Uzhhorod National University

Faculty of Dentistry

Department of Fundamental Medical Disciplines and

Orthopedic Dentistry

"**APPROVE**"

Dean of the Faculty of Dentistry

Doctor of Medical Sciences, Prof. Kostenko Ye.Ya.

"\_\_" \_\_\_\_\_\_\_ 2022

**WORK PROGRAM OF THE DISCIPLINE**

**HYGIENE AND ECOLOGY**

(code and name of the discipline)

Knowledge area 22 Healthcare

(cipher and name of the direction of training)

specialty 221 DENTISTRY

(cipher and name of the specialty)

Specialization DENTISTRY

(name of specialization)

Institute, Faculty, Department of Uzhhorod National University, Faculty of Dentistry, full-time faculty.

(name of institute, faculty, department)

Uzhhorod – 2022

Work program on "Hygiene and Ecology" for second-year students

(name of the discipline)

dental faculty in the field of knowledge "22 Health care", direction of training 6.120101 Medicine, specialty "221 Dentistry" – 59 p.

"\_\_" \_\_\_\_\_\_\_\_ 2022

Developers:

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The work program was approved at a meeting of the Department of Fundamental Medical Disciplines and Orthopedic Dentistry

Protocol from "\_\_" \_\_\_\_\_\_\_ 2022 No\_\_.

Head of the Department

Doctor of Medicine, Associate Professor

"\_\_" \_\_\_\_\_\_\_\_\_ 2022 \_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

(signature) (surname and initials)

Approved by the educational and methodical commission of the higher educational institution in the specialty

«221 Dentistry»\_

(cipher, name)

Protocol from "\_\_" \_\_\_\_\_\_\_\_ 2022 No \_\_

"\_\_" \_\_\_\_\_\_\_\_\_ 2022 \_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_ . (signature) (surname and initials)

1. **Description of the discipline**

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| --- | --- | --- | --- | --- |
| Name of indicators | Field of knowledge, direction of training, educational qualification level | Characteristics of the discipline | | |
| **full-time education** | |  |
| Number of credits - 2 | Field of knowledge  22 Healthcare  (cipher and name) | Normative  (optional) | | |
| Direction of training  221 DENTISTRY (6.120101 Medicine)  (cipher and name) |
| Modules – 1 | Specialty (professional  Direction):  Dentistry | **Year of preparation:** | | |
| Content modules – 3 | 2nd | - | |
| Individual research task | **Semester** | | |
| Total number of hours - 50 | Iii | - | |
| **Lecture**  **( 1 sem. / 2 sem.)** | | |
| Weekly hours for full-time education:  classroom – 40  independent work of the student – 10 | Educational qualification level:  specialist | 10 a.m. | - h. | |
| **Practical, seminary**  **( 1 sem. / 2 sem.)** | | |
| 30 hours. | * H. | |
| **Laboratory**  **( 1 sem. / 2 sem.)** | | |
| - h. | - h. | |
| **Independent work**  **( 1 sem. / 2 sem.)** | | |
| 10 a.m. | - h. | |
| **Individual tasks** of the hour. | | |
| **Type of control**  **( 1 sem. / 2 sem.)** | | |
| Exam  8 hours | |  |

**Note**.

The ratio of the number of hours of classroom classes to independent and individual work is:

for full-time education – 80 % : 20 %.

# ENTRY

The curriculum for the discipline "Hygiene and Ecology" is compiled in accordance with the following regulatory documents:

* draft of the Higher Education Standard of Ukraine for the training of specialists of the second (master's) level of the field of knowledge 22 "Health care", specialty 221

"Dentistry";

* exemplary curriculum for the training of specialists of the second (master's) level of higher education in the field of knowledge 22 "Health care" in higher educational institutions of the Ministry of Health of Ukraine in the specialty 221 "Dentistry" qualification of the educational "Master of Dentistry", qualification of professional "Dentist" from 26.07.2016;
* order of the Ministry of Education and Science of Ukraine No. 943 of 16.10.2009 "On the introduction of the European Credit Transfer System in higher educational institutions of Ukraine";
* order of the Ministry of Education and Science, Youth and Sports of Ukraine No 683 of 05.06.2013 with amendments "On approval of forms of documents on training in higher educational institutions of I-IV levels of accreditation";
* instructions for evaluating the educational activities of students in the context of the implementation of the European Credit Transfer System of organization of the educational process, updated taking into account the results of the application of the assessment system during 2005 - 2014 from 25.04.2014 №0801- 47/10395.

# DESCRIPTION OF THE DISCIPLINE (ANNOTATION)

Professional training of doctors in the specialty 221 "Dentistry" cannot be of high quality and effective without in-depth study of preventive disciplines – hygiene and sanitation, ecology and epidemiology.

The specificity and prevalence of this kind of medical services, their differentiation by age (children, adults) and place of residence (city, village), narrow specialization (dentist-therapist, dentist-surgeon, orthopedic dentist, dentist-orthodontist, periodontist, etc.) necessitate creation of appropriate technical, technological, as well as hygienic conditions for its implementation.

The dissemination of dental services on a budgetary and private basis requires familiarization of future dentists, as well as doctors who plan to engage in private practice, with sanitary and sanitary and hygienic requirements for dental offices of various profiles, means of preventing nosocomial infections and preventing the adverse effects of harmful occupational factors on the health of dentists.

Therefore, the training of a dentist at the modern level requires mastering fundamental knowledge in the field of hygiene and ecology, taking into account the elements of bioethics and nooethics in practice.

# Hygiene and ecology as an academic discipline:

a) is based on the study by students of medical biology, medical and biological physics, medical chemistry, biological and bioorganic chemistry, human anatomy, life safety, the basics of labor protection, etc.;

c) lays the foundations for students to study environmental factors and their impact on general and dental human health;

b) equips the dentist with practical skills for the implementation of specific preventive measures, regarding the observance of personal hygiene by a healthy and sick person, hygiene of food, life, work, upbringing and training of children and adolescents, maintenance of medical and preventive dental institutions in proper sanitary condition, radiation safety patients and staff of dental institutions, etc.;

c) opens up ample opportunities for the formation of preventive thinking in future dentists, equips them with fundamental theoretical knowledge and practical skills aimed at preserving and strengthening the general and dental health, the continuation of creative longevity and life expectancy in general.

The discipline "Hygiene and Ecology" consists of 1 module, which consists of three content modules. The volume of students' study load is described in ECTS credits – credits that are credited to students upon successful assimilation of the relevant module (credit).

# Module 1. Hygiene and ecology. Content modules:

1. Hygienic importance of the environment and methods of its hygienic research.
2. Hygienic basics of nutrition, healthy development of children and adolescents.
3. Hygienic bases of activity of medical institutions, labor protection in medicine.

The types of training sessions according to the curriculum are: a) lectures; b) practical classes; c) independent work of students.

The main goal of the lecture course is the development of students' scientific hygienic thinking, its use to assess the level of general and dental health, providing recommendations on hygienic issues to a healthy and sick person, using hygienic knowledge to optimize working conditions and hospital environment, prevention of intra-hospital infection in medical institutions, including dental profile, sanitary and educational work, etc.

The topics of the lecture course reveal the problematic issues of the relevant sections of hygiene and ecology.

Practical classes according to the method of their organization are practically oriented, and include:

a) students mastering the most common methods of hygienic studies of environmental factors (temperature, humidity,

air velocity, air condition, lighting, ventilation of enclosed spaces, in particular the dental profile; assessment of the actual nutrition of the population and the quality of food, water, etc.);

b) study of the influence of these factors on general and dental health of a person;

c) mastering the basic skills of current sanitary supervision in treatment and prophylactic, in particular dental clinics (offices), other premises;

d) development of hygienic knowledge and thinking through practical classes, solving situational problems, analyzing the results of hygienic research, drawing up certain preventive recommendations, performing educational and research research papers and discussing their results.

The current learning activities of students are controlled in practical classes in accordance with the specific objectives of the current topic and during the performance of individual work by students. level of knowledge and skills) through oral or written questioning, problem solving.

The final control of mastering the module is carried out upon completion of its study. Assessment of the assimilation is carried out at the final modular control lesson in the form of an oral or written survey, solving situational problems, blank or computer test control, by evaluating the calculation work of students and the ability to put into practice the acquired skills.

The assessment of the student's progress in the discipline is rating and is set on a multi-point scale as an arithmetic average assessment of the assimilation of the relevant modules and is determined by the ECTS system and the traditional scale adopted in Ukraine.

For those students who wish to improve their academic performance in the discipline on the ECTS scale, the final modular control of the assimilation is carried out in accordance with the regulatory documents additionally according to the schedule approved educational institution.

Evaluation of the assimilation of individual topics (current control) is carried out at each practical lesson in accordance with specific goals, the assessment of mastering the module is carried out at the last training session of the module. It is recommended to use the following tools for diagnosing the level of training of students such as: computer tests, solving situational problems, conducting laboratory tests and evaluating their results, analyzing and evaluating the results of instrumental studies and indicators characterizing the functions of the human body, its organs and systems, the state of health in general.

**The subject** of study of the discipline are: **hygiene** – a branch of medical knowledge, the science of preserving and strengthening public and individual health through the implementation of preventive measures; **ecology** is a complex integral science that studies the state of the environment and

patterns of its influence on humans in particular and society as a whole, as well as features of environmental reverse reactions in response to human activities.

**Interdisciplinary connections:** the discipline "Hygiene and Ecology" has interdisciplinary connections with the following disciplines: philosophy, sociology and medical sociology, computer science, ethics, physics, biology, microbiology and virology, medical and general chemistry, bioorganic and biological chemistry, physiology, pathological physiology, internal diseases, radiation medicine, medical law, bioethics.

# The purpose and objectives of the discipline

* 1. The purpose of teaching the discipline "Hygiene and Ecology" is: the study of the theoretical foundations of preventive medicine, in particular hygiene and ecology, as the sciences that are the basis of the preventive component of the professional worldview specialist in the direction of training the qualification of professional "Dentist", educational qualification "Master of Medicine", mastering by students the necessary knowledge, skills, actions, targets, skills that meet the ultimate objectives of studying the discipline in accordance with the Standard of Higher Education of Ukraine.
  2. The main tasks of studying the discipline "Hygiene and Ecology" are:
* laying the theoretical foundations of hygiene and ecology as sciences (terminology, laws, methods, principles of hygienic rationing;
* regulatory and methodological support for the application of preventive measures) and the development of practical skills in: prevention of diseases of infectious and non-infectious origin in accordance with the basics of the current legislation of Ukraine; mastering laboratory research methods (organoleptic, physical, chemical, biological, bacteriological methods);
* use of favorable health factors of the environment to promote human health, harden the body, etc.
  1. The list of competencies of the graduate, the formation of which is facilitated by the study of the discipline "Hygiene and Ecology" and its relationship with the normative content of the training of applicants for higher education in the field of knowledge 22 "Health Care", formulated in terms of learning outcomes in the Standard of Higher Education Ukraine is the second (master's) level of higher education.

According to the requirements of the Higher Education Standard of Ukraine, the second (master's) level of higher education, the discipline "Hygiene and Ecology" ensures that students acquire **competencies of** the following levels:

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| **Integral competence** | Ability to solve typical and complex specialized problems and practical problems in professional activities in the field of health care or in the process of training, which involves conducting research and / or implementation innovating and characterized by  complexity and uncertainty of conditions and requirements |
| **General competencies** | 1. Ability to abstract thinking, analysis and synthesis. 2. Ability to learn and master modern knowledge. 3. Ability to apply knowledge in practical situations . 4. Knowledge and understanding of the subject area and understanding |

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|  | professional activity.   1. Ability to adapt and act in a new situation. 2. Ability to make informed decisions. 3. Ability to work in a team. 4. Interpersonal skills. 5. Ability to communicate in the state language both orally and in writing. 6. Ability to communicate in a foreign language. 7. Skills in the use of information and communication technologies. 8. Certainty and perseverance regarding the tasks and responsibilities taken . 9. Ability to act socially responsibly and consciously. 10. The desire to preserve the environment . 11. Ability to act on the basis of ethical considerations (motives). |
| **Special (professional, subject) competencies** | 1. Ability to determine the necessary list of laboratory and instrumental studies and evaluate their results. 2. The ability to determine the necessary mode of work and rest in the treatment of dental diseases. 3. The ability to determine the nature of nutrition in the treatment of diseases of the dental profile. 4. Ability to diagnose emergencies . 5. The ability to determine the tactics of emergency medical care, especially the dental profile. 6. Ability to carry out medical and evacuation measures. 7. Ability to carry out sanitary and hygienic and preventive measures . 8. Ability to plan and carry out preventive and anti-epidemic measures for infectious diseases . 9. Ability to maintain medical records. 10. Ability to conduct epidemiological and medical-statistical studies of public health; processing of state, social, economic and medical information. 11. Ability to assess the impact of the environment, socio-economic and biological determinants on the health of the individual, family, population. |

Detailing competencies in accordance with NRK descriptors in the form of a "Matrix of Competencies".

