MINISTRY OF HEALTH OF UKRAINE
DANYLO HALYTSKIY LVIV NATIONAL MEDICAL UNIVERSITY

Department of hygiene and prophylactic toxicology FPGE

APPROVED
The First Vice-Rector for scientific and pedagogical work academician
M. R.Hgelhotskyy
"_____"_____2021

TRAINING PROGRAM OF DISCIPLINE "HYGIENE AND ECOLOGY"

(INDIVIDUAL PROFILE COURSE OF CHOICE: SURGERY)

Training of Specialists of the second (master's) level of higher education
field of knowledge 22 «Health Care»
Specialty 222 "Medicine"

Discussed and approved at the methodological meeting of the Department of hygiene and prophylactic toxicology FPGE
Protocol № 21 of " 18 " 06 2021

Head of Department _____
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Approved by the profile Methodical Commission of Preventive Medicine
Protocol № 4 of " 24 " 06 2021

The head of profile methodical commission_____
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Programme prepared:

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Reviewer:

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Introduction

Program of discipline "Hygiene and ecology"

The program was developed according to the Standard of higher education of Ukraine of preparation of experts of the second master level field of knowledge 22 “Health Care” Specialty 222 " Medicine " and the approximate curriculum master's degree) of higher education in the field of knowledge 22 "Health" in higher educational institutions of the Ministry of Health of Ukraine in the specialty 222 "Medicine" qualification educational "Master of Medicine" qualification professional "Doctor", approved by the Ministry of Health of Ukraine 26.07.2016.

Description of academic discipline (abstract)

According to the curriculum for 6th year faculty study discipline «Hygiene and ecology» is given 90 hours, including 40 hours of practical classes and 50 hours of self-studies working of students.

	Number of credits, hours, of them					
		Auditorium			Study year/ semester	Type of control
Hygiene and ecology Module**:** Estimation of the state of environment and its influence on a health of population	Total	lectures	practical lessons	SEW		
	credits – 3,0 hours – 90	–	40	50	6, XI-XII semestrs	credit

1 Credit – 30 hours

Auditorium load – 44,4%; self-educational work – 55,6%.

The subject of study of the discipline are: hygiene - the field of medical knowledge, the science of preserving and strengthening public and individual health through the implementation of preventive measures and ecology is a complex integrated science that studies the state of the environment and the patterns of its impact on humans in particular and society in general, as well as the peculiarities of environmental reactions in response to human activities.

Interdisciplinary integration: In accordance with the academic curriculum of the discipline "Hygiene and Ecology" a student must acquire knowledge of basic disciplines:

- philosophy,
- bioethics,
- medical biology
- medical informatics,
- biomedical physics,
- general chemistry and biochemistry,
- normal and pathological anatomy
- normal and pathological physiology,
- microbiology, virology and immunology,
- epidemiology,
- internal medicine,
- radiation medicine,
- social medicine, health care organization and integrates with these disciplines.

In accordance with the requirements of the Standard, the discipline provides students with the acquisition of **competencies**:

1) Integral competency;
2) General competencies;
3) Special (professional, subject) competencies.

General:

Code	*Characteristics of general competency*
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 subject area and understanding of professional activity
GC 5	Ability to adaptation and action in new situation
GC 6	Ability to make reasonable decisions
GC 7	Ability to work in a team.
GC 8	Interpersonal skills.
GC 9	ability to communicate in the state language both orally and in writing
GC 10	ability to communicate in a foreign language
GC 11	Skill in use of information and communication technologies
GC 12	Ability to act on the basis of ethical views (reasons)
GC 13	Ability to act socially responsibly and consciously
GC 14	The desire to preserve the environment
GC 15	Ability to act based on ethical considerat

Special (professional, subject) competencies:

Code	*Characteristics of general competency*
SC 2	Ability to recommend laboratory-and instrumental examinations and estimation of their results
SC 4	Ability to determine the necehnbssary mode of work and rest in the treatment of diseases
SC 5	Ability to determine the nature of nutrition in the treatment of diseases
SC 13	Ability to carry out sanitary-hygienic and preventive measures.
SC 18	Ability to conduct epidemiological and medical and statistical health research population; processing of state, social, economic and medical information;
SC 19	Ability to assess the impact of the environment, socio-economic and biological determinants on the health of an individual, family, and population.

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Detailing of competencyare presentin accordance with the descriptors of the National qualifications framework in the form of "Competences Matrix".

Competence Matrix

№	**Competence**	**Knowledge**	**Skill**	**Communication**	**Autonomy and responsibility**
Integral competence					
The ability to solve typical and complex specialized tasks and settle practical problems in health care activities, or in the learning process, which provides for research and/or innovation and is characterized byuncertainty of conditions and requirements					
General competence					
1.	Abstract-thinking,	Know the methods of analysis,	Be able to analyze information, make	Establish theappropriate	To be responsible for the timely

	analysis and synthesis capability.	synthesis and further modern learning	informed decisions, be able to master modern knowledge	links for achieving the goals	acquiring of modern knowledge.
2.	Ability to learn and master modern knowledge	Know the current trends of medicine development and analyze them	Be able to analyze professional information, make informed decisions, acquire modern knowledge	Establish theappropriate links for achieving the goals.	To be responsible for the timely acquisition of modern knowledge.
3.	Ability to apply the knowledge in practical situations	Have specialized conceptual knowledge, acquired in the process of studying.	Be able to solve difficult tasks andproblems that arise in professional activity	Understandable and unequivocal explanation of own conclusions and knowledgeto specialists and non-specialists	To be responsible for decisions, made in difficult conditions
4.	Knowledge and understanding of subject area and professional activity	Have profound knowledge in the structure of professional activity.	Be able to carry out professional activities that need updating and integrating knowledge	Ability to effectively form communications strategy in professional activities	To be responsible for professional development, the ability to further professional training with a high level of autonomy
5.	Ability to adapt and act in a new situation.	To know types and ways of adaptation, principles of action in a new situation	To be able to use means of self-regulation, to be able to adapt to new situations (circumstances) of life and activity.	Establish appropriate links to achieve the result	To be responsible for, timely use ofmethods of self-regulation.
6.	Ability to make a justified decision	To know the tactics and strategis of communication, laws and methods of communicative behavior	To be able to make justified decisions, choose the ways and strategies of communication to ensure effective teamwork	Use strategies to communicate and interact with interpersonal skills	To be responsible for choice and tactics of communication method
7.	Ability to work in a team	To know the tactics and strategies of communication, laws and methods of communicative behavior	To choose the ways and strategies of communication to ensure effective teamwork	Use communication strategies	To be responsible for choice and tactics of communication method
8.	Skills of Interpersonal interaction	To know the laws and ways of intepersonal interaction	To choose the ways and strategies of communication for interpersonal interaction	Use the skills of interpersonal interaction	To be responsible for choice and tactics of communication method
9.	Ability to communicate, using the state	Have a perfect knowledge of the state language	To be able to use the state language, both orally and writing	Usethe state language in professional and	To be responsible for free possession of the state

