A syllabus of discipline "Hygiene and Ecology"

individual profile course of choice "Surgery"

1. General information	
Name of the faculty	Faculty of foreign students
Educational program (branch, specialty, higher education level, form of education)	22 Health Care, 222 Medicine, second (master's) higher education level, full time
Academic year	2021-2022
Name of the discipline, code (email address at Danilo Halytsky Lviv National Medical University)	Hygiene and Ecology OB 3.2. **https://new.meduniv.lviv.ua/kafedry/kafedra-gigiyeny-ta-profilaktychnoyi-toksykologiyi/**
Department (name, address, telephone, e-mail)	Department of hygiene and prophylactic toxicology FPGE Address Zelena str., 12, Lviv, Ukraine, 79010, phone: +38 (032) 276-28-22, *e-mail:* kaf_prophylactictox@meduniv.lviv.ua
Head of the department (contact e-mail)	Ulyana B. Lototska-Dudyk, associate professor, PhD, chief of department of hygiene and prophylactic toxicology FPGE, *e-mail:* ulyanalot@gmail.com
Year of study (year of study of discipline)	6th
Semester	XI-XII
Type of discipline / module (required / optional)	optional
Tutors (names, names, degrees and titles of teachers who teachdiscipline, contact e- mail)	Ulyana B. Lototska-Dudyk, associate professor, PhD, chief of department of hygiene and prophylactic toxicology FPGE, *e-mail:* ulyanalot@gmail.com
Erasmus yes / no (discipline availability for students at withinthe Erasmus + program)	No
The person responsible for the syllabus (e-mail)	Ulyana B. Lototska-Dudyk, associate professor, PhD, *e-mail:* ulyanalot@gmail.com
Number of ECTS credits	3,0 credits
Number of hours (lectures / practical classes / self-educational work of students)	hours – 90 hours of practical classes – 40 hours of self-educational work of students – 50
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 discipline "Hygiene" is aimed at the formation of 6th year medical students Faculty of Knowledge to assess the impact of environmental factors on the body human, the ability to provide in the practice of the doctor preventive recommendations for maintaining and promoting patient health. Discipline "Hygiene and Ecology" is necessary for doctors of medical profiles during performance of their professional activity for formation healthy lifestyle, prevention and diagnosis of diseases based on the study of the impact environmental factors on the human body and its health as sources of etiology risk factors for the occurrence and spread of diseases.	
3. Purpose and goals of the course	
1. 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".

2. 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.

3. **Competencies and Program learning results** wich provides the discipline (general and special competences):

General Competences (GC):

- Ability to abstract thinking, analysis and synthesis (GC-1);
- Ability to learn and master modern knowledge (GC-2);
- Ability to apply knowledge in practical situations (GC-3);
- Knowledge and understanding of the subject area and understanding of professional activity (GC-4);
- Ability to adapt and act in a new situation (GC-5);
- Ability to make informed decisions (GC-6);
- Ability to work in a team (GC-7);
- Interpersonal skills (GC-8);
- Ability to communicate in the state language both orally and in writing (GC-9);
- Ability to communicate in a foreign language (GC-10);
- Skills of using information and communication technologies (GC-11);
- Certainty and persistence in terms of tasks and responsibilities (GC-12);
- Ability to act socially responsibly and consciously (GC-13);
- The desire to preserve the environment (GC-14);
- Ability to act on the basis of ethical considerations (motives) (GC-15).

Special (professional, subject) competencies:

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

Program learning results

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.

4. Prerequisites for the course

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.

