19</i>	
L-8	Hygienic bases of medical and treatment-and-prophylactic nutrition.	Therapeutic nutrition, Principles of construction, purpose, types, rations. The composition of the diets of therapeutic and preventive nutrition. Therapeutic and dietary nutrition as an element of complex drug and dietary therapy, a means of preventing complications and recurrences of diseases. The value of proteins, fats, carbohydrates, minerals and vitamins in medical nutrition. Pharmacological action of food. Basic principles of construction of medical food.	<i>Kn 1-15,</i> <i>Sk 1-15</i> <i>C 1-15</i> <i>AR 1-15</i> <i>Professional Kn -</i> <i>13,19</i> <i>Sk-13,19</i> <i>C-13,19</i> <i>AR 13,19</i>	Kozak L.P..
P-29,30	Hygienic aspects of dietary (therapeutic) nutrition. The organization of food in medical institutions.	Modern requirements for the improvement of therapeutic (dietary) nutrition in treatment and prevention facilities. Order of the Ministry of Health of Ukraine № 931 dated 29.10.2013 "On improving the organization of therapeutic nutrition and the work of the dietary system in Ukraine". Types of food blocks. Sanitary and hygienic requirements for the planning of production equipment and maintenance of food premises. Sanitary and hygienic requirements for the maintenance of food, mechanical and non-mechanical equipment. Marking of tables, cutting boards, knives, kitchen utensils. Hygiene of technological process of food processing. Medical control over the procurement, storage of food, cooking, ensuring the quality and taste of food and ready meals, their distribution to the department. Sanitary and hygienic requirements for the transportation of ready meals from the kitchen to the ward. Sampling and evaluation of the completeness and good quality of dishes by the doctor on duty. Organization of medical nutrition in medical and preventive institutions. Duties of hospital staff.	<i>Kn 1-15,</i> <i>Sk 1-15</i> <i>C 1-15</i> <i>AR 1-15</i> <i>Professional Kn -</i> <i>13,19</i> <i>Sk-13,19</i> <i>C-13,19</i> <i>AR</i> <i>13,19</i>	Kozak L.P., Sybirny A.V., Yurchenko S.T..
SWS-17	Therapeutic properties of foodstuffs.	The value of different types of products of plant and animal origin for humans. Nutritional and biological value of products of animal and vegetable origin (meat, fish, milk, eggs, vegetables, fruits, cereals, flour and bread). Medicinal and dietary properties of meat, fish, milk, eggs, vegetables, fruits, cereals, flour and bread. Hygienic and medical-biological requirements for the quality of milk, meat, bread, flour.	<i>Kn 1-15,</i> <i>Sk 1-15</i> <i>C 1-15</i> <i>AR 1-15</i> <i>Professional Kn -</i> <i>13,19</i> <i>Sk-13,19</i> <i>C-13,19</i> <i>AR 13,19</i>	Kozak L.P., Sybirny A.V., Yurchenko S.T.
L-9	Current issues of radiation hygiene. The question of bioethics and biosafety in the application of ionizing radiation.	The urgency of hygienic problems of radiation protection of workers with industrial sources of ionizing radiation and radiation safety of the population. The essence and nature of radioactivity, types of nuclear transformations, their qualitative and quantitative characteristics, use in practice. Qualitative and quantitative characteristics of radionuclides, ionizing radiation. Hygienic characteristics of ionizing radiation and their sources. External and internal radiation dose limits. NRSU-97. Biological action of ionizing radiation. Deterministic and stochastic effects of ionizing radiation. Ionizing radiation as an	<i>Kn 1-15,</i> <i>Sk 1-15</i> <i>C 1-15</i> <i>AR 1-15</i> <i>Professional Kn -</i> <i>13,19</i> <i>Sk-</i>	Kozak L.P.

