

SYLLABUS
THERAPEUTIC DENTISTRY (MODULE 1, 2)

regulatory discipline

Module 1.Methods of examining a dental patient.

Damage to the hard tissues of the teeth

Module 2.Endodontic disease (pulpitis, periodontitis).

level of higher education	the second (master's) level of higher education
discipline	22 "Health care"
specialty	221 "Dentistry"
educational qualification	master of dentistry
professional qualification	dentist
educational and professional program	"Dentistry"
form of education	daytime
course and semester of study of the academic discipline	3rd year - 5th semester 3 N course - VI semester

DATA ABOUT TEACHERS WHO TEACH EDUCATIONAL DISCIPLINE

Surname, first name, patronymic of teachers, academic degree, academic title	Iryna Mykhaylivna Tkachenko, doctor of medicine, professor Sydorova A.I., Doctor of Medicine, Associate Professor I. Ya. Marchenko, Doctor of Medicine, Associate Professor Shundryk M.A., Doctor of Medicine, Associate Professor S.A. Pavlenko, Doctor of Medicine, Associate Professor Nazarenko Z.Yu., Doctor of Medicine, Associate Professor Pavlenkova O.V., Doctor of Medicine, Associate Professor L. I. Lyashenko, Doctor of Medicine, assistant Vodoriz Ya.Yu., Doctor of Philosophy, assistant A.M. Dvornyk, Doctor of Philosophy, assistant N.M. Brailko, assistant
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MAIN CHARACTERISTICS OF THE EDUCATIONAL DISCIPLINE

Scope of the academic discipline

Number of credits / hours – 4 credits / 120 hours, of which:

Lectures (hours) - 4 p.m

Practical (hours) – 48 hours

Independent work (hours) - 56 hours

Policy of educational discipline

An important condition for a successful educational process is the personal observance by each student of higher education of the rules of conduct adopted by the State Medical University and in society. A university graduate, as a future doctor, must have a high level of culture of behavior, behave with dignity, tact, maintain endurance and self-control. A student of higher education must come to class on time without being late, be dressed in the appropriate medical uniform (white coat or surgical suit, changeable shoes and a medical cap). A student of higher education should not violate the schedule of the educational process, come to class with a synopsis and prepared on the topic of the class, not allow non-fulfillment of the curriculum and individual curriculum without valid reasons. A student of higher education who has missed classes

without a valid reason must apply to the dean's office within three days after leaving for classes with an application addressed to the dean for permission to work. During the class, the student of higher education should not leave the classroom without the teacher's permission; using a mobile phone and other means of communication and receiving information during classes without the teacher's permission, engaging in extraneous activities, distracting other students and disturbing the teacher.

When organizing the educational process at PDMU, students of higher education and teachers act in accordance with:

Regulations on the organization of the educational process at the Poltava State Medical University https://www.pdmu.edu.ua/storage/department-npr/docs_links/EXHOB4YrpFJqaaUWjwI3e7GhMA6TcAWDd7yVXYjO.pdf

Regulations on the academic integrity of higher education applicants and employees of the Poltava State Medical University and the Code academic integrity at PDMU

https://www.pdmu.edu.ua/storage/n_process_vimo/docs_links/t0jTYbqtNrd5ETCcHiFyMtnnlHbvN0orJOgwYDeS.pdf

https://www.pdmu.edu.ua/storage/n_process_vimo/docs_links/WwK8jif9Fb1Sz yjXCStiqjWVmat8x3J9QFHekKWx.pdf

Rules of internal procedure for students of the Poltava State Medical University (https://www.pdmu.edu.ua/storage/department-npr/docs_links/ycZUUg0fZUvD4QBZ4a18PWhTNJH8AbU6fANHfFAF.pdf).

Regulations on the organization of independent work of students of higher education at the Poltava State Medical University (https://www.pdmu.edu.ua/storage/department-npr/docs_links/pA4e0X3ke7nhuMkZbATEoLhDsEVaJsVrQtqiFjI.pdf)

Regulations on making up for missed classes and unsatisfactory grades by students of higher education of the Poltava State Medical University (https://www.pdmu.edu.ua/storage/department-npr/docs_links/Tw1ZR7sjAmDI8i0uE6kRX5q2F80J6AiwtZ2dvVlQ.pdf) and others

Description of the academic discipline (abstract)

Therapeutic dentistry is a discipline whose methods are aimed at preserving the health of teeth, organs and tissues of the oral cavity, restoring their anatomical form and physiological function, and preventing dental diseases by therapeutic methods. Module 1, 2 involves the study of methods of examining a dental patient with odontopathology, causes, pathogenesis, classification, clinical manifestations, methods of treatment and prevention of the main odontological diseases.

Prerequisites and postrequisites of the academic discipline (interdisciplinary connections)

The study of therapeutic dentistry is based on previously acquired knowledge of:

human anatomy: ontogenesis of organs and tissues of the oral cavity, topographical and anatomical structure of the human dental and jaw system, namely bones of the facial skull, temporomandibular joint, masticatory

and facial muscles, clinical and anatomical features of teeth, their blood supply and innervation; interpretation of gender, age and individual characteristics of the structure of tooth tissues, organs and tissues of the oral cavity and the human body as a whole;

histology, cytology, embryology: histogenesis of organs and tissues of the human oral cavity, their microscopic structure, changes in different age periods, as well as in conditions of physiological and reparative regeneration;

biological chemistry: biochemical composition of hard tissues of the tooth, saliva; biochemistry of metabolic processes in normal and pathological conditions; enzymatic system of saliva and oral fluid; the influence of vitamins and hormones on metabolic processes;

normal and pathological physiology: oral cavity as the initial part of the digestive system; reflex activity and sensory processes of the oral cavity; chewing, its features, determination of the completeness of the chewing apparatus; composition and functions of saliva and oral fluid;

medical and biological physics: odreams of materials science, properties of materials of different groups; biophysical foundations of galvanism; rheography; biophysics of muscle contraction; studying the parameters of the main physical factors that are used for diagnostic and therapeutic purposes;

microbiology, virology and immunology: biological properties of pathogenic and non-pathogenic microorganisms, viruses and laws of their interaction with the macroorganism, with the human population and the external environment; the main mechanisms of formation of the immune response of the human body; microflora of the human oral cavity; bacterial etiological factors of caries and its complications, their tincture properties;

operative surgery and topographical anatomy: topography of organs and tissues of the oral cavity; operative interventions on the organs and tissues of the oral cavity; topographical anatomy of blood, lymphatic vessels, nerves of the maxillofacial area;

pharmacology: the mechanism of action of various groups of medicinal substances used in dental practice; prescription rules.

propaedeutics of therapeutic dentistry: clinical features of the anatomical and histological structure of teeth, tissues and organs of the oral cavity, organization and equipment of the dental office, materials science in therapeutic dentistry, methods and techniques of preparation and filling of carious cavities, stages of endodontic treatment of teeth and filling of root canals.

Post-requisites(disciplines, the study of which requires knowledge, abilities and skills acquired after completing the study of this discipline).

As an educational discipline, therapeutic stomatology lays the foundation for studying other dental disciplines, namely surgical, orthopedic dentistry, orthodontics and formation of skills to apply acquired knowledge in the process of further study of all clinical disciplines and in future professional activities.

The purpose and tasks of the educational discipline.

the purpose study of the educational discipline "Therapeutic dentistry (module 1, 2)" is the preparation of a dentist capable of diagnosing, preventing and treating dental diseases of carious and non-carious origin.

The main tasks study disciplines "Therapeutic dentistry (module 1, 2)" is the ability to conduct an examination of a dental patient, identify the leading syndromes and symptoms, justify and formulate a preliminary diagnosis; analyze the results of the examination of a dental patient and carry out differential diagnosis, formulate the final diagnosis of the main odontological diseases, detect and identify the manifestations of somatic, infectious diseases in the oral cavity, determine the nature and principles of treatment of patients in the clinic of therapeutic dentistry, identify different clinical variants of the course and complications of the most common dental diseases, carry out their primary and secondary prevention.

Competencies and learning outcomes according to the educational and professional program, the formation of which contributes to the discipline (integral, general, special)

According to the "Standard of Higher Education of Ukraine" and the "Educational and Professional Program "Dentistry", the discipline "Therapeutic Dentistry" (module 1, 2) ensures that students of higher education acquire the following competencies:

Integral: the ability to solve complex tasks and problems in the field of health care in the specialty "Stomatology" in the process of education and future professional activity.

General:

1. Ability to abstract thinking, analysis and synthesis.
2. Knowledge and understanding of the subject area and understanding of professional activity.
3. Ability to apply knowledge in practical activities.
4. Ability to communicate in the national language both orally and in writing.
5. Ability to communicate in English. Ability to use international Greek-Latin terms, abbreviations and clichés in professional oral and written communication.
6. Skills in using information and communication technologies.
7. Ability to search, process and analyze information from various sources.
8. Ability to adapt and act in a new situation.
9. Ability to identify, pose and solve problems.
10. Ability to be critical and self-critical.
11. Ability to work in a team.
12. The ability to act socially responsibly and consciously.
13. The ability to realize one's rights and responsibilities as a member of society, to realize the values of a civil (free democratic) society and the need for its sustainable development, the rule of law, the rights and freedoms of a person and a citizen in Ukraine.

Special:

1. The ability to collect medical information about the patient and analyze clinical data.
2. The ability to interpret the results of laboratory and instrumental research.