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| **No p/n** | **List of competencies** | **Contents** | **Types of competence** | | |
| Integral | General | Special |
| 1 | Communicative | Integration capacity based on humanistic qualities of the individual and aimed at ensuring effectiveness  communicative activity due to the experience of interpersonal communication |  |  | + |

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|  |  | personality, the level of her learning, upbringing  and development |  |  |  |
| 2 | Cognitive | The level of individual cognitive activity, which corresponds to the system of principles, values, methods existing in the culture of society  Cognition |  | + |  |
| 3 | Intellectual | A special type of knowledge organization that provides the ability to make effective  solutions , including in extreme conditions |  |  | + |
| 4 | Intellectual and corporate | Complex psychological property of a person, characterized by a set of skills and abilities adequate to the importance of optimization cases  Tasks |  | + |  |
| 5 | Information | The ability of an individual to apply, find, store and transform various information. This is the ability to work with different  information systems. |  |  |  |
| 6 | Technological | The system of creative and technological knowledge, abilities and stereotypes of activities on  transformation of objects of medical reality with the help of technical means |  |  | + |
| 7 | Cultural | The ability of the individual to organize an integral humanitarian educational  space, the formation of a single image of culture or a holistic picture of the world | + |  |  |
| 8 | Psychological | Structured system of knowledge about a person as a person, subject of labor and personality, included in individual or joint activities, carries out professional or other  Interaction. |  |  | + |
| 9 | Psychological medicinal | The combination of certain qualities (properties) of the individual with a high level of preparedness for medical activity and effective  interaction with patients in the wellness process |  |  | + |
| 10 | Professional | Qualitative characteristics of the degree of mastery by specialists of their professional activities, which implies: awareness of their motivations for this activity, assessment of their personal properties and qualities, regulation of their professional development,  self-improvement and self-education |  |  | + |
| 11 | Socio-psychological | Possession of scientifically based psychological techniques for effective work with colleagues, medical staff, patients and their relatives , readiness for  interactions with other people. | + |  | + |
| 12 | General cultural | Awareness of the individual in the field of culture of others  Peoples | + |  |  |
| 13 | Conflictological | Professional awareness of the range of possible strategies of the conflicting parties and the ability to provide psychological and technological assistance in the implementation of constructive  interaction in a specific conflict situation. |  | + |  |

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| 14 | Projective/ prognostic | Skills necessary to determine the tactical and  strategic tasks through the achievement of which the professional process is implemented. |  |  | + |
| 15 | Information-  Prognostic | Constructive compositional skills  ordering of integral knowledge. | + |  |  |
| 16 | Organizational | Ability to manage activities. |  | + |  |
| 17 | Communicative | Communicative skills to influence subjects  professional process |  |  | + |
| 18 | Analytical | Ability to adequately assess the level of their own  Activity. |  | + |  |

**Matrix of *competencies***

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| --- | --- | --- | --- | --- | --- |
| **№** | **Classification of competences by NRK** | **Knowledge** | **Skill** | **Communication** | **Autonomy and responsibilities** |
| **1** | **2** | **3** | **4** | **5** | **6** |
| **Integral competence** | | | | | |
| Ability to solve typical and complex specialized problems and practical problems in professional activities in the field of health care, or in the learning process, which involves research and / or innovation and is characterized by complexity and  uncertainty of conditions and requirements. | | | | | |
| **General competencies** | | | | | |
| 1. | Ability to abstract thinking, analysis and synthesis | Know the ways of analysis, synthesis and further modern learning | Be able to analyze information, make informed decisions, be able to purchase modern  knowledge | Establish appropriate links to achieve goals | Be responsible for the timely acquisition of modern  Knowledge |
| 2. | Ability to learn and master modern knowledge | Know the current trends in the industry and analyze them | Be able to analyze professional information, make informed decisions , acquire  Modern knowledge | Establish appropriate links to achieve goals | Be responsible for the timely acquisition of modern knowledge |
| 3. | Ability to apply knowledge in practical situations | Have specialized conceptual knowledge acquired in the learning process | Be able to solve complex problems and problems that  arise in professional activities | Clear and unambiguous reporting of their own conclusions, knowledge and explanations that substantiate them to specialists and  Non-specialists | Responsible for decision-making in difficult conditions |
| 4. | Knowledge and  Subject understanding | Have Deep  knowledge of structure | Be able to  carry out professional | Ability  Effectively form | Carry  Responsible for |

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|  | region and professional activity | professional activity | activities requiring updating and integrating knowledge | communication strategy in professional activities | professional development, the ability to further  vocational training |
| 5. | Ability to adapt and act in a new situation | Know the types and methods of adaptation, the principles of action in a new situation | Be able to apply the means of self-regulation, be able to adapt to new situations (circumstances) of life  and activities | Establish appropriate links to achieve the result | Be responsible for the timely use of self-regulation methods |
| 6. | Ability to make informed decisions | Know the tactics and strategies of communication, laws and ways of communicative behavior | Be able to make an informed decision, choose ways and strategies of communication to ensure effective  teamwork | Use communication strategies and interpersonal skills | Be responsible for the choice and tactics of the method of communication |
| 7. | Ability to work in a team | Know the tactics and strategies of communication, laws and ways of communicative behavior | Be able to choose ways and strategies of communication to ensure  effective teamwork | You use communication strategies | Be responsible for the choice and tactics of the method of communication |
| 8. | Interpersonal skills | Know the laws and ways of interpersonal interaction | Be able to choose ways and strategies of communication for  Interpersonal interaction | You use interpersonal skills and interaction | Be responsible for the choice and tactics  way of communication |
| 9. | Ability to communicate in the state language both orally and in writing | Have a thorough knowledge of your native language | Be able to apply knowledge of the state language, both orally and in writing | You use the state language in professional and business communication and in the preparation of documents | Bear responsibility for fluency in the state language, for the development of professional  Knowledge |
| 10. | Ability to communicate in a foreign language | Have basic knowledge of a foreign language | Be able to communicate in a foreign language | You use a foreign language in your professional activities | Be responsible for the development of professional knowledge with  use |

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|  |  |  |  |  | m foreign  Language |
| 11. | Skills in the use of information and communication technologies | Have deep knowledge in the field of information and communication technologies used in professional activities | Be able to use information and communication technologies in a professional field that needs updating and  knowledge integration | You use information and communication technologies in your professional activities | Be responsible for the development of professional knowledge and skills |
| 12. | Certainty and perseverance regarding the tasks and responsibilities taken | Know the duties and ways to perform the tasks | Be able to define goals and objectives, be persistent and conscientious when  Performance of duties | Establish interpersonal relationships for effective execution  tasks and responsibilities | Responsible for the quality of the tasks |
| 13. | Ability to act socially responsibly and consciously | Know your social and civil rights and responsibilities | To form your civic consciousness, to be able to act  responsibly to her | Ability to convey their social and social position | Be responsible for their civic position and activities |
| 14. | The desire to preserve the environment | Know the problems of preserving the environment and ways to preserve it | Be able to form requirements for yourself and others to preserve the environment | Make proposals to the relevant authorities and institutions on measures for the preservation and protection of the environment | Bear responsibility for the implementation of environmental protection measures within the framework of  of their competence |
| 15. | Ability to act on the basis of ethical considerations | Know the basics of ethics and deontology | Be able to apply ethical and deontological norms and principles in professional activities | Ability to convey to patients, members of their families, colleagues their professional position | To be responsible for the implementation of ethical and deontological x norms and principles in  professional activity |
| **Special (professional, subject) competencies** | | | | | |
| 1. | Ability to determine the required list  laboratory and instrumental | Have specialized knowledge about a person, his organs  and systems standard | Be able to analyze the results of laboratory and instrumental  research and on their basis | To form and communicate to the patient and specialists  conclusions about the necessary | Be responsible for acceptance  evaluation decisions |

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|  | x studies and evaluation of their results | methods of laboratory and instrumental research | evaluate information on the diagnosis of the patient | list of laboratory and instrumental studies | laboratory results and instrumental  their research |
| 2. | The ability to determine the necessary mode of work and rest in the treatment of diseases | Have specialized knowledge about a person, his organs and systems; ethical and legal norms; algorithms and standard schemes for determining the mode of work and rest during treatment, based on previous and clinical  diagnosis of the disease | To be able to determine, on the basis of a preliminary and clinical diagnosis, by making an informed decision, the necessary mode of work and rest in the treatment of the disease | To form and convey to the patient and specialists conclusions on the necessary mode of work and rest in the treatment of the disease | To be responsible for the reasonableness of the appointment of a regime of work and rest in the treatment of the disease |
| 3. | The ability to determine the nature of nutrition in the treatment of diseases | Have specialized knowledge about a person, his organs and systems; algorithms and standard nutrition regimens for treatment  Disease | Be able to determine, on the basis of a preliminary and clinical diagnosis, the nature of nutrition in the treatment of the disease | To form and convey to the patient, specialists conclusions on nutrition in the treatment of the disease | Be responsible for the validity of the definition of nutrition in the treatment of the disease |
| 4. | Ability to diagnose emergencies | Have specialized knowledge about a person, his organs and systems; standard methods of human examination (at home, on the street, in a health care institution) in conditions of lack of information | To be able, in conditions of lack of information, using standard techniques, by making an informed decision to assess the human condition and make a diagnosis | Under any circumstances, adhering to the relevant ethical and legal standards, make an informed decision to assess the human condition, diagnose and organize the necessary medical measures depending on the condition;  Fill | To be responsible for the timeliness and effectiveness of medical measures for the diagnosis of emergency conditions |

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|  |  |  |  | Appropriate  medical documents |  |
| 5. | Ability to determine the tactics of emergency medical care | Know the legal framework for the provision of emergency medical care, in particular the law of Ukraine  "On emergency medical care." have specialized knowledge of human emergencies;  Aid | Be able to identify emergencies; principles and tactics of emergency medical care; to carry out organizational and diagnostic measures aimed at saving and preserving human life | Reasonably formulate and communicate to the patient or his legal representative the need for emergency care and obtain consent for medical intervention | Be responsible for the correctness of determining the emergency condition, the degree of its severity and tactics of providing emergency medical care |
| 6. | Ability to carry out medical and evacuation measures | Know the stages of medical evacuation in an emergency, including in the field. Know the system of medical and evacuation support.  Know the principles of organizing and conducting medical and evacuation measures among the population and servicemen. Know the system of alerting the population in emergency situations.  medical evacuation | Be able to organize and carry out medical measures during the deployment of medical evacuation stages in emergency situations, including in the field | Establish contact with the relevant officials to ensure the conditions for the implementation of the stages of medical evacuation | Be responsible for the timely and high-quality performance of medical duties during the deployment of stages of medical evacuation in an emergency situation and martial law |
| 7. | Ability to carry out sanitary-  hygienic and preventive | Know the system of sanitary and hygienic and  preventive measures among | Be able to form population groups to carry them out  medical examination. Be able to make | Based on the results of the medical examination  th and health analysis | Be responsible for  timely and high-quality |