		environmental factor, their sources. Radiation background. Issues of bioethics and biosafety in the use of ionizing radiation. Radiation safety of the population in its places of residence, the factors that determine it. Natural radionuclide radon and medical X-ray radiological diagnostic procedures for the population as the main components of human radiation exposure, their hygienic assessment and special measures to reduce radiation exposure in humans due to these factors. The Chernobyl disaster and its consequences for public health and the environment. The concept of living in Ukraine with high levels of radioactive contamination due to the Chernobyl disaster.	<i>13,19</i> <i>C-13,19</i> <i>AR</i> <i>13,19</i>	
P-31	Methods and means of radiation control and radiation protection of personnel and radiation safety of the population when using ionizing radiation in production, research, medical institutions. Calculated methods for assessing radiation safety and parameters of protection against external radiation.	Ionizing radiation as an industrial hazard. Conditions on which the radiation hazard depends when working with radionuclides and other sources of ionizing radiation. The essence of radiation hazard when working with sources of ionizing radiation. Hygienic bases of radiation protection in medicine, in industrial and household conditions. The main tasks of radiation control. Methods and means of radiation control. Measures of radiation protection against external radiation, based on the physical laws of its attenuation (protection by quantity, time, distance, shielding). Calculation methods for assessing radiation safety and parameters of protection against external radiation Principles underlying the choice of material and calculation of the thickness of protective screens against β , γ , X-rays. Methods for determining the parameters of radiation hazard for radiation protection. The value of calculation methods for radiation hazard assessment and parameters of protection against external radiation. Radiation safety standards of Ukraine (NRSU-97), basic provisions. Basic sanitary rules of radiation protection of Ukraine (BSRU, 2005). The value of the calculated methods of radiation hazard assessment and parameters of protection against external radiation in a set of measures for radiation protection of personnel.	<i>Kn 1-15,</i> <i>Sk 1-15</i> <i>C 1-15</i> <i>AR 1-15</i> <i>Profess</i> <i>ional</i> <i>Kn -</i> <i>2,13,19</i> <i>Sk-</i> <i>2,13,19</i> <i>C-</i> <i>2,13,19</i> <i>AR-</i> <i>2,13,19</i>	Kozak L.P., Sybirny A.V., Yurchenko S.T..

P-32	Hygienic assessment of radiation protection of personnel and radiation safety of patients with the use of radionuclides and other sources of ionizing radiation in medical institutions.	Use of ionizing radiation sources in medicine. Ionizing radiation as an industrial hazard for medical personnel. Medical radiological diagnostic procedures for patients and employees of medical institutions as components of radiation exposure. The concept of closed and open sources of ionizing radiation under conditions of treatment. Radiation protection of personnel and radiation safety of patients with the use of radionuclides and other sources of ionizing radiation. Radiation safety of patients and staff during X-ray examinations. Requirements for placement, arrangement, organization of the X-ray room. The structure of the radiology department of the hospital. Radiation control in X-ray departments and radiology departments by production environment and individual radiation doses of personnel. Medical control over the health of medical staff. Radiation safety regulations for medical staff and patients (NRSU-97, BSRU-2005). Ways to reduce radiation exposure for staff and patients of medical institutions. Sanitary equipment of X-ray and radiology departments. Methods of collecting and disposing of radioactive waste when working with open sources of ionizing radiation.	<i>Kn 1-15, Sk 1-15 C 1-15 AR 1-15</i> <i>Professional Kn - 13,19 Sk- 13,19 C-13,19 AR- 13,19</i>	Kozak L.P., Sybirny A.V., Yurchenko S.T.
SWS-18	Radiation pollution. Hygienic aspects of the Chernobyl accident.	Socio-economic, ecological and hygienic, medical consequences of the Chernobyl accident. Legislation of Ukraine regulating the legal regime of contaminated territories and the status of the affected population. Radiation safety and the concept of living of the population in the territories of Ukraine affected by the Chernobyl disaster and the Laws of Ukraine on the legal regime of these territories and the legal status of the affected population .. Zoning of the territory of Ukraine by the degree of radioactive contamination.	<i>Kn 1-15, Sk 1-15 C 1-15 AR 1-15</i> <i>Professional Kn - 13,19 Sk-13,19 C-13,19 AR- 13,19</i>	Kozak L.P., Sybirny A.V., Yurchenko S.T.
SWS-19	The main sources, ways, scales of environmental pollution. Natural and anthropogenic catastrophes.	The main sources, ways, scales of environmental pollution. Classification of emergencies by origin, scale, speed of development. Natural disasters, anthropogenic catastrophes. Chemical disasters, nuclear accidents. Accident at the Chernobyl nuclear power plant. Environmental and medical consequences of disasters. International organizational structures for liquidation and medical support of the consequences of the catastrophe, national formations for liquidation of emergencies in Ukraine.	<i>Kn 1-15, Sk 1-15 C 1-15 AR 1-15</i> <i>Professional Kn -13,19 Sk-13,19 C-13,19 AR 13,19</i>	Sybirny A.V..
SWS-20	General patterns of human adaptation to different environmental conditions. Ecologically conditioned and ecologically dependent diseases.	The concept of adaptation. mechanisms of formation of adaptation of a human body to environmental conditions. Levels of the process of adaptation and types of adaptive behavior of living organisms. General patterns of adaptation of the human body to different environmental conditions The main patterns of the general adaptation syndrome. Stress, eustress, distress. Urban ecology. Biosphere degradation in large cities. Ecology of housing. Landscaping of cities. Pollution of the environment and human health. The concept of environmentally friendly and environmentally	<i>Kn 1-15, Sk 1-15 C 1-15 AR 1-15</i> <i>Professional</i>	Kozak L.P., Sybirny A.V., Yurchenko S.T..