3. Ability to diagnose: determine preliminary, clinical, final, accompanying diagnosis, emergency conditions.
4. The ability to determine the management tactics of patients with diseases of the organs and tissues of the oral cavity and maxillofacial region with accompanying somatic diseases.
5. Ability to perform medical and dental manipulations.
6. Ability to maintain normative medical documentation.

Learning outcomes for the discipline according to the educational and professional program "Dentistry":

"Therapeutic dentistry" (module 1, 2), as an educational discipline, lays the foundation for the further formation of integrative final program learning outcomes, such as:

1. To isolate and identify the leading clinical symptoms and syndromes, according to standard methods, using preliminary data of the patient's history, data of the patient's examination, knowledge about the person, his organs and systems, to establish a probable nosological or syndromic preliminary clinical diagnosis of dental disease (according to the list 2.1. Therapeutic stomatology (A, B) of Appendix 1 of the educational and professional program "Dentistry").
2. Collect information about the patient's general condition, evaluate the patient's psychomotor and physical development, the condition of the maxillofacial organs, based on the results of laboratory and instrumental studies, evaluate information about the diagnosis.
3. Prescribe and analyze additional (mandatory and optional) examination methods (laboratory, x-ray, functional and/or instrumental) according to list 5 of appendix 1 of the educational and professional program "Dentistry", of patients with diseases of the organs and tissues of the oral cavity and jaw -facial area for differential diagnosis of diseases.
4. To determine the final clinical diagnosis in compliance with the relevant ethical and legal norms, by making a reasoned decision and logical analysis of the received subjective and objective data of clinical, additional examination, carrying out differential diagnosis under the control of the managing physician in the conditions of a health care institution (according to list 2.1. Therapeutic stomatology (A, B) of appendix 1 of the educational and professional program "Dentistry").
5. Establish a diagnosis of urgent conditions under any circumstances (at home, on the street, in a medical institution), in conditions of emergency, martial law, lack of information and limited time (according to list 4 of appendix 1 of the educational and professional program "Dentistry").
6. Plan and implement dental disease prevention measures among the population to prevent the spread of dental diseases.
7. Analyze the epidemiological situation and carry out measures for mass and individual, general and local drug and non-drug prevention of dental diseases.
8. Determine the approach, plan, type and principle of treatment of dental disease (according to list 2.1. Therapeutic dentistry (A, B) of appendix 1 of the educational and professional program "Dentistry") by making a reasoned decision according to existing algorithms and standard schemes.

9. Determine the nature of work, rest and necessary diet in the treatment of dental diseases on the basis of a preliminary or final clinical diagnosis by making a reasoned decision according to existing algorithms and standard schemes.
10. Determine the tactics of managing a dental patient with somatic pathology (according to list 3) by making a reasoned decision according to existing algorithms and standard schemes.
11. To carry out treatment of basic dental diseases according to existing algorithms and standard schemes under the supervision of a managing physician in the conditions of a health care institution (according to list 2.1. Therapeutic dentistry (A, B) of appendix 1 of the educational and professional program "Dentistry").
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 a limited time (according to list 4).
14. Analyze and evaluate state, 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 facility 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.
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 required level of individual safety (own and the persons one cares about) in case of occurrence 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 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 for different segments of the population and in different conditions (according to list 7 (manipulations according to numbers 7, 22, 32, 33, 35, 42, 43, 46, 48, 52, 56, 60, 68) of Appendix 1 of the educational and professional program "Dentistry").
23. To perform emergency medical aid manipulations using standard schemes, under any circumstances based on the diagnosis of an emergency condition (according to list 4) in conditions of limited time (according to list 6).
24. To develop measures for the organization and integration of the provision of dental care to the population and to conduct marketing of medical, including dental, services in the conditions of the functioning of the health care institution, its division, in a competitive environment.

After completing the study of the discipline "Therapeutic dentistry" (module 1, 2), students of higher education should know:

- clinical features of the anatomical and histological structure of the teeth, periodontium, mucous membrane and organs of the oral cavity;
- classification of dental diseases (caries and its complications, non-carious lesions of hard tooth tissues);
- basic methods of examination of dental patients;
- clinical signs of odontological diseases;
- basic clinical and biochemical indicators of the norm of biological fluids of the human body;
- principles of differential diagnosis of odontological diseases;
- principles and stages of treatment of dental patients;
- types, levels and measures of prevention of dental diseases.
- the main signs of emergency conditions at a dental appointment and under any circumstances (at home, on the street, in a medical institution);
- tactics, algorithms for providing emergency medical care at a dental appointment and under any circumstances under limited time conditions;

be able:

- conduct an examination of a dental patient;
- to analyze changes in the structure of hard tissues of the tooth, pulp, periodontium, periodontium, mucous membrane of the oral cavity, related to age and pathological conditions;
- substantiate and formulate a preliminary diagnosis;
- carry out differential diagnosis;
- analyze the results of examination of a dental patient;
- determine the clinical diagnosis of the main dental diseases of carious and non-carious origin and its complications;
- detect and identify manifestations of somatic, infectious diseases in the oral cavity;
- determine the nature and principles of treatment of patients in the clinic of therapeutic dentistry;
- identify various clinical variants and complications of the most common odontological diseases;
- carry out primary and secondary prevention of the most common diseases in the clinic of therapeutic dentistry.
- determine the necessary work and diet regime for the treatment of dental diseases in the clinic of therapeutic dentistry;
- determine the diagnosis of an emergency;
- determine the tactics and provision of emergency medical assistance;
- organize medical evacuation measures.

Thematic plan of lectures (by modules) with an indication of the main issues considered at the lecture

Seq. №	The topic of the lecture	Number hours
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1	2	3
Module 1. Methods of examining a dental patient. Damage to the hard tissues of the teeth (6 hours)		
1.	Examination of a dental patient. Medical documentation of a therapeutic dental appointment. Medical history as a medical, legal and scientific document. - General principles of examining a dental patient in a clinic of therapeutic dentistry. - Scheme of examination of a dental patient. - Subjective examination of a dental therapeutic patient. - characteristics of the pain syndrome; - identifying features of the anamnesis of the disease - collection of life history data - Objective examination of the dental therapeutic patient. Diagnostic value and evaluation of the results of examination, probing, percussion, palpation. - Additional methods of examining a dental patient. Their importance for the diagnosis of the main odontological diseases.	2
2.	Tooth decay. Definition. Epidemiological indicators of caries. Etiology and pathogenesis of caries. International caries classification and management system ICCMS (ICDAS codes). The concept of caries resistance of tooth tissues. Clinic, pathomorphology, diagnosis and differential diagnosis of non-cavitated and cavitated forms of caries. Caries treatment depending on the degree of severity and activity of the process. - Definition of the concept. - Epidemiology of caries: - prevalence; - intensity; - increase in intensity (incidence). - Etiology of caries, the role of microorganisms. - The influence of environmental factors on the prevalence of caries. - International caries classification and management system ICCMS (ICDAS codes). - The concept of caries resistance. The value of acid-resistant bone enamel. - Modern ideas about the pathogenesis of caries. The role of dental plaque. - Caries treatment options depending on the degree of severity and activity of the process. - Assessment of the complexity of caries treatment. - Approaches to the removal of carious tissues.	2

3.	Non-carious lesions of teeth. Classification according to Patrikeev. Pathomorphology, clinic and diagnosis of lesions occurring before and after teething. Treatment. 1. Classification of non-carious tooth defects; 2. Enamel hypoplasia: etiology, types, clinic, treatment; 3. Enamel hyperplasia: types, clinic, treatment; 4. Fluorosis: etiology, classification, clinic, treatment; 5. Hyperesthesia: types, clinic, treatment; 6. Wedge-shaped defect: theories of development, clinic, treatment; 7. Erosion of hard tooth tissues: clinic, treatment; 8. Necrosis of hard tissues of the tooth: types, stages, clinic; Tooth injuries: types, clinic, treatment.	2
Module 2. Endodontic disease (pulpitis and periodontitis). diagnosis, treatment, prevention (10 hours).		
4.	Pulpit. Definition of the concept. Etiology and pathogenesis of pulpitis. Classification of pulpitis Yu.M. Gofunga, I.O. Novika, KMI (E.S. Yavorska, L.I.Urbanovych, 1964), MKH-10, American Association of Endodontists (2013). Pathomorphology, clinic, diagnosis of reversible and irreversible forms of pulpitis. 1. Definition of the concept. 2. Clinical features of the structure of the pulp. 3. Etiology of pulpitis. Ways of penetration of infection into the pulp. 4. Pathogenesis of pulpitis. 5. Pulpit classifications. 6. Clinic and pathomorphology, symptoms of acute pulpitis. 7. Clinic and pathomorphology, symptoms of chronic forms of pulpitis. 8. Diagnosis of reversible and irreversible forms of pulpitis.	2
5.	Treatment of pulpitis with biological, vital amputation and extirpation methods. Indications, sequence and features of stages. Effectiveness of methods, complications. 1. General characteristics of pulpitis treatment methods. 2. Biological method of treatment of pulpitis: essence, indications for use, stages of treatment. 3. Medical pads: groups, mechanism of action, features of use. 4. Vital amputation: essence, indications for use, stages of treatment. 5. Vital extirpation: essence, indications for use, stages of treatment. Effectiveness of treatment of pulpitis with vital methods.	2
6.	Devital extirpation, amputation and combined method of treatment of pulpitis. Mummification, stages of	2