5. Program results of training

PLR 4 - Determine the required mode of work and rest at the treatment of the disease.
PLR 5 - Determine the necessary therapeutic nutrition at the treatment of the disease.
PLR 12 - To form among the fixed contingent population dispensary groups of patients; groups healthy people who require dispensary supervision. Carry out system of primary prevention measures within primary health care.
PLR 18 - Identify negative environmental factors environment; analyze the state of health of the population; determine the relationship between state of the environment and state of health of a certain contingent; elaborate preventive measures based on communication data between the state of the environment and the state contingent health. Perform analysis morbidity of the population, identifying groups risk, risk areas, time of risk, factors risk. Assess the impact of socio-economic and biological determinants on health of the individual, family, population.
PLR 22 - Follow a healthy lifestyle, use the techniques of self-regulation and self-control

List of learning results

Learning results code	The scope of the learning results	Reference to the code of the competence matrix
The code is created when the syllabus is filling (category: Kn - Knowledge, Sk- Skill, C-Competence (general), AR - Autonomy and Responsibility	Learning outcomes determine what the student must know, understand and be able to perform, after completing the discipline in accordance with the learning objectives. To enroll in the discipline, it is necessary to confirm the achievement of each learning result.	The symbol of the code of the program learning results in the Standard of Higher Education
Kn-1	Know the methods of analysis, synthesis and further modern learning	PLR 4, 5, 12, 18, 22
Sk- 1	Be able to analyze information, make informed decisions, be able to master modern knowledge	
GC-1	Abstract-thinking, analysis and synthesis capability	
AR -1	To be responsible for the timely acquiring of modern knowledge.	
Kn- 2	Know the current trends of medicine development and analyze them	PLR 12, 18, 22
Sk-2	Be able to analyze professional information, make informed decisions, acquire modern knowledge	
GC -2	Ability to learn and master modern knowledge	
AR -2	To be responsible for the timely acquisition of modern knowledge.	
Kn- 3	Have specialized conceptual knowledge, acquired in the process of studying.	PLR 4, 5, 12, 18, 22
Sk-3	Be able to solve difficult tasks and problems that arise in professional activity	
GC -3	Ability to apply the knowledge in practical situations	
AR -3	To be responsible for decisions, made in difficult	

	conditions	
Kn- 4	Have profound knowledge in the structure of professional activity.	PLR 4, 5, 12, 18, 22
Sk-4	Be able to carry out professional activities that need updating and integrating knowledge.	
GC -4	Knowledge and understanding of subject area and professional activity	
AR -4	To be responsible for professional development, the ability to further professional training with a high level of autonomy	
Kn- 5	To know types and ways of adaptation, principles of action in a new situation	PLR 4, 5, 12, 18, 22
Sk-5	To be able to use means of self-regulation, to be able to adapt to new situations (circumstances) of life and activity.	
GC - 5	Ability to adapt and act in a new situation.	
AR -5	To be responsible for, timely use ofmethods of self-regulation	
Kn- 6	To know the tactics and strategis of communication, laws and methods of communicative behavior.	PLR 4, 5, 12, 18, 22
Sk-6	To be able to make justified decisions, choose the ways and strategies of communication to ensure effective teamwork	
GC - 6	Ability to make a justified decision	
AR - 6	To be responsible for choice and tactics of communication method	
Kn- 7	To know the tactics and strategies of communication, laws and methods of communicative behavior.	PLR 12, 18
Sk-7	To choose the ways and strategies of communication to ensure effective teamwork	
GC -7	Ability to work in a team	
AR -7	To be responsible for choice and tactics of communication method	
Kn- 8	To know the laws and ways of intepersonal interaction	PLR 12, 18
Sk-8	To choose the ways and strategies of communication for interpersonal interaction	
GC -8	Skills of Interpersonal interaction	
AR -8	To be responsible for choice and tactics of communication method	
Kn- 9	Have a perfect knowledge of the state language	PLR 4, 5, 12, 18
Sk-9	To be able to use the state language, both orally and writing	
GC -9	Ability to communicate, using the state language both orally and writing.	
AR -9	To be responsible for free possession of the state language, for the development of professional knowledge	
Kn- 10	Have basic knowledge of a foreign language	PLR 4, 5, 12, 18
Sk-10	Able to communicate a foreign language	
GC -10	The ability to communicate using foreign language	
AR -10	To be responsible for the development of professional knowledge with the use of foreign language.	
Kn- 11	To possess profound knowledge in the field of informative and communicative technologies applied in professional activities	PLR 5, 12, 18, 22
Sk-11	To be able to use informative and communicative technologies in the professional field, that need updating and integrating the knowledge	

