

DANYLO HALYTSKY LVIV NATIONAL MEDICAL UNIVERSITY

Department of Therapeutic Dentistry

**"APPROVED"**

First Vice-Rector for

Scientific and Pedagogical Work

Associate Professor Iryna SOLONYNKO



2024

**SYLLABUS  
of the subject**

**OC 27.1**

**"Ergonomics in dentistry"**

**Second (master's) level of higher education**

**Field of Knowledge 22 "Healthcare"**

**Specialty 221 "Dentistry"**

**Faculty, year: Dentistry, 1<sup>st</sup> year**

Discussed and approved at the  
Methodical Meeting of the Department of  
Therapeutic Dentistry  
Minutes No. 4, dated 16 April 2024  
Head of the Department

Prof. Volodymyr ZUBACHYK

Certified by the Specialized Scientific and  
Methodical Board for Dental Subjects  
Minutes No. 3, dated 17 April 2024  
Chair of the Profile Methodical  
Board

Prof. Volodymyr ZUBACHYK



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The syllabus of the subject «Ergonomics in dentistry» is developed at the Department of Therapeutic Dentistry of Danylo Halytsky Lviv National Medical University for the 1<sup>st</sup> year students of the Dentistry Faculty in the Specialty 221 Dentistry.

The syllabus is discussed and approved at the Methodical Meeting of the Department of Therapeutic Dentistry (Minutes No. 4 dated 16 April 2024) and certified by the Specialized Scientific and Methodical Board for Dental Subjects (Minutes No. 3 dated 17 April 2024)

**Changes and additions to the syllabus in the 2023-2024 academic year:**

<b>№</b>	<b>Content of changes (additions)</b>	<b>Minutes of the meeting of the Department, date</b>	<b>Notes</b>

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## Introduction

### **Syllabus of the academic discipline “Ergonomics in dentistry”**

According to the standard of higher education of the second (master) degree of higher education

field of knowledge 22 “Health care”

specialty 221 “dentistry”

### **Description of the academic discipline**

"Ergonomics" is the science of relationships of work, time and environment.

The task of ergonomics is the improvement of the productivity of a dentist's work. It is solved in different ways, mainly by organizing the working place of the doctor and his assistant with modern high-tech equipment and high-quality tools, introduction of new techniques and technologies.

One of the principles of ergonomics is to bring the tools and environment in compliance with anatomical, physiological and psychological capability of the human body. Proper ergonomic design is necessary to prevent repetitive strain injuries and other musculoskeletal disorders, which can develop over time and can lead to a long-term disability.

A long period of time, during which a number of sciences has developed and served as the foundation of: anatomy, physiology, anthropology, psychology, hygiene and others was also necessary for the formation of ergonomics.

Ergonomics (from the Greek word "*ergon*", work, and "*nomos*, natural laws), is the science of refining the design of products to optimize them for human use. Human characteristics, such as height, weight, and proportions are considered, as well as the information about human hearing, sight, temperature preferences, and so on.

Ergonomics is sometimes known as human factors engineering.

In 60-70 years of the twentieth century, special committees, laboratories, institutes were organized by many developed countries with the aim to coordinate the implementation of modern achievements of engineering and biomedical sciences into the practice of dentistry. That was necessary, because new technical means, electronic, automatic and cybernetic equipment and modern methods of the diagnosis and the treatment with application of ultrasound, laser, electromagnetic and X-rays have been widely used by the doctors in their everyday work. These methods and equipment can have harmful effects on the health of the doctor. There is a substantive interconnection between the daily activities of dentists and the influence of various unfavorable factors on the production environment and work process, namely: high neuroemotional stress, position of doctors during their work, tension of analyzer systems, the impact of hazardous chemicals, noise, vibration, carcinogens, etc.

Ergonomics in dentistry is of utmost importance due to the application of new technology in the doctor's work. Therefore, the influence of different dental technical equipment in medical institutions on working conditions, health of doctors, nurses and the patients is very important.

### **Syllabus of the academic discipline**

#### **“Ergonomics in dentistry”**

**(1st year)»**

**For students of dental faculty**

**specialty 14.01.22 “dentistry”, qualification – dentist**

Structure of the academic discipline	Number of hours				Year of education, semester	Type of control
	In all	Classes		CPC		
		lectures	Practical lessons			
<b>Ergonomics in dentistry</b>	30 hours.	4 hours.	10 hours.	16 hours.	I year II semester	credit
<b>semesters</b>						
<b>Ergonomics in dentistry</b>	30 hours.	4 hours.	10 hours.	16 hours.	II semester	credit

**The aim of ergonomics** - to arrange the working processes in order that doctors can perform their professional duties more efficiently and comfortably without getting tired, reducing morbidity, avoiding injuries.