	implementation, complications. Comparative characteristics of various methods of treatment of pulpitis. 1. Methods of treatment of pulpitis. 2. Medicinal means for devitalization. Mechanism of their action, features of use. 3. Devital extirpation: definition, indications for use, stages of implementation. 4. Devital amputation: definition, indications for use, stages of execution, complications. 5. Devital combined method: definition, indications for use, stages of implementation. 6. Effectiveness of treatment of pulpitis by devital methods.	
7.	Apical periodontitis. Etiology and pathogenesis. Classifications of periodontitis. Pathomorphology, clinic, diagnosis, differential diagnosis of symptomatic (acute) and asymptomatic (chronic) forms of periodontitis. 1. Anatomical and histological structure of the periodontium. Functions of the periodontium. 2. Etiology of periodontitis: a) infectious; b) traumatic; c) medication. 3. Pathogenesis of infectious and non-infectious forms of periodontitis. 4. Principles of classification of periodontal inflammation. 5. Classification of periodontitis: a) I.H. Lukomsky b) M. I. Groshikova c) S. A. Vaindrukh 6. Pathomorphology and clinic of acute and chronic and acute forms of periodontitis.	2
8.	Treatment of periodontitis. General principles of treatment and stages. Emergency assistance. Modern technologies of impact on the apical focus of infection. 1. Methods of treatment of periodontitis. 2. The principle of periodontitis treatment. 3. Influence on the macrochannel and its branches. 4. Effect on the system of microtubules. 5. Effect on periapical tissues in the treatment of periodontitis. 6. Stages of treatment of acute purulent apical periodontitis. Emergency assistance. 7. Peculiarities of treatment of chronic destructive forms of periodontitis. 8. Peculiarities of choosing a filling material for filling root canals. Indications for the one-session method of treatment of	2

	periodontitis.	
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**Thematic plan of practical classes by modules and content modules
with an indication of the main issues considered in the practical class**

Seq. №	Topic name	Number hours
Module 1: "Methods of examining a dental patient. Damage to the hard tissues of the teeth"		
	Content module 1. "Examination of a dental patient with odontopathology".	
1.	Therapeutic dentistry: tasks, relationship with general clinical and dental disciplines. Equipment of workplaces of a dentist-therapist. Safety precautions. Scheme of examination of a dental patient. Subjective examination: complaints, anamnesis of disease and life (social, medical, behavioral, dental). Characteristics of pain syndrome in various dental diseases. Medical documentation of the dental therapeutic reception. <i>*Ethics and deontology in dentistry. Iatrogenic diseases. Emergencies at a dental appointment: causes, clinical manifestations, medical care (independent work).</i> - tasks of therapeutic dentistry; - relationship with general clinical and dental disciplines; - structure of the dental polyclinic: main and additional subdivisions; - the structure of the therapeutic department. - equipping a dentist's workplace: universal installations and dental chairs; - safety techniques for work in the therapeutic office; - the basic rules of ethics and deontology when receiving patients; - examination scheme of a dental patient; - principles of dental patient examination; - study of pain syndrome in odontopathology; - the sequence of collecting the patient's medical history; - the sequence of collecting the patient's life history. - clinical manifestations and medical assistance in emergency situations: fainting, collapse, allergic shock, hypertensive crisis, acute heart failure, etc.	2
2.	Clinical methods of examination, their importance for diagnostics of oral cavity diseases: the review (external, face of the patient, vestibule, actually oral cavities, dentitions): sequence, assessment. - methodology and sequence of conduct, informativeness, main objective methods of examination;	2

	- conducting an external examination of the patient and assessing his condition in normal and pathological conditions; - conducting an examination and assessing the state of the face in normal and pathological conditions; - examination and assessment of regional lymph nodes; - examination and assessment of the condition of the vestibule of the oral cavity in normal and pathological conditions. - examination and assessment of the condition of the oral cavity and dentition in normal and pathological conditions; dental formulas.	
3.	Inspection of disease place (Locus morbi): surveys, probing, percussion, palpation. - assessment of the state of the affected tooth based on the examination result; - carrying out and evaluating tissue probing of the affected tooth; - conducting and evaluating horizontal and vertical percussion of the affected tooth; carrying out and evaluating palpation of the mucous membrane in the region of the projection of the apex of the root of the affected tooth.	2
4.	Auxiliary methods of inspection of the stomatological patient: thermodiagnostic, EOD, caries-marking: methodology of conducting, interpreting of results. X-ray, luminescent and transilluminating diagnostics: the indication to use, feature of realization. Diagnostic tests: with an anesthesia and on the preparation. <i>*Additional functional and laboratory research methods: luminescence and transillumination diagnostics, digital fiber-optic tomography, DIAGNOdent: indications, features of the procedure. Procedure for determining trigger zones and examination of the exit sites of the trigeminal nerve peripheral branches. Laboratory examination methods. Interpretation of the results of analyzes of oral liquid, blood, urine, etc. (independent work).</i> - essence, indications, method of thermal diagnostics, interpretation of its results; - essence, indications, method of conducting electroodontodiagnostics (EOD), interpretation of its results; - essence, indications, method of carrying out caries marking (vital staining) and interpretation of its results; - essence, indications, types of x-ray examination of the patient, interpretation of its results; - computed tomography in dentistry: possibilities, indications for appointment;	2

	- essence, indications, method of conducting luminescence diagnostics, interpretation of its results; - essence, indications, method of conducting transillumination diagnostics, interpretation of its results; - determination of quantitative light fluorescence; - essence and method of diagnostic tests: anesthesia test, dissection test; - the method of determining trigger zones and examining the exit points of the peripheral branches of the trigeminal nerve; - determination of ohmic resistance of hard tooth tissues; - evaluation of urine tests, general blood test, blood sugar test, biochemical blood test, pH of oral fluid, etc.	
5.	Oral hygiene and its importance in the complex prevention of diseases of an oral cavity and organism as a whole. Microbial biofilm: formation mechanism, composition, properties. Methods of indicating microbial biofilm: staining, HI according to Fedorov-Volodkina, Green-Vermillion, oral hygiene efficiency index (Podshadley, Haley). Methods of removing dental deposits: manual, hardware (sonic, ultrasonic), air-abrasive, combined. - factors that affect the state of oral hygiene; - the importance of hygiene in the prevention of dental diseases; - means and ends and oral hygiene; - mechanism of formation, structure, properties, composition of microbial biofilms; - methods of microbial indication biofilms: use of dyes, interpretation of results; - the method of determining the hygienic index according to Fedorov-Volodkina; - method of determining the hygienic index according to Green-Vermillion; - the oral hygiene efficiency index assessment method (Podshadley, Haley); - types, mechanism of formation of dental deposits; - methods of removing mineralized and non-mineralized dental deposits; - essence, stages of conducting (algorithm) professional oral hygiene; - manual removal of mineralized dental deposits: tools for scaling (Langer curettes, a set of Zaks hooks, etc.); - removal of dental deposits by air-abrasive method (air flow); - removal of dental deposits by hardware (sonic, ultrasonic) method; - chemical control biofilms	2
6.	** Current control of content module № 1.	2

	- the material of the passed topics of content module 1 "Examination of a dental patient with odontopathology".	
Content module 2. "Caries and non-caries lesions of teeth".		
7.	Caries of a tooth. Definition of concept. Statistical parameters of tooth caries. Modern representations about etiology and pathogenesis of caries. International caries classification and management system ICCMS (ICDAS codes). 4D cycle of caries management. Concept of structural and functional resistance of hard tooth tissues. Determination of structural and functional resistance of enamel (TER-test, CESER). <i>* Theories of caries development: the essence of advantages and disadvantages. Contribution of scientists: G. Miller, D.A. Entin, A. Shatz and D. Martin, I.G. Lukomsky, A.E. Sharpenak, A.I. Rybakova, P.A. Leus, V.K. Leontiev, V.R. Okushko, E.V. Borovsky and others. (independent work).</i> - caries definition; - caries classification; - epidemiological indicators of caries, methods of their determination, evaluation of results; - the role of dental plaque in the pathogenesis of caries; - modern interpretation of the mechanism of demineralization of hard tooth tissues. - ICCMS international caries classification and management system (ICDAS codes). - 4D caries management cycle; - the concept of structural resistance of hard tooth tissues. - the concept of functional resistance of hard tooth tissues. - the method of conducting and interpreting the results of the TER test; - the method of conducting and interpreting the results of the CESER test.	2
8.	Pathomorphology, clinic, diagnosis, differential diagnosis of active (acute) forms of cavitated and non-cavitated caries. Blooming (multiple) caries: causes of development, clinical manifestations, diagnosis. - clinical characteristics of the severity of crown caries according to ICDAS; - a dental caries diagnosis scheme that combines visual and X-ray assessment of the severity of caries taking into account the activity of the lesion; - pathomorphological changes in enamel with acute initial caries; - clinic and diagnosis of non-cavitated caries; - clinic and diagnosis of cavitated medium and deep caries;	2