	language both orally and writing.			business communication and making documents	language, for the development of professional knowledge
10.	The ability to communicate using foreign language	Have basic knowledge of a foreign language	Able to communicate a foreign language	Use a foreign language in professional activities	To be responsible for the development of professional knowledge with the use of foreign language
11.	Skills of using of informative and communicative technologies	To possess profound knowledge in the field of informative and communicative technologies applied in professional activities	To be able to use informative and communicative technologies in the professional field, thatneed updating and integrating the knowledge	Using of informative and inter-communicative technology in professional activities	To be responsible for the development of professional knowledge and skills
12.	Awareness and perseverance concerning taken tasks and duties	Know the responsibilities and ways of fulfilling the tasks	To be able to identify goals and objectives to be persistet and conscientious in the performance of responsibilities	To establish interpersonal-net connections for effective execution of tasks and responsibilities	To be responsible for the quality of fulfillment of the tasks
13.	Ability to act socially relevant and deliberate	Know your social and civil rights and responsibilities	To form your civil consciousness, to be able to act in accordance with it	Ability to convey ownpublic and social position	To be responsible for the own citizenship position and activity
14.	The desire to preserve the environment	Know the problems of environmental protection and ways to preserve it.	Be able to form requirements for themselves and others to preserve the environment	Make offers to the relevant institutions and agencies on measures to preserve and protect the environment	To be responsible for the implementation of environmental protection measures within its competence.
15.	Ability to act based on ethical considerations	Know the basics of ethics and deontology	To be able to use ethical and deontology norms and principles in professional activities	Ability to convey to patients, their family members and colleagues your own professional position	To be responsible for the implementation of ethical and deontological norms and principles in professional activity
Special (Professional, subject) competence					
2.	Ability to recommend laboratory-and instrumental examinations and estimation	Have specialized knowledge about human, his organs and systems, standard methods of laboratory and	To be able to analyze the results of laboratory and instrumental examinations	To form the necessary list of laboratory and instrumental researches	Be responsible for deciding on the results evaluation of laboratory and instrumental examinations

	of their results	instrumental research			
4.	Ability to determine the necessary regime of work and recreation in the treatment of diseases.	Have specialized knowledge about human, his organs and algorithms and standard schemes for determining the regime of work and rest at treatment of the sick person	To be able to determine the necessary regime of work and rest in the treatment of the disease	To form and inform the patient about the necessary mode of work and rest in the treatment of the disease	To be responsible for the validity of the appointment of work and rest in the treatment of the disease
5.	Ability to determine the nature of nutrition in the treatment of diseases	To have specialized knowledge about algorithms and standard schemes of nutrition in the treatment of diseases	To be able to determine the nutrition at the treatment of diseases	To form and convey to the patient, specialists ' conclusions regarding the nutrition at the treatment of diseases	Be responsible for the validity of the recommended nutrition at the treatment of the disease
13	Ability to carry out sanitary-hygienic and preventive measures.	To know the system of sanitary-hygienic and preventive measures among the fixed contingent of the population. To know methodical approaches for an estimation of a condition of environment and existence of the factors influencing a state of health of the population in the given conditions. Know the principles of nutrition, water supply, mode of activity and rest, the formation of a favorable working environment, primary prevention of diseases and injuries; principles and methods of promoting a healthy lifestyle.	Have the skills to analyze the state of health of groups and develop preventive measures. Have the skills to compile an analytical report on the state of health of the population depending on the factors of production and the environment.	Based on the results of medical examination and analysis of public health, the state of production and the environment, to know the principles of submitting analytical information to local government and health; heads of industrial enterprises to take measures to eliminate the harmful effects on public health. Use local press for publications on health promotion and environmental improvement, use of radio, television, lectures and interviews	To be responsible for timely and high-quality measures to assess the health of the population, rehabilitation and improvement of the health of certain contingents, improving the environment, promoting a healthy lifestyle, primary prevention of diseases and injuries

18.	Ability to conduct epidemiological and medical and statistical health research population; processing of state, social, economic and medical information;	Know the methods of epidemiological and medical-statistical research; requirements for diagnostic tests that can be used for screening studies; risk indicators and methods of their calculation. Know standard methods, including modern computer information technology, processing of state, social and medical information	Have standard methods of descriptive, analytical, epidemiological and medical-statistical research. Be able to assess the dynamics and in comparison with the average data of morbidity, including chronic non-infection diseases, integrated health indicators. Have a method of screening for important non-infection diseases. Be able to calculate and assess indicators of individual and population risk of disease occurrence and course. Have a method of forming risk groups. Be able to perform statistical processing of material and analysis of information	Formulate conclusions on the state of health of the population on the basis of epidemiological and medical-statistical studies. Interact with specialists of information and analytical departments to obtain data on the health of the population. To form conclusions on the basis of the analysis and statistical processing of the received information	To be responsible for the validity of the conclusions on the state of health of the population; high-quality and timely execution of statistical processing and analysis of the received information
19.	Ability to assess the environmental impact of the environment, socio-economic and biological determinants on the health of the individual, family, population	To know the methods of assessment the health of population; environmental factors that negatively affect the health of population; methods of statistical analysis and laboratory research, health assessment of certain contingents, factors; measures to prevent the negative impact of environmental factors on the health of population. To	Be able to assess the health of population, environmental conditions and negative factors of health impact. Possess the methods of statistical and laboratory analysis of health of different groups of populations. Be able to form preventive measures based on data on the relationship between the state of the environment and the health status of certain contingents of the population. Be able to calculate indicators of public health. Be able to	To formulate conclusions on the health status of population, based on data on the relationship with environmental factors, socio-economic and biological determinants, and make proposals to the relevant authorities and institutions on the implementation of preventive measures. Interact with specialists in the	To be responsible for timely conclusions regarding the health status of population on the basis of data on the negative impact of environmental factors, socio-economic and biological determinants, and on the timely introduction of proposals for the implementation of appropriate preventive measures.

		know socio-economic and biological determinantsthat influence on health of population; Types and methods of prophylaxisto prevent the negative impact of socio-economic factors on the health of population and its individual groups. Know the principles of forming risk groups, risk areas, time and risk factors.	assess the relationshipand influence of socio-economic and biological factors on the health of the individual, family, and population. Be able to plan preventive measures to prevent the negative impact of socio-economic factors on the health of population and its separate groups.	sanitary-hygienic profile and managers of enterprises, institutions and the relevant departments on nature protection, surrounding environment	

Learning outcomes:

Integrative final program learning outcomes, the formation of which is facilitated by the academic discipline:

Identify negative environmental factors; analyze the state of health of a certain contingent; determine the relationship between the state of the environment and the state of health of a particular contingent; develop preventive measures based on data on the relationship between the state of the environment and the state of health of a particular contingent. Carry out the analysis of morbidity of the population, revealing risk groups, risk areas, time of risk, risk factors. Assess the impact of socio-economic and biological determinants on the health of the individual, family, population; adhere to a healthy lifestyle, use the techniques of self-regulation and self-control

2. INFORMATION VOLUME OF THE DISCIPLINE

For the study of the discipline are allocated 3.0 credits / 90 hours.

The purpose of teaching the discipline "Hygiene and ecology" is the study of the theoretical foundations of preventive medicine as a science, which is the basis of the preventive component of the professional worldview of the specialist in the field of "Medicine", mastering the necessary knowledge, skills, actions, goals, skills that meet the ultimate goals of the discipline to EPP "Medicine".

Final objectives of the subject discipline «Hygiene and ecology»

- Analyze the environment sate and its factors influence on population health.
- Master methods of hygienic assessment of the environment factors' influence on population health. Interpret main laws of hygiene and general patterns of connection between health with factors and conditions of ital activity.
- Substantiate hygienic measures concerning the infectious diseases prevention.
- Plan measures to provide the healthy lifestyle e, personal hygiene and their practical apply into public health.
- Plan organizational and subject measures concerning preventive and regular sanitary inspection.
- Approve plans of preventive measures with the development plan of territory, administrative and industrial units.

- Analyze the environment state based on the integrative assessment criteria of population health state.
- Substantiate the carrying out of the preventive measures.