GC -11	Skills of using of informative and communicative technologies	
AR -11	To be responsible for the development of professional knowledge and skills	
Kn- 12	Know the responsibilities and ways of fulfilling the tasks	PLR 5, 12, 18
Sk-12	To be able to identify goals and objectives to be persistet and conscientious in the performance of responsibilities	
GC -12	Awareness and perseverance concerning taken tasks and duties	
AR -12	To be responsible for the quality of fulfillment of the tasks	
Kn- 13	Know your social and civil rights and responsibilities	PLR 4, 5, 12, 18, 22
Sk-13	To form your civil consciousness, to be able to act in accordance with it	
GC -13	Ability to act socially relevant and deliberate	
AR -13	To be responsible for the own citizenship position and activity	
Kn- 14	Know the problems of environmental protection and ways to preserve it.	PLR 18, 22
Sk- 14	Be able to form requirements for themselves and others to preserve the environment	
GC - 14	The desire to preserve the environment	
AR - 14	To be responsible for the implementation of environmental protection measures within its competence.	
Kn- 15	Know the basics of ethics and deontology	PLR 4, 5, 12, 18
Sk- 15	To be able to use ethical and deontology norms and principles in professional activities	
GC - 15	Ability to act based on ethical ethical considerations	
AR - 15	To be responsible for the implementation of ethical and deontological norms and principles in professional activity	
Special Kn-2	Have specialized knowledge about human, his organs and systems, standard methods of laboratory and instrumental research	PLR 4, 5, 12, 18
Sk- 2	To be able to analyze the results of laboratory and instrumental examinations	
SC-2	Ability to recommend laboratory-and instrumental examinations and estimation of their results	
AR -2	Be responsible for deciding on the results evaluation of laboratory and instrumental examinations	
Kn-4	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	PLR 4, 5, 12, 18, 22
Sk- 4	To be able to determine the necessary regime of work and rest in the treatment of the disease	
SC-4	Ability to determine the necessary regime of work and recreation in the treatment of diseases.	
AR -4	To be responsible for the validity of the appointment of work and rest in the treatment of the disease	
Kn- 5	To have specialized knowledge about algorithms and standard schemes of nutrition in the treatment of diseases	PLR 4, 5, 12, 18
Sk- 5	To be able to determine the nutrition at the treatment of diseases	

SC- 5	Ability to determine the nature of nutrition in the treatment of diseases	
AR - 5	Be responsible for the validity of the recommended nutrition at the treatment of the disease	
Kn- 13	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.	PLR, 12, 18, 22
Sk- 13	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.	
SC- 13	Ability to carry out sanitary-hygienic and preventive measures.	
AR - 13	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	
Kn- 18	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	PLR 4, 5, 12, 18, 22
Sk- 18	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	
SC- 18	Ability to conduct epidemiological and medical and statistical health research population; processing of state, social, economic and medical information;	
AR - 18	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	
Kn- 19	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 know socio-economic and biological determinantsthat influence on health of population;	PLR 18, 22

	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.	
Sk- 19	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 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	PLR 4, 5, 12, 18, 22
SC- 19	Ability to assess the environmental impact of the environment, socio-economic and biological determinants on the health of the individual, family, population	
AR - 19	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.	

6. Course format and scope

Course format	Full-time course	
Type of activity	Number of hours	Number of groups
Practical	40	1-8
Self-training work	50	1-8

7. Topics and content of the course

Code of the type of the classes	Topic	Content of the studying	Learning results code	Teacher
P-1 (practical class)	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	Role of environmental factors as an etiologic factors and risk factors of development of different diseases. Hygienic diagnostics. Ecological-dependent diseases, methods of their prognostication and prophylaxis. Population health as an integral criterion for environment estimation. The methods of establishment of correlations between the state of environment and health. Risk assessment methodology. 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. A concept about the maximum	PLR 4, PLR 12, PLR 18, PLR 22	Ulyana B. Lototska-Dudyk