	- causes of multiple caries; - pathomorphology, clinic and diagnosis of multiple caries.	
9.	Pathomorphology, clinic, diagnosis, differential diagnosis of inactive (chronic) forms of cavitated and non-cavitated caries. - pathomorphological changes in enamel with inactive initial caries; - clinic and diagnosticsinactive non-cavitated caries; - clinic and diagnosticsinactive cavitated medium and deep caries;	2
10.	Caries treatment options depending on the degree of severity and activity of the process. Assessment of the complexity of caries treatment. Approaches to the removal of carious tissues. - assessment of the complexity of caries treatment; - justification of the possibility of a conservative method of caries treatment. - approaches to carious tissue removal (non-selective caries removal, selective caries removal, staged caries removal); - caries treatment options depending on the degree of severity and activity of the process.	2
11.	Non-carious lesions of teeth: classification. Pathomorphology, clinic and diagnosis of non-carious lesions occurring after teeth eruption: enamel erosion, wedge-shaped defect, increased wear, necrosis of hard tooth tissues. Tooth trauma. Hyperesthesia of hard tissues of teeth. <i>*Pathomorphology, clinic and diagnosis of non-carious lesions that occur before teeth erupt. hypoplasia, hyperplasia, endemic fluorosis, anomalies of tooth development. (independent work).</i> <i>*Differential diagnosis of various forms of caries and non-carious lesions of teeth (independent work).</i> - classification of non-carious lesions of teeth; - etiology, pathogenesis of non-carious lesions of teeth that occur before teeth erupt; - clinic, differential diagnosis of enamel hypoplasia; - clinic, differential diagnosis of enamel hyperplasia; - clinic, differential diagnosis of anomalies of tooth development (Hetchenson's, Fournier's, Pflueger's teeth, etc.); - classification of dental fluorosis according to A.K. Nikolishinim - clinic, differential diagnosis of various forms of dental fluorosis; - etiology, pathogenesis of non-carious dental lesions occurring after teeth eruption; - clinic, differential diagnosis of enamel erosion; - clinic, differential diagnosis of wedge-shaped defect; - types, clinic, differential diagnosis of increased wear of teeth;	2

	- clinic, differential diagnosis of chemical necrosis of hard tooth tissues; - classification, dental trauma clinic. - intra- and extra-syndromic diagnosis of caries and non-carious dental lesions.	
12.	**Current control of content module № 2. - the material of the passed topics of content module 2 "Caries and non-carious lesions of teeth".	2
Module 2: "Endodontic disease (pulpitis, periodontitis).		
	Content module 3 "Pulpitis".	
13.	Pulpitis. Etiology, pathogenesis, classifications by E.M. Gofung, KMI (E.S. Yavorska, L.I.Urbanovych, 1964), ICD-10, American Association of Endodontists (2013). Pathomorphology, clinic, diagnosis of reversed forms of pulpitis (acute traumatic pulpitis, pulp hyperemia, limited pulpitis). - causes of pulp inflammation; - pathogenesis of acute and chronic forms of pulpitis; - classification of pulpitis (E.M. Gofung, E.S. Yavorska and L.I. Urbanovych (1964), ICD-10), their differences, positive sides and disadvantages; - classification of the American Association of Endodontists; - pathomorphology, clinic, diagnosis of acute traumatic pulpitis; - pathomorphology, clinic, diagnosis of pulp hyperemia, acute limited pulpitis; - intrasyndromic and non-syndromic differential diagnosis of pulp hyperemia and acute limited pulpitis.	2
14.	Pathomorphology, clinic, diagnosis, differential diagnosis of symptomatic irreversible forms of pulpitis (acute diffuse and purulent pulpitis). - pathomorphology, clinic, diagnosis of acute diffuse and purulent pulpitis; - intrasyndromic and non-syndromic differential diagnosis of acute forms of pulpitis.	2
15.	Pathomorphology, clinic, diagnosis, differential diagnosis of chronic forms of pulpitis (fibrous, hypertrophic, gangrenous, concrementous). Exacerbation of chronic pulpitis: causes, clinic, diagnosis. - causes of chronic inflammation of the pulp; - mechanism of development of chronic pulp inflammation; - pathomorphology, clinic, diagnosis of chronic fibrous pulpitis; - clinic, diagnosis of chronic hypertrophic pulpitis; - clinic, diagnosis of chronic gangrenous pulpitis;	2

	- pathomorphological forms of chronic concrementous pulpitis, types of concretions, differences in their structure and location; - clinic, diagnosis of chronic calcifying pulpitis; - causes of exacerbation of chronic pulpitis, local and general factors; - clinic, diagnosis of exacerbation of chronic pulpitis; - intrasyndromic and extrasyndromic differential diagnosis of chronic and acute forms of pulpitis.	
16.	Methods of pulpitis treatment. Justification of the choice of the method of treatment of pulpitis depending on the form, course and general condition of the patient. Analgesia in the treatment of pulpitis: types, indications, groups of anesthetics. Conservative method of treatment of pulpitis (biological): essence, indications for use. Stages of treatment. Medical pads: groups, properties, composition and prescription of combined medical pastes. - indications, methods of various types of anesthesia in the treatment of pulpitis; - mechanism of action of anesthetics, possible complications; - types of pulpitis treatment methods: conservative and surgical; - the essence of various methods of treatment of pulpitis, justification of their choice depending on the form, course and general condition of the body; - the essence, indications and contraindications for the biological method of treating pulpitis; - stages of biological treatment of pulpitis; - groups, properties, mechanism of action of therapeutic pastes, possible complications; - effectiveness and complications in the treatment of pulpitis by the biological method.	2
17.	Vital pulp amputation and extirpation: essence of methods, indications, stages of implementation. Effectiveness and possible complications. <i>* Filling of root canals with pulpitis. Sealers and fillers: groups, properties, indications for use depending on the method of treatment, group of teeth, patency of root canals. Root canal sealing methods (central pin method, lateral condensation of gutta-percha, cold and warm vertical condensation of gutta-percha). Errors and complications. (independent work)</i> - the essence, indications and contraindications for performing salutary amputation in the treatment of pulpitis; - stages of treatment of pulpitis by the method of vital amputation;	2

	- groups, properties, mechanism of action of therapeutic pastes used for the treatment of pulpitis by the method of vital amputation - effectiveness and complications in the treatment of pulpitis by the method of vital amputation; - the essence, indications and contraindications for conducting salutary extirpation in the treatment of pulpitis; - stages of endodontic treatment of pulpitis by the method of vital extirpation; - methods of determining mouths of root canals; - mechanism of action of antiseptic and hemostatic medicinal substances; - methods of instrumental processing of root canals; - choice of sealer when sealing root canals; - root canal sealing methods; - effectiveness and complications in the treatment of pulpitis by the method of vital extirpation.	
18.	Devital pulpitis treatment methods: extirpation, amputation and combined. Essence of methods, indications, stages of implementation. Medicines for pulp devitalization: indications for use, mechanism of action, features of use. Effectiveness and possible complications. <i>*Methods of instrumental treatment of impenetrable root canals: drugs for chemical expansion, pulp mummification and impregnation of impenetrable root canals. Depot-phoresis. Disadvantages and possible complications (independent work).</i> - essence, indications and contraindications for devital extirpation in the treatment of pulpitis; - mechanism of action of devitalizing pastes; - regulationsapplication of devitalizing pastes, possible complications. - stages of endodontic treatment of pulpitis by the devital extirpation method; - effectiveness and complications in the treatment of pulpitis by devital extirpation. - essence, indications and contraindications for devital amputation in the treatment of pulpitis; - essence,indications and contraindications for the combined method of treatment of pulpitis; - stages of devital amputation and the combined method in the treatment of pulpitis; - medicinal means for mummification of the pulp; - methodsimpregnation of root canals; disadvantages and possible complications.	2
19.	**Current control of content module 3. - the material of the passed topics of content module 3 "Pulpit"	2

	Content module 4. "Periodont"	
20.	Apical periodontitis: etiology, pathogenesis, classification (I.G. Lukomskiy, M.A. Groshikov, S.A Vaindrukh, ICD-10, WHO, 1995). Classification of injuries according to Chuprikina N.M. (1985). Pathomorphology, clinic, diagnosis, differential diagnosis of symptomatic (acute) forms of periodontitis of infectious and non-infectious origin (serous and purulent periodontitis). - clinical features of periodontal structure, main functions; - etiology of infectious and non-infectious forms of periodontitis; - pathogenesis of acute forms of periodontitis; - classification of periodontitis according to I.H. Lukomskiy, M.A. Groshikov, S.A Vaindrukh, MKH-10, their main differences, advantages and disadvantages; - reasons for the development of acute non-infectious inflammation of the periodontium; - the mechanism of development of acute medicinal and traumatic apical periodontitis; - classification of injuries according to Chuprinina N.M. (1985); - pathomorphology, clinic, diagnosis of drug-induced periodontitis; - pathomorphology, clinic, diagnosis of acute traumaOho periodontitisin; - pathomorphology, clinic, diagnosis of acute seositis periodontitis; - pathomorphology, clinic, diagnosis of acute purulent periodontitis; - intrasyndromic and extrasyndromic differential diagnosis of acute forms of periodontitis.	2
21.	Pathomorphology, clinic, diagnosis, differential diagnosis of asymptomatic (chronic) forms of apical periodontitis (fibrous, granulating, granulomatous.) - reasons for the development of chronic inflammation of the periodontium; - the mechanism of development of chronic periodontal inflammation, its destructive forms; - pathomorphology, clinic, diagnosis of chronic granulating periodontitis; - clinic, diagnosis of chronic granulomatous periodontitis; - clinic, diagnosis of chronic fibrous periodontitis.	2
22.	Exacerbation of chronic forms of apical periodontitis: etiology, pathomorphology, clinic, diagnosis, differential diagnosis.	2

	Clinic of apical periodontitis complicated by periostitis. X-ray diagnosis of chronic forms of periodontitis. - causes of exacerbation of chronic apical periodontitis, local and general factors; - clinic, diagnosis of exacerbation of chronic fibrous periodontitis; - clinic, diagnosis of exacerbation of chronic granulating periodontitis; - clinic, diagnosis of exacerbation of chronic granulomatous periodontitis; - definition of the concepts of osteoporosis, osteosclerosis, destruction of bone tissue, hypercementosis; - features of the radiological picture of chronic forms of periodontitis; - indications for computer tomography of the jaws in the diagnosis of periodontitis; - analysis of a computer tomogram of the maxillofacial area. - intrasyndromic and non-syndromic differential diagnosis of various forms of periodontitis.	
23.	Principles of treatment of various forms of apical periodontitis. <i>*The concept of tooth restoration. Planning the construction of a restoration after endodontic treatment (independent work).</i> - stages of treatment of acute forms of apical periodontitis of infectious origin; - features of providing emergency care to a patient with acute purulent apical periodontitis; - antidote therapy of acute drug-induced periodontitis; - the choice of treatment tactics for acute traumatic periodontitis depending on the type of injury; - groups of sealers, composition and properties of materials for sealing root canals, indications for their use.	2
24.	Current control of content module 4.** - the material of the passed topics of content module 4. "Periodontitis"	2
	Together	48

*Note: topics of independent work, the implementation of which is monitored in this practical lesson, are highlighted in italics.