		dependent diseases. The role of chemical factors in the occurrence of diseases that are associated with environmental influences. The state of health of the population of Ukraine in connection with environmental pollution. Biogeochemical endemics of natural and artificial origin as a kind of ecologically conditioned pathology. Measures to prevent pathology of chemical genesis.	<i>Kn - 13,19</i> <i>Sk- 13,19</i> <i>C-13,19</i> <i>AR 13,19</i>	
SWS-21	Methodological and methodological bases of studying health depending on the state of the environment.	The concept of "methodology", its application in hygiene. Surveillance areas to study health depending on the state of the environment. Definition, requirements for choice. Methods of integrated assessment of the state of the environment. Methods of longitudinal and transverse epidemiological research, definition, essence, types. Indicators that characterize the health of the population. Criteria for dividing the population by health groups. Methods for determining the integrated health index. Stages of identifying and assessing the relationship of environmental factors to public health. Environmental risk factors, their classification and impact on the formation of public health. The concept of risks (relative, attributive, population). Schemes for studying the impact of environmental factors on public health. Biomarkers as indicators of exposure to environmental factors.	<i>Kn 1-15,</i> <i>Sk 1-15</i> <i>C 1-15</i> <i>AR 1-15</i> <i>Professional</i> <i>Kn - 13,19</i> <i>Sk- 13,19</i> <i>C-13,19</i> <i>AR 13,19</i>	Kozak L.P., Sybirny A.V., Yurchenko S.T.
SWS-22	Natural and anthropogenic catastrophes. Organization of sanitary and hygienic measures in emergencies.	Classification of emergencies by origin, scale, speed of development. Natural disasters (floods, earthquakes, volcanic eruptions, landslides, villages, hurricanes), anthropogenic disasters. Chemical disasters, nuclear accidents. Accident at the Chernobyl nuclear power plant. Environmental and medical consequences of disasters. International organizational structures for liquidation and medical support of catastrophe consequences, national formations for emergency response in Ukraine. Sanitary and hygienic measures in the center of emergencies. The content of sanitary supervision in the emergency center. Individual means of protection in the event of fires and the consequences of emergencies. Working conditions of liquidators in the center of emergencies. Measures aimed at maintaining the health, improving the efficiency of liquidators. Substantiation of different-time and emergency maximum concentration limits for emergency liquidators and the population.	<i>Kn 1-15,</i> <i>Sk 1-15</i> <i>C 1-15</i> <i>AR 1-15</i> <i>Professional</i> <i>Kn - 13,19</i> <i>Sk- 13,19</i> <i>C-13,19</i> <i>AR 13,19</i>	Kozak L.P., Sybirny A.V., Yurchenko S.T.
L-10	Healthy lifestyle and personal hygiene. Hygiene of clothes and shoes. Prevention of bad habits.	Healthy lifestyle, definition, content. Personal hygiene as a branch of hygienic science, its content and significance for maintaining and promoting health in modern conditions. Body, skin and hair hygiene. Oral and dental hygiene, care products, their hygienic assessment. Prevention of hypokinesia. Physical culture as one of the most important elements of personal hygiene in modern conditions. Types of physical culture, hygienic value of morning gymnastics, stay and walks in the fresh air. Organization of hygienic control over the dosage of physical activity. Hygienic requirements for clothing and footwear for different age groups. Comparative hygienic characteristics of clothing and footwear made of natural and artificial fabrics and materials. Adverse health effects associated with footwear. Prevention of bad habits.	<i>Kn 1-15,</i> <i>Sk 1-15</i> <i>C 1-15</i> <i>AR 1-15</i> <i>Professional</i> <i>Kn - 13,19</i> <i>Sk- 13,19</i> <i>C-13,19</i> <i>AR 13,19</i>	Kozak L.P..