PROGRAM OF TRAINING DISCIPLINE "HYGIENE AND ECOLOGY"

MODULE: "Estimation of the state of environment and its influence on a health of population

Theme 1. Methodological, methodical principles of studying and risk assessment of environmental factors influence on population health. Preventive toxicology. The principles and methods of hygienic normalization of harmful chemical substances in different environmental objects

Theoretical bases of hygiene, contribution of national scientists in their scientific substantiation. The general philosophic and subject methodology of hygiene. The significance of hygiene for forming of professional thought and practical activity of doctors of medical type.

Role of environmental factors as an etiologic (causal) factors and risk factors of development of different diseases. The determined and stochastic (possibilistic) effects in human organism under influence of environmental factors. Hygienic diagnostics. Ecological-dependent diseases, methods of their prognostication and prophylaxis. The methodology of high-quality (conceptual) and quantitative integral estimation of the state of environment and health. Population health as an integral criterion for environment estimation. Prognostication of changes of population health by means of the estimation of state contamination of atmospheric air, water, soil. The methods of establishment of correlations between the state of environment and health. General scheme of epidemiological research of identification and estimation of correlation between environmental factors and health.

Risk assessment methodology. Problem characteristics and main definitions. Main stages of risk assessment methodology: identification of harmful factors, exposure assessment, determine "dose-response" relationships for carcinogens and non-carcinogens, risk characterization, risk management. Direct and indirect methods of exposure assessment, biomarkers of exposure, effect and susceptibility. Problems of application of risk assessment methodology in Ukraine.

Object and tasks of prophylactic toxicology. Concept about toxicokinetics, toxicodynamics, toxicometry. Toxicness and accumulation of xenobiotics. Modern idea about accumulation, methods of its estimation. Classification of industrial pollutants and pesticides after the degree of toxicness and danger. A concept about the maximum allowable concentrations (MAC) of exogenous chemical matters, acceptable daily intake (ADI) and acceptable daily dose (ADD) in food rations, features of the independent hygienical standardization. Critical indicator of harmfulness of pollutants in different environments. Complex standardization of pesticides. Types of the combined action of matters. Legislatively normative documents in industry of the hygienical regulation.

Self-studies work 1. The hygienic estimation of natural and anthropogenous components of biosphere influence on personal health and health of the population. The scientific bases of medical biorythmology and chronohygiene.

The communication of ecology and hygiene. Biosphere, its structure, the general laws of influence of denatured biospheres on population health (hygiene laws). Modern problems and tasks of environmental protection.

The peculiarities of influence of natural factors of environment on population health. Medical classifications of weather. A technique of mediko-meteorological forecasting. Preventive meagers (permanent, seasonal, immediate) of heliometeorotropic reactions at the healthy and sick person. The general and applied classifications of a climate. Preventive maintenance climate depended reactions. Structure and the organisation of service of supervision of climatic both weather conditions and their forecasting.

Biological rhythms, their classification, the basic characteristics, their influence on health of the person. Studing and calculation of biological rhythms of the person. Concept about desynchronozes, the kinds of desynchronozes. Chronohygiene as the preventive maintenance basis of desynchronozes. Studing of the types of daily working capacity of the person. Biorytmology principles of the rational organization of daily activity of the person.

Theme 2. Hygiene of water and water-supply, sanitary protection of water objects and soil, cleaning of settlements.

Hygienical indexes and norms of quality of drinking-water, them scientific ground. Determination of character and degree of contamination of water sourses and ground of terms of its use for economic-drinkable necessities. Centralized and decentralize systems water supply, charts of water-supply line from superficial and underground sources. Cleaning and disinfection of water of water-supply line. Disinfection of sources of decentralizing water-supply. Areas of sanitary protecting of water sourses.

Geochemical, geoendemic description of soils. Sources of contamination of soil in the conditions of industrialization and chemicalization of agriculture, influence of contamination of soil on a health and sanitary terms of life of population. A role of soil is in an origin and distribution of infectious diseases, invasions, diseases of uninfectious etiology. Processes and indexes of autopurification of soil. An estimation of the sanitary state of soil according to chemical and biological indexes. Principles of cleaning of settlements. Liquid waste, their classification and sanitary-epidemiological value. Sewage system of settlements, its role in the prophylaxis of infectious diseases, influence on the sanitary state of soil and conditions of habitation of population. Cleaning of waste water and sanitary protection of reservoirs. Small sewage system and terms of its use. Features of utilization of solid and liquid waste of infectious, surgical and other departments of MPE.

Theme 3. Hygienical aspects of planning and exploitation, prophylaxis of in-hospital infection, ultraviolet irradiation and radiation safety in treating-and-prophylactic establishments.

Basic legislative and normatively-methodical documents which regulate the terms of location and planning of MPE. Sanitary-hygenic requirements to planning of lot land of MPE, therapeutic, surgical, pediatric, obstetric, infectious, admitting departments, operating block and policlinic. Estimation after situation and general plans of accordance to the hygienical norms of placing and zoning of territory of designed MPE. Estimation after the drafts of accordance to the hygienical norms of area, cubic capacity, sanitary improvement of hospital apartments. A problem of in-hospital infections in medicine, modern determinations of concept and position to reasons of distribution, structure of nosology forms of in-hospital infections. Principles and measures of prophylaxis of in-hospital infections in permanent establishments of different type. Facilities of protection of personnel of MPE from in-hospital infections. Bases of investigation of flare-up of in-hospital infections in MPE. Prevention of acute respiratory disease COVID-19 caused by SARS-CoV-2.

Diseases, related to the deficiency and surplus of UV-radiation. The use of naturalnd artificial UV-radiation for the primary and secondary prophylaxis of illnesses. Artificial sources of ultraviolet, them hygienical characteristic.

Sources of ionizing radiation, which used in medical practice, them quality and quantitative characteristics. Basic principles of radiation safety and their providing. Radiation safety and antiradiation protection of personnel and patients at application of sources of ionizing radiations in medical establishments.

Self-studies work 2. A hygienical estimation of terms of stay of patients in medical establishments. Features of antiradiation protection of personnel and patients in X-ray and radiological departments of hospitals.

Unfavorable factors of in-hospital environment of different subsections of CI. The basic hygienical requirements to the modes of exploitation of medical, diagnostic, auxiliary and domestic apartments of hospital permanent establishment and policlinic. Hygienical norms of microclimate, air environment, ventilation, natural and artificial illumination of different subsections of CI. Chart of sanitary-hygenic inspection of hospital.

Methods of application of nonradionuclide and radionuclide sources of ionizing radiations in CI with a diagnostic and medical aim. Characteristics of radiation danger in X-ray diagnostic room and conditions of which it depends on. Structure of radiological department of hospital. Features of radiation danger and antiradiation protection during realization of teletherapy and contact radiotherapy by means of bare and sealed sources of ionizing radiations. Requirements to planning of X-ray and radiological departments, their sanitary and technical, antiradiation equipment, types of duty. Methods of collection

and rendering of radioactive wastes during work with the bare sources of ionizing radiations. Regulations of radiation safety of personnel of CI and patients. Ways of decline of the radiation load of personnel and patients. Operating conditions, personal hygiene and benefits of personnel.

Theme 4. Nutrition in preventive medicine. A treatment-and-preventive and ecological-and-protective nutrition. The Sanitary-and-hygienic control over a clinical (dietary) nutrition

Nutriment functions and factors that their provide. Types of biological effect of nutriment and types of nutrition. Value of diets nutrients composition. The basic hygienic requirements to diets organization. Calculation of energy expenditure of organism, caloric and alimentary value of diets. Basic groups of diseases that expressly or by implication associated with nutrition, causes of their occurrence and prevention. The medical control for nutrition, methods of studying of actual nutrition of population. The nutritional status, methods of studying and assessment of caloric and vitaminized components of nutritional status.