**Note: topics for which a positive assessment must be received.

Independent work

Independent work of students involves:

- development of topics that are not included in the topics of classroom classes;
- preparation for practical classes;
- preparation for control of content modules.

**Independent processing of topics that are not included
to the classroom lesson plan**

Seq. №	Topic	Number hours
1.	Ethics and deontology in dentistry. Iatrogenic diseases. Emergencies at a dental appointment: causes, clinical manifestations, medical assistance. - concepts of ethics and deontology in dentistry; - types of iatrogenes, causes of occurrence; - fainting: causes of development, clinical manifestations, emergency care; - collapse: causes of development, clinical manifestations, emergency care; - allergic shock: causes of development, clinical manifestations, emergency care; - hypertensive crisis: causes of development, clinical manifestations, emergency care; - acute heart failure: causes of development, clinical manifestations, emergency care; - bleeding: causes of development, clinical manifestations, emergency care; - prevention of emergencies at the dental office.	1
2.	Additional functional and laboratory research methods: luminescence and transillumination diagnostics, digital fiber-optic tomography, DIAGNOdent: indications, features of the procedure. Techniques for determining trigger zones and examining the exit points of the peripheral branches of the trigeminal nerve. Laboratory methods of examining a dental patient. Interpretation of the results of analyzes of oral fluid, blood, urine, etc. - essence, indications, methods of conducting luminescence diagnostics, interpretation of its results; - essence, indications, methods of conducting transillumination diagnostics, interpretation of its results; - determination of quantitative light fluorescence; - essence and technique conducting diagnostic tests: anesthesia test, dissection test; - method determination of trigger zones and examination of exit points of the peripheral branches of the trigeminal nerve; - determination of ohmic resistance of hard tooth tissues; evaluation of urine tests, general blood test, blood sugar test, biochemical blood test, pH of oral fluid, etc.	
3.	Theories of caries development: essence, advantages and disadvantages. Contribution of scientists: Miller, D.A. Entin, A. Shatz and D. Martin, I.G. Lukomsky, A.E. Sharpenaka,	1

	A.I. Rybakova, P.A. Leusa, V.K. Leontieva, V.R. Okushko, E.V. Borovsky, etc.) - Miller's chemical-parasitic theory: essence, positive and negative qualities; - physical and chemical theory by D.A. Entin: essence, positive and negative qualities; - the theory by A. Shatz and D. Martin; - biological theory by I.H. Lukomsky: essence, positive and negative qualities; - age-related concept of adverse effects on the dental pulp by A.I. Rybakov: essence, positive and negative qualities; - polyetiological theory by V. Borovsky, V.K. Leontiev, P.A. Leus: essence, positive and negative qualities; - contribution V.R. Okushko into the concept of resistance of hard tooth tissues and their importance in the development of caries.	
4.	Pathomorphology, clinic and diagnosis of non-carious lesions occurring before teeth eruption: hypoplasia, hyperplasia, endemic fluorosis, anomalies of tooth development. classification of non-carious lesions of teeth; - etiology, pathogenesis of non-carious lesions of teeth that occur before teeth erupt; - clinic, differential diagnosis of enamel hypoplasia; - clinic, differential diagnosis of enamel hyperplasia; - clinic, differential diagnosis of anomalies of tooth development (teeth Getchenson, Fournier, Pflueger, etc.); - classification of dental fluorosis according to A.K.Nikolishin; - clinic, differential diagnosis of various forms dental fluorosis.	1
5.	Differential diagnosis of various forms of caries and non-carious lesions of teeth. - intrasyndromic differential diagnosis of acute and chronic forms of caries and non-carious dental lesions; - non-syndromic differential diagnosis of acute and chronic forms of caries and non-carious dental lesions.	1
6.	Filling of root canals at pulpitis. Sealers and fillers: groups, properties, indications for use depending on the method of treatment, group of teeth, patency of root canals. Root canal sealing methods (central pin method, lateral condensation of gutta-percha, cold and warm vertical condensation of gutta-percha). Errors and complications. - the choice of sealer for sealing root canals depending on the chosen method of treatment, patency of the root canal, group of teeth, etc.;	

	- methods of filling root canals in different ways; - errors and complications.	
7.	Methods of instrumental treatment of impassable root canals: drugs for chemical expansion, pulp mummification and impregnation of impenetrable root canals. Depophoresis. Disadvantages and possible complications. - causes of instrumental obstruction of root canals; - medicinal products for chemical expansion of root canals: groups, mechanism of action; - medicinal products for pulp mummification and impregnation of impenetrable root canals: mechanism of action, methods; - depophoresis: essence, indications for use, method of implementation; - disadvantages and possible complications in the treatment of poorly permeable and instrumentally impervious root canals.	1
8.	The concept of tooth restoration. Planning the construction of a restoration after endodontic treatment. - the difference between filling a carious cavity and restoring a tooth; - indications for tooth restoration; - planning the construction of a restoration after endodontic treatment of teeth; - selection of filling material for tooth restoration: determination of color, transparency, group of filling material depending on the location of the tooth, degree of its destruction, purpose; - the use of parpulpary and intracanal pins and inserts made of different materials in the restoration of tooth crowns.	1

Individual tasks

1. Creation of educational videos on:
 - diagnosis and treatment of diseases of hard tooth tissues of carious and non-carious origin, endodontic diseases;
 - differential diagnosis of dental diseases in the clinic of therapeutic dentistry.
2. Production of tools for visualizing learning (educational stands, models, preparations, etc.).
3. Preparation of scientific student papers and reports at scientific student conferences.
4. Participation in professional student Olympiads in the discipline.
5. Participation in competitions of professional skills.

List of theoretical questions for preparing students for the control of content modules of module 1 "Methods of examining a dental patient. Damage to the hard tissues of the teeth"

Content module 1 "Examination of a dental patient with odontopathology".

1. Therapeutic dentistry as the main dental discipline. Tasks of therapeutic stomatology, relationship with general clinical and stomatological disciplines. Sections of therapeutic dentistry. Contribution of E.M. Gofung, I.O. Novik in solving the current problems of dentistry.
2. Equipping the dentist's workplace. Ethics and deontology in dentistry. Iatrogenic diseases.
3. Professional diseases of dentists and their prevention.
4. Emergencies in therapeutic dentistry: causes of development, clinical manifestations. Providing emergency care.
5. Principles and scheme of examination of a dental patient. The value and informativeness of the subjective method of examination, the sequence of its implementation.
6. Basic methods of objective examination of a dental patient: methods of conducting, their informativeness and significance.
7. Additional methods of objective examination of a dental patient: method of conducting, interpretation of results.
8. Medical documentation of a therapeutic appointment: filling rules. The medical card of a dental patient (f. 043/O) is a medical, scientific and legal document.
9. Oral hygiene. Means and methods. Composition, properties of microbial biofilm. The importance of dental plaque in the pathogenesis of dental caries.
10. Determination of the hygienic index according to Fedorov-Volodkina, qualitative and quantitative characteristics, interpretation of the results.
11. Determination of the hygienic index according to Green-Vermillion, interpretation of the results.
12. Dental layering. Species, composition. The mechanism of formation of dental plaque and calculus. The importance of dental plaque in the occurrence of caries.
13. The concept of professional teeth cleaning. Definition, methods of removing dental deposits, means and tools.

Content module 2 "Caries and non-carious lesions of teeth".

1. Tooth decay. Definition. Epidemiology of caries: prevalence, intensity, increase in intensity; methods of their determination.
2. Tooth decay. Definition. International caries classification and management system ICCMS (ICDAS codes). 4D cycle of caries management.
3. Miller's theory of the occurrence and development of caries. Bottom line, positive and negative sides.
4. The theory of the occurrence and development of caries D.A. Entina. Bottom line, positive and negative sides.
5. The theory of the occurrence and development of caries A.I. Rybakova Bottom line, positive and negative sides.
6. Theories of the occurrence and development of caries E.V. Borovsky Bottom line, positives and negatives.