P-33	Hygienic assessment of detergents, fabrics and household, industrial and hospital clothing.	Detergents: soap, detergents, their classification, hygienic characteristics. Hygienic requirements for synthetic detergents (SWD). Toxicological-hygienic and microbiological indicators of perfume and cosmetics industry products. The main types of tissues, their classification by origin and physicochemical properties. Hygienic value, functions and types of clothing. Hygienic requirements for different layers of clothing depending on their functional purpose. Hygienic features and criteria for assessing the microclimate in the clothing space. Hygienic assessment of tissue, the principle of determining its individual indicators (thickness, specific gravity, porosity, capillarity, relative thermal conductivity, resistance to acids, alkalis, organic solvents). Hygienic requirements for children's clothing. Hygienic requirements for hospital linen and clothing. Hygienic requirements for the manufacture of underwear. Hygienic characteristics of fabrics of different origin (cotton, linen, wool, synthetic, artificial).	<i>Kn 1-15, Sk 1-15 C 1-15 AR 1-15</i> <i>Professional Kn - 13,19 Sk- 13,19 C-13,19 AR 13,19</i>	Kozak L.P., Sybirny A.V., Yurchenko S.T.
SWS-22	Healthy lifestyle and personal hygiene. Hygienic assessment of baths, their impact on health.	The importance of personal hygiene for human health. Methods and means of a healthy lifestyle. subjective and objective methods and means of a healthy lifestyle. The concept of active and passive rest. Sleep hygiene. Body hygiene (skin, hair). Oral hygiene. Physical culture as one of the most important elements of a healthy lifestyle and prevention of hypokinesia. Hardening. Definition of the concept. Principles, methods and mode of hardening. Principles, methods and means of hardening using natural factors (solar radiation, air, water, etc.). Requirements for the organization, planning and operation of solariums and photo booths. Hygienic assessment of steam and dry baths. Baths as a means of maintaining cleanliness and stimulating the physiological functions of the skin	<i>Kn 1-15, Sk 1-15 C 1-15 AR 1-15</i> <i>Professional Kn - 13,19 Sk- 13,19 C-13,19 AR 13,19</i>	Kozak L.P., Sybirny A.V., Yurchenko S.T.
SWS-23	Prevention of alcoholism, drug addiction, substance abuse, smoking.	Adverse health effects of active and passive tobacco smoking. Adverse health effects of excessive alcohol consumption. Methods and means of combating alcoholism. Harmful and dangerous habits - drug addiction, substance abuse, their prevention. Causes of drug use, mental and physical drug addiction. Medical and social problems, ways and means of prevention of active and passive tobacco smoking, alcohol abuse, drug addiction and drug addiction. The main ways and means of hygienic training and education of different groups of the population.	<i>Kn 1-15, Sk 1-15 C 1-15 AR 1-15</i> <i>Professional Kn - 13,19 Sk-13,19 C-13,19 AR 13,19</i>	Kozak L.P., Sybirny A.V., Yurchenko S.T.
P-34	Psychohygienic bases of daily human activity.	Psychohygiene as a science, its tasks and sections. Mental health, its criteria. Age psychohygiene. Psychoprophylaxis. Features of the influence of hereditary and environmental factors on the mental health of children and adolescents. The structure of human personality traits (properties of temperament and character, motivational orientation, features of	<i>Kn 1-15, Sk 1-15 C 1-15 AR 1-15</i>	Kozak L.P., Sybirny A.V., Yurchenko S.T.