		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.		
P-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. 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. 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. Features of utilization of solid and liquid waste of infectious, surgical and other departments of MPE.	PLR 18	Ulyana B. Lototska-Dudyk
P-3	Hygienical aspects of planning and exploitation, prophylaxis of in-hospital infection, ultraviolet irradiation and radiation safety in treating-and-	Sanitary and hygenic requirements to planning of lot land of MPE, therapeutic, surgical, pediatric, obstetric, infectious, admitting departments, operating block and policlinic. A problem of in-hospital infections in medicine, modern determinations of concept and position to reasons of distribution, structure of nosology	PLR 4	Ulyana B. Lototska-Dudyk

	prophylactic establishments	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 natural and artificial UV-radiation for the primary and secondary prophylaxis of illnesses. 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.		
P-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 it provide. Types of biological effect of nutriment and types of nutrition. Value of diets nutrients composition. The basic hygienic requirements to diets organization. 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. Health-improving action of nutriment and preventive nutrition of humans from risk groups. Hygienic principles of nutrition of pregnant women and nursing mothers. Nutrition in prevention of occupational diseases. The basic mechanisms of intoxication, metabolism and detoxication of xenobiotics in organism. 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. Standard diets and their individualization. Principles of the organization clinical (dietary) nutrition in hospitals and sanatorium-	PLR 5, PLR 12	Ulyana B. Lototska-Dudyk

		and-spa institutions. The sanitary-and-hygienic control by clinical (dietary) nutrition in care institutions.		
P-5	Legislative bases of the medical and prophylactic providing of workers. Hygienical estimation of process of labor and factors of industrial environment.	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.	PLR 4, PLR 5, PLR 12, PLR 22	Ulyana B. Lototska-Dudyk
P-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	PLR 18	Ulyana B. Lototska-Dudyk

		contamination of atmosphere. Urbanization as socially hygienical problem. 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.. 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.		
P-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. 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 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-	PLR 4, PLR 5, PLR 12, PLR 18, PLR 22	Ulyana B. Lototska-Dudyk

		hygienic conditions of pupils' stay in the schoolhouse. Criteria of readiness of child to studying at school: morphogenetic, psychological, social.		
P-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. Organization of feed and water-supply in emergencies under the medical and sanitary inspection.. 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. Principles of estimation of results of radioactivity measuring of environmental objects. Monitoring of population irradiation, its components. 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.	PLR 18	Ulyana B. Lototska-Dudyk
SW-1	Hygienical estimation	The communication of	PLR 18	Ulyana B.

(Self-training work)	of natural and anthropogenic components of biosphere influence on a health man and population. Scientific bases of medical biorhythmology and chronohygiene	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 organization 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.		Lototska-Dudyk
SW-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	Unfavorable factors of in-hospital environment of different subsections of hospitals. Hygienical norms of microclimate, air environment, ventilation, natural and artificial illumination of different subsections of hospitals. 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. 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. 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.	PLR 4, PLR 5, PLR 12	Ulyana B. Lototska-Dudyk

SW-3	Food poisonings as hygienical problem. Method of investigation of cases of the food poisonings	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. Order of investigation of food poisonings. Measures of liquidation and prevention of events of food poisonings.	PLR 5, PLR 12, PLR 18	Ulyana B. Lototska-Dudyk
SW-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	PLR 4, PLR 22	Ulyana B. Lototska-Dudyk
SW-5	Hygienical principles of rational organization of physical education and labour studies of children and teenagers. Scientific bases of conducting of medical-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 bases 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	PLR 4, PLR 18, PLR 22	Ulyana B. Lototska-Dudyk

		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.		
SW-6	Organization and conducting of sanitary supervision after the terms of labour of liquidators of consequences of extraordinary 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.	PLR 4, PLR 12, PLR 18, PLR 22	Ulyana B. Lototska-Dudyk
SW-7	Preparation to practical classes	Individual preparation to practical classes: theoretical preparation, calculation of tasks and tests.	PLR 22	Ulyana B. Lototska-Dudyk

The following teaching methods are used to develop skills:
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

8. Verification of learning results

Current control is carried out during the training sessions and aims to check the assimilation of students' educational material (it is necessary to describe the forms of current control during training sessions). Forms of assessment of current educational activities should be standardized and include control of theoretical and practical training. For the final grade for the current educational activity a 4-th grade (national) scale is used All types of work are considered in this case.