7. Modern interpretation of the etiology of dental caries. Types of oral cavity microorganisms. Factors determining their cariogenicity.
8. Enamel resistance test. Essence, methodology, interpretation of results.
9. Concept of structural and functional resistance of enamel. The concept and meaning of dental fluid.
10. Concept of resistance of hard tooth tissues. Methodology and interpretation of the TER test.
11. Pathomorphology, clinic, diagnosis of active and inactive non-cavitated caries (white and pigmented spot stage).
12. The principle of non-operative treatment of an active non-cavitated lesion: drugs and methods of remineralizing therapy.
13. Pathomorphology, clinic, diagnosis of initial and medium active cavitated caries.
14. Pathomorphology, clinic, diagnosis of primary and secondary inactive cavitated caries.
15. The principle of treatment of moderately active cavitated caries (code 3, 4).
16. The principle of treatment of deep active cavitated caries (code 5, 6). Approaches to the removal of carious tissues.
17. Flowering caries: definition, causes of development, clinical manifestations and diagnosis.
18. Non-carious lesions of teeth. Classification according to Patrikeev. Pathomorphology, clinic and diagnosis of non-carious lesions occurring before teeth eruption: hypoplasia, hyperplasia, endemic fluorosis. Classification of dental fluorosis according to A.K. Nikolishinim.
19. Pathomorphology, clinic and diagnosis of non-carious lesions occurring after teeth eruption: traumatic and chemical lesions.
20. Dental hyperesthesia: causes of development, types.
21. Pathomorphology, clinic, diagnosis, treatment of wedge-shaped defect.
22. Pathomorphology, clinic, diagnosis, treatment of tooth enamel erosion.
23. The concept of tooth restoration. Planning the construction of the restoration. Tools and accessories for its implementation and finishing.

A list of practical skills for preparing students for the tests of content modules of module 1"Methods of examining a dental patient. Damage to the hard tissues of the teeth"

Content module 1 "Examination of a dental patient with odontopathology".

1. Provide medical assistance in case of fainting, collapse, shock, allergic reactions, hypertensive crisis.
2. Conduct a subjective examination of the patient: collect complaints, medical and life history (social, medical, behavioral, dental).
3. To carry out the main methods of objective examination: external examination of the patient, examination of the crown and the oral cavity itself.
4. Conduct an examination of the site of the disease: inspection of the carious cavity, sounding, percussion, palpation.

5. Carry out auxiliary methods of patient examination: thermodiagnosics, EOD, caries marking (vital staining), etc.
6. To evaluate the results of auxiliary methods of patient examination: thermodiagnosics, EOD, caries marking (vital staining), etc.
7. Evaluate the results of clinical blood and urine tests.
8. Fill out the dental patient's outpatient card, daily patient record sheet.
9. Write a referral to a physiotherapeutic office, for consultation with other specialists, for x-ray, allergological examination.
10. Determine the hygienic index according to Fedorov-Volodkina and give an assessment of the state of oral hygiene.
11. Determine the hygienic index according to Green-Vermillion and give an assessment of the state of oral hygiene.
12. To evaluate the effectiveness of oral hygiene.

Content module 2 "Caries and non-carious lesions of teeth".

1. Diagnose non-carious lesions that occur before teeth erupt: hypoplasia, hyperplasia, dental fluorosis, etc.
2. Diagnose non-carious lesions occurring after teeth eruption: traumatic lesions, chemical lesions, enamel erosion, hyperesthesia, wedge-shaped defect.
3. To determine the prevalence, intensity and increase in caries intensity.
4. Determine the state of enamel resistance (enamel resistance test).
5. Diagnose various forms of caries using basic and additional examination methods.
6. Carry out intra-syndromic differential diagnosis of various forms of caries.
7. Diagnose blooming caries using basic and additional examination methods.
8. Prescribe non-operative treatment of non-cavitated and initial cavitated caries (remineralizing therapy).
9. Prescribe operative treatment of cavitated forms of caries.

A list of theoretical questions for preparing students for the tests of content modules of the module2 "Endodontic disease (pulpitis, periodontitis).

Content module 3 "Pulpitis".

1. Pulpitis. Etiology, pathogenesis, classifications by E.M. Gofung, KMI (E.S. Yavorska, L.I. Urbanovych, 1964), ICD-10), American Association of Endodontists (2013).
2. Causes and clinical manifestations of acute traumatic pulpitis.
3. Pathomorphology, clinic, diagnosis of reversed forms of pulpitis (acute traumatic pulpitis, pulp hyperemia, limited pulpitis).
4. Pathomorphology, clinic, diagnosis, differential diagnosis of symptomatic irreversible forms of pulpitis (acute diffuse and purulent pulpitis).
5. Pathomorphology, clinic, diagnosis, differential diagnosis of chronic forms of pulpitis (fibrous, hypertrophic, gangrenous, concrementous).
6. Exacerbation of chronic pulpitis: causes, clinic, diagnosis.
7. Differential diagnosis of deep caries and reverse forms of pulpitis.
8. Differential diagnosis of irreversible forms of pulpitis and acute sinusitis.
9. Differential diagnosis of acute irreversible forms of pulpitis and trigeminal neuralgia.

10. Differential diagnosis of reversible and irreversible forms of pulpitis.
11. Differential diagnosis of medium caries and enamel erosion.
12. Differential diagnosis of medium caries and wedge-shaped defect.
13. Differential diagnosis of deep caries of irreversible forms of pulpitis.
14. Biological method of treatment of pulpitis. Essence. Indications and contraindications. Sequence and feature of treatment stages. Justification of the choice of medical pastes.
15. Vital amputation: definition, indications, contraindications.
16. Vital extirpation: definition, indications and contraindications.
17. Devital extirpation. Definition, indications and contraindications.
18. Combined method of treatment of pulpitis. Definition, indications for use. Effectiveness of the method. Possible complications.
19. Devital amputation. Definition. Indications and contraindications. Effectiveness of the method. Possible complications.
20. The choice of sealer for sealing root canals in pulpitis: groups, properties, indications for use.
21. Methods of sealing root canals in the treatment of pulpitis: the method of the central pin, vertical condensation of gutta-percha, cold and warm lateral condensation of gutta-percha. Errors and complications.

Content module 4 "Periodontitis"

1. Periodontitis. Definition, etiology and pathogenesis. Classification of periodontitis according to I.G. Lukomsky, M.I. Groshikov, S.A. Vaindrukh, ICD-10, WHO, 1995).
2. Causes of development and clinical manifestations of acute apical traumatic periodontitis. Classification of injuries according to Chuprikina N.M. (1985).
3. Causes of development and clinical manifestations of acute apical drug-induced periodontitis.
4. Pathomorphology, clinic, diagnosis, differential diagnosis of symptomatic (acute) forms of periodontitis of infectious origin (serous and purulent periodontitis).
5. Pathomorphology, clinic, diagnosis, differential diagnosis of asymptomatic (chronic) forms of apical periodontitis (fibrous, granulating, granulomatous.)
6. Pathomorphology, clinic, diagnosis of exacerbation of chronic forms of periodontitis.
7. Differential diagnosis of inactive medium caries and asymptomatic (chronic) periodontitis.
8. Differential diagnosis of symptomatic pulpitis and periodontitis.
9. Differential diagnosis of asymptomatic pulpitis and periodontitis.
10. Internally syndromic differential diagnosis of asymptomatic forms of periodontitis.
11. Principles of treatment of apical periodontitis of infectious etiology.

List of practical tasks to prepare students for the tests of content modules of the module 2 "Endodontic disease (pulpitis, periodontitis).

Content module 3 "Pulpitis".

1. Diagnose forms of reversible and irreversible inflammation of the pulp, which differ in etiology and pathomorphological manifestations, using basic and additional examination methods.
2. Provide emergency care to a patient with symptomatic irreversible pulpitis.
3. Prescribe according to the indications for the treatment of pulpitis by the method of preserving the vital activity of the pulp. Select medicinal substances to restore the crown and root pulp.
4. Prescribe treatment of pulpitis by the salutary amputation method according to the indications. Select medicinal substances to restore the pulp stump.
5. Prescribe treatment of pulpitis with the vital extirpation method according to the indications. Choose medicinal substances of hemostatic, antiseptic effect.
6. Prescribe treatment of pulpitis by the devital extirpation method according to the indications. Select medicinal substances for devitalization of the pulp.
7. Prescribe treatment of pulpitis by the devital amputation method according to the indications. Select medicinal substances for pulp mummification and impregnation of root canals.
8. Prescribe according to the indications and carry out treatment of pulpitis by devital combined method. Select medicinal substances for mummification of pulp, impregnation of root canals, chemo-mechanical treatment of through root canals.
9. It is differentiated to choose sealers of different groups for different clinical situations in the treatment of pulpitis.

Content module 4 "Periodontitis".

1. Diagnose different forms of symptomatic (acute) and asymptomatic (chronic) inflammation of apical periodontitis with different etiology and pathomorphological manifestations, using basic and additional examination methods.
2. Carry out intra-syndromal differential diagnosis of various forms of apical periodontitis.
3. Carry out non-syndromic differential diagnosis of various forms of apical periodontitis.
4. Carry out x-ray diagnostics of asymptomatic forms of periodontitis.
5. Prescribe treatment of acute forms of apical periodontitis depending on etiological factors.
6. Choose methods of influencing the post-apical focus of infection, depending on the form of inflammation, group of teeth, etc.
7. Prescribe treatment of asymptomatic apical periodontitis in one visit.
8. Identify and analyze errors made in the diagnosis and treatment stages of periodontitis.

System of current and final control

Evaluation of educational activities of university graduates education includes input, current and final control of knowledge, skills and abilities. At the same time, they are used standardized generalized criteria for evaluating the knowledge of higher education applicants (table 1).