		neuropsychological state, etc.), methods of their study Psychohygienic principles of rational organization of educational and professional optimization activities, daily human activities. production, in communication of the doctor with the patient. Autotraining. Psychohygienic bases of the scientific organization of mental and operator work. Psychohygienic work of medical personnel. Occupational factors that negatively affect the work of a doctor (hospital staff).	<i>Professional Kn - 13,19 Sk- 13,19 C-13,19 AR 13,19</i>	
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Traditional teaching methods are used in the teaching process of the discipline "Hygiene and Ecology": verbal methods; visual; practical Methods of educational and cognitive activity: explanatory and illustrative method, problem presentation method, scientific research method, research method. Methods of stimulation and motivation of educational and cognitive activity: methods of stimulation and motivation of learning, methods of control and self-control as methods of learning.

Methods of controlling the stimulation and motivation of students' educational and cognitive activities, as methods of learning (control by the teacher, self-control, mutual control, self-correction, mutual correction, corrections and integrated methods).

8. Verification of learning results

Current control

Current control is carried out at each practical lesson in accordance with the specific goals of the subject of the lesson to determine the level of formation of a separate skill or ability, the quality of assimilation of educational material based on a comprehensive assessment of the student's activity, which includes control of the student's independent preparation for the lesson, the quality of practical work, the level of theoretical preparation and the results of the final control of the level of knowledge and skills. During the current control of students' educational activities, preference is given to standardized control methods: testing, structured written works, control of practical skills in conditions close to real ones. An oral survey (frontal, individual, combined) is also used. During the evaluation of mastering of each topic for the current educational activity, the student is given grades on a four-point (national) scale according to approved evaluation criteria.

Learning result code	Code type classes	Method of verifying learning results	Enrollment criteria
GC, FC: <i>Kn1, Kn2, Sk1, Sk2, Sk3, C1, C2, AR1, AR2.</i>	L-1-15 P- 1-35	Mastering of lecture material is controlled during the final control (exam). Educational practical tasks are performed by students in the classroom in accordance with the guidelines for practical training. The results of practical work are made out by the student in the form of the protocol according to the scheme: date and a subject of employment; the principle of the method of determining the studied indicators; the formula for the calculation and the result obtained; hygienic conclusion, in which the obtained result is compared with the hygienic standard and hygienic recommendations are given to optimize the condition of the object of study, aimed at improving the indicator. The protocol at the end of the lesson is signed by the teacher. <u>Evaluation of theoretical material:</u> - 5 / "excellent" - the student has mastered the theoretical material, demonstrates deep and comprehensive knowledge of the topic, the main provisions of scientific sources and recommended literature, thinks logically and builds the	Maximum score is 5 points, The minimum score is 3 points.

answer, freely uses the acquired theoretical knowledge in the analysis of practical material;

- 4 / "good" - the student has mastered the theoretical material, has the basic aspects of primary sources and recommended literature, argues it, expresses his views on certain issues, but assumes certain inaccuracies and errors in the logic of the theoretical content;