**The main tasks of ergonomics in dentistry:**

To reduce the labour intensity on the doctor and assistant, eliminate or reduce the risk of occupational diseases.

2. To ensure good working practice and to reduce the loading on a patient.
3. To increase significantly the productivity of labour of the personnel by sustainable use of the working hours and thus to form a lot of free time.
4. To spend the free time for the professional advancement of the medical personnel, and thus to promote better treatment in future.

**The task of ergonomics:**

- to ensure the maximal conveniences for the work of doctors, creation and use of equipment, furniture and working clothes;
- to organize properly the workstation and rational distribution of equipment;
- to provide the comfort of air climate, the lighting, noise control, the vibration;
- to reduce the psychological and emotional stress on a doctor;

- to reduce the physiological stress on a doctor through proper workstation, choice of comfortable positions, rational labor movements;
- to provide the proper organization of work and rest;
- to work out the preventive methods against occupational diseases;
- to develop the methods of staff's management, re-skilling of medical personnel.

Evolutional development of the unit can be represented in following way: hand, foot (stand-up foot undemountable, demountable, difficult; combined foot and with a motor), electric (stand-up with an electromotor (stationary), hangings wall from electromotor, portable), ultrasound, turbine (pneumatic), laser drills.

Modern dental unit has modules of the dentist and assistant which operate independently. The module of the doctor includes: dental turbines and micromotors. The module with lower suspension is the most convenient.

We recommend the following sequence (from left to right).

- The turbine with lighting.
- High-speed angle handpieces with lighting.
- The low-speed corner (for polishing) or direct (if necessary) with at ONLY.
- The water-air handpiece.
- The piezoelectric system for removal of dental plaque, endodontic treatment.
- Control tab to change the position of a chair, rotational speed.

Over the module of a dentist there must be a space for sets of preparation and other tools. Module of a dentist should be located on the right hand.

Assistant Module: located to the left of the chair and includes devices for evacuation of liquids and dust (vacuum cleaner), air-water handpiece and control tab.

**Plans of lectures, practical lessons, out of class work and individual work in  
discipline „Ergonomic in Dentistry” for  
English-medium students I year (II term)**

**PRACTICAL LESSONS**

<b>No</b>	<b>Topic</b>	<b>Pract. lessons</b>	<b>Out of class work</b>	<b>Individual work</b>
1.	The meaning of the term “ergonomic”. Sciences on which ergonomic is based. Formation of ergonomic as a complex integral science. Parts of ergonomic.	2		
2.	Ergonomic in dentistry. The aim, main tasks and problems. Development of dentistry and influence of ergonomic on its improvement. Ergonomic conditions in the work of a dentist.	2		Review of scientific and professional literature, preparation of the written work
3.	Professional diseases of dentists. The ways of preservation the capacity for work by dentists. Rational organization of dental office and placement of the equipment. Reduction of physical loading on a dentist. Distribution of work in dental office.	2		
4.	Influence of ergonomic on the improvement of dental equipment and instruments.	2		
5.	Computer and internet as new elements in dental ergonomic. Computerize investigation of optimal solution of the question. The use of computers in educational process in dentistry	2		

	Summary	10	16	
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### Lectures (4 hours)

No	Topic of the lecture	Hours	Date
1.	History of the development of dentistry in Ukraine and Halychyna region in particular. Introduction of ergonomic into the science.	2	
2.	Ergonomic in dentistry.	2	

### OUT OF CLASS WORK

(25 hours)

No	Topic	Hours	Type of control
1.	<u>Preparation for practical lessons - theoretical training</u>	10	
2.	<u>Independent work with the topics not including into practical</u>		Control



<u>lessons:</u>		
1. The use of computers to save up clinical data and administration documents	2	at practical lessons
2. Systems CAD/ CAM .	2	
3. Figure devices for statistical representation of images.	2	
<u>Summary</u>	16	

## **The purpose and objectives of the discipline**

**1.1. The purpose** of medical practice is to test and consolidate the knowledge and practical skills of a dentist, obtained by students in accordance with the draft Standard of Higher Education of Ukraine of the second (master's) level of higher education 22 "Health Care", specialty 221 "Dentistry".