Specific action of nutriment and rational nutrition, requirements to their. Health-improving action of nutriment and preventive nutrition of humans from risk groups. Hygienic principles of nutrition of pregnant women and nursing mothers. Value of TPN in prevention of occupational diseases. Protective function of nutrition. The basic mechanisms of intoxication, metabolism and detoxication of xenobiotics in organism. Main principles of construction and organization of TPN. The hygienic characteristic and assessment of a daily food product, chemical composition and caloric value of rations of a treatment-and-preventive nutrition. Ecological-and-protective nutrition, their principles and hygienic meaning.

Parapharmacological action of food. Principles of clinical nutrition. Alimentary nutrients value in clinical nutrition. Standard diets and their individualization. The list of the basic diets, the hygienic characteristic of their food-stuff, chemical composition and caloric value, methods of culinary processing of dish. Principles of the organization clinical (dietary) nutrition in hospitals and sanatorium-and-spa institutions. The sanitary-and-hygienic control by clinical (dietary) nutrition in care institutions.

Self-studies work 3. Food poisonings as a hygienic problem. Methods of investigation of food poisoning cases.

Food poisonings, their definition, classification, modern views on classification. Alimentary toxicoinfections, bacterial and mycotoxicoses, definition, etiology, diagnostics, clinic, preventive principles. Food poisonings of non-microbial nature (by venenate plants and tissues of animals; foodstuff, which are toxicant under certain conditions; chemicals admixing). Food poisonings of an unknown etiology, a hypothesis of their occurrence, feature of clinic. Procedure of investigation of the causes of food poisonings, participation and duties of doctors-hygienists and medical doctors. Legislative and guidelines documents which define the measures of prevention and order of investigation of food poisonings. Measures of liquidation and prevention of events of food poisonings.

Theme 5. Legislative bases of the medical and prophylactic providing of workers. Hygienical estimation of process of labour and factors of industrial environment.

Bases of Ukrainian legislation of occupational hygiene and labour protection. Bases of medical and prevention providing of working people, abide by sanitary norms and rules on enterprise and prophylaxis of professional diseases and poisonings. Groups of professional diseases. Measures of prophylaxis of professional pathology and labour protection on production. Previous and periodic inspections of workers, investigation of cases of acute and chronic professional diseases and poisonings, organization of their realization, accounting and current paper work. List of medical contra-indications to work with the harmful and dangerous factors of industrial environment and labour process. An order of establishing a connection between diseases and working conditions. Analysis of general, professional morbidity and disability of working people, indexes and methods of their determination. Accident prevention, productive sanitation, sanitary education of workers as measures of professional diseases and poisonings prophylaxis. Types of labour, their physiological and hygienic description. Manual labour, its weight, criteria of weight. Mental work, its tension, criteria of tension. Fatigue and overstrain, explanation and scientific grounds of their development. Modern principles and criteria of hygienical estimation of labour, classes of labour after the degree of weight and tension, harmfulness and ununconcern. Methods of estimation of the modes of labour and rest, degree of tension of physiology functions of organism in the

process of labour. The system of prophylactic measures and rational organization of labour process. Psychophysiology of professional selection, diagnostics and prophylaxis of mental overstrain.

Self-studies work 4. Occupational hygiene of medical workers in medical establishments. Prevention of acute respiratory disease COVID-19 caused by SARS-CoV-2.

Hygienical value of planning, equipment, optimum mode of exploitation of ME, as terms of creation of safe terms of labour of medical personnel. Professional harmfulness, hygiene and labour of medical personnel of different separations (therapeutic, surgical, infectious, reanimation, psyhoneurology, diagnostic, physical therapy and others like that) and laboratories of ME protection. Legislative and organizational measures are on a labour of medical personnel protection. Providing of favourable terms of labour, prophylaxis of intrahospital infections and professional diseases among a medical personnel, personal hygiene of medical personnel.

Theme 6. Hygienical value of contamination of atmospheric air and physical factors in settlements. Hygiene of planning of settlements.

Basic criteria and indexes of contamination of atmospheric air, air of living and public buildings. Influence of atmospheric contaminations on a health of population. An estimation of quality of atmospheric air and the method of study of influence of pollutants of atmosphere on a health. The system of prevention measures of contamination of atmosphere. Urbanization as socially hygienical problem. Terms of life in settlements and health of population. Diseases, caused the high tempos of urbanization. Principles of planning, functional zoning and building of settlement. Habitation as factor of forming of individual health. Basic hygienically factors of habitation, them hygienical estimation. Prophylaxis of diseases, conditioned the unfavorable external and internal factors of human environment. Sources of noise, vibration, EMV in settlements, them hygienical value and standardization, system of measures on a decline and prevention of negative influence in housings, educational apartments, MPE. Legislatively normative documents, which regulate possible levels of noise, vibration, EMV in settlements.

Theme 7. The complex estimation of individual and population health and physical development of children. Hygienic requirements to planning, improvement of children's institutions and the organization of training and educational process.

The advanced social-and-biological, social-and-hygienic and medical-and-organization factors that influence on health of children, features of adverse factors influence on children. Modern methodical approaches to complex studying and estimation of state of children's health. The analysis of interrelation of indicators of health with influence of environmental factors: monitoring of environment and children's health state, an order and periodicity of complex medical examinations and dispensary supervision over a state of health of children. Physical development as the important criterion of complex estimation of children's health. Influence of environmental factors on processes of growth and development of children. An acceleration and retardation as opposite tendencies of physical development of children in modern conditions, their correlation with a state of health. Principles of distribution of children on health groups. A role of an estimation of health level at planning of preventive, medical-and-improving measures and at detection of their efficiency.

Peculiarities and negative consequences of influence on children's and adolescents' health of stay and studying conditions in schoolhouse. Hygienic requirements to the ground area, planning and a sanitary-and-technical accomplishment (water-supply, sewerage, illumination, ventilation, heating) of schoolhouse premises. Hygienic requirements to a construction and parameters of school furniture, maintenance of optimum position of a body behind a school desk. Method of estimation of a day regimen, training and education in schoolhouses. Preventive recommendations concerning improvement of sanitary-and-hygienic conditions of pupils' stay in the schoolhouse. Criteria of readiness of child to studying at school: morphogenetic (health status, physiological maturity, level of physical development, generated of small motility, biological age), psychological (intellectual, emotional-and-volitional readiness, motivational readiness), social (communicativeness, verbal activity, ect.)

Self-studies work 5. Hygienic principles of the rational organization of physical and labour training of children and adolescent. Scientific bases of carrying out of medical-and-professional consultation.

Means and forms of physical training in children's institutions. Hygienic principles of rational organisation of physical training of children and adolescents. The diseases predetermined by the irrational organization of physical training. Physiological-and-hygienic backgrounds of estimation of physical training lesson. Physical training groups. Hygienic requirements to places for physical training. The medical control of organization of physical training lessons. Physiological-and-hygienic principles of rational making fit of children and adolescents. The basic means of making fit. Hygienic principles of the rational organization of labour study of pupils. Job counselling as a hygienic problem, its functions and components. Scientific bases of carrying out of medical-professional consultation, job counselling and professional selection. Methods of prognostication of professional progress of adolescents.

Theme 8. The organization of sanitary inspection on temporary placing feeding and water-supplying of the rescue units and population in emergency situations. The forming of radiation load and hygienic aspects of residence of population on territories which were exposed to the radioactive contamination.

Determination and classification of emergencies, their influence on the sanitary-hygienic terms of dwelling of population and labour conditions of the rescue units. International and national organizational structures for liquidation of medical consequences of emergencies. Basic principles of organization of the sanitary-hygienic and disease providing, temporal placing of a victim of population and rescuers, during emergency, principles of prognostication medical hygienic consequences of emergencies. The hygienic setting of norms is at emergency contamination of environment.