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|  | Activities | of the fixed contingent of the population. Know the principles of organizing the medical examination of different groups of the population: healthy people subject to dispensary supervision (newborns, children, adolescents, pregnant women, representatives of professions that must undergo a mandatory dispensary review) and groups of patients. Know the indicators of evaluation of the organization and effectiveness of medical examination. Know the methodological approaches to assess the state of the environment and the presence of factors that affect the state of health of the population in these conditions.  Know the principles of the organization of rational nutrition, water supply, mode of activity and rest, the formation of a favorable working environment, primary prevention of diseases and injuries; principles and  propaganda methods | medical examination plan for various groups. Have the skills to organize medical examination of the relevant contingents.  Have the skills to analyze the state of health of groups of the population based on the results of medical examination and the development of medical and preventive measures.  Be able to organize the promotion of a healthy lifestyle, primary prevention of diseases and injuries of the population | population, the state of production and the environment, know the principles of presenting analytical information to local governments and health care; heads of industrial enterprises, to carry out measures to eliminate the harmful effects on public health.  Use the local press for publications on measures to strengthen health and improve the environment, use radio, television, lectures and interviews | carrying out activities to assess the state of public health, improve the health and improve the health of certain contingents, improve the environment, promote a healthy lifestyle, primary prevention of diseases and injuries |

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| --- | --- | --- | --- | --- | --- |
|  |  | healthy way  life |  |  |  |
| 8. | Ability to plan and carry out preventive and anti-epidemic measures for infectious diseases | Know the principles and systems of planning and carrying out preventive and anti-epidemic measures for infectious diseases in typical conditions and in conditions of epidemic distress based on the results of the analysis, data of the examination of the focus of infectious diseases. methods of detection and early diagnosis of infectious diseases, organization of primary anti-epidemic measures in the focus of infectious diseases.  Diseases | Be able, on the basis of epidemiological analysis, using preventive and anti-epidemic methods, to plan measures to prevent the spread of infectious diseases. health, among the assigned population and in the foci of infectious diseases on the basis of epidemiological analysis by risk groups, risk area, time and risk factors | Inform the population, heads of relevant institutions and enterprises about the timely implementation of preventive measures and anti-epidemic measures, vaccinations, etc. | To be responsible for the qualitative analysis of indicators of infectious diseases of the population, the timely implementation of appropriate preventive and anti-epidemic measures |
| 9. | Ability to maintain medical records | Know the system of official document circulation in the professional work of a doctor, including modern computer information technologies | Be able to determine the source and location of the necessary information depending on its type.  received information | Obtain the necessary information from a specific source and , based on its analysis , form appropriate conclusions | Be responsible for the completeness and quality of the analysis of information and conclusions based on its analysis |
| 10. | Ability to  conducting | Know the methods  Epidemiological | Own  Standard | Formulate  findings on | Carry  Responsible |

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|  | epidemiological x and medical and statistical studies of public health; processing of state, social, economic and medical information | and medical and statistical studies; requirements for diagnostic tests that can be applied for screening studies; risk indicators and methods of their calculation. Know standard methods, including modern computer information technologies, processing of state, social and medical information | by methods of descriptive analytical, epidemiological and medical-statistical studies. Be able to evaluate in dynamics and when compared with the average data morbidity rates, including chronic non-communicable diseases, disability, mortality, integral health indicators. Be able to calculate and evaluate indicators of individual and population risk of occurrence and course of diseases.  Own the method of forming risk groups. Be able to determine the source of finding the necessary information depending on its type; ability to carry out statistical processing of material and analysis of the information received | state of health of the population on the basis of data from epidemiological and medical-statistical studies.  Interact with specialists of information and analytical departments to obtain data on the state of health of the population.  To form conclusions on the basis of analysis and statistical processing of the information received | the validity of conclusions about the state of health of the population; qualitative and timely execution of statistical processing and analysis of the information received |

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| 11. | Ability to assess the impact of the environment, socio-economic and biological determinants on the health of the individual, family, population | Know the methods for assessing public health; environmental factors that adversely affect public health; methods of statistical analysis and laboratory research, health assessment of certain contingents, environmental factors and methods for determining the relationship between them; measures to prevent the negative impact of environmental factors on public health. Know the socio-economic and biological determinants that affect public health; types and methods of prevention to prevent the negative impact of socio- economic factors on the health of the population and its individual groups.  risk, time and risk factors | Be able to assess the state of health of the population, the state of the environment and negative factors affecting health. Possess the methods of statistical and laboratory analysis of the state of health of different groups of the population.  Be able to form preventive measures based on data on the relationship between the state of the environment and the state of health of certain contingents of the population. factors on the health of the individual, family, population. Be able to plan preventive measures to prevent the negative impact of socio-economic factors on the health of the population and its individual groups | To form conclusions on the state of health of the population, on the basis of data on the relationship with environmental factors, socio-economic and biological determinants and make proposals to the relevant authorities and institutions for preventive measures.  Interact with sanitary and hygienic specialists and heads of enterprises, institutions and relevant departments for the protection of nature, the environment | To be responsible for timely conclusions on the state of health of the population on the basis of data on the negative impact of environmental factors, socio-economic and biological determinants, for the timely submission of proposals for carrying out appropriate preventive measures |

# Information volume of the discipline

90.0 hours of 3.0 ECTS credits are allotted for the study of the discipline.

**Module 1.**  **Hygiene and ecology**

**Content module 1.**

# Hygienic importance of the environment and methods of its hygienic research.

K o n k r e t n i c i l i

* - Realize the importance of hygiene knowledge for a doctor majoring in 221

"Dentistry" and the priority of prevention over medical medicine.

* - Master the laws and methodological foundations of hygiene, classification of methods of hygienic research, classification of environmental factors and the basic laws of their impact on the human body and population health.
* - Get acquainted with the basics of sanitary legislation, methods and means of preventive and current sanitary supervision.
* - To acquire knowledge about the importance of air, solar radiation, climate, weather as environmental factors .
* - Master the methods of using the positive properties of solar, including ultraviolet radiation for health purposes and for the prevention of diseases
* - Master the principles and methods of optimizing the microclimate of residential, hospital, health facilities , dental clinics and offices.
* - To acquire knowledge of methods and means of protection against chemical pollution of atmospheric air and air of premises for various purposes.
* - To acquire knowledge about the importance of water as an environmental factor.
* - Interpret the effects of drinking water on general and dental health. Identify risk factors for common diseases and major dental diseases associated with the use of poor quality drinking water.
* - Master the knowledge of the importance of soil as an environmental factor .

\*- Interpret the effects of soil, its natural composition and pollutants on general and dental health.

**Topic 1.**  **(lecture).** Introduction to hygiene and ecology. Hygienic value of the components of the biosphere, solar radiation, climate, weather. Bioethical aspects of the influence of the environment on humans.

The definition of hygiene , its purpose , tasks , content, connection with other sciences.

The importance of hygiene knowledge for the formation of professional consciousness and in the practice of dentists.

Health, definition of concepts: individual theoretical, individual factual, personal, public, indicators of public (population health).

Prevention, its types (public and personal, primary, secondary and tertiary).

The environment, its elements. The influence of natural factors and social conditions on the human body and public health. Bioethical aspects of the influence of the environment on humans.

Solar radiation and its physical bases. The effect of solar activity on living organisms of the Earth. Infrared radiation of the Sun, hygienic value, pathology caused by excessive action, its prevention. Visible radiation of the Sun, its spectrum, hygienic value. Ultraviolet radiation of the Sun, its spectrum on the border with the atmosphere and on the surface of the Earth.

Climate, weather, definition of the concept. Formation of climate, weather, their impact on human health.

**Topic 2.** Methods of hygienic research. Sanitary-epidemiological service of Ukraine, organization of preventive and current sanitary supervision. Methods for determining the intensity and prophylactic dose of ultraviolet radiation. The method of using ultraviolet radiation in order to prevent diseases and sanitate the air environment.

Laws of hygiene, basic laws, methods and methods of hygienic research. Classification of hygiene methods. Specific methods of hygienic research.

Sanitation as a branch of practical activity in the health care system.

Varieties of sanitation.

Sanitary-epidemiological service, its structure in Ukraine. Sanitary-epidemiological station as a leading institution of the sanitary-epidemiological service.

The concept of preventive and current state sanitary supervision.

Communication of sanitary-epidemiological and treatment-and-prophylactic services, their joint work in the field of preservation and strengthening of personal and public health.

The solar spectrum is on the border of the atmosphere and the surface of the Earth. The effect of solar activity on living organisms of the Earth.

Ultraviolet radiation of the Sun, its spectrum on the border with the atmosphere and on the surface of the Earth, biogenic and abiogenic action, devices for determining the intensity, use in medicine.

The effect of solar radiation on public health, including the development and condition of the dentition and jaw system of the body.

The concept of erythema and prophylactic dose. Solar "starvation".

Ultraviolet climate.

Artificial sources of ultraviolet radiation and their comparative hygienic characteristics.

**Topic 3 (SIRS).** Method of using ultraviolet radiation for air sanitation in separate offices of dental institutions, for disinfection of dental instruments and when using photopolymer lamps.

Artificial sources of ultraviolet radiation. Classification, their characteristics.

Basic principles and methods of using artificial sources of ultraviolet radiation in medical institutions

The use of artificial sources of ultraviolet radiation for air sanitation in separate offices of dental institutions; for disinfection of dental instruments; when using polymer lamps , etc.

**Topic 4.** Methods of determination and hygienic assessment of natural and artificial lighting of premises**.**

Visible radiation of the Sun, its spectrum, hygienic value, hygienic value of natural lighting of premises for various purposes (residential, educational, industrial, hospital and others).

The effect of lighting on vision functions, the state of the central nervous system, performance, especially dentists.

Methodology for assessing the natural lighting of premises.

External and internal factors that affect the level of natural illumination of the premises; geometric, lighting methods for assessing the natural lighting of premises.

Hygienic requirements for natural lighting of premises. Hygienic value of artificial lighting.

Methods of hygienic assessment of artificial lighting of premises for various purposes, including dental institutions, its indicators, evaluation of results.

Hygienic characteristics of sources of artificial lighting.

Types and systems of artificial lighting. Lighting fittings and its hygienic assessment.

**Topic 5.**  Microclimate and its hygienic value. Methods of determination and hygienic assessment of temperature, humidity, air velocity and radiation temperature. Factors that form it.

Hygienic value of the physical properties of air (temperature, humidity and air velocity).

Types and influence of uncomfortable (cooling and heating) microclimate on the heat exchange of a person and his health.

Physiological mechanisms of heat transfer and thermoregulation as factors of the thermostat of warm-blooded organisms: heat production and heat transfer.

Ways of heat transfer: through breathing, through the skin, with secretions.

Chemical mechanisms of heat production and physical mechanisms of heat transfer: radiation, conduction (convection and conduction), evaporation.

Physiological changes in the mechanisms of thermoregulation in the heating and cooling microclimate.

Method of determination and hygienic assessment of temperature, humidity, air velocity and radiation temperature.

Devices for measuring air temperature, radiation temperature; indicators of air humidity and rules for working with them.

Methods and indicators for assessing the complex effect of the microclimate on the human body (physical modeling, effectively equivalent temperatures, resulting temperatures, and others).

Bioethical problems of maintaining the microclimate of residential and public premises

**Topic 6 (SIRS).**  Methods of hygienic assessment of climate and weather conditions and their impact on human health. Sanitary protection and biosafety of atmospheric air.

The biosphere, its structure, functional connections, the place of man in the biosphere.

Atmosphere, its structure and properties. Natural chemical composition of atmospheric air and hygienic value of its individual components.

Atmospheric pressure and its effect on the body.

Air pollution , main sources, types and consequences.

The impact of polluted air on the health and living conditions of the population.

Sanitary protection and biosafety of atmospheric air.

Climate, definition of the concept. Climate-forming and climate-characterizing factors and indicators. General and applied (medical, construction) climate classifications. Climate, health and performance. Acclimatization as a complex social and hygienic process.

Weather, definition of the concept. Weather formation. Weather-forming and weather-characterizing factors. Types of atmospheric circulation, the main thermobaric formations: anticyclones, cyclones, atmospheric fronts. Direct and indirect impact of weather on human health. Heliometeotropic reactions of a healthy and sick person.