**1.2. The main objectives** of the practical training are to be able to conduct the examination of the dental patient, to study the main syndromes and symptoms, to formulate the initial diagnosis; The ability to analyse the results of the examination of the patient and conduct a differential diagnosis, to make a residual diagnosis of the main diseases, Determine the nature of treatment in the clinic of therapeutic dentistry, identify different clinical variants and complications of the most widespread diseases, conduct medical examination of patients.

**1.3 Competences and learning outcomes**, the formation of which is facilitated by the discipline (relationship with the normative content of training of higher education, formulated in terms of learning outcomes in the Standard). According to the requirements of the Standard, the practice "Industrial medical practice in therapeutic dentistry" provides students with the acquisition of competencies:

- Integral: The ability to solve complex problems and problems in the field of health care in the specialty "Dentistry" in a professional activity or in the learning process, which involves research and / or innovation and is characterized by uncertainty of conditions and requirements.

- General:

1. Ability to abstract thinking, analysis and synthesis; ability to learn and be modernly trained.
2. Knowledge and understanding of the subject area and understanding of the profession.
3. Ability to apply knowledge in practical situations.
4. Ability to communicate in the state language both orally and in writing. Ability to communicate in another language.
5. Skills in the use of information and communication technologies.
6. Ability to search, process and analyze information from various sources.
7. Ability to adapt and act in a new situation; ability to work autonomously.
8. Ability to identify, pose and solve problems.
9. Ability to choose a communication strategy.
10. Ability to work in a team.
11. Interpersonal skills.
12. Ability to act on the basis of ethical considerations (motives).
13. Skills for safe activities.
14. Ability to evaluate and ensure the quality of work performed.
15. The desire to preserve the environment.

Special:

1. Collection of medical information about the patient's condition.
2. Evaluation of laboratory and instrumental research results.
3. Establishing a clinical diagnosis of dental disease.
4. Diagnosis of emergencies.
5. Planning and implementation of measures for the prevention of dental diseases.
6. Determining the nature and principles of treatment of dental diseases.
7. Determining the necessary mode of work and rest, diet in the treatment of dental diseases.
8. Performing medical and dental manipulations.
9. Treatment of major dental diseases.
10. Assessment of the impact of the environment on the health of the population (individual, family, population).
11. Keeping medical records.
12. Processing of state, social and medical information.
13. Ability to organize and conduct a screening examination in dentistry.
14. Ability to maintain normative medical documentation.
15. Processing of state, social and medical information.
16. Ability to organize and carry out rehabilitation measures and care for patients with diseases of the oral cavity.
17. The ability to legally support one's own professional activity.
1. The ability to provide pre-medical care according to the protocols of tactical medicine.

- *Professional competences of the specialty (FC):*

- 1.Ability to collect medical information about the patient and analyze clinical data.
2. Ability to interpret the results of laboratory and instrumental research
- 3.Ability to diagnose: determine preliminary, clinical, final, accompanying diagnosis, emergency conditions.
4. Ability to plan and carry out measures for the prevention of diseases of the organs and tissues of the oral cavity and maxillofacial region.
- 5.The ability to design the process of providing medical care: to determine the approaches, plan, types and principles of treatment of diseases of the organs and tissues of the oral cavity and maxillofacial region
- 6.The ability to determine a rational regimen of work, rest, and diet in patients in the treatment of diseases of the organs and tissues of the oral cavity and maxillofacial region.
- 7.The ability to determine the management tactics of patients with diseases of the organs and tissues of the oral cavity and maxillofacial region with concomitant somatic diseases
- 8.Ability to perform medical and dental manipulations.
- 9.The ability to treat the main diseases of the organs and tissues of the oral cavity and maxillofacial area.
- 10.Ability to organize and carry out medical evacuation measures.
- 11.Ability to determine tactics, methods and provision of emergency medical assistance.
- 12.Ability to organize and conduct a screening examination in dentistry.
- 13.The ability to assess the impact of the environment on the state of health of the population (individual, family, population).
- 14.Ability to maintain normative medical documentation.
- 15Processing of state, social and medical information.
- 16Ability to organize and carry out rehabilitation measures and care for patients with diseases of the oral cavity and MFS
- 17.The ability to legally support one's own professional activity.
18. Ability to provide pre-medical care according to the protocols of tactical medicine.