The student should get an estimate from each topic and then it will be converted into points according to 200-point scale.

The student answers 10 MCQs (devoted to the topic of the lesson, format A). Right answers: for 10-9 MCQs = 5 points; by 8-7 MCQs = 4 points; 6-5 MCQs = 3 points; 4 or less MCQs = 0 points.

Answers standardized questions, knowledge of which is necessary to understand the current topic. Demonstrates knowledge and skills of practical skills in accordance with the topic of the workshop.

Solves a situational task according to the topic of the class.

Criteria for evaluation of educational activities

Learning results code	Code of the type of the classes	Verifying learning outcomes method	Enrollment criteria
Зн- 1- 7 Ум- 1- 20 К- 1- 20 АВ- 1-8	Р 1-8 SW 1-7	Practical tasks are performed by students in the classroom in accordance with the guidelines for practical training. The	Maximum score is 5 points, The minimum score is 3

		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. *Evaluation of theoretical material:* -"excellent" (5) - 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 answer, freely uses the acquired theoretical knowledge in the analysis of practical material; - "good" (4) - 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; - "satisfactory" (3) - 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; - "unsatisfactory"(2) - 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:* - “excellent” (5)- the student answered correctly 90-100% of the A format test (from the database "Step-2"); - “good” (4) - the student answered correctly 74-89% of the A format test (from the database "Step-2"); - “satisfactory” (3) - the student answered correctly 60-73% of the A format test	points.

		(from the database "Step-2"); - “unsatisfactory”(2) - the student gave less than 60% of correct answers to the A format tests. *Evaluation of situational tasks:* For solving situational tasks, the ability to analyze and interpret research results to correctly draw sound conclusions, the student receives: - "excellent" (5) - the student correctly solved the situational task in accordance with the sequence of its solution and made reasoned conclusions and gave the necessary recommendations; - "good" (4) - the situational task is solved correctly in accordance with the sequence of its solution, but the conclusion is inaccurate or incomplete; - - "satisfactory" (3) - the situational task 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); - "unsatisfactory" (2) - the situational task is not solved. *The sequence of solving the problem:* - 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. *Evaluation of practical skills:* - "excellent" (5) - the student freely uses the acquired theoretical knowledge in the analysis of practical material, demonstrates a high level of mastery of practical skills; - "good" (4) - the student has practical skills, but assumes certain inaccuracies and errors in the implementation of practical skills; - "satisfactory" (3) - 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; - "unsatisfactory" (2)- the student has no practical skills. *Self-work of students* Independent work of students in preparation for a practical lesson is assessed during the current control of the topic in the relevant lesson. Execution of SW by volumes, which are submitted for independent study, is recorded in the academic journal.	
Final control			
General evaluation system		Participation in the work during the semester / credit on a 200-point scale	
Rating scales		traditional 4-point scale, multi-point (200-point) scale, ECTS rating scale	
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	Enrollment criteria
Credit		All topics for current control submitted. Grades from the 4-point scale are converted into points on a multi-point (200-point) scale in accordance with the provision "Criteria, rules and procedures for evaluating the results of student learning activities"	The maximum number of points is 200. The minimum number of points is 120
The calculation of points is carried out based on the student's grades according to the 4-th grads (national) scale during the study of the discipline, by calculating the arithmetic mean (AM) rounded up to two decimal places. Resulting value is converted into points according to multipoint scale as follows: $X = \frac{CA \square 200}{5}$			
9. Course policy			
It is based on the full implementation of the curriculum of the course (attending workshops, working academic debts up, performing independent tasks), academic integrity, lack of plagiarism. *Observance of academic integrity by students:* 1. Independent performance of educational tasks, tasks of current and final control of results; 2. Links to sources of information in the case of the use of ideas, developments, statements, information; 3. Observance of the legislation on copyright and related rights. 4. Providing reliable information about the results of their own (scientific, creative) activities, used research methods and sources of information.			
10. References			