**Topic 7.** Hygienic value of the air environment of premises, its hygienic assessment (determination of CO 2 concentration, air oxidizability,

dust, chemical and bacteriological contaminants).

The main sources of air pollution in the premises of municipal, public, industrial purposes. Criteria and indicators of air pollution (physical, chemical, bacteriological).

Sources of air pollution of residential premises and individual premises of medical institutions (dental offices, dental and technical laboratories, etc.).

Air oxidation and carbon dioxide as sensitive indirect indicators of human air pollution.

Chemical factors of the production environment. Carcinogenic, mutagenic, allergenic factors in production, prevention of their harmful effects.

Production dust, its classification, prevention of harmful effects. Production toxicology. Complex, combined, combined action of occupational hazards.

Biological factors in production, prevention of their adverse effects.

Systems for enhancing the movement of air in the premises. Natural and artificial ventilation. Hygienic value of ventilation of premises. Types, classification of ventilation of premises for domestic and industrial purposes.

Ventilation efficiency indicators . The required and actual volume and multiplicity of ventilation, methods for their determination.

Air conditioning. Principles of construction of air conditioners.

**Topic 8 (lecture).** Hygiene of populated areas, its bioethical aspects. Hygiene of water and water supply. Impact of drinking water quality on general and dental health of the population.

Living conditions in settlements and human health. Features of the formation of the urban environment and hygienic aspects of life in a modern city. Urbanization as a social and hygienic problem.

Planning and development of the territory of the settlement .

Water as an environmental factor, hygienic value.

Water consumption rates depending on the level of communal and sanitary and technical improvement of the settlement, living conditions and human activities. Physiological, household, endemic, epidemiological, toxicological, balneological, economic roles of water.

Sources of water supply, their comparative hygienic characteristics.

Impact of drinking water quality on general and dental health of the population.

State standard of water quality of sources of centralized economic and drinking water supply. Scientific substantiation of standards for the quality of drinking water of centralized water supply systems. Methods of water purification: basic (lighting, discoloration and disinfection) and special (fluoridation, defluorination, deferrization, softening, demineralization, deodorization and others).

Sanitary supervision of water supply to populated cities. Sanitary zones

protection of sources of centralized water supply systems.

**Theme. 9**. Methods of hygienic assessment of drinking water. Endemic fluorosis and caries as a hygienic problem, their prevention.

General hygienic requirements for the quality of drinking water, its organoleptic properties, chemical composition, epidemic safety.

The influence of the organoleptic properties of drinking water on the level of water consumption and the state of sanitary culture of the population.

Water as an etiological factor of non-infectious diseases, including disorders of the formation and condition of the dentition .

The role of water and water supply conditions in the spread of infectious diseases. Infectious diseases, pathogens that are transmitted by water (cholera, typhoid fever, dysentery, etc.).

The role of sanitary-indicative microorganisms in assessing the quality of drinking water by bacterial composition.

Caries and endemic fluorosis as a hygienic problem, their prevention.

Hygienic value of fluoride, the effect of insufficient content of it and some other trace elements in water on the occurrence of caries, endemic goiter and other diseases.

The danger of excessive content in water of various chemicals of natural origin and chemical compounds of anthropogenic origin for human health.

Endemic fluorosis, its stages, water-nitrate methemoglobinemia. Method for determining the fluorine content in drinking water, evaluation of the data obtained.

Organization and joint study by hygienists and dentists of the effectiveness of water fluoridation for the prevention of dental caries, defluorination of water for the prevention of dental fluorosis and adjustment of the dose of fluoride in it.

**Topic 10 (CIRS).** Hygienic assessment of the sanitary condition of the soil. Modern hygienic and bioethical problems of cleaning settlements.

Soil, definition of the concept. Mechanical structure, physical properties and chemical composition of the soil. Hygienic assessment of various types of soils. Processes and indicators of self-cleaning of the soil. Assessment of the sanitary condition of the soil by chemical and biological indicators.

Sources of soil pollution in modern conditions of industrialization and chemicalization of the national economy. The impact of soil pollution on the health and sanitary conditions of life of the population.

Principles of cleaning inhabited cities. Systems and facilities for temporary storage, disposal, disposal and disposal of solid waste. modern methods of neutralization and disposal of solid garbage (plants for their processing

and disposal, improved landfills, composting methods, biothermal chambers and others).

Liquid waste, its classification and sanitary and epidemic value.

Canalization of populated cities, its importance in the prevention of infectious diseases.

Methods and facilities for purification and disinfection of liquid domestic wastewater (large populated cities, individual facilities, in particular therapeutic and preventive and sanatorium-improving).

# Content module 2.

**Hygienic basics** of  **nutrition, healthy development** of  **children and adolescents.**

K o n k r e t n i c i l i

* - To acquire knowledge about the role of nutrition as an important factor in the processes of growth, development of the body, prevention of aging, preservation and strengthening of general and dental health, preservation of working capacity, resistance to adverse environmental factors.
* " Interpret the effects of nutrition on general and dental health ."
* - To master the knowledge of a balanced diet, its basic principles, organization and control over it.
* - To acquire knowledge about the role of individual nutrients, the composition and properties of food.
* - Determine, assess the nutritional status of a person, diagnose alimentary diseases, determine the causes of status disorders, establish a connection with dental diseases.
* - Recognize infectious diseases of alimentary origin and food poisoning, interpret the functional duties of a general doctor in their investigation and prevention.
* - Interpret the age and sex characteristics of the structure and physiological state of the body.
* - Determine the influence of environmental factors and social conditions on the development and health of the child's body.
* - To master knowledge about the laws of physical and psychophysiological development of children and adolescents, to be able to organize health-improving dental activities, regarding the conditions of upbringing, education of children in the family, in children's groups.
* - Master the methods of comprehensive assessment of the state of general and dental health of children and adolescents and the factors affecting it, methods of prevention of childhood diseases of infectious and non-infectious etiology.
* - Get acquainted with the hygienic requirements for planning, equipment and mode of operation of preschool and educational institutions of various profiles .

**Topic 11 (lecture).** Nutrition and public health. Basics of a balanced diet. Impact of nutrition on general and dental health of the population. Biosafety of nutrition.

Nutrition as a factor in general and dental health of the population. The actual state of nutrition of the population of Ukraine.

Theories of nutrition, food functions and types of nutrition.

Rational nutrition, its principles and importance for the formation of the dentition , dental mineralization and prevention of dental diseases.

The concept of alimentary diseases, their classification, causes , prevalence in Ukraine.

Hygienic value of nutrients (proteins, carbohydrates, minerals, vitamins), food in the prevention of dental diseases. Food cariogenic factors.

Methods for determining human energy consumption and needs for basic nutrients. Biosafety of food (epidemiological safety and sanitary quality of food).

**Topic 12 (SIRS).**  Hygienic problems of nutrition in conditions of polluted environment and hazardous industries.

Contaminants in food products (nitrite, pesticides and fertilizer residues, heavy metals, radionuclides, etc. in food raw materials and food products).

The concept of products for therapeutic and prophylactic purposes.

Classification.

The concept of food additives, their classification, purpose and application in the food industry.

**Topic 13.** Physiological and hygienic value of the main nutrients of the diet. Composition and properties of food products.

Physiological and hygienic role of proteins. Scientific substantiation of protein needs. Hygienic characteristics of proteins of animal and vegetable origin. Protein quality indicators. Sources of proteins and essential amino acids.

Physiological and hygienic role of fats. Indicators of the quality of fats of various origins. Physiological and hygienic role of unsaturated fatty acids, phospholipids, sterols. Scientific substantiation of the body's needs for fats. Sources of fat. Culinary fats. "Overheated fats."

Physiological and hygienic role of carbohydrates. Scientific substantiation of the body's need for simple and complex carbohydrates. Indicators of the quality of carbohydrates. Sources of carbohydrates. The concept of refined and "protected" carbohydrates.

Vitamins, mineral salts, flavors, their physiological and hygienic role,

importance in the prevention and treatment of dental diseases. Sources of vitamins and minerals. Micro- and macroelementoses, their manifestations and prevention.

Hygienic and nutritional characteristics of basic foods. Milk and dairy products. Meat and meat products. Fish, fish products, sea products. Eggs, fruits, berries, grains, legumes and oilseeds. Diseases associated with the use of poor quality products, their classification.

**Topic 14.** The method of calculating the energy consumption of a person and his needs for nutrients.

Methods for studying energy consumption. Units of energy consumption. Updated WHO recommendations on the calculation of energy costs (according to the order of the Ministry of Health No 16 of 14.01.2013).

Individual features of energy metabolism. The concept of the value of the main exchange (VOO).

The method of calculating energy consumption by the timing-tabular method.

Recommended values of the physiological need for energy. The concept of the coefficient of physical activity (CFA), the main groups of physical activity according to CFA.

"Norms of physiological needs of the population of Ukraine in basic nutrients and energy".

Principles of nutrition of people of different age groups, professions, athletes.

**Topic 15.** Methods for determining, assessing the nutritional status of a person and the adequacy of food on the menu layout.

The concept of the nutritional status of the body, methods of its determination and evaluation. Classification of nutritional status by body mass index.

Indicators, signs that characterize the violation of protein, fat, carbohydrate, vitamin and mineral statuses. Methods for determining and criteria for assessing the nutritional status of the body.

Methods for studying the actual nutrition of the population on the menu layout.

Norms of physiological needs of the population of Ukraine in basic nutrients and energy".

Methods for assessing the adequacy of nutrition, its rational correction in accordance with individual physiological needs for energy and nutrients (proteins, fats, carbohydrates, minerals, vitamins).

# Topic 16. Methods of investigation and prevention of food poisoning.

Food poisoning, definition of the concept, classification.

Food poisoning of microbial nature, etiology, pathogenesis, prevention.

Mycotoxicosis, their etiology, diagnosis, clinic, prevention.

Food poisoning of non-microbial nature, products that are toxic in nature, products that have acquired toxic properties under storage conditions, products contaminated with toxic substances (xenobiotics) – heavy metals, pesticides and others.

Food poisoning of unknown etiology, hypotheses of their occurrence, features of the clinic.

Prevention of food poisoning of microbial, non-microbial nature and unexplained etiology, duties of the doctor in the investigation of food poisoning and in their prevention. Instructive, methodological and legislative documents used in the investigation of food poisoning and their prevention.

The role of the dentist in the prevention of food poisoning.

**Topic 17 (SIRS).** Alimentary prevention of major dental diseases.

The relationship of nutrition with the emergence and development of major dental diseases.

Nutritional composition of the diet and its possible impact on the development of dental diseases.

Hygienic value of nutrients (proteins, carbohydrates, minerals, vitamins), food in the prevention of dental diseases. Prevention.

Rationalization of food use in accordance with age, professional, individual characteristics.

The concept of dietary supplements. Dietary nutrition in the treatment of dental diseases.

**Topic 18.** Research methods and assessment of the health of children and adolescents under the influence of environmental factors. Methods of hygienic assessment of planning, equipping and maintenance of educational preschool institutions and schools.

Environmental factors and conditions that influence the formation of the health of children and adolescents Basic health criteria.

Dental health of children and adolescents. Distribution of children and adolescents by health groups .

Physical development as a leading indicator of health. Key indicators and regional standards of physical development.

Methods of hygienic assessment of the physical development of the individual and the children's team. Modern ideas about acceleration. The concept of biological and calendar age.

School maturity. The concept of the mode of the day, their types. Activities.

Hygiene of training sessions at school. Organization of educational

process in educational institutions of a new type.

Hygiene of physical education of children and adolescents. Prevention of hypokinesia.

The main types, forms and means of physical culture.

Hygienic requirements for planning, arrangement , equipment, sanitary and technical improvement of the school and class.

The main dimensions of educational furniture, their hygienic assessment.

Educational furniture, their type, number of seats, the material from which they are made, color, condition of surfaces, corners and edges, sanitary condition.

Methods of hygienic assessment of the classroom (school class).