- 3 / "satisfactory" - the student has mainly mastered the theoretical knowledge of the subject or discipline, is guided by primary sources and recommended literature, but unconvincingly answers, confuses concepts, additional questions cause the student uncertainty or lack of stable knowledge;

- 2 / "unsatisfactory" - the student has not mastered the study material of the topic, does not know the scientific facts, definitions, almost does not navigate in the original sources and recommended literature, there is no scientific thinking

Evaluation of test control:

5 / "excellent" - the student gave 91-100% of correct answers to the tests;

• 4 / "good" - the student gave 71-90% of correct answers to the tests;

• 3 / "satisfactory" - the student gave 60.5-70% of correct answers to the tests;

• 2 / "unsatisfactory" - the student gave less than 60.50% of correct answers to the tests.

Evaluation of situational problems:

For solving situational problems, the ability to analyze and interpret research results to correctly draw sound conclusions, the student receives:

- 5 / "excellent" - the student correctly solved the situational problem in accordance with the sequence of its solution and made reasoned conclusions and gave the necessary recommendations;

- 4 / "good" - the situational problem is solved correctly in accordance with the sequence of its solution, but the conclusion is inaccurate or incomplete;

- 3 / "satisfactory" - the situational problem is not fully solved (the sequence of its solution is not followed, or there are errors in the calculations or an incorrect conclusion is made);

- 2 / "unsatisfactory" - the situational problem is not solved.

The sequence of solving the problem:

	SWS 1 - 23	<ul style="list-style-type: none"> ● reading the condition of the problem and clarifying the content; ● a brief record of the task conditions; ● analysis of the condition of the problem, during which its essence, norms or formulas that are needed for the solution, drawing up a plan for solving the problem are clarified; ● obtaining the final algorithm or formula for calculation (indicating all physical quantities expressed in the SI system), calculation of the specified value; ● analysis of the obtained results, writing a conclusion and recommendations. <p style="text-align: center;"><i>Assessment of practical skills:</i></p> <p>- 5 / "excellent" - the student freely uses the acquired theoretical knowledge in the analysis of practical material, demonstrates a high level of mastery of practical skills;</p> <p>- 4 / "good" - the student has practical skills, but assumes certain inaccuracies and errors in the implementation of practical skills;</p> <p>- 3 / "satisfactory" - the student in response to questions of a practical nature, reveals inaccuracies in knowledge, is unable to assess facts and phenomena, relate them to future activities, makes mistakes in performing practical skills;</p> <p>- 2 / "unsatisfactory" - the student has no practical skills.</p> <p style="text-align: center;"><i>Independent work of students.</i></p> <p>Independent work of students in preparation for a practical lesson is evaluated during the current control of the topic in the corresponding lesson. The performance of the SWS for the volumes assigned for independent study is recorded in the academic journal. "Passed" - the student answered 50% - 100% of the A-format tests on the MISA platform., "Not Passed" - the student answered less than 50% of the A-format tests on the MISA platform. Mastering of topics that are assigned to independent work is controlled during the final control (at the exam).</p>	<p>Enrollment of SWS is carried out on a two-point scale "credited" - "not credited".</p> <p>"Credited" - All tasks are fully and correctly performed in accordance with the guidelines.</p> <p>"Not credited" - All tasks in accordance with the methodological recommendations have not been completed.</p>
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Final control

General system Evaluation	Participation in the work during the semester / exam - 60% / 40% on a 200-point scale	
Scales Evaluation	Traditional 4-point scale, multi-point (200-point) scale, ECTS rating scale	
Terms of admission to final control	The student attended all practical (laboratory, seminar) classes and received at least 120 points for current performance	
Type of final Control	Methods of final control	Criteria Enrollment

Exam	<p>The rules of the exam provide for the following stages:</p> <p>The first stage is a written answer to test tasks of format A (blank test control).</p> <p>The student answers the test package. Each package contains 60 A-format tests with topics included in the final control.</p> <p>Stage II - a written answer to standardized questions (the student receives 3 theoretical questions to which he must give a written answer).</p> <p>Stage III - solving a situational problem (the student receives 1 situational problem, to which he must give a written answer).</p> <p>Stage IV - testing of practical skills.</p>	<p>The exam is passed - the student scored 50 or more points.</p> <p>The exam was not passed - the student scored less than 50 points.</p>
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Exam evaluation criteria