**Matrix of competences of the educational component academic discipline**

**“Ergonomics in dentistry”**

<p><b>Program competencies</b></p>	<p><b>academic discipline “Ergonomics in dentistry” MD 27.1</b></p>
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<b><i>General competences</i></b>	
<b>ZK 1 Ability to abstract thinking, analysis and synthesis.</b>	
<b>GC 2.</b> Ability to learn and master modern knowledge.	+
<b>GC 3</b> Ability to apply knowledge in practical activities.	+
<b>GC 4</b> Knowledge and understanding of the subject area and understanding of professional activity.	
<b>GC 5</b> Ability to adapt and act in a new situation.	-
<b>GC 6</b> Ability to make informed decisions.	
<b>GC 7</b> Ability to work in a team.	+
<b>GC 8</b> Interpersonal skills.	-
<b>GC 9</b> Ability to communicate in the state language both orally and in writing;	+
<b>GC 10</b> Ability to communicate in a foreign language.	
<b>GC 11</b> Skills in using information and communication technologies.	+
<b>GC 12</b> Determination and persistence in relation to assigned tasks and assumed responsibilities.	-
<b>GC 13</b> The ability to act socially responsibly and consciously.	-
<b>GC 14</b> The desire to preserve the environment	-
<b>GC 15</b> The ability to act on the basis of ethical considerations	-
<b><i>Professional competences</i></b>	
<b>PC 1</b> Ability to collect medical information about the patient and analyze clinical data.	+
<b>PC 2</b> The ability to interpret the results of laboratory and instrumental research.	-
<b>PC 3</b> Ability to diagnose: determine preliminary, clinical, final, concomitant diagnosis, emergency conditions.	-
<b>PC 4</b> The ability to plan and carry out measures for the prevention of diseases of the organs and tissues of the oral cavity and maxillofacial area.	-
<b>PC 5</b> The ability to design the process of providing medical care: to determine the approaches, plan, types and principles of treatment of diseases of the organs and tissues of the oral cavity and maxillofacial area.	-
<b>PC 6</b> The ability to determine a rational regimen of work, rest, and diet in patients in the treatment of diseases of the organs and tissues of the oral cavity and maxillofacial area.	-

<b>PC 7</b> The ability to determine the management tactics of patients with diseases of organs and tissues of the oral cavity and maxillofacial area with concomitant somatic diseases.	-
<b>PC 8</b> Ability to perform medical and dental manipulations.	-
<b>PC 9</b> The ability to treat the main diseases of the organs and tissues of the oral cavity and maxillofacial area.	-
<b>PC 10</b> Ability to organize and carry out medical evacuation measures.	-
<b>PC 11</b> Ability to determine tactics, methods and provision of emergency medical assistance.	-
<b>PC 12</b> Ability to organize and conduct a screening examination in dentistry.	-
<b>PC 13</b> The ability to assess the impact of the environment on the state of health of the population (individual, family, population).	-
<b>PC 14</b> Ability to maintain regulatory medical documentation.	-
<b>PC 15</b> Processing of state, social and medical information.	-
<b>PC 16</b> Ability to organize and carry out rehabilitation measures and care for patients with diseases of the oral cavity and OMF.	-
<b>PC 17</b> The ability to legally secure one's own professional activity.	-
<b>PC 18</b> The ability to provide pre-medical care according to the protocols of tactical medicine.	-

**Detailing of competencies according to NQF descriptors in the form of "Competence Matrix".**

**Competence matrix**

<b>№</b>	<b>Competence</b>	<b>Knowledge</b>	<b>Skills</b>	<b>Communication</b>	<b>Autonomy and responsibility</b>
<b>Integral competence:</b>					
Ability to solve complex problems and problems in the field of health care in the specialty "Dentistry" in a professional activity or in the learning process, which involves research and / or innovation and is characterized by uncertainty of conditions and requirements					
<b>General competencies</b>					
1.	Ability to abstract thinking, analysis and synthesis; ability to learn and be modernly trained.	Know the current trends in the industry 22 "Health" and the indicators that characterize them .	Be able to analyze professional information, make informed decisions, acquire modern knowledge to improve the activities of a dentist. Be able to analyze professional information, make informed decisions, acquire modern knowledge to improve the activities of a dentist.	Establish appropriate communication links to achieve goals.	Be responsible for the timely acquisition of modern knowledge. Lifelong learning.
2.	Knowledge and understanding	Know the features of the professional	Be able to carry out professional activities that	To form a communication strategy in	Be responsible for continuous professional
	of the subject area and understanding of the profession.	activity of a dentist.	require updating and integration of knowledge.	professional activity.	development with a high level of autonomy.