# Content module 3.

**Hygienic bases of activity of medical institutions, labor protection in medicine**.

K o n k r e t n i c i l i:

* + - To acquire knowledge about the medical and preventive duties of a dentist, about his work in medical and social expert commissions (LSEC), medical and labor expert commissions (LTEC), medical control commissions (LCC).
  + - Analyze sanitary legislation in the field of hygiene and labor protection, draw conclusions based on accounting and reporting documentation .
  + - To learn the classification of dangerous and harmful factors of the labor process and the working environment, to be able to recognize the health disorders of workers caused by them.
  + - To learn the dangerous and harmful occupational factors of dental specialties, methods and means of preventing their adverse effects.
  + - To acquire knowledge about the causes of occupational diseases and poisoning, methods and means of their recognition, investigation and prevention.
  + - To justify the implementation of preventive measures in labor protection in accordance with the basics of the current legislation of Ukraine.
  + - To acquire knowledge of hygienic requirements for the internal planning of hospitals, in particular the dental profile, institutions - emergency departments, ward sections, operating rooms, manipulation rooms, dental offices, laboratory and auxiliary rooms, etc.
  + - Be able to organize the sanitary regime of operation of dental institutions, other hospitals and health facilities , measures to prevent the occurrence and spread of nosocomial infections.
  + - To possess the principles of medical ethics and deontology, to prevent the occurrence of iatrogenic, to promote the socio-psychological adaptation of patients to the hospital environment, to use the methods and means of psychohygiene, psychoprophylaxis.
  + - Plan activities to maintain a healthy lifestyle, personal hygiene and implement them in health care practice .
  + - Justify the need, methods and means of hygienic care of the oral cavity as a means of preventing dental diseases.
  + - To acquire knowledge about the biological effect and danger to human health of ionizing factors of natural, man-made origin and methods and means of protection against them at work, in medicine, for the population as a whole.
  + - Use methods and means of radiation control when working with sources of ionizing radiation at work and in medicine on the basis of "Radiation Safety Standards (NBR-97)" and other legislative documents.
  + - Be able to organize and provide anti-radiation protection of personnel and patients in radiological and radiological units of medical institutions.

**Topic 19 (lecture).** Hygienic requirements for medical institutions, incl. dental profile. Occupational hygiene of dentists, dental technicians. Biosafety and bioethics of the work of dentists.

The modern structure of medical institutions, trends in hospital construction. Creation of proper hygienic conditions in the hospital (increasing the efficiency of the treatment process, preventing nosocomial infections, optimizing the working conditions of staff).

The leading factors determining the creation of hygienic conditions in the hospital: the choice of a site for its construction, the requirements for it (size, shape, relief , soil condition, level of groundwater standing, etc.), the hospital construction system (decentralized, centralized , mixed, centralized-block), planning of the hospital area (zoning, construction, landscaping, schedules of movement of patients, staff, transport means).

Planning and internal arrangement of hospital buildings of the hospital (central emergency department, ward section as the main structural and functional element of the hospital, wards). Features of planning and operation of infectious diseases hospitals, departments, ward sections, wards.

Polyclinic as the main structural and functional element of outpatient care for patients.

Occupational hygiene of medical workers of dental institutions. The specifics of the influence of harmful and dangerous factors of the working environment on the dentist. Prevention of the harmful effects of production factors on the body of workers in adverse production conditions.

**Topic 20.** Hygienic characteristics of harmful and dangerous factors of the working environment, their effects on the body, preventive measures .

Work and work, the definition of concepts. The socio-biological role of labor. Physiology of labor. Changes in physiological processes in the human body during

Work. Fatigue and overwork. Prevention of overwork. Hygiene of mental work.

Factors of the production environment and the labor process.

Harmful factors of the production process associated with overstrain of individual organs and systems and improper organization of the labor process.

Physical factors of the production environment in the dentist's work (noise, vibration, ultraviolet radiation, X-rays, ultrasound, ultrahigh and ultrahigh frequencies), prevention of harmful effects.

Chemical factors of the production environment in the work of the dentist and dental technician (mercury, lead, polymeric materials, etc.). Diseases caused by them, preventive measures.

Biological factors, bacterial air pollution and tools in the dental hospital, prevention of their harmful effects.

Measures to improve the working conditions of medical workers.

Personal protective equipment against harmful and dangerous factors of the working environment (in the offices of therapeutic dentistry, hospitals of surgical and orthopedic dentistry, dental and technical laboratories).

Prevention of the harmful effects of production factors on the body, the spread of dental diseases on the body of workers in adverse production conditions.

**Topic 21 (SIRS**). Professional harmful factors and prevention of their actions on employees of dental institutions.

Occupational disease, harmful product factors – definition of concepts, classification.

Hygienic features of working conditions and health of dentists and dental technicians with the combined, complex and combined effects of harmful substances on their bodies.

Measures to improve the working conditions of medical workers of dental institutions.

Recognition and investigation of cases of occupational poisoning and diseases of dentists, regulatory and instructive documentation.

Implementation of preventive measures for occupational diseases and poisoning, evaluation of their effectiveness.

**Topic 22.** Hygienic requirements for the placement, equipment, maintenance and operation of individual structural units of dental institutions.

Dental clinic. Hygienic requirements for the arrangement and operation of departments of therapeutic, surgical and orthopedic dentistry and dental laboratory.

Sanitary and technical improvement of the hospital and polyclinic (availability of water supply, hot water supply, sewerage, ventilation, electrical supply, etc.).

Hygienic bases of the organization of the sanitary and anti-epidemic regime in

dental medical institutions .

Hygienic requirements for dental equipment, instruments, rules for its maintenance and disinfection.

Intra-hospital infections, conditions leading to their occurrence and their negative consequences. Methods and means of prevention.

Methods of objective control over compliance with hygienic conditions in dental institutions.

**Topic 23 (SIRS).** Hygienic bases of the organization of the sanitary and anti-epidemic regime in dental medical institutions .

The concept of nosocomial infections. Ways of its transmission.

The importance of the optimal hygienic regime of medical institutions to increase the effectiveness of treatment of patients, the prevention of nosocomial infections, the creation of safe working conditions for staff and their improvement.

Prevention of nosocomial infections in dental institutions .

Features of the organization of disinfection and sterilization regime in dental institutions.

Laboratory and instrumental supervision of compliance with sanitary, hygienic and anti-epidemic requirements for the maintenance and operation of dental institutions.

**Topic 24.** Hygienic assessment of patients' stay in hospitals and preventive institutions and occupational health of medical workers, including dental institutions.

Modern hospital building systems (centralized, block, decentralized, pavilion, mixed), their comparative hygienic assessment, prospects for improvement. Hygienic requirements for land plots for the placement of hospitals.

Hygienic requirements for the main indicators of development, functional zoning of the territory.

Hygienic requirements for planning, equipment and mode of operation of departments: emergency (for somatic, infectious, children's departments), therapeutic, surgical, infectious profile, children's departments, specialized hospitals ( psychoneurological, phthisiatric and other), dental institutions.

Ward section, its composition, hospital ward, options for its planning and equipment for somatic patients, infectious, mental, intensive care, dental patients .

Hygienic requirements for the area, cubic capacity of chambers, their scientific substantiation. Requirements for the orientation of the windows of the chambers, microclimate, air environment,

lighting, heating , ventilation, noise mode.

Prevention of food poisoning and infections in the hospital.

Organization and means of objective control over the health of staff and their compliance with the requirements of personal hygiene.

**Topic 25 (lecture).** Radiation hygiene. Ionizing radiation as an environmental factor and industrial hazard. anti-radiation protection in medical institutions, including dental profile. Bioethical aspects of the influence of the radiation factor on humans.

Ionizing radiation as an environmental factor, their sources: natural, man-made-enhanced of natural origin, industrial.

Classification of ionizing radiation by nature and origin.

Qualitative and quantitative characteristics of ionizing radiations and radionuclides, their units.

Biological effect of ionizing radiation. Modern ideas about its mechanisms, the conditions on which it depends, its features.

Deterministic and stochastic effects of human exposure, the conditions of their occurrence, the use of this knowledge in the practical activities of doctors.

Radiation safety of the population in its places of residence, factors that determine it.

Patterns of formation of radiation exposure of the population, its hygienic assessment and ways to reduce.

Legislative and regulatory documents.

Bioethical aspects of the influence of the radiation factor on humans.

**Topic 26.** Methods of monitoring the radiation protection of personnel and radiation safety of patients in the use of radionuclides and other sources of ionizing radiation in medical institutions, in particular in the X-ray department (office) dental clinic.

Ionizing radiation as a production hazard. The main radiation doses, their characteristics.

The concept of radiation protection of personnel and radiation safety of patients in the use of radionuclides and other sources of ionizing radiation.

Radiation safety of patients and staff during X-ray examinations in dentistry.

Radiation control over the production environment and individual doses of personnel exposure , medical control over the health of workers.

Principles of radiation hazard.

Medical X-ray and radiological diagnostic procedures for the population and employees of dental institutions as the main components of radiation exposure of people, their hygienic assessment and special measures to reduce the level of their contribution to the total radiation dose.

Conditions that determine the radiation hazard when working with radionuclides and other sources of ionizing radiation.

The concept of closed and open sources of ionizing radiation, features of radiation hazard and radiation protection when working with them.

Anti-radiation protection of workers with radionuclides and other sources of ionizing radiation as a hygienic problem, its essence and basic principles of implementation:

Hygienic regulation of ionizing radiation Radiation Standards of Ukraine, their importance and main provisions.

State regulatory document defining the basic requirements for the implementation of radiation protection in the conditions of practical activity.

Mandatory personal radiation protection equipment.

# Topic 27. Final control of mastering module 1 – Hygiene and ecology.

* 1. **The structure of the discipline "Hygiene and Ecology"**

The types of educational activities of students, according to the curriculum, are: a) lectures; b) practical classes; c) independent work of students. Thematic plans of lectures, practical classes and independent work provide the study of all topics that make up the two modules.

Lectures aim to systematize the basics of scientific knowledge in the discipline, to reveal the state and prospects of development of medical science, to focus on the most complex and relevant issues. Preference is given to problematic, review and conceptual-analytical lectures. A lecture becomes a process during which students form knowledge, provide a motivational component and a general-oriented stage of mastering scientific knowledge. The role of lectures in the quality management of independent work is increasing. Lectures are given by the management of the department, professors and associate professors.

Practical classes are a type of training sessions in which scientific and pedagogical workers, together with students, conduct a detailed consideration of individual theoretical provisions of the discipline and form the skills and abilities of their practical application by individual performance by students of appropriately formulated tasks. The duration of one practical lesson according to the curriculum and taking into account the standards of the weekly classroom load of students is at least 2.0 academic hours. practical tasks.

Independent work of the student is the main way of mastering educational material in the time free from compulsory training sessions.

Independent work of students is provided by a complex of educational and methodological tools provided for the study of the discipline: textbooks, textbooks, materials of departmental lectures, etc. Methodical developments for the independent work of students provide for the possibility of self-control by students. For independent work, in addition, appropriate scientific and professional literature is recommended .