Table 1. Standardized generalized criteria for evaluating knowledge

students of higher education at PDMU

For 4-point scale	Assessment in ECTS	Evaluation criteria
5 (excellent)	A	The student of education shows special creative abilities, knows how to acquire knowledge independently, finds and processes the necessary information without the help of a teacher, knows how to use the acquired knowledge and skills to make decisions in non-standard situations, convincingly argues answers, independently reveals his own gifts and inclinations, possesses at least 90 % of knowledge on the topic both during the survey and all types of control.
4 (good)	B	The learner is fluent in the studied amount of material, applies it in practice, freely solves exercises and problems in standardized situations, independently corrects errors, the number of which is insignificant, possesses at least 85% knowledge of the topic as during the survey, and all types of control.
	C	The student of education knows how to compare, generalize, systematize information under the guidance of a scientific and pedagogical worker, in general, independently apply it in practice, control his own activity; correct mistakes, including significant ones, choose arguments to support opinions, possess at least 75% of knowledge on the topic both during the survey and all types of control.
3 (satisfactory)	D	The student reproduces a significant part of the theoretical material, demonstrates knowledge and understanding of the main provisions with the help of a scientific and pedagogical worker, can analyze the educational material, correct errors, among which there are a significant number of significant ones, possesses at least 65% knowledge of the topic as during the survey, and all types of control.
	E	The student of education possesses educational material at a level higher than the initial level, and reproduces a significant part of it at the reproductive level. has at least 60% knowledge on the topic both during the survey and all types of control.

2 (unsatisfactory)	FX	The learner owns the material at the level of individual fragments that make up a small part of the material, has less than 60% knowledge of the topic both during the survey and all types of control.
	F	The learner possesses the material at the level of elementary recognition and reproduction of individual facts, elements, possesses less than 60% of knowledge on the topic during the survey, and all types of control.

Evaluation of current educational activities is carried out by scientific and pedagogical staff of the department during practical classes. The main purpose of current control is to provide feedback between a scientific and pedagogical worker and a student of higher education in the process of learning and formation of educational motivation of students of higher education. The information obtained during the current control is used both by the scientific and pedagogical worker - to adjust the technologies, methods and means of education, and by the students of higher education - to plan their independent work. Current control is carried out in the form of an oral survey, solutions to tests and situational tasks, assessment of the implementation of manipulations, written control, written or software computer testing in practical classes, assessment of the performances of students of higher education when discussing issues in classes, discussions, etc. Upon completion of studying the topics of the module, the average arithmetic value of the assessment is calculated and converted into points according to the table. 2.

Table No. 2. Unified table of correspondence of points for current academic performance, points for PMK, exam, and traditional four-point evaluation.

Average score for current academic performance (A)	Points for current success in the module (A * 24)	Points for PMK from the module (A*16)	Points for the module and/or exam (A*24 + A*16)	Category ECTS	By 4-point scale
2	48	32	80	F FX	2 Unsatisfactorily
2.1	50	34	84		
2.15	52	34	86		
2,2	53	35	88		
2.25	54	36	90		
2,3	55	37	92		
2.35	56	38	94		
2.4	58	38	96		

2.45	59	39	98			
2.5	60	40	100			
2.55	61	41	102			
2.6	62	42	104			
2.65	64	42	106			
2.7	65	43	108			
2.75	66	44	110			
2.8	67	45	112			
2.85	68	46	114			
2.9	70	46	116			
2.95	71	47	118			
3	72	50	122			
3.05	73	50	123			
3.1	74	50	124	E	3 satisfactorily	
3.15	76	50	126			
3.2	77	51	128			
3.25	78	52	130			D
3.3	79	53	132			
3.35	80	54	134			
3,4	82	54	136			
3.45	83	55	138			
3.5	84	56	140	C		4 good
3.55	85	57	142			
3.6	86	58	144			
3.65	88	58	146			
3.7	89	59	148			
3.75	90	60	150			
3.8	91	61	152			
3.85	92	62	154			
3.9	94	62	156			
3.95	95	63	158			
4	96	64	160	B		
4.05	97	65	162			
4.1	98	66	164			
4.15	100	66	166			
4.2	101	67	168			
4.25	102	68	170			
4.3	103	69	172			
4.35	104	70	174			
4.4	106	70	176			
4.45	107	71	178			
4.5	108	72	180	A	5 perfectly	
4.55	109	73	182			
4.6	110	74	184			

4.65	112	74	186		
4.7	113	75	188		
4.75	114	76	190		
4.8	115	77	192		
4.85	116	78	194		
4.9	118	78	196		
4.95	119	79	198		
5	120	80	200		

The reasons for failure to study the module may be as follows:

a) the student of higher education has unworked absences from classes and (or) lectures;

b) the student of higher education attended all classes (practical, lectures), but did not score the minimum number of points for the current educational activity;

the student of higher education attended all classes (practical, lectures), scored the minimum number of points for the current educational activity, but did not pass the intermediate control of the content modules for a positive assessment.

The student of higher education has the right to retake the intermediate controls of the content modules with the permission of the head of the department after the elimination of missed classes, lectures, study of topics submitted for independent study in eAristo. After rescheduling, the department informs the dean's office about the liquidation of the debt (absence of "nb", GPA of 3.0 or more). The student of higher education has the right to retake the tests of content modules before the end of the study of the corresponding module (modules) of the discipline at the department that teaches them. Failure to retake at least one intermediate control of the content module by the student of higher education before the start of the new semester is grounds for expulsion. With the permission of the rector or the first vice-rector of the academy, individual students of higher education may be given an additional deadline for passing (re-passing) intermediate tests of content modules.

Final semester certification - none

Discipline assessment. The evaluation of the discipline "Therapeutic Dentistry" is given on a traditional (national) 4-point scale based on the average number of points for all modules provided by the discipline program.

The scale for converting the average number of points for all modules provided by the discipline program into a traditional assessment on a 4-point scale of disciplines and for all departments is uniform (table 3).

The grade from the discipline is not converted (is not converted) into ECTS grades.

The grade for the discipline is issued to the student no later than on the next working day after the last final module control only if the student of higher education has all enrolled modules.

Table 3. Conversion of the average number of points for all modules provided by the discipline program into a traditional assessment on a 4-point scale

The average number of points for all modules of the discipline	Traditional assessment on a 4-point scale
122 - 139.99	3
140 - 179.99	4
180 - 200	5

A student who has successfully passed all intermediate tests of the content modules while studying the discipline has the right to increase the grade on the traditional 4-point scale and the ECTS grade of the discipline only with the permission of the rector or the first vice-rector only in the final year.

Teaching methods

When studying the educational discipline "Therapeutic dentistry", the following teaching methods are used:

- verbal (lecture, explanation, story, conversation, instruction);
- visual (observation, illustration, demonstration);
- practical (various types of exercises, performing graphic works, conducting experiments, practices).
- explanatory-illustrative or information-receptive, which involve the presentation of ready-made information by the teacher and its assimilation by students;
- reproductive, which is based on the performance of various tasks according to the model;
- the problem presentation method, which consists in the fact that the teacher poses a problem and solves it himself, demonstrating the contradictions that characterize the learning process, while the students' task is to control the sequence of the presentation of the material, the materiality of the evidence, predicting the teacher's next steps; this MN is implemented by training students in problem situations with the aim of successful preliminary preparation for future work in real conditions of practical medical institutions;
- partially search or heuristic, aimed at mastering individual elements of search activity, for example: the teacher formulates a problem, students - a hypothesis;
- research, the essence of which is the teacher's organization of creative research activities of students by posing new problems and problematic tasks.

Teaching methods are also used:

- that ensure perception and assimilation of knowledge by students (lectures, independent work, instruction, consultation);
- for applying knowledge and acquiring and consolidating skills and abilities (practical classes, control tasks, working in a clinic, conducting practice);
- to check and evaluate knowledge, abilities and skills;
- for encouragement and punishment.

At the department of propaedeutics of therapeutic dentistry, priority is given to active learning methods that encourage students to active mental and practical activities in the process of mastering the educational material. Active learning presupposes the use of such a system of methods, which is directed mainly not to the teacher's presentation of ready-made knowledge, their

memorization and reproduction, but to the independent mastery of knowledge and skills in the process of active cognitive and practical activity, that is, he is not taught, but he learns.

Active learning methods include:

- thematic discussions;
- brainstorming;
- simulation tasks;
- problematic statement;
- partial search, research, heuristic methods;
- presentations;
- trainings;
- business game "Admission to the clinic";

The maximum effectiveness of training is achieved under the condition of a rational (systemic) combination of various methods.

Control methods

Various methods and forms of control are used to effectively check the level of students' assimilation of knowledge, skills and abilities in the educational discipline "Therapeutic Stomatology".

The most common methods of control are: oral control, written, test, graphic, programmed control, practical test, as well as methods of self-control and self-assessment.

Control by oral survey contributes to the mastery of logical thinking, the development and development of the skills to argue, to express one's thoughts competently, figuratively, emotionally, to defend one's own opinion. It is used in practical classes, lectures and consultations, as well as when taking substantive and final module tests.

The oral survey involves the following sequence: formulation of questions (tasks) taking into account the specifics of the educational discipline and program requirements; preparing students for answering and presenting knowledge; correction of knowledge presented in the process of answering; analysis and evaluation of the response.

According to the level of cognitive activity, the questions for verification can be: reproductive (presuppose the reproduction of what has been learned); reconstructive (require application of knowledge and skills in slightly changed conditions); creative (application of knowledge and skills in significantly changed, non-standard conditions, transfer of learned principles of proof (methods of action) to the performance of more complex tasks).