3.	Ability to apply knowledge in practical situations.	Know the methods of implementing knowledge in solving practical problems of the professional activity of a dentist.	Be able to use professional knowledge to solve practical problems.	Establish links with the subjects of practical activities.	Be responsible for the validity of decisions.
4.	Ability to communicate in the state language both orally and in writing. Ability to communicate in another language.	Know the state language, including professional orientation. Know a foreign language at a level sufficient for professional communication.	Be able to use the state language and a foreign language for professional activities and communication.	Use language skills in the professional activity of a dentist.	Be responsible for the continuous improvement of knowledge of state and foreign languages.
5.	Skills in the use of information and communication technologies.	Have modern knowledge in the field of information and communication technologies used in professional activities.	Be able to use information and communication technologies in the professional field, which requires updating and integration of knowledge.	Use information and communication technologies to establish communication links.	Be responsible for the continuous development of professional knowledge and skills.
6.	Ability to search, process and analyze information from various sources.	Know the algorithm for searching, processing and analyzing information from various sources in the specialty 221 "Dentistry".	Be able to use the algorithm of search, processing and analysis of information from various sources in the professional activity of a dentist.	Use up-to-date information to establish communication links.	Be responsible for the continuous search, processing and analysis of information from various sources in order to improve professional activities.
7.	Ability to adapt and act in a new situation;	Know the methods of implementing knowledge in solving practical	Be able to use professional knowledge to adapt and act in a	Establish links with the subjects of practical activities.	Be responsible for the quality of professional tasks in the new

	ability to work autonomously	problems in new conditions.	new situation.		situation.
8.	Ability to identify, set and solve problems.	Know how to implement the knowledge in identifying, formulating and solving the problems of professional activity of a dentist.	To be able to use knowledge to identify, set and solve problems of professional activity.	Establish links with the subjects of practical activities in order to identify, set and solve problems of professional activity.	Responsibility for the validity of the decisions made on the solution of problems of professional activity.
9.	Diligence in selecting a communication strategy.	Know how to implement a strategy for communicating with patients and colleagues.	Be able to use the knowledge to choose a strategy for communication with patients and colleagues.	Be able to use the knowledge to choose a strategy for communication with patients and colleagues.	Be responsible for choosing a communication strategy with patients and colleagues.
10.	The willingness to work as part of a team.	Know how to interact collectively when working in a team.	Know how to work together productively during teamwork.	Formulate the capacity for professional communication during teamwork.	Be personally responsible for contributing to the team's work.
11.	Interpersonal skills and interpersonal communication.	Know how to communicate with colleagues and patients in an interpersonal way.	Be able to use the knowledge to choose a communication strategy for interpersonal interaction.	Formulate a communication strategy in professional activities.	Be responsible for continuous professional development.
12.	The commitment to act on the basis of ethical considerations (motives).	Know the moral and ethical principles of the medical specialist and the rules of professional subordination.	Use in practice the moral and ethical principles of the medical specialist and the rules of professional subordination.	To respect the moral and ethical principles of the medical professional and the rules of professional subordination during professional ac-	To be personally responsible for upholding the moral and ethical principles of the medical specialist and the rules of professional



				activities.	subordina- tion.
13.	Skills to carry out safe work.	The ability to assess the level of risk in the performance of professional tasks.	Be able to carry out professional activities in compliance with safety regulations.	Ensure that professional work is carried out in a professional manner work in compliance with safety rules.	To be personally responsible for complying with safety rules when carrying out professional tasks.
14.	The performance of the work must be evaluated and the quality of the work carried out must be ensured.	The competence to assess and ensure quality in the performance of professional tasks.	Know the methods for assessing performance indicators.	Establish communication links to ensure the quality of work.	Be personally responsible for ensuring the quality of professional performance professional activity.
15.	A commitment to the preservation of the natural environment.	The capacity to assess the state of the environment.	To be able to analyse indicators of the quality of the environment, to take part in measures to preserve and improve it.	Use communicative communication to improve efficiency and conservation of the environment. Environmental protection.	To be personally responsible for the environmental protection rules in the performance of professional tasks.
<b>№</b>	<b>Competence</b>	<b>Knowledge</b>	<b>Skills</b>	<b>Communica- tio n</b>	<b>Autonomy and respon- sibility</b>
<b><i>Special competences</i></b>					