An individual task is a form of organization of training in order to deepen, summarize and consolidate the knowledge that students receive in the learning process, as well as to apply this knowledge in practice. Types of individual work can be: writing essays or a printed presentation with protection in a practical lesson, participation in scientific and practical conferences, olympiads, research work, etc.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Titles of content modules and topics | Number of hours | | | | |
| Just | full-time | | | |
| including | | | |
| l | See | Indus. | srs |
| 1 | 2 | 3 | 4 | 5 | 6 |
| **Module 1 "Hygiene and ecology"** | | | | | |
| **Content module 1.**  **Hygienic importance of the environment and methods of its hygienic research.** | | | | | |
| Topic 1. Introduction to hygiene and ecology. Hygienic value of the components of the biosphere, solar radiation, climate, weather. Bioethical aspects of exposure  environment per person | 3 | 2 | - | - | 1 |
| Topic 2. Methods of hygienic research. Methods for determining the intensity and prophylactic dose of ultraviolet radiation.  diseases and rehabilitation of the air environment. | 4 | - | 2 | - | 2 |
| Topic 3. Method of using ultraviolet radiation for air sanitation in separate offices of dental institutions, for disinfection of dental instruments and when using polymeric  Lamps. | 1 | - | - | - | 1 |
| Topic 4. Method of determination and hygienic assessment  natural and artificial lighting of premises | 4 | - | 2 | - | 2 |
| Topic 5. Microclimate and its hygienic value.  Methods of determination and hygienic assessment | 4 | - | 2 | - | 2 |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| temperature, humidity, air velocity  and radiation temperature. |  |  |  |  |  |
| Topic 6. Methods of hygienic assessment of climate and weather conditions and their impact on human health. Sanitary protection and biosafety of atmospheric  air. | 1 | - | - | - | 1 |
| Topic 7. Hygienic value of the air environment of premises, its hygienic assessment (determination of CO2 concentration, air oxidation, dust, chemical and bacteriological  pollution). | 3 | - | 2 | - | 1 |
| Topic 8. Hygiene of populated areas, its bioethical aspects. Hygiene of water and water supply. Impact of drinking water quality on general and dental  public health. | 3 | 2 |  | - | 1 |
| Topic 9. Methods of hygienic assessment of drinking water. Endemic fluorosis and caries as hygienic  problem, their prevention. | 4 | - | 2 | - | 2 |
| Topic 10. Hygienic assessment of sanitary condition  Soil. Modern hygienic and bioethical problems of cleaning settlements . | 1 | - |  | - | 1 |
| Total content module 1 | **28** | **4** | **10** | **-** | **14** |
| **Content module 2.**  **Hygienic basics** of  **nutrition,**  **healthy development** of  **children and adolescents.** | | | | | |
| Topic 11. Nutrition and public health. Basics of a balanced diet. Effects of nutrition on general and dental  public health. Biosafety of food. | 3 | 2 | - | - | 1 |
| Topic 12. Hygienic problems of nutrition in a polluted environment  and hazardous industries . | 1 | - | - | - | 1 |
| Topic 13. Physiological and hygienic value of the main  nutrients of the diet . Composition and properties of food products. | 5 | - | 2 | - | 3 |
| Topic 14. The method of calculating the energy consumption of a person and his needs for nutrients. Norms of physiological needs for basic food  substances and energy. | 5 | - | 2 | - | 3 |
| Topic 15. Methods for determining, assessing the nutritional status of a person and the adequacy of nutrition by  menu-layout. | 4 | - | 2 | - | 2 |
| Topic 16. Methods of investigation and  prevention of food poisoning. | 4 | - | 2 | - | 2 |
| Topic 17 Alimentary Prevention Major | 2 | - | - | - | 2 |

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| --- | --- | --- | --- | --- | --- |
| dental diseases |  |  |  |  |  |
| Topic 18. Research methods and assessment of the health of children and adolescents under the influence of environmental factors. Methods of hygienic assessment of planning, equipping and maintenance of educational preschool  institutions and schools. | 4 | - | 2 | - | 2 |
| Total content module 2 | **28** | **2** | **10** | **-** | **16** |
| **Content module 3.**  **Hygienic bases of activity of medical institutions, labor protection in medicine**. | | | | | |
| Topic 19. Hygienic requirements for medical institutions, including dental profile. Occupational hygiene of dentists, dental technicians. Biosafety and bioethics of labor  dentists. | 4 | 2 | - | - | 2 |
| Topic 20. Hygienic characteristics of harmful and  hazardous factors of the working environment, their effects on the body, preventive measures . | 4 | - | 2 | - | 2 |
| Topic 21. Features of the combined, complex and combined effect of harmful substances on the body of a dentist, dental technician. methods of investigating cases of occupational diseases and poisoning in the work of a doctor-  Dentist. | 2 | - | - | - | 2 |
| Topic 22. Hygienic requirements for the placement, equipment, maintenance and operation of individual structural units of dental  Institutions. | 4 | - | 2 | - | 2 |
| Topic 23. Hygienic bases of the organization of sanitary and anti-epidemic regime in dental  medical institutions . | 2 | - | - | - | 2 |
| Topic 24. Hygienic assessment of patients' stay in hospitals and preventive institutions and occupational health of medical workers, including  dental institutions. | 4 | - | 2 | - | 2 |
| Topic 25. Radiation hygiene. Ionizing radiation as an environmental factor and production hazard. Radiation protection in medical institutions, incl. dental profile. Bioethical  aspects of the influence of the radiation factor on humans. | 3 | 2 |  |  | 1 |
| Topic 26. Methods of monitoring radiation protection of personnel and radiation safety  patients with radionuclides and | 3 | - | 2 | - | 1 |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| other sources of ionizing radiation in medical institutions , in particular in  X-ray department (office) of the dental clinic. |  |  |  |  |  |
| Total content module 3 | **26** | **4** | **8** |  | **14** |
| **INDZ** | **4** |  |  | **4** |  |
| Preparation for the final modular  Control | **2** |  |  |  | **2** |
| Final modular control | **2** |  | **2** |  |  |
| **Total for Module 1** | **90** | **10** | **30** | **4** | **46** |

# Topics of lectures

|  |  |  |
| --- | --- | --- |
| **No p/n** | **Lecture topic** | **Number of hours** |
| 1. | Introduction to hygiene and ecology. Hygienic value of the components of the biosphere, solar radiation, climate, weather. Bioethical  aspects of the impact of the environment on humans. | 2 |
| 2. | Hygiene of populated places, its bioethical aspects. Water hygiene and  Water supply. Impact of drinking water quality on general and dental health of the population. | 2 |
| 3. | Nutrition and public health. Basics of a balanced diet. Effects of nutrition on general and dental  public health. Biosafety of food. | 2 |
| 4. | Hygienic requirements for medical institutions, incl. dental profile. Occupational health of doctors-  dentists, dental technicians. Biosafety and bioethics of the work of dentists. | 2 |
| 5. | Radiation hygiene. Ionizing radiation as an environmental factor and production hazard. Radiation protection in medical institutions, incl.  dental profile. Bioethical aspects of the influence of the radiation factor on humans. | 2 |
| **TOGETHER:** | | **10** |

**6. Topics of seminars**

Conducting seminars is not provided by the curriculum

# Topics of practical classes

|  |  |  |
| --- | --- | --- |
| **№** | **The topic of the practical lesson** | **Keel-**  **Bone of hours** |
| 1. | Methods of hygienic research. Biotic aspects of the impact of the environment on humans. Methods for determining the intensity and prophylactic dose of ultraviolet radiation. Method of use  ultraviolet radiation in order to prevent diseases and sanitate the air environment. | 2,0 |
| 2. | Methods of determination and hygienic assessment of natural and artificial  room lighting. | 2,0 |
| 3. | Microclimate and its hygienic value . Methods of determination and hygienic assessment of temperature, humidity, air velocity and  radiation temperature. | 2,0 |
| 4. | Hygienic value of the air environment of premises, its hygienic  assessment (determination of CO2 concentration, air oxidation, dust, chemical and bacteriological contaminants). | 2,0 |
| 5. | Methods of hygienic assessment of drinking water. Endemic fluorosis and caries  as a hygienic problem, their prevention. | 2,0 |
| 6. | The method of calculating the energy consumption of a person and his needs for nutrients.  Norms of physiological needs for basic nutrients and energy. | 2,0 |
| 7. | Physiological and hygienic value of the main nutrients of the diet .  Composition and properties of food products. | 2,0 |
| 8. | Methods for determining, assessing the nutritional status of a person and adequacy  meals on the menu layout. | 2,0 |
| 9. | Methods of investigation and prevention of food poisoning. | 2,0 |
| 10. | Research methods and assessment of the health of children and adolescents under the influence of environmental factors. Methods of hygienic assessment of planning, equipping and maintenance of educational preschool institutions and schools. | 2,0 |
| 11. | Hygienic characteristics of harmful and dangerous factors  production environment, their effects on the body, preventive measures . | 2,0 |
| 12. | Hygienic requirements for the placement, equipment, maintenance and operation of individual structural units of dental institutions. | 2,0 |
| 13. | Hygienic assessment of patients' stay in hospitals and preventive institutions and occupational health of medical workers, including  dental institutions. | 2,0 |
| 14. | Methods of monitoring the radiation protection of personnel and radiation safety of patients in the use of radionuclides and other sources of ionizing radiation in medical institutions, in particular in  X-ray department (office) of the dental clinic. | 2,0 |
| 15. | **Final control**  **mastering module 1 – "Hygiene and ecology".** | 2,0 |
| **TOTAL :** | | **30** |

1. **Topics of laboratory classes**

Laboratory classes are not provided for in the curriculum

# Independent work

|  |  |  |  |
| --- | --- | --- | --- |
| №  s.p. | Theme | Number  Hours | Type of control |
| 1. | Preparation for practical classes – theoretical training and practical skills | 1 | Current control on practical  Classes |
| 2. | SRS. | - | Current control during practical classes and modular  Control |
| 2.1. | *Method of using ultraviolet radiation for air sanitation in separate offices of dental institutions, for disinfection of dental instruments*  *and when using photopolymer lamps.* | 1 | Final modular control |
| 2.2. | *Methods of hygienic assessment* of  *climate and weather conditions and their impact on* human  *health.*  *Sanitary protection*  *and biosafety of atmospheric air.* | 1 | -//- |
| 2.3. | *Hygienic assessment of the sanitary condition* of  *the soil.*  *Modern hygienic and bioethical problems of cleaning inhabited*  *Places.* | 1 | -//- |
| 2.4. | *Hygienic problems* of  *nutrition in conditions of polluted environment and harmful*  *Productions.* | 1 | -//- |
| 2.5. | *Alimentary prevention of the main*  *dental diseases* | 1 | -//- |
| 2.6. | *Features of the combined, complex and combined effect* of  *harmful substances on the body of a dentist, dental technician.*  *Methodology*  *investigation of cases of occupational diseases and poisoning in the work of a dentist* | 1 | -//- |
| 2.7. | *Hygienic bases of* the  *organization of sanitary-*  *anti-epidemic regime in dental medical institutions.* | 1 | -//- |
| 3. | Individual educational and research tasks (INDZ) | 1 | Current control during practical classes  and modular control |
| 4. | Preparation for the final modular controls | 1 | Final  Modular control |
|  | **Together** | **10** |  |

1. **Individual tasks**

One of the most important ways to optimize and improve the quality of practical training of graduates of medical institutions is the implementation of individual educational and research tasks (INDZ).

The main purpose of the INDZ:

* deeper comprehension and assimilation of theoretical and practical knowledge, skills and abilities in the discipline (mainly in terms of interdepartmental integration of their final level in the relevant specialty);
* psychological and practical preparation of students for continuous professional development, mastering the basic techniques of scientific and bibliographic analysis, generalization and design of various materials for reports, references, articles, etc.

Given the importance of forming a preventive orientation of medical thinking and the subsequent implementation in the practical activities of a specialist in professional qualification "Dentist", IDNZ in the process of studying the course of hygiene and ecology is a crucial element of the educational process in this discipline.

An individual educational and research task is carried out independently or as part of working groups (2-3 students) when consulted by a teacher during the study of the discipline.

The main forms of INDZ in the discipline "Hygiene and Ecology":

* bibliographic search and study of literature on a particular topic, its generalization, drawing up an overview of the current state of the problem (writing an abstract work);
* speech with a report at a meeting of the circle of the department, student scientific conference, etc.;
* participation in the creation of educational and demonstration manuals (stands, albums, tables, visual materials) and other technical means of training;
* mastering the latest research methods, devices, performance of educational and practical student works;
* implementation of the thematic task of a research nature (participation in experimental scientific research of the department).

# Tasks for independent work

1. Preparation for practical classes.
2. Mastering topics that are not included in the classroom plan.
3. Performance of individual educational and research tasks (INDZ).

# Teaching methods

In the educational process, when teaching the discipline "Hygiene and Ecology", traditional teaching methods are used: verbal methods; visual;

Practical. Methods of educational and cognitive activity: explanatory and illustrative method, reproductive method, method of problem presentation, partial-search or heuristic method, research method.

Methods of stimulation and motivation of educational and cognitive activity : methods of stimulation and motivation of learning, methods of control and self-control as teaching methods.