Principal:
1. Hygiene and ecology / Edited by professor V.G. Bardov. Vinnytsya: Nova Knyha, 2018. 688 p.
2. Hygiene and ecology / V.A. Korobchanskiy, M.P. Vorontsov, A.A. Musulbas. Kharkov, 2006. 207 p.
3. General hygiene and environmental health / Edited by M.M. Nadvorny. Odessa, 2005. 242 p.
4. Hygiene and human ecology / O. V. Fera. Uzhhorod: Goverla, 2019. 247 p.
5. Hygiene and preventive medicine / M. M. Nadvorniy [et al.]; ed. by Prof. Nadvorniy M. M., Prof. Lastkov D.O. Odessa: Press-courier, 2011. 208 p.
6. Principles of occupational health and hygiene. An introduction / edited by Sue Reed, Dino Pisaniello, Geza Benke. 2019. 576 p.
7. Occupational Safety and Hygiene IV /Edited By Pedro M. Arezes et al. 2016. 636 p.

Additional:
1. General hygiene and medical ecology. Textbook for student's medical faculty/ Editor prof. S.Shibanov., Simferopol, 2004. 540 p.
2. Hygiene and ecology. Student's text-book, 4 modules, 38 chapters. Vladimir A. Korobchanskiy, Michael P. Vorontsov, Alisa A. Mususlbas. Kontrast Publishing Enterprise, Kharkov, 2006. 207 p.
3. Principles of Human Nutrition / 2nd ed. by Martin Eastwood. 2003. 680 p.
4. Preventive Medicine, Integrative Medicine and the Health of the Public / David L. Katz, Ather Ali. 2009. 45 p.
5. General nutrition: Study guide for the 4th accreditation level Medical School Students / edited by S.T. Omelchuk, O.V. Kuzminska. Kyiv, 2016. 146 p.
6. Glossary of Hygiene and Ecology (Ukrainian-Russian-English) / Biletska E.M., Onul N.M., Antonova O.V., Holovkova T.A., Kalinicheva V.V. Edited by professor Biletska E.M., Dnipro: Aktsent PP, 2019. 187 p.
7. General Science of Nutrition. Study Guide for the 4th accreditation level Medical School Students /Edited by S.T. Omelchuk, O.V. Kuzminska., K., 2016. 145 p.
8. Clinical Nutrition Basics for Medical Students Paperback / Amanda Velazquez – 2014 , 304 p.
9. Fundamentals of Human Nutrition: for Students and Practitioners in the Health Sciences, 12-th Edition/Catherine Geissler, Hilary Powers, 2011, p. 291-365.
10. Nutrition at a Glance 1st Edition / Mary Barasi 2014, p. 80-102.
11. Nutrition Counseling and Education Skills: A Guide for Professionals 7th Edition/Judith Beto, Betsy Holli ,- 2018, p. 220-245.
12. Nutrition in Public Health 4th Edition /Sari Edelstein,- 2018.-p.183-225.

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

- Training program of the discipline
- Plans of practical classes, and independent work of students
- Methodical recommendations for practical training for students
- Methodical recommendations for practical training for teachers
- Methodical recommendations that provide independent work of the student
- MCQs of the A format test (from the database "Step-2") and cases for practical classes
- Situational tasks for practical classes
- The list of questions which are submitted for final control
- Methodical support of the final control
- Demonstration materials, instructions for the use of devices and equipment.

12. Additional Information

Materials related to the educational and organizational process (thematic plan, schedule of classes, schedules of consultations and work up of missed classes) are available on the website of the department: kaf_prophylactictox@meduniv.lviv.ua. Educational and methodical materials (topic guidelines) for preparation for practical classes, independent work, self-control are available on the MISA platform in the section "Department of hygiene and prophylactic toxicology FPGE " on the website of LNMU named after Danylo Halytsky: http://misa.meduniv.lviv.ua/ login / index.php.

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