Exam	<p>When checking the examination work, the examiner puts in the sheet of examination answers of the student separately points for solving each question and puts the final grade (in points) for the final control, which he certifies with his signature.</p>	<p><i>The complex number of points that a student scores based on the results of the final control (exam) has the following components:</i></p> <p><i>According to the results of the test control, the student receives</i></p> <p style="text-align: center;"><i>55 - 60 - 20 points (5 / "excellent")</i></p> <p style="text-align: center;"><i>43 - 54 - 15 points (4 / "good")</i></p> <p style="text-align: center;"><i>36 - 42 - 10 points (3 / "satisfactory")</i></p> <p style="text-align: center;"><i><36 - 0 points (2 / "unsatisfactory")</i></p> <p><i>For each of the planned theoretical questions the student receives:</i></p> <ul style="list-style-type: none"> - 5 / "excellent" (12 points) - the student clearly and essentially gave answers to the theoretical question; - 4 / "good" (10 points) - the student assumes certain inaccuracies and errors in the logic of the theoretical content of the question; - 3 / "satisfactory" (8 points) - the student's answer to the theoretical question is unclear, confused in the definitions of basic concepts and terms; - 2 / "unsatisfactory" (0 points) - no specific answer to the question. <p><i>For solving the situational problem, the ability to analyze and interpret the results of research to correctly draw sound conclusions, the student receives:</i></p> <ul style="list-style-type: none"> - 5 / "excellent" (12 points) - the student correctly solved the situational problem in accordance with the sequence of its solution, made reasoned conclusions, gave the necessary recommendations; <p>The sequence of solving the problem:</p> <ul style="list-style-type: none"> • reading the condition of the problem and clarifying the content;
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		<ul style="list-style-type: none"> • a brief record of the task condition; • analysis of the condition of the problem, during which its essence, norms or formulas that are needed for the solution, drawing up a plan for solving the problem are clarified; • obtaining a final algorithm or formula for calculation (indicating all physical quantities expressed in the SI system), calculation of a given value; • analysis of the obtained results, writing a conclusion and recommendations. <p><i>For the implementation of planned practical tasks, demonstration of practical skills:</i></p> <ul style="list-style-type: none"> - 5 / "excellent" (12 points) - the student demonstrates a high level of practical skills, is able to draw conclusions; - 4 / "good" (10 points) - the student has practical skills, but assumes certain inaccuracies and errors in the analysis of the practical task; - 3 / "satisfactory" (8 points) - the student can not assess the facts and phenomena, relate them to future activities; - 2 / "unsatisfactory" (0 points) - practical skills of the student are not formed the student did not complete the task and failed to analyze and interpret it.
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The maximum number of points that a student can score for the current academic activity for admission to the exam is 120 points.

The minimum number of points that a student must score for the current academic activity for admission to the exam is 72 points.

The calculation of the number of points is based on the grades obtained by the student on a 4-point (national) scale during the study of the discipline, by calculating the arithmetic mean (CA), rounded to two decimal places. The value obtained is converted into points on a multi-point scale as follows:

$$X = CA \cdot 120 / 5$$

Recalculation of the average score for current activities in a multi-point scale

(final control - exam)

For convenience, a table of recalculation on a 200-point scale is given:

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The grade for the discipline, which ends with the exam, is defined as the sum of points for the current educational activity (not less than 72) and points for the exam (not less than 50).

Discipline scores for students who have successfully completed the program are converted into a traditional four-point scale according to the following criteria:

Points in the discipline	Score on a four-point scale
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From 170 to 200 points	5
From 140 to 169 points	4
From 139 points to the minimum number of points that a student must score	3
Below the minimum number of points that a student must score	2

9. Course policy

Adherence to the principles and norms of ethics and deontology.