Principles and forms of organization of feed and water-supply of the rescue forming and population during emergencies. Requirement to the field points of feed, field points of water-supply and water spread points. Organization of feed and water-supply in emergencies under the medical and sanitary inspection. Methods of controlling the adequacy of food, food products and drinking-water quality, improvement of water quality. Organizationally regular forming and laboratory facilities of medical service for the leadthrough of examination of food and water in emergencies. Objects, tasks, stages of medical examination of food and water, types of expert conclusions. Methods of prevention of infectious intestinal trophonosiss, helminthisms, food poisonings, defeats, through a meal and water by poisonous and radio-active matters, bacterial facilities.

Natural radiation background and its components. Hygienic characteristic of radioactive contamination of environment as a result of failure on CNPP, characteristic of main dose-constituent radionuclides, ways of contamination of environment objects by them, radiation characteristic of natural γ-background, soil, drinking-water, foodstuffs, their role in forming of the radiation load of population. Concept about the technogeneous increased radiation sources of ionizing radiation, their role in forming of the radiation load of population, criteria of quantitative estimation and hygienic regulations. Principles of estimation of results of radioactivity measuring of environmental objects. Monitoring of population irradiation, its components. Essence of conception of residence of Ukrainian population on territories with the heightened levels of radioactive contamination. Principles and criteria of zoning, legal status of territories which were exposed to the radioactive contamination as a result of the Chornobyl catastrophe. Hygienical aspects of way of life, nutrition, labour and rest of population who live on territories with the heightened levels of radioactive contamination. Ways of decline of doses of external and internal irradiation of population. Principles of radioprotective feeding and measures of its realization. Hygienic regulations of irradiation of emergency personnel and population during liquidation of consequences of radiation failure.

Self-studies work 6. The organization and leadthrough of sanitary inspection on the terms of labour of rescuers of consequences of emergency situations

A value of the hygienical providing of terms of labour of the military and civil formings at emergencies. Principles of organization of sanitary supervision after the terms of labour of personnel of the rescue formings during emergency. Hygienical features of terms of labour at emergencies of different origin, their influence on a health and capacity of rescuers. Prophylactic measures of decline of negative

action of harmful and dangerous terms and character of labour on a health and capacity of rescuers of emergency. Clinical and psyhophysiology methods of estimation of capacity and fatigue of rescuers. Classification of individual protective devices (IPD), that used at liquidation of consequences of emergency.

3. STRUCTURE OF TRAINING DISCIPLINE "HYGIENE AND ECOLOGY"

№	Themes	Hours	
		Practical classes	SEW
1.	Methodological, methodical principles of studying and risk assessment of environmental factors influence on population health. Preventive toxicology. Principles and methods of hygienic standardization of harmful chemical substances in different environmental objects	5	6
2.	Hygiene of water and water-supply, sanitary protection of water objects and soil, cleaning of settlements.	5	-
3.	Hygienical aspects of planning and exploitation, prophylaxis of in-hospital infection, ultraviolet irradiation and radiation safety in treating-and-prophylactic establishments	5	6
4.	Nutrition in preventive medicine. A treatment-and-preventive and ecological-and-protective nutrition. The Sanitary-and-hygienic control over a clinical (dietary) nutrition	5	6
5.	Legislative bases of the medical and prophylactic providing of workers. Hygienical estimation of process of labor and factors of industrial environment.	5	6
6.	Hygienical value of contamination of atmospheric air and physical factors in settlements. Hygiene of planning of settlements	5	-
7.	The complex estimation of individual and population health and physical development of children. Hygienic requirements to planning, improvement of children's institutions and the organization of training and educational process	5	6
8.	The organization of sanitary inspection on temporary placing feeding and water-supplying of the rescue units and population in emergency situations. The forming of radiation load and hygienic aspects of residence of population on territories which were exposed to the radioactive contamination	5	6
9.	Preparation to practical lessons	-	14
Total 90 hours / 3,0 credits ECTS		**40**	**50**
Final control		**credit**	

4. LECTURE HOURS FROM THE DISCIPLINE "HYGIENE AND ECOLOGY" ARE NOT PROVIDED

5. LIST OF PRACTICAL CLASSES

№	Themes	hrs
1	Methodological, methodical principles of studying and risk assessment of environmental factors influence on population health. Preventive toxicology. Principles and methods of hygienic normalization of harmful chemical substances in different environmental objects	5
2	Hygiene of water and water-supply, sanitary protection of water objects and soil, cleaning of settlements.	5
3	Hygienical aspects of planning and exploitation, prophylaxis of in-hospital infection, ultraviolet irradiation and radiation safety in treating-and-prophylactic establishments	5
4	Nutrition in preventive medicine. A treatment-and-preventive and ecological-and-protective nutrition. The Sanitary-and-hygienic control over a clinical (dietary) nutrition	5
5	Legislative bases of the medical and prophylactic providing of workers. Hygienical	5

	estimation of process of labor and factors of industrial environment.	
6	Hygienical value of contamination of atmospheric air and physical factors in settlements. Hygiene of planning of settlements	5
7	The complex estimation of individual and population health and physical development of children. Hygienic requirements to planning, improvement of children's institutions and the organization of training and educational process	5
8	The organization of sanitary inspection on temporary placing feeding and water-supplying of the rescue units and population in emergency situations. The forming of radiation load and hygienic aspects of residence of population on territories which were exposed to the radioactive contamination	5

Total 40 hrs.

6. LIST OF INDEPENDENT WORKS

№	Themes of independent work	hrs
1	Hygienical estimation of influence of natural and anthropogenic components of biosphere on a health man and population. Scientific bases of medical biorhythmology and chronohygiene	6
2	A hygienical estimation of terms of stay of patients in medical establishments. Features of antiradiation protection of personnel and patients in roentgenologic and radiological departments	6
3	Food poisonings as hygienical problem. Method of investigation of cases of the food poisonings	6
4	Occupational hygiene of medical workers in medical establishments. Prevention of acute respiratory disease COVID-19 caused by SARS-CoV-2	6
5	Hygienical principles of rational organization of physical education and labour studies of children and teenagers. Scientific bases of conducting of medical-professional consultation	6
6	Organization and conducting of sanitary supervision after the terms of labour of liquidators of consequences of extraordinary situations	6
7	Preparation to practical lessons	14

Total 50 hrs.

7. INDIVIDUAL WORK OF THE STUDENT

Individual task (medical case report) is a form of organization of education in order to deepen, generalize and consolidate the knowledge that students receive in the process of learning, as well as the application of this knowledge in practice, that is an individual educational and research tasks.

Students' independent work is assessed during the on-going control of the topic throughout workshops.

8. TEACHING METHODS

1. Verbal methods: conversation, story, explanation, work with literature.
2. Visual methods: illustration, demonstration, observation.
3. Practical methods: situational tasks, independent work, research work.
4. Interactive methods: discussion, work in small groups, brainstorming, case method, business game.

9. CONTROL METHODS:

Types of control (current and final).

Current control is based on the control of theoretical knowledge, practical skills and abilities. Forms current control: 1. Oral survey (frontal, individual, combined) 2. Practical test existing professional skills 3. Test control (open and closed tests) Self work of students is evaluated at workshops and is part of the final grade of the student.

Final control is carried out in the form of a written exam that includes: a) tests (40), drawn up in accordance with the themes of discipline; b) complex questions (4), which include theoretical material and practical skills from summary module.

Distribution points that get students.

Evaluation criteria Current control is performed during the training sessions and aims at checking mastering educational material. The form of the current control during the classes defined working curriculum subjects. In evaluating the mastering of each topic for current educational activity the student score for the 4-point scale (traditional) scale taking into account the approved evaluation criteria.