According to relevance, questions for oral examination are divided into main, additional and auxiliary. The main questions involve an independent detailed answer (for example, questions on the topics of the content module tests), additional ones - clarifying how the student of higher education understands a certain question, wording, formula, etc., auxiliary ones - correcting errors and inaccuracies. All questions must be logical, clear, understandable and compelling, correspond to the student's level of preparation, and their set should be consistent and systematic.

The use of oral control promotes close contact between the teacher and the student, ensures feedback makes it possible to identify the extent and thoroughness of knowledge, gaps and inaccuracies in students' knowledge and immediately correct them. However, this type of control requires too much time for verification. In addition, students are nervous during the survey, so the assessment is often subjective.

Written control. The purpose of this control is to find out in written form the degree of students' mastery of knowledge, abilities and skills in the academic discipline, to determine their quality - correctness, completeness, accuracy, awareness, the ability to apply theoretical knowledge in practice.

Written examination is carried out in the form of a test (control) work, writing a detailed answer to a question, etc. The topics of test (control) works, tasks, exercises cover the program material, are clearly formulated to identify knowledge of factual material, correspond to the level of students' knowledge and at the same time require the student to make certain efforts necessary for their implementation. Homework (depending on the specifics of the academic discipline) can be done in the form of writing short summaries, sketches, essays on the topics set out for independent study.

The main advantage of the written test is that in a short period of time the teacher can get a clear idea of the knowledge of many students. The results of the inspection are clearly fixed. Written works are saved. Students have the opportunity to find out with the teacher the details and inaccuracies in their own answers, to conduct self-analysis.

Test control is used to determine the level of formation of knowledge and skills in the discipline "Propaedeutics of therapeutic dentistry". Open-form tests (with freely constructed answers) and closed-form tests (with suggested answers) are distinguished.

Test control is used for the purpose of determining the entry level of knowledge and assessing the student's self-preparation for each topic of the practical lesson, as well as before deriving the final grades, as an admission to the PMK. In addition, tests serve as a means of internal control for comparison, determination of success levels of individual groups of students, comparative characteristics of various forms and methods of teaching.

This type of control makes it possible to use time more efficiently, sets the same requirements for all students, and helps to avoid excessive worries. Test verification prevents randomness in the assessment of knowledge, stimulates students to self-control. However, the test can reveal only knowledge of facts, it encourages mechanical memorization, not the work of thought.

Programmable control. It is implemented by presenting standard requirements to all students, which is ensured by the use of control tasks and questions that are the same in number and complexity. At the same time, the analysis of the answer, output and fixation of the assessment is carried out with the help of individual automated means.

Practical test it is used to assess the mastery of the system of practical professional skills and abilities, and is conducted during practical classes and

final module tests. Such a check makes it possible to reveal the extent to which the higher education seeker has understood the theoretical foundations of these actions.

Method of self-control. Its essence is the student's conscious regulation of his activity in order to ensure such results that would correspond to the tasks, requirements, norms, rules, and models. The purpose of self-control is to prevent mistakes and correct them. An indicator of the formation of self-control is the student's awareness of the correctness of the activity plan and its operational composition, that is, the way of implementing this plan.

Self-assessment method. Presupposes an objective assessment by the student of the achieved results.

In order to develop the ability for self-control and self-assessment, the teacher motivates the assessment, offers the student to evaluate his answer himself. An effective means is the organization of mutual control, reviewing the answers of comrades. At the same time, students of higher education familiarize themselves with the norms and criteria for assessing knowledge. Taking into account the results of self-monitoring and self-assessment of knowledge by the teacher when issuing the final assessment makes them weighty, has a positive effect on the formation of responsibility for educational work, on the education of honesty, principledness, a sense of self-worth, compliance with the principles of academic integrity.

Evaluation of independent work: control over the mastery of each topic submitted for independent study takes place automatically in the shell of the SRZO electronic platform for independent work / distance learning eAristo directly during the study of the educational component (module) and by entering questions and tasks from the relevant topics for control measures (intermediate control of content modules, exams), together with the material studied in classroom training sessions.

Provided that the percentage of correct answers is at least 60% or higher of the total number of control questions, the system automatically credits the applicant with mastery of the given topic with the appearance of the "completed" indicator.

If the percentage of correct answers is less than 60% of the total number of control questions, the system does not automatically credit the applicant with mastery of this topic with the appearance of the "failed" indicator, which makes it necessary to re-master this topic.

After the student has successfully mastered all the topics assigned for independent study, the electronic platform automatically notifies about the amount of work completed.

The eAristo electronic platform and distance learning algorithm is regulated by the "Regulations on the ePlato educational process support electronic platform at PDMU".

Methodical support

1. The working program of the educational discipline "Therapeutic dentistry. Module 1, 2";
2. Syllabus for students studying the discipline "Therapeutic dentistry. Module 1, 2";
3. Plans of lectures, practical classes and a list of topics assigned for independent study;
4. Teses, texts, multimedia presentations of lectures on the discipline;
5. Multimedia presentations and materials for studying and monitoring knowledge on topics submitted for independent study on the eAristo platform;
6. Theoretical questions and practical tasks to control the assimilation of content modules;
7. Situational problems from the license exam bank "Step 2" for each practical session with algorithms for solving them.

Recommended reading

Basic (available in the PDMU library)

1. Borysenko A.V. Dental caries. Pulpitis. Apical periodontitis. Oral sepsis / Edited by A.V. Borysenko: L.F. Sidelnikova, O.F. Nesun, Zh.I. Rakhniy, I.G. Dikova, Yu.G. Kolenko, L.V. Lynovytska etc. - O.: Astro, 2015. - 314p.
2. Borysenko A.V. Operative Dentistry Endodontics in 2 volumes. volume 1. – K.: AUS Medicine Publishing, 2016. – 384 p.
3. CariesCare practice guide: consensus on evidence into practice. Stefania Martignon, Nigel B. Pitts, Guy Goffn, Marco Mazevet, Gail V. A. Douglas, J. Tim Newton, Svante Twetman, Christopher Deery, Sophie Doméjean, Anahita Jablonski-Momeni, Avijit Banerjee, Justine Kolker, David Ricketts, Ruth M. Santamaria. British dental journal, volume 227, No. 5, September 13, 2019. - P. 353-362.

Auxiliary

1. Algorithms of Practical Skills in Propaedeutics of Therapeutic Dentistry / Tkachenko I.M., Marchenko I.Y., Shundrik M.A. – Poltava: "ASMI", 2021. – 160 p.
2. Bobyriov V.M. «Pharmacotherapy in dentistry»: навчальний посібник. Vinnytsia: Nova Knyha, 2020.
3. Fejerskov O. Kidd E.M. Dental caries. / O. Fejerskov, E.M. Kidd. - Oxford Univercity Press; 2016. - 208 p.
4. Kidd E. Essential of Dental Caries. / E. Kidd, O. Fejerskov. - Oxford Univercity Press, 2016. - 208 p.
5. Magne P. Bonded Porcelain Restorations in the Anterior Dentition: A Biomimetic Approach / Pascal Magne, Urs Besler. - Quintessence Publishing Co, Inc; 2013. - 406 p.
6. Manauta J. Layers: An Atlas of Composite Resin Stratification, 1 edition / Jordi Manauta. - Quintessence Publishing Co, Inc; 2013. - 444 p.
7. Ming-yu Li Contemporary Approach to Dental caries / Li Ming-yu. – Rijeka; 2012. – 478 p.

8. Summitt J. Fundamentals of Operative Dentistry: A Contemporary Approach, 4 edition / James Summitt. - Quintessence Publishing Co, Inc, 2013. - 600 p.
9. Pitts N. Detection, Assessment, Diagnosis and Monitoring of Caries. / Nigel Pitts. - Karger, 2016.-376 p.
10. Terry D. Esthetic and Restorative Dentistry: Material Selection & Technique, 2 edition / Douglas A. Terry Willi Geller. - Quintessence Publishing Co, Inc, 2013. - 752 p.
11. Cohenca N. Disinfection of Root Canal Systems: The Treatment of Apical Periodontitis / Cohenca Nestor. - Wiley-Blackwell, 2014. - 376 p.
12. Hargreaves K. Cohen' s Pathways of the Pulp, 11th Edition / Kenneth M. Hargreaves. - Elsevier Canada; 2015. - 928 p.
13. Summitt J. Fundamentals of Operative Dentistry: A Contemporary Approach, 4 edition / James Summitt. - Quintessence Publishing Co, Inc, 2013. - 600 p.
14. Torabinejad M. Endodontics: Principles and Practice, 5 edition / Mahmoud Torabinejad, Ashraf Fouad. - Elsevier Canada, 2014. - 496 p.
15. Nairn Wilson and Stephen Dunne Manual of Clinical Procedures in Dentistry // Wiley-Blackwell. – 2018. – 577 p.
16. F. Schwendicke, Jo Frencken, N. Innes Caries Excavation: Evolution of Treating Cavitated Carious Lesions // Karger. – 2018. -- 190 p.
17. Vimal K Sikri Dental Caries // CBS Publishers & Distributors – 2017. -- 780p.
18. Zhou Xuedong Dental Caries // Springer--- 2016. -- 187 p.
19. Sturdevant's Art and Science of Operative Dentistry / seventh edition // Elsevier – 2019. -- 699 p.
20. Carlos Rocha Gomes Torres Modern Operative Dentistry // Springer — 2020. – 720 p.
21. Pickard's Guide to Minimally Invasive Operative Dentistry / tenth edition // Oxford University Press. – 2015. – 197 p.
22. Bennett T. Amaechi Dental Erosion and Its Clinical Management // Springer. --2015. -- 318 p.
23. Ece Eden Evidence