Methods of control of stimulation and motivation of educational and cognitive activity of students as teaching methods (control by the teacher, self-control, mutual control, self-correction, mutual correction, correction and integrated methods).

# Control methods

Control methods and assessment system are carried out in accordance with the requirements of the discipline program and instructions for evaluating students' academic activities in the context of the implementation of the European Credit Transfer System for organizing the educational process

Current control is carried out during the study of a specific topic to determine the level of formation of a particular skill or skill, the quality of assimilation of a certain portion of educational material.

Boundary control involves the total of points received during the current control.

The final control involves the result of boundary control, individual work and offsetting.

The score for the module is defined as the sum of the assessments of current educational activities in points and the assessment of the final module control also in points, which is set when assessing theoretical knowledge and practical skills in accordance with the lists of disciplines defined by the program.

*The maximum number of points awarded to students when mastering each module (credit) is 200, including for current academic activities – 120 points (60%), according to the results of modular final control – 80 points (40%).*

*Current control* is carried out at each practical lesson in accordance with specific goals for each topic. When evaluating students' learning activities, it is necessary to give preference to standardized control methods: testing, structured written works, structured according to the procedure for monitoring practical skills in conditions that are close to real.

*Indicative list of questions and practical skills for the final control of the relevant content modules and the discipline as a whole*

# Module 1.

## Content module 1.

1. Hygiene as a science, its purpose, content, tasks, connection with other sciences.
2. Prevention and its varieties. The value of hygiene knowledge for a doctor, in particular a dentist.
3. Sanitation, sanitary-epidemiological service in Ukraine, its structure and functions.
4. The unity of actions of sanitary and hygienic and medical institutions in the prevention of diseases and promotion of public health.
5. The influence of natural factors and social conditions on the human body and public health. Public health as a social and hygienic problem. Bioethical aspects of the impact of the environment on humans.
6. Methods of hygienic studies of the environment and its impact on the human body and public health. Specific methods of hygiene.
7. Solar radiation, its hygienic value.
8. The main types of biological action of various components of the solar spectrum, solar "starvation" and its prevention. Hyperinsolation and its prevention.
9. Biological effect of infrared and visible radiation of the Sun. Methods and units of measurement.
10. Hygienic characteristics of the ultraviolet part of the solar spectrum. Methods and units of measurement of ultraviolet radiation. Concept of erythema, physiological and prophylactic doses of ultraviolet radiation.
11. Characteristics of the main artificial sources of ultraviolet radiation. Their use for the prevention of "light starvation" and diseases.

13 Hygienic value of natural light. The effect of lighting on vision functions, the state of the central nervous system, performance.

1. Methods of hygienic assessment of natural light, indicators, evaluation of results.
2. Hygienic requirements for artificial lighting of premises. Methods of hygienic assessment of artificial lighting of premises for various purposes, its indicators, evaluation of results.
3. Hygienic characteristics of sources of artificial lighting. Types and systems of artificial lighting. Lighting fittings and its hygienic assessment.
4. Hygienic value of air temperature and radiation temperature.
5. Hygienic value of humidity. Method of measuring the absolute and relative humidity of enclosed spaces. Rationing of relative humidity.
6. Hygienic value of air movement in the room and settlement. "Wind rose " , its use for hygienic purposes.
7. Microclimate, its parameters and varieties. Method for determining the microclimate of enclosed spaces. Bioethical problems of maintaining the microclimate of residential and public premises
8. Hygienic requirements for the microclimate of residential and public premises, effects on the body and assessment methods.
9. Heat exchange of the body with the environment. Ways of heat transfer by the body under different temperature conditions , humidity and air velocity .
10. Physiological changes in the body and diseases associated with the action of a supercooling microclimate, their prevention.
11. Physiological changes in the body and diseases caused by the action of an overheating microclimate on the body, measures for their prevention.
12. Atmospheric pressure, its changes and their effects on the human body. Prevention of mountain and altitude sickness.
13. Weather. Weather-forming and weather-characterizing factors. Medical weather classifications. Sanitary protection and biosafety of atmospheric air.
14. Climate and factors that form and characterize it. Characteristics and classification of climate from hygienic positions.
15. Acclimatization, acclimatization phases. Features of acclimatization in the northern and southern regions .
16. The chemical composition of atmospheric air, the hygienic value of its individual components.
17. Sources of air pollution. Impact of polluted air on public health and sanitary living conditions. Sanitary protection and biosafety of atmospheric air.
18. Ventilation of premises and its hygienic value. Natural and artificial ventilation.
19. Hygienic importance of water, the impact of water quality and water supply conditions on public health, sanitary living conditions. Bioethical problems of water supply.
20. Classification of water supply sources, their characteristics.
21. Sources of water pollution of water bodies and the processes of self-purification of water in them. Indicators of pollution and self-purification of water bodies.
22. Infectious diseases transmitted by water, their classification who. Features of water epidemics and outbreaks, their prevention.
23. Hygienic value of fluoride drinking water. Caries, endemic fluorosis conditions of their occurrence and preventive measures.
24. Diseases caused by the peculiarities of the macro- and microelement composition of water.
25. Indicators of organoleptic properties of water, their hygienic value and use in sanitary examination of water supply sources.
26. Bacteriological and chemical indicators of drinking water pollution.
27. Methods of air conditioning water quality. Coagulation, settling, filtration, disinfection of water.
28. Water fluoridation as a hygienic problem. Interaction of the dental and sanitary-hygienic service in matters related to the introduction and implementation of water fluoridation and the study of its anti-caries effectiveness.
29. Rationing of the qualitative composition of water as one of the ways to prevent diseases of the population associated with the water factor. State standards for water of centralized systems of economic and drinking water supply.
30. Scientific and technological progress and water pollution of water bodies with chemicals. Sanitary protection of reservoirs.
31. Zones of sanitary protection of water supply sources, their importance in improving water quality .
32. Hygienic value of the soil. Sources of soil pollution and its

Self-purification. Soil pollution with agrochemicals, measures to prevent it. Bioethical problems of soil hygiene.

1. Liquid and solid waste from populated cities, their sanitary and epidemic value. Modern hygienic and bioethical problems of cleaning settlements.

## Content module 2.

1. Nutrition as a social and hygienic problem. The main functions of nutrition. Bioethical aspects of nutrition of a healthy person.
2. The concept of a balanced diet. Laws of rational nutrition.
3. "Norms of physiological needs of the population of Ukraine in basic nutrients and energy".

4.. Physiological and hygienic value of proteins in nutrition, the body's needs for them, their main sources.

1. Classification of protein deficiency. Clinical signs of excess and lack of protein in the diet.
2. Physiological and hygienic value of fats in nutrition, the need for them. Edible fats of animal and vegetable origin, their nutritional and biological value.
3. Classification of fatty acids. Functions of PUFAs, sources of receipt. The role of PUFAs ω3.
4. The physiological and hygienic value of carbohydrates in the diet, their needs , their main sources.
5. Classification of carbohydrates. The concept of the glycemic index.
6. Fiber functions , daily need.
7. Physiological and hygienic value of vitamins in nutrition, their needs , the main sources of income.
8. Causes of vitamin deficiency.
9. Mineral salts (calcium, iron, phosphorus and others), their physiological and hygienic value, their needs. The main sources of macro-and micronutrients.
10. Causes of mineral deficiencies in the body. Demineralizing factors.
11. Classification of alimentary diseases .
12. Cariogenic factors.
13. Diet, its components, scientific substantiation for different groups of the population and under different working conditions.
14. The concept of food status, assessment methods, varieties.
15. Methods for studying human energy consumption, units of energy consumption.
16. Methods of hygienic assessment of food adequacy .
17. Methods of medical and hygienic study of nutrition of an individual and teams.
18. Quantitative and qualitative nutrition. The concept of a balanced diet. The method of assessing the diet on the menu -layout.

23.. Nutritional and biological value of food products of plant origin: cereals, legumes, vegetables, fruits, berries, use in a balanced diet.

1. Nutritional and biological value of animal products (milk

and dairy products, meat and meat products, fish and fish products), their hygienic assessment.

1. Food poisoning, classification, measures for their prevention. The concept of biosafety food.
2. Food toxicoinfections, etiology, pathogenesis, conditions of occurrence, preventive measures .
3. Food intoxication, etiology, pathogenesis, conditions of occurrence, preventive measures .
4. Food poisoning with products that are poisonous in nature and products that have acquired toxic properties under certain conditions, preventive measures.
5. Food poisoning with impurities of chemicals to food, preventive measures .
6. Food mycotoxicosis, preventive measures .
7. Methods of investigation of food poisoning.
8. Hygienic bases of the organization of nutrition of patients in hospitals, in particular in case of damage to the dentition and jaw apparatus.
9. Alimentary prevention of major dental diseases.
10. Medical and hygienic services for children and adolescents. Acceleration in modern conditions, hygienic problems associated with it.
11. Methods of research and evaluation of the health of children and adolescents under the influence of environmental factors. Criteria for a comprehensive assessment of the health of children and adolescents
12. Children's health groups , their characteristics.
13. Factors that shape the health of children and adolescents, their characteristics
14. Methods of hygienic assessment of the physical development of children and adolescents, methods for their assessment. Physical education groups
15. Hygienic bases of the organization of the daily regimen of children of different ages.
16. Hygienic requirements for planning , equipment and maintenance of modern educational and recreational institutions for children and adolescents.
17. Hygienic requirements for the educational process in modern institutions for children and adolescents. Prevention of diseases associated with the conditions of stay of children and adolescents in educational institutions.
18. Hygienic control over the organization of physical education and labor training of children and adolescents.

## Content module 3.

1. Hygienic requirements for the location of the hospital in the village. Requirements for the land plot and its planning. Zoning of the hospital area.
2. Comparative hygienic characteristics of modern hospital building systems.
3. Intra-hospital infections, conditions leading to their occurrence and their negative consequences. Methods and means of prevention.
4. The importance of the internal planning of hospitals and departments to ensure the hygienic conditions for the stay of patients and the work of staff.
5. Dental clinic. Hygienic requirements for the arrangement and

operation of departments of therapeutic, surgical and orthopedic dentistry and dental laboratory .

1. Hygienic bases of the organization of the sanitary and anti-epidemic regime in dental medical institutions. Prevention of intra-hospital infections.
2. Hygienic requirements for dental equipment , instruments, rules for its maintenance and disinfection.
3. Methods of objective control over compliance with hygienic conditions in dental institutions.
4. Hygienic characteristics of the ward section, requirements for a set of premises, the purpose of each of them.
5. Hygienic requirements for the planning of emergency departments of hospitals. Features of taking infectious patients, children, women in labor. The importance of planning and operating the emergency departments of hospitals in
6. Hygienic requirements for the planning, arrangement and maintenance of operating units.
7. Labor as a social and hygienic problem. The concept of work and work. Physical and mental labor. Bioethical problems of labor.
8. Production hazards and occupational diseases. Classification of occupational hazards.
9. Physiological shifts in physical and mental labor. Fatigue and overwork. Basics of prevention of overwork.
10. The severity and overstrain of work, the criteria that characterize them, the use for the regulation of working conditions.
11. Hygienic characteristics of the work and professional activity of dentists of various profiles and dental technicians. Biosafety and bioethics of the work of dentists.
12. Forced body position and overstrain of individual muscle groups as occupational harm. Prevention of diseases caused by forced body position in the work of a dentist and dental technician.
13. Dust as a production hazard, sources of its formation, the effect of dust on the body, depending on the composition, concentration, dispersion, shape of dust particles. Prevention of the harmful effects of dust on the body in the conditions of dental and technical laboratories of dental clinics.
14. Chemical factors of the production environment in the work of the dentist and dental technician (mercury, lead, polymeric materials, etc.). Diseases caused by them, preventive measures.
15. Biological factors, bacterial air pollution and tools in the dental hospital, prevention of their harmful effects.
16. Noise as a production hazard, its physical characteristics, effects on the human body. General principles of noise rationing at work, in particular at the dentist's workplace in a dental clinic (office).
17. Prevention of "noise" disease and other diseases caused by the action of wave factors on the body in the conditions of medical and preventive institutions, in particular the dental profile.
18. Vibration as a production hazard, effects on the body, preventive measures, in particular in the workplace of a dentist.
19. Production poisons, ways of their entry into the body. Pathology caused by their action. Methods of investigation of occupational poisoning, measures for their prevention.
20. Acute and chronic occupational poisoning. Production poisons in the work of a dentist and dental technician.
21. Microclimate in production. Diseases caused by the action of adverse microclimatic conditions on the body. General principles of rationing the microclimate in industrial premises.
22. Basic principles of prevention of occupational diseases..
23. Hygienic principles of a healthy lifestyle. Personal hygiene in modern conditions.
24. Hygiene of the body and oral cavity. Oral hygiene products and their hygienic assessment.
25. The importance and ways of preventing hypokinesia in modern conditions. Hygienic requirements for places of physical education.
26. Quenching as an element of personal hygiene. Principles of hardening.
27. Hygienic value of the daily regimen. Hygiene of rest and sleep.
28. Medical and social significance of bad habits, prevention of their occurrence.
29. Hygiene of mental work.
30. Hygienic requirements for fabrics , clothing and shoes. Comparative hygienic characteristics of natural and synthetic fabrics.
31. The concept of ionizing radiation, doses and units of their measurement. Qualitative and quantitative characteristics of ionizing radiations and their sources.
32. Biological effect of ionizing radiation. Modern ideas about its mechanisms, the conditions on which it depends, its features.
33. Conditions determining radiation hazard when working with radionuclides and other sources of ionizing radiation.
34. Features of radiation hazard and protection of personnel when working with open sources of ionizing radiation in medical institutions.
35. Features of radiation hazard and protection of personnel when working with closed sources of ionizing radiation.
36. Ensuring the protection of personnel of X-ray departments (offices). Radiation control, its types. Measures to protect against excessive X-ray radiation.
37. Radiation safety of patients and staff during X-ray examinations in dentistry. Principles of radiation hazard.
38. The main types of radiation damage to the body, the conditions of their occurrence, preventive measures. Bioethical aspects of the influence of the radiation factor on humans.