10. CRITERIA FOR THE STUDENTS' EDUCATIONAL ACTIVITIES EVALUATION WHILE LEARNING THE DISCIPLINE "HYGIENE AND ECOLOGY"

Criteria for evaluation of current educational activities

Excellent ("5") – the student answered correctly 90-100% of the A format test (from the database "Step-2"). Correctly, clearly, logically corresponds to all standardized questions of the current topic. Closely binds theory with practice and demonstrates the correct implementation of practical skills. Fluent in interpretation of the laboratory test results, adepts at prescribing appropriate examination methods. Solves clinical case with higher level of difficulty and knows how to compile the material.

Good ("4") - the student answered correctly 70-89% of the of A format test (from the database "Step2"). Correctly and essentially responds to all standardized questions of the current topic. Demonstrates knowledge of practical skills. Correctly uses theoretical knowledge in solving practical problems, conducts a differential diagnosis. Capable to solve easy and medium complexity clinical cases. Possesses all necessary practical skills and techniques to perform their uses, in excess of the required minimum.

Satisfactory ("3") - the student answered correctly 50-69% of the A format test (from the database "Step-2"). Incomplete, with the help of additional questions answers all the standardized questions on the current topic. Cannot independently makes a clear logical answer. While the student is answering and demonstrating practical skills he makes mistakes. Can solve only the easiest situational tasks. Has knowledge of only the minimum methods of investigations.

Unsatisfactory ("2") - the student answered correctly 50% of the test of A format. Does not know the material of the current topic, cannot build a logical response, does not respond to additional questions, and does not understand the content of the material. Makes significant, gross mistakes when answering and demonstrating practical skills. Evaluation of the students' independent work for preparation for the practical classes is carried out during the current control of the topic at the appropriate workshop.

The evaluation which are put by traditional assessment scale are converted into points.

For courses which form the final control is test:

The maximum number of points that a student can collect for current educational activity per semester for admission to exam is **200 points.**

The minimum number of points that a student must collect for current educational activity per semester for admission to exam is **120 points.**

Calculating the number of points is based on student evaluations received by traditional scale while learning subjects by calculating the arithmetic average (AA), rounded to two decimal places. The resulting value is converted into points by multi-scale as follows:

$$X = AA \times 200/5$$

Table

Conversion of the average score for current activity in multi point scale for courses that are completed by test

4- point scale	200-point scale	4- point scale	200-point scale	4- point scale	200-point scale	4- point scale	200-point scale
5	200	4.45	178	3.92	157	3.37	135
4.97	199	4.42	177	3.89	156	3.35	134
4.95	198	4.4	176	3.87	155	3.32	133
4.92	197	4.37	175	3.84	154	3.3	132
4.9	196	4.35	174	3.82	153	3.27	131
4.87	195	4.32	173	3.79	152	3.25	130
4.85	194	4.3	172	3.77	151	3.22	129

4.82	193	4.27	171	3.74	150	3.2	128
4.8	192	4.24	170	3.72	149	3.17	127
4.77	191	4.22	169	3.7	148	3.15	126
4.75	190	4.19	168	3.67	147	3.12	125
4.72	189	4.17	167	3.65	146	3.1	124
4.7	188	4.14	166	3.62	145	3.07	123
4.67	187	4.12	165	3.57	143	3.02	121
4.65	186	4.09	164	3.55	142	3.00	120
4.62	185	4.07	163	3.52	141	**Less than 3**	**Not enough**
4.6	184	4.04	162	3.5	140		
4.57	183	4.02	161	3.47	139		
4.52	181	3.99	160	3.45	138		
4.5	180	3.97	159	3.42	137		
4.47	179	3.94	158	3.4	136		

Evaluation of self-study working of students in preparation for classroom practical exercises carried out during the current control topics relevant to auditory training.

The maximum amount that can be collected by a student in a module is equal to 200 points. It is calculated by multiplying the number of points that corresponds with «5» on a number of topics in the module.

The minimum number of points that the student can get when the module is calculated by multiplying the number of points that corresponds with «3» on the number of topics in the module (120 points).

Determining the number of points scored by a student in the discipline

Discipline points are independently converted into both the ECTS scale and the 4-point scale. The ECTS scale scores can't be converted to a 4-point scale and on the contrary. The scores of the students who have been studying under one specialty should be ranked in accordance with the ECTS scale (Table), taking into account the points which were scored in the discipline.

Correspondence of estimates on a 200-point scale, 4-point (traditional) scale and ECTS scale

Points	4th grade mark
170 - 200	5
140 - 169	4
139- 120	3
Low than minimum	2

Mark ECTS	Statistical indicator
A	The best 10 % students
B	Next 25 % students
C	Next 30 % students
D	Next 25 % students
E	Last10 % students

11. METHODICAL SUPPORT (EDUCATIONAL CONTENT)

On the information stand and the website of the department for preparation for all types of classes are placed:

1. Educational and professional program "Medicine"
2. The program of the discipline
3. Methodical instructions for practical classes (for students)
4. Multimedia equipment of the course
5. Visual aids, technical teaching aids, etc.
6. Sets of situational tasks
7. Sets of test tasks for practical classes
8. Methodical materials for self-study works of students
9. Criteria for assessing the level of knowledge and skills of students

12. LIST OF QUESTIONS FOR THE STUDENT'S PREPARATION TO THE FINAL CONTROL

Theme 1.

1. Hygiene as a science, its purpose, tasks. Sanitation, its legislative base. The specific methods of hygiene. The classification of methods of hygienic research. Definition of health according to WHO. General pathological definition of health. Population and individual health. Health indices. Prophylaxis, its types. Role of hygiene and prophylaxis in work of doctors of medical type.

2. Etiologic (causal) factor and risk factor of development of disease. The determined and stochastic effects in organism under influence of environmental factors. Hygienic diagnostics. Ecological-dependent diseases.

3. Ways of realization of epidemiological method of health study. Forms and stages of epidemiological research of studying correlations in the system of environment-health.

4. Monitoring areas for assessment of environmental and health state, methodology of their selection. Methods of high-quality and quantitative integral estimation of the environment state and health. Stages of integral estimation of the state of population health, information sources about health. Methods of establishment of high-quality and quantitative correlations between the environment state and health. Prognostic estimations of health level depending on the state of contamination of atmospheric air, water, soil.

5. Conception about risk and its generalizing classification in health protection system. The main definitions of risk assessment methodology (source of hazard, exposure, dose, a reference or tolerant dose, relative, attributive, attributive population risk). Conception about biological markers (biomarkers of exposure, effect, susceptibility).

6. The main stages of risk assessment, their purpose and tasks. Schemes of epidemiological researches, suitable for determine of cause-effect relations in system of environment-health, and risk quantity indicators at carrying out of these researches.

7. Object and tasks of prophylactic toxicology. Basic principles of the independent and complex hygienical standardization of xenobiotics. Stages of hygienical estimation of compounds. Chart of toxicological experiment.

8. Basic parameters of toxicometry. Determination of concepts is toxicness, accumulation (after B.M. Shtabskiy), types of accumulation. Classification of industrial pollutants and pesticides after the degree of toxicness and danger.

9. Determination of concepts, hygienical value, method of ground of MAC of xenobiotics in air, water, soil, food products, ADD of pollutants in food rations and ADD of pesticides. Critical indicator of harmfulness at the hygienical standardization of xenobiotics in water, soil, food products.

10. Combined, complex and joint action of factors of environment, types of combined action.

Theme 2.