1.	Gathering medical information about the patient's condition.	Know the algorithm for collecting medical information about the patient's condition by the dentist at the therapeutic appointment.	Know how to describe and identify the main problems, assess the general condition and determine the patient's dental status.	Adhere to ethics, bioethics and deontology during the anamnesis.	To be responsible for the good performance of the tasks assigned.
2.	Evaluating the results of	Structure of hard tissues of the	Evaluate the condition of the	Be able to explain and	Be responsible for the

	laboratory and instrumental investigations.	tooth, pulp, periodontium, organs and mucous membrane of the cavity, changes in them, associated with age and pathological conditions. Clinical and anatomical features of the structure of teeth, signs of relevance to the appropriate slit, sides. Biochemical, microbiological composition of plums, oral fluid, their biophysical properties and remineralizing potential. Methods for determining the length of the root canal.	teeth, periodontium, organs and mucous membrane of the mouth. Determine whether the teeth belong to the same group, side (right, left), upper or lower slit. Evaluate and interpret the results of biochemical, biophysical, microbiological examinations of the oral mucosa and its remineralising properties. Evaluate the color, the condition of the tooth tissue in normal conditions, demineralization, etc. To determine the length of the root canal using various methods.	explain the changes in the condition of the teeth, periodontium, organs and mucous membranes of the mouth, the mucosa of the mouth and the oral cavity to the patient and colleagues.	correctness and accuracy of the evaluation of laboratory and instrumental methods of investigation.
3.	Establishing a clinical diagnosis of a dental disease.	1. Have specific knowledge of the diagnostics of dental diseases specified by the standard of higher education. 2. Classification of carious	1. Identify and identify the main clinical symptoms and syndromes, using the patient's histo-	Establish communication links to ensure the quality of the diagnostic process.	Be responsible for the results of the diagnosis of dental disease. Be responsible for providing the appropriate knowledge and skills.

			ry, examination data, knowledge		
		diseases according to Blek. 3. Clinical features of the anatomic and histological structure of the teeth. 4. Topography of dental tissues and structures. 5. Dental formulas.	of the human body, its organs and systems, and establish the initial clinical diagnosis of the dental disease. 2. Determine whether the carious lesions belong to a certain class according to Blek. 3. Evaluate the extent of carious damage, dental tissues condition. 4. Mark the teeth with different dental formulas.		
4.	Diagnosis of non-critical conditions.	Diagnosis of non-critical conditions at a dental appointment.	Have specialised knowledge of the diagnosis of non-injurious conditions as defined by the Higher Education Standard.	Perform diagnosis of non-injurious conditions according to standard schemes.	Determine tactics for emergency medical care according to the algorithm.

5.	Planning and carrying out preventive measures against dental diseases.	To know the principles of prevention of dental diseases and their complications. Knowledge of the basic principles of hygienic education and education of the population.	Be able to plan measures to prevent the spread of dental diseases and evaluate their effectiveness. Plan primary and secondary prevention of the most common dental diseases in children of different ages.	Be able to explain and substantiate the principles of prevention of dental diseases and their complication to the patient, colleagues.	To be responsible for the correctness and accuracy of dental disease prevention measures.
			Carry out prophylactic measures for the main dental diseases.		
6.	The nature and principles of the treatment of dental diseases.	Knowledge of algorithms for determining the nature and principles of treatment of dental diseases of the therapeutic patients.	To be able to practically use treatment protocols to determine the nature and principles of the treatment of therapeutic patients.	Be able to explain and justify the choice of treatment principles for dental diseases to the patient, colleagues.	To be responsible for the correctness and accuracy of the treatment of dental diseases.