# Form of final control of learning outcomes

The final module control is carried out upon completion of the study of all topics of the module in the last control lesson from the module.

Students who have completed all types of work provided for by the curriculum are allowed to the final control, and when studying the module, scored a number of points not less than the minimum (60 points).

The form of the final modular control should be standardized and include control of theoretical and practical training. Specific forms of control on hygiene and ecology are defined in the working curriculum.

The maximum number of points of the final control is 80.

The final module control is considered credited if the student scored at least 50 points out of 80 points.

The module is credited to the student if he scored at least 112 points (60 for current activities + 50 for the final module control).

*Evaluation of the discipline:*

The assessment in hygiene and ecology is given only to students who are enrolled in all modules in the discipline.

The grade in the discipline is set as the average of the grades for the modules into which the discipline is structured.

Incentive points by decision of the Academic Council may be added to the number of points in the discipline by students who have scientific publications, or have won prizes for participating in the Olympiad in the discipline among universities of Ukraine and so on.

The objectivity of evaluating students' learning activities should be checked by statistical methods (correlation coefficient between current academic performance and the results of the final module control).

# Scheme of accrual and distribution of points that students receive

*Evaluation of current educational activities :*

When mastering each topic of the module for current educational activities, the student is given marks on a 4-point traditional scale, which are then converted into points depending on the number of topics in Modules.

The grade for the module is determined taking into account the grades for the current academic activities of the student and the grade for the final module control. The current educational activity of the student is evaluated on a 4-point scale, which is converted into points as follows: a) practical classes:

|  |  |
| --- | --- |
| Traditional assessment | Conversion to points |
| Module 1 |
| “5” | 8 |
| “4” | 6 |
| “3” | 4 |
| “2” | 0 |

b) individual SRS - mandatory. If successfully performing this work , up to 8 points are awarded.

**The maximum number of points for the current educational activities of a student is 120:** when mastering 14 topics , the student is assigned 112 points (14x8 = 112) + 8 points for successful completion of CIRS.

|  |  |  |
| --- | --- | --- |
| **No p/n** | **Content module, topic** | **Maximum score** |
| 1. | ***Content module* 1** |  |
|  | Topic 1 | 8 |
|  | Topic 2 | 8 |
|  | Topic 3 | 8 |
|  | Topic 4 | 8 |
|  | Topic 5 | 8 |
| 2 | ***Content module* 2** |  |
|  | Topic 6 | 8 |
|  | Topic 7 | 8 |
|  | Topic 8 | 8 |
|  | Topic 9 | 8 |
|  | Topic 10 | 8 |
| 3 | ***Content module* 3** |  |
|  | Topic 11 | 8 |
|  | Topic 12 | 8 |
|  | Topic 13 | 8 |
|  | Topic 14 | 8 |
|  | Topic 15 | 8 |
|  | **Individual SRS** | 8\* |
| ***Together current learning activities*** | | **120** |
| ***Modular final control*** | | **80** |
| ***TOGETHER*** | | **200** |

**The minimum number of points** that a student must score for current academic performance and independent work in order to be admitted to the final module control is 60 points = (14 x 4) +4 for SIRS.

**Final module control** is considered enrolled if the student scored at least 50 points.

*Evaluation of an individual educational and research task:*

The number of points for the implementation of an individual educational and research task depends on the volume and significance, but not more than 8 points. These points are added to the sum of points scored by the student for current academic activities.

*Evaluation of independent work:*

Evaluation of independent work of students, which is provided in the topic along with

classroom work, carried out during the current control of the topic at the relevant classroom lesson.

Evaluation of topics that are submitted only for independent work and are not included in the topic of classroom training sessions is controlled by the final modular control.

# Methodical support

1. Methodical recommendations for teachers on each of the topics of practical classes.
2. Methodical recommendations for independent work of students.
3. Normative and methodical documents.
4. Demonstration materials, instructions for the use of technical means of training (devices and equipment).

# 16.Recommended literature Basic (basic)

1. Fundamentals of Ecology : National textbook for students of higher educational institutions / V.G. Bardov, V.I. Fedorenko, E.M. Biletska [et al.]: edited by V.G. Bardova, V.I. Fedorenko. – Vinnytsia: New Book, 2013. – 424 p.
2. Hygiene of dental institutions. Manual /I.T.Matasar, V.I.Tsypriyan and others. – K.Wolf, 2010. -146 p.
3. Prevention of nosocomial infections (hygienic, epidemiological and microbiological aspects) / edited by V.F. Moskalenko - K.:

"Health", 2013. - 160 p.

1. Introduction to preventive medicine. Methodological and historical aspects /V.V.Babienko, A.M.Hrynzovskyi, Yu.M. Vorokhta. Tutorial. K.: Publishing House "Slovo", 2012. - 232 p.
2. Общая гигиена, социально-гигиенический мониторинг: руководство к практическим занятиям. Razdel "Common gigiena": Ucheb. ref/P.I.Melnychenko [et al.]. – M.: Practical Medicine, 2014. – 332 p.
3. Radiation hygiene: a textbook for interns and trainees

/[Murashko V.O., Mechev D.S., Bardov V.G., etc.]. - Vinnytsia: New Book, 2013. - 376 p.

1. Fundamentals of dental activity (organizational, legal, hygienic, deontological) 2nd edition. Educational and reference manual: / Edited by V.G. Bardova.- Vinnitsa: New Book, 2011. - 440 p.
2. Hygiene and ecology in terms, diagrams, tables and tests / Moskalenko V.F., Bardov V.G., D.O. Lastkov [ et al. ] edited by V.F. Moskalenko – K.: VSV "Medicine", 2012. – 208 p.
3. Collection of test tasks for state tests on hygiene, social medicine, organization and economics of health care / V.F. Moskalenko, V.G. Bardov, O.P. Yavorovsky [et al.]. Tutorial.-

Vinnytsia: New Book, 2012. – 200c.

1. Hygiene and Ecology: Textbook /Edited by V.G. Bardov. - Vinnitsa: New Book, 2006. - 720 p.

# Additional

1. Preventive medicine. General hygiene with the basics of ecology. I.I. Datsenko, R.D. Gabovich. Textbook, 2nd edition. - Kyiv: «Zdorovya», 2004. - 792 p.
2. Mizyuk M.I. Hygiene: Textbook. – K.: Zdorov'ya, 2002.- 288p.
3. Mizyuk M.I. Hygiene: Manual for practical classes. – K.: Zdorov'ya, 2002.- 256p.
4. Bardov V.G., Sergeta I.V., Stepanenko G.P., Omelchuk S.T., Shvayko I.I. and others. General hygiene and human ecology. 2002. - 213 p.
5. Nikolaev A. I., Tsepov L. M. Sanitary and hygienic regime in therapeutic dental cabinets (separate). – 80 p.
6. Radiation Hygiene: Textbook /Edited by Prof. Edgar Hoover. V.Y. Umansky and prof. S.T. Omelchuk. - Donetsk: Nord-Press, 2009. - 143 p.
7. Sanitary-hygienic and anti-epidemic regime in the treatment of the dental profile / V.V. Anashkin, N.A. Anashkin, S. Etc. Volkov et al. – K.: Transport of Ukraine, 1999. – 158 p.
8. Occupational Hygiene: Textbook /Y.I.Kundiev, O.P.Yavorovskyy, A.M. Shevchenko et al.; edited by acad. NAS of Ukraine, NAMS of Ukraine, prof. Yu.I. Kundieva, chl-kor. NAMS of Ukraine prof. O.P. Yavorovskogo. - K.: VSV "Medicine", 2011. - 904p.
9. Bardov V.G., Sergeta I.V., Stepanenko G.P., Omelchuk S.T., Shvayko I.I. and others. General hygiene and human ecology. 2002. - 213 p.
10. Food hygiene with the basics of nutrition. Textbook /Ed. V.I.Tsypriyana. - K.: "Health" , 1999. – 568 p.
11. Hygiene and labor protection of medical workers. Tutorial

/Ed. V.F.Moskalenko, O.P.Yavorovskogo. - K.: "Medicine", 2009. - 176 p.

1. Hygiena /Pod ed. acad. RAMS G.I. Rumyantseva. - M.: Medicine, 2000.

- 608 p.

1. Pivovarov Yu.P. Gigien and the basics of human ecology: Uchebnik for stud. vyssh. med. ucheb. zavedenyi / Yu.P. Pivovarov, V.V. Korolyk, L.S. Zinevich. Ed. YU.P. Pivovarov. - M.: Izdatelsky center "Academy", 2004. - 528 p.
2. General Hygiene: A Guide to Practice/By General ed. Datsenko I.I. - Lviv, 2001. - 472 p.
3. Intrabolic infections /per. s eng., ed. R.P.Wenzel. - M., 1990.

# 17. Information resources

*Official web resources of the President* of  *Ukraine, the Verkhovna Rada of Ukraine, the Ministry of Education and Science, the Ministry* of  *Health and other central authorities*  of  *Ukraine, educational portals of higher medical educational institutions*   *Ukraine.*

1. Official website of the President of Ukraine [http://www.president.gov.ua](http://www.president.gov.ua/)/
2. Verkhovna Rada of Ukraine [http://www.rada.gov.ua](http://www.rada.gov.ua/)/
3. Cabinet of Ministers of Ukraine [http://www.kmu.gov.ua](http://www.kmu.gov.ua/)/
4. Ministry of Education and Science of Ukraine [http://www.mon.gov.ua](http://www.mon.gov.ua/)/
5. Ministry of Ecology and Natural Resources of Ukraine [http://www.menr.gov.ua](http://www.menr.gov.ua/)/
6. State Emergency Service of Ukraine [http://www.dsns.gov.ua](http://www.dsns.gov.ua/)/
7. National Security and Defense Council of Ukraine [http://www.rnbo.gov.ua](http://www.rnbo.gov.ua/)/
8. Permanent Mission of Ukraine to the United Nations [http://ukraineun.org](http://ukraineun.org/)/
9. World Health Organization <http://www.who.int/en/>
10. Centers for diseases control and prevention [www.cdc.gov](http://www.cdc.gov/)
11. Public Health Center of the Ministry of Health of Ukraine https://phc.org.ua/