1. Structure, composition and properties, hygienical value of hydrosphere, source of contamination.

2. Infectious and uninfectious disease, related to the drinking-water, measures of their prophylaxis. Features of water epidemics. Water-nitrate methemoglobinemia, endemic fluorosis and caries, their prophylaxis. Hygienical value of hardness of water.

3. Hygienical requirements to quality of drinking-water and documents, that it was regulated.

4. Description of the centralized and decentralizing water systems. Elements of water-supply line from an artesian mining hole and superficial reservoir. General methods of water treatment at the centralized water (coagulation, precipitation, filtration) system, special methods of water quality improvement, methods of disinfection of water, their essence and hygienical characteristic. Areas of sanitary protection of water sources. Sanitary supervision after a local water-supply, organization and exploitation of wells, cleaning of wells.

5. Structure, composition, properties, hygienical value of lithosphere, source of contamination.

6. Infectious and uninfectious diseases, related to soil, measures of prophylaxis.

7. Indexes of the sanitary state of soil, their classification and hygienical value. A reference scale of estimation of level of contamination of soil and degree of its hazard for the health of population.

8. Self-purification of soil, value for neutralization of domestic waste. Large and small sewage system, stages and methods of cleaning of domestic waster water.

9. Hygienical description of methods of collection, delete and neutralization of solid waste of domestic origin. Features of neutralization of neutralization and liquid waste of surgical, infectious and other departments.

Theme 3.

11. Systems of hospitals building, them comparative description. Hygienical requirements to placing of hospital in a settlement, area, functional zones and planting of greenery of hospital area.

12. Hygienical requirements to planning of ward departments, ward section, ward for somatic pacients (adult and cildren), box section, box, semi-box, box ward for infectious patients, admission, obstetric-gynaecological departments, operating block and policlinic. Hygienical requirements to the technique of MPE (water-supply, heating, ventilation, illumination).

13. In-hospital infections, determination of concept, source, agents, ways and factors of transmission, basic principles and measures of prophylaxis, organization of sanitary-hygenic and epidemiology supervision after distribution and basis of investigation of flare-up of infection. Sanitary-hygenic and antiepidemic regimen of permanent establishments of different type. Measures of prophylaxis of in-hospital infections in personnel in hospital, duties of personnel in relation to the prophylaxis of in-hospital infections.

14. Hygienical value of ultraviolet radiation. Methods and units of research of intensity. Erytemal and preventive doses of ultraviolet radiation, applications of UV-radiation for cleaning of objects of environment.

15. Diseases, related to the deficiency of UV-radiation. Symptoms of “sun deficiency” and methods of its prophylaxis. Contra-indications to the conduction of primary and secondary UV-prophylaxis.

16. Types of nuclear transformations. Classification of ionizing radiations, their properties. Qualitative and quantitative properties of radionuclides and ionizing radiations, types of doses, units of their measuring.

17. Main types of radiation damage of the organism and condition of their origin. Acute and chronic radiation sickness, terms of origin, phases of clinical course, basic symptomatology. Long-term effects of radiation damage, local lesions.

18. Principles of the hygienic setting of norms of ionizing radiations. Categories of persons who are exposed to rays. Groups of radiation and hygienic regulations. Limit of dose as basic radiation and hygienic standard, its normative values for different categories of persons who are exposed to rays. Concept about the tolerant, control and recommended levels of irradiations.

19. Classification of SIR. SIR that used in medical practice.

20. Main principles of radiation safety and their providing. Classification of antiradiation protection measures for people who work with SIR. Monitoring of irradiation of working people, its types. Radiation, medical and general hygienic control at work of personnel in CI with the SIR. Measures of limitation of additional irradiation of patients during X-ray radiodiagnostic examinations. Categories of patients, recommended levels of their irradiation.

Theme 4.

1. Classification of alimentary diseases.

2. Nutriment functions and factors that their provide. Types of nutriment biological effect and types

of nutrition. Functions of proteins, fats, carbohydrates, vitamins, mineral substances in nutrition. Components of daily energy expenditure of organism, methods of their determination.

3. Principles of rational nutrition. Groups of intensity of work of adult able-bodied population of Ukraine by physical activity coefficient. Requirements to dietary habits of the healthy human of able-bodied age.

4. Physiological requirements of children, able-bodied population, people of elderly age and senile age for proteins, fats, carbohydrates (for caloric of ration), vitamins and mineral substances.

5. Methods of studying of actual nutrition of population. Algorithm of daily ration assessment by means of menu schedule. The nutritional status, its components, types and criteria of assessment. Assessment of the nutritional status by means of body mass index.

6. Hygienic value and main principles of preventive nutrition.

7. Hygienic principles of nutrition of pregnant women and nursing mothers.

8. Hygienic value and main principles of TPN. Types and rations of TPN.

9. Principles of ecological-and-protective nutrition.

10. Principles of clinical nutrition in care institutions. Numbered system of diets and the indication to their order. Elemental (individual) system of clinical nutrition and its advantages, standart diets. Principles of the organization of clinical (dietary) nutrition in care institutions. Features of dietary nutrition in sanatoriums, preventoriums.

11. Structure and staffs, functional duties of officials in care institutions (the head doctor, the doctor on duty, the dietarian, dietary nurse, medical staff) and the list of basic documents in care institutions concerning of organization patient's nutrition. Order of passing of preventive medical surveys and inspections by personnel of nutrition unit in care institutions. Absolute and relative contraindications to work in nutrition unit.

12. The list of foodstuff and dish which are forbidden for receiving, preparation and realization by nutrition units in care institutions; foodstuff and dish which can leave to the next day in nutrition unit and in a still-room-distributing; the foodstuff which are forbidden for transfer by the patients from relatives. Means of preparation of dietary dish.

Theme 5.

1. Sanitary legislation of labour protection. Prophylactic measures of occupational pathology and labour protection on production. Accident prevention, productive sanitation, sanitary education of workers as measures of occupational diseases and poisonings prophylaxis.

2. Previous and periodic medical inspections of workers, organization of their realization, accounting and current documentation. List of medical contra-indications to work with the harmful and dangerous factors of industrial environment and labour process.

3. Investigation of cases of acute and chronic occupational diseases and poisonings, organization of this investigation, accounting and current documentation. Groups of occupational diseases.

4. Analysis of morbidity with a temporary disability and professional morbidity of working people, indexes and methods of their determination.

5. Types of labour and its physiological and hygienic description. Manual labour, its weight, criteria of estimation. Mental work, its tension, criteria of estimation. Features of operator labour. Physiology and psychophysiology methods of research of the functional state of organism at mental and physical work.Physiology changes in organism of workers in the process of manual, mental and operator labour. Fatigue and overstrain explanation and scientific grounds of their development. Measures are on rationalization of the modes of labour and rest.

6. Harmful and dangerous terms of labour, criteria of their estimation. Classes of labour on the indexes of harmfulness and ununconcern of factors of occupational environment, weight and tension of labour process.

7. Psychophysiology of professional selection, its purposes, tasks, methods.

Theme 6.

8. Structure, composition and properties, hygienical value of atmosphere and its contamination. Description of sources of contamination of atmosphere in a settlement. Mechanism of distribution of

atmospheric contaminations and factors which the level of contamination of air depends on. Transformation of atmospheric contaminations.

9. Influence of contaminated air on a health and terms of residence of population. Acute and chronic poisonings, specific and nonspecific diseases, caused the action of contaminations.

10. Preventive measures of negative influence of contaminations of atmospheric air on a health. Sanitary-protection zones, their sizes for the enterprises of different classes of danger.

11. Methods of sampling air for sanitary-and-chemical and bacteriological research. There are expressmethods of determination of chemical admixtures in air.

12. Urbanization as socially hygienical problem. Terms of life in settlements and health of population. Principles of planning, functional zoning and building of settlement. Hygienical value of the green planting.