7.	<p>Identification of the necessary working and resting regimen, diet in the treatment of dental diseases.</p>	<p>To commit to healthy lifestyles, personal hygiene and to implement them in health care practices.</p>	<p>To be able to analyse the health status of a given population, based on official data, by comparing it with statistical averages. Based on data on environmental conditions, food-stuffs, leisure and work regime, the health status of the contingent, identify the link between them.</p>	<p>Establish communicative links to ensure a good working and rest time regime, diet in the treatment of dental diseases.</p>	<p>To be responsible for ensuring that you have the appropriate knowledge and skills for the work and rest time regime, diet in the treatment of dental diseases.</p>
8.	<p>Performing medical and dental procedures.</p>	<p>1. Methods and techniques for the treatment of various classes of cavities according to Black. 2. Composition, properties, indications for the use of filling materials for permanent and</p>	<p>1. Repeat the treatment of carious cavities in different ways with classic and minimally invasive techniques. 2. Fill carious cavities of grades I to V according to</p>	<p>Be able to select methods and carry out individual treatment steps in a well-grounded manner.</p>	<p>To be responsible for the acquisition of relevant knowledge and skills.</p>

		temporary fillings, treatment pads and techniques for their use. 3.Clinical peculiarities of the structure of the cavity of the tooth and root canals. 4.Composition, properties, indications for the use of root canal filling materials (sealers and fillers).	Black with materials of different groups. 3.Trepanning of crowns of teeth of different groups, amputation, pulp extirpation, removal of cavities, instrumental and medicamentous treatment of root canals and their filling by different methods and groups of sealers for the purpose.		
9.	The treatment of basic dental diseases.	Knowledge of protocols for the treatment of dental diseases of patients in the therapeutic area with odontopathology.	To be able to practically apply treatment protocols in dental patients with a therapeutic profile.	Know how to explain and justify the treatment of dental diseases to the patient, colleagues. accurately.	Be responsible for the treatment of general dental patients with odontopathology

### Learning outcomes:

Integral and final programme learning outcomes, which are shaped by the discipline:

Completion of "medical practice" forms the basis for the formation of further practical part of the program results of training in accordance with the standard of higher education of Ukraine for undergraduate training of specialists of the second (master) level specialty 221 "Dentistry:

1. Gather information about the general state of the patient, assess the psychomotor and physical development of the patient, the condition of the palpebral-facial area, based on the results of laboratory and instrumental

examinations to evaluate the information about the diagnosis.

2. Identify and identify the leading clinical symptoms and syndromes; using standard methods, using the previous history of the patient, examination of the patient, knowledge of the person, its organs and systems, establish a virogynous nosological preliminary clinical diagnosis of dental disease.

3. Recognize and analyze laboratory, functional, and/or instrumental examinations of patients with dental disease for differential diagnosis of diseases.

4. Establish a residual clinical diagnosis according to appropriate ethical and legal standards by rendering an informed decision and logical analysis of the obtained subjective and physical findings, Additional examinations, differential diagnostics under the supervision of a medical supervisor in a treatment setting.

5. Determine the diagnosis of non-disabling conditions in the treatment setting.

6. Plan and implement preventive measures of dental diseases in the population to prevent the spread of dental diseases.

7. To analyse epidemiological state and conduct mass and individual, general and local medical and non-medicinal prophylaxis of dental diseases.

8. Determine the nature of treatment of dental disease by taking an informed decision according to the current algorithms and standard schemes.

9. Determine the nature, principles of the work regime, rest and necessary diet in the treatment of dental diseases on the basis of the previous or residual clinical diagnosis.

10. To carry out treatment of the main dental diseases according to the current algorithms and standard schemes under the control of the medical supervisor in the conditions of the treatment facility.

11. Analyse and evaluate public, social and health information using standard approaches and computer-based information technology.

12. Evaluate the impact of the environment on the health of the population in the medical institution according to standard methods.

13. Determine the tactics of providing emergency medical care, using the recommended algorithms, under any circumstances based on the diagnosis of an emergency condition in limited time (according to list 4).

14. Analyze and evaluate government, social and medical information using standard approaches and computer information technologies.

15. Assess the impact of the environment on the state of health of the population in the conditions of a medical institution according to standard methods.

16. To form goals and determine the structure of personal activity based on the result of the analysis of certain social and personal needs.

17. Follow a healthy lifestyle, use self-regulation and self-control techniques.

18. To be aware of and be guided in one's activities by civil rights, freedoms and duties, to raise the general educational cultural level.

19. To comply with the requirements of ethics, bioethics and deontology in their professional activities.

20. To organize the necessary level of individual safety (own and the persons he cares for) in case of typical dangerous situations in the individual field of activity.

21. Perform medical manipulations on the basis of a preliminary and/or final clinical diagnosis (according to lists 2, 2.1) for different segments of the population and in different conditions (according to list 6).