Mandatory observance of academic integrity by students:

- independent performance of all types of work, tasks, forms of control provided by the working program of the discipline "Hygiene and Ecology";
- links to sources of information in the case of the use of ideas, developments, statements, information;
- compliance with the legislation on copyright and related rights;
- providing reliable information about the results of their own educational (scientific, creative) activities, the use of research methods and sources of information.

Educational practical classes, which were missed by the student, are mastered independently in extracurricular time (theoretical questions of the educational theme, the decision of control tests, situational problems) with the subsequent performance of educational and practical tasks during working off according to the working off schedule.

10. References

Principal:

1. Hygiene and Ecology: student's book / [V. G. Bardov, S. T. Omelchuk, N. V. Merezhkina et al.]; ed. by V. G. Bardov. Translation from Ukrainian ed. — Vinnytsia : Nova Knyha, 2022. — 456 pages.

Additional:

1. Hygiene and Ecology. Textbook. / Edited by V.G. Bardov. - Vinnytsa: Nova Knyha, 2018 - p. 14-32, 65-87.
2. Hygiene and Ecology. Textbook. / Edited by V.G. Bardov. - Vinnytsa: Nova Knyha, 2009 – 688 p.
3. Hygiene and ecology / Vladimir A. Korobchanskiy, Michael P. Vorontsov, Alisa A. Musulbas. – Kharkov: Kontrast Publishing Enterprise, 2006. – P. 110-115, 123-129.
4. Perspectives in nutrition.: Wardhaw-Insel - WCB, McGraw-Hill., 1995. - P.698-729.
5. Principles of Human Nutrition / 2nd ed. by Martin Eastwood. - 2003. - 680 p.
- Nutrition for living. / 2nd ed. by J.L. Christian, J.L. Greger – USA: The Benjamin/Cummings publishing company, Inc. - 1988. - 493 p.
6. Occupational Hygiene / 3rd ed. by Kerry Gardiner and Malcolm Harrington. - 2005. - 680 p.

11. Equipment, logistics and software of the discipline / course

12. - Educational and professional program of the second level of higher education for the preparation of masters in the specialty 222 "Medicine" in the field of knowledge 22 Health. Qualification: Master of Medicine. Doctor. Lviv, 2020.
13. - Working curriculum of the discipline.
14. - Abstracts of lectures on the discipline.
15. - Methodical development of lectures.
16. - Methodical recommendations for teachers to each topic of practical classes.
17. - Methodical recommendations for students to each topic of practical classes.
18. - Methodical recommendations for independent work of students.
19. - Test and control tasks for practical classes.
20. - Situational tasks on the topics of practical classes and independent work.
21. - List of questions and practical skills for the final control.
22. - Regulatory and legislative documents.

23. - Demonstration materials, instructions for the use of technical teaching aids (devices and equipment: psychrometers, anemometer, barometer, thermometer, lactodensimeter, luxmeter, multimedia projector, overhead, training tables).
24. • Electronic educational resources (EER):
25. • Educational and methodical (working curriculum, syllabus, thematic plans of lectures, practical and independent classes).
26. • Methodical recommendations for students for practical and independent work.
27. • Educational (textbooks, manuals, lectures).
28. • Ancillary (official regulatory and legislative documents).
29. ESR to control students' knowledge (test tasks of different levels of complexity and situational tasks for each topic of practical classes and topics that are submitted for independent study).

Information resources

Official web resources of the President of Ukraine, the Verkhovna Rada of Ukraine, the Ministry of Education and Science, the Ministry of Health and other central authorities of Ukraine, web resource of LNMU named after Danylo Halytsky), website of the Department of General Hygiene and Ecology of LNMU named after Danylo Halytsky, educational portals of higher medical educational institutions of Ukraine.

12. Additional Information

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Venue of classes – Lviv, at Zelena street, 12.

Website / departments – new.meduniv.lviv.ua/kafedra-zagalnoji-gigiyeny-z-ekologiyeyu/

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