13. Hygienical value of microclimate, lighting and regime of insolation, chemical and microbal composition of air, efficiency of ventilation of housings and public buildings. State sanitary supervision after building of housings and public buildings, them by a sanitaries.

14. Sourcesof noise, vibration and EMV in settlements. Hygienical standartization of noise, vibration, EMV in the conditions of settlements. Measures of protection of population from noise, vibration, EMI of radio-waves.

Theme 7.

1. The general pecularities of growth and development of child.

2. Indicators, criteria and methods of a complex assessment of individual and population health of children. Physical development as the important criterion of a complex estimation of health of children. The basic indicators of physical development, methods of its research and estimation. Principles of health group distribution of children. Biological, social-and-hygienic and ecological factors (risk factors) that lead to infringements of children's health.

3. Modern concepts about an acceleration and retardation. Monitoring of health state of the children's population, its algorithm and the maintenance of each stage. Consequences, features and display of ecological-dependent infringements in children and measures of their hygienic correction.

4. Factors of pupils' stay and conditions of education in children's institutions, which can influence on children's and adolescents' health. Diseases caused by influence of environmental factors, of training and education in children's institutions.

5. Hygienic requirements to ground area of preschool institutions and schools, their functional zoning; requirements to planning, maintenance, equipment, microclimate, ventilations, illumination of the main premises of children's institutions. Principle of group isolation in preschool institutions.

6. Hygienic requirements to school furniture, groups of furniture, their marking, location in school class, rules of pupils' seating in class.

7. A school maturity, its criteria. Methods of definition of readiness of child to studying at school.

8. A day regimen. Hygienic requirements to elements of day regimen for children of different age.

9. Hygienic requirements to school timetable, method of its assessment.

10. Measures concerning improvement of sanitary-and-hygienic conditions of pupils' stay in modern schoolhouse.

Theme 8.

1. Determination of concept and classification of emergencies, their influence on the sanitary-hygienic terms of dwelling of population and labour conditions of the rescue units. National organizational structures for liquidation of medical consequences of emergencies. Organization of sanitary-hygienic and disease prevention measures during emergencies. Basic sanitary-hygienic measures in emergencies.

2. Types of the field placing for population and rescue units in emergencies, unfavourable factors of dwelling in the field habitation. Hygienic requirements for the area and planning of camp.

3. Classification of shelters, requirement, to their planning and equipments, basic harmfulness, modes of ventilation, norm of area, cubic capacity, content of carbon dioxide and microclimate in depositories.

4. Initial data, that necessary for operative prognostication medical hygienic consequences of influence of emergencies on a population and personnel of the rescue units.

5. Measures of defences for a population in the extraordinary situations of chemical, biological and radiation character. Emergency MAC and normative defences of rescuers and population during the emergencies.

6. Argues of rational feed and methods of hygienic control after its adequacy and safety at emergencies. Organization forms of feed of the rescue units and population in emergencies. Dry stakes, subhigh-calorie stakes, rations of survival, food concentrates, as facilities of feed in a sharp period of emergencies, them hygienical description. Hygienic requirements to the field points of feed.

7. Diseases, related to inferiority and poor quality of feed. An order of investigation and methods of prophylaxis of the food poisonings in emergencies.

8. Objects, tasks, stages of medical examination of food and variants of expert conclusions. Indexes, which characterize freshness, commodity qualities of food products, sign of their spoilage, epidemiology and toxicological danger.

9. Types of water-supply of the rescue forming and population in emergencies. Norms of water-supply in the field location. Purpose and stages of reconnaissance of sources of water-supply. Hygienic requirements to the field point of water-supply and water spread points. Methods and facilities of improvement of the water quality in the field locations. Methods of cleaning, disinfection and rendering of water harmless at emergency situations.

10. Sources, factors and mechanisms of infection of products and water, by poisonous, nuclear and bacterial substances.

11. Subsections of medical service, participating in examinations of food and drinking-water. Table facilities, intended for the examination of food and water.

12. Natural radiation background and its components. Sources and ways of radioactive contamination of environmental objects. Characteristic of main dose-constituent radionuclides after a failure on CNPP. Radiation characteristics of natural γ-background, soil, drinking-water, foodstuffs after a failure on CNPP, their role in forming of the radiation load of population. Principles of radiometric researches and estimation of results of radioactivity measuring of environmental objects.

13. Classifications of radiation failures and feature of failure on CNPP. Hygienic regulations of irradiation of emergency personnel and population during liquidation of consequences of radiation failure.

14. Concept about the technogeneous increased radiation sources of ionizing radiations, their role in forming of the radiation load of population, criteria of quantitative estimation and hygienic regulations.

15. Principles and criteria of zoning of territories which were exposed to the radioactive contamination as a result of the Chornobyl catastrophe. Hygienic aspects of way of life, nutrition, labour and rest of population who live on territories with the heightened levels of radioactive contamination. Monitoring of population irradiation, its components. Ways of decline of doses of external and internal irradiation of population. Principles of radioprotective nutrition and measures of its realization.

13. APPROXIMATE LIST OF PRACTICAL SKILLS AND CASES FOR THE SUMMING-UP MODULE CONTROL

1. Measure and assess the microclimate parameters (temperature, humidity, air movement speed, radiant temperature).
2. Determine indices of artificial illumination of premises (illuminance, brightness and others) using luxmeter.
3. Determine the ultraviolet radiation intensity by biological and photochemical methods.
4. Sample the air for determination of the microbial, dust, chemical pollution by sedimentation and aspiration methods using laboratory analyses (using electroaspirator, Krotov device, aerosol filters, allonges with absorbing reagents).
3. Calculate required and actual ventilation volume, rate in premises based on the maximum allowable and actual concentrations of carbon dioxide or other pollutant.
4. Determine the medical type of the weather using meteorological and synoptic, heliophysical and other weather-forming factors.
5. Sample the water during the selection of the water supply and drinking water sources.

6. Master methods of the water purification, disinfection and deactivation in field conditions.
7. Sample the soil for determination of physical and chemical indices, chemical, bacteriological, helminthological analyses.
8. Calculate the organism daily energy expenditure and requirements in nutrients.
9. Calculate the caloric content and balance by nutrients of nutritional ration – using menu-schedule and results of the food products and ready meals laboratory analyses.
10. Determine the capillary resistance using Matussis or Nesterov manometer.
11. Assess the food products quality using organoleptic methods, sample them for laboratory analysis.
12. Carry out instrumental and laboratory research of the physical factors, working zone air.
13. Carry out ergonomic time-keeping and registration of the working day image in industry.
14. Measure noise and vibration level using the noise-and-vibration complex, noise dosimeter and noise spectrum analyzer.
15. Carry out somatoscopic, somatometric, physiometric, neuropsychological researches of the children and adolescents physical development.
16. Measure the school premises, furniture.
17. Determine indices of the premises natural lighting (lighting coefficient, daylight factor and others) using calculation methods (determination of the DF using Daniluk's diagrams and insolation time using control-insolation scale).
18. Sanitary examination of hospital, educational, industrial institution.
19. Measurement of the microclimate, lighting indices, carbon dioxide content in the ward, ward section, department, patient care and health center in general.
20. Carry out the research of the denatured biosphere factors (physical, chemical, biological pollution).
21. Measure the ionizing radiation doses rate on workplaces, protective shields, individual irradiation doses of the personnel belongs to the category A, calculate the work surfaces pollution with radionuclides and their concentration in the air, water, food products.
22. Register the indices of the organism physiological state (heart rate, arterial pressure, concentration of attention, latent period of sensomotor reactions, manus force, torso force, volume of operator memory).

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