22. Perform medical dental manipulations on the basis of a preliminary and/or final clinical diagnosis (according to lists 2, 2.1) for different segments of the population and in different conditions (according to list 7).

23. Perform emergency medical aid manipulations using standard schemes under any circumstances based on the diagnosis of an emergency (according to list 4) in limited time (according to lists 6, 7).

Upon completion of the practical training "Medical Practice in Therapeutic Dentistry" students will be able to know:

- clinical features of anatomic and histological structure of teeth, periodontium, mucous membrane and mouth cavity organs;
- Basic methods of examination of dental patients;
- Clinical signs of dental diseases of hard tissues and periodontium;
- Basic clinical and biochemical indices of the human organism biologic standards;
- Principles of differential diagnostics of dental diseases;
- Principles and stages of treatment of dental diseases;
- Types, levels and prophylactic measures for diseases of the oral cavity;
- Tactics, algorithms of emergency medical aid at dental appointments. skills:

- Carry out examination of a dental patient;
- establish and formulate the initial diagnosis;
- Carry out the differential diagnosis;
- Analyze the results of the examination of the patient;
- Make a clinical diagnosis of the main diseases;
- Detect and identify manifestations of somatic diseases in the oral cavity.

### PROGRAM LEARNING OUTCOMES

	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6	PLO 7	PLO 8	PLO 9	PLO	PLO	PLO	PLO	PLO	PLO	PLO	PLO	PLO	PLO	PLO	PLO	PLO
OD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	+	+	-	-	-	-	-

## Methods of control

Each theme of the thematic module is estimated in accordance with the 4-grade assessment criteria (traditional scale), later the marks are converted into grades. The summary report makes it possible for the evaluators to assess the student's activities in the proper way (max.- 120 gr., min.- 72 gr.), and grades for the differentiated control (max. - 80 gr., min. - 50gr.).

### **Determination of the number of grades that a student earn from discipline.**

Assessment of the discipline is the result of the current study of student and calculated in grades, according to Table1.

Grades by discipline converted in scale of ECTS and scale of traditional marks. The grades of ECTS scale not converted in scale of traditional marks and vice versa. Grades of students, which study in specialty, converted on a scale ECTS as follows:

### **The convertation of estimations in rating scale into the scale of progress in studies ECTS**

Estimation of ECTS	Statistical index	Description	Limits of estimations of ECTS
<b>A</b>	The best 10%	Excellent	191-200
<b>B</b>	Next followings 25%	Very good	166-190
<b>C</b>	Next followings 30%	Good	136-165
<b>D</b>	Next	Satisfactory	111-135

	followings 25%		
<b>E</b>	The last 10%	Acceptably	101-110
<b>Fx</b>	Repeated handing over	Unsatisfactory	
<b>F</b>	Obligatory repeated course of studies	Unsatisfactory, with the re- peated course of studies	

Grades of discipline	4-th point traditional marks
From 170 to 200 grades	5
From 140 to 169 grades	4
From 139 to minimal numbers of grades	3
less than the minimum number of grades	2

### **THEORETICAL TEST QUESTIONS FOR DIFFERENTIAL CONTROL**

1. Comment on the tasks of therapeutic dentistry, as a basic dental discipline.
2. Who was the first to initiate the term "ergonomics"? In what year it happened?
3. Ergonomics as a science. The history of its formation.
4. Sections of ergonomics.
5. What problems in dentistry are solved by means of ergonomics ?

6. Dentistry as a science. The history of its formation.
7. The main tasks of therapeutic dentistry.
8. The relationship of therapeutic dentistry with other special and general medical disciplines.
9. Dental equipment.
10. Develop an appreciation of evidence-based knowledge of positioning in the dental environment. Understand the relationship between neutral position and the prevention of musculoskeletal problems.
11. Demonstrate operation of the clinician chair and the patient chair.
12. Demonstrate correct patient position relative to the clinician.
13. State the reason why it is important that the top of the patient's head is even with top edge of the chair headrest. Demonstrate how to correctly position a patient who is short in the dental chair so that (a) the patient is comfortable and (b) you have good vision and access to the oral cavity.
14. Position equipment so that it enhances neutral positioning.
15. Demonstrate correct clinician and patient position in each of the mandibular and maxillary treatment areas while maintaining neutral positioning.
16. Recognize incorrect position and describe how to correct the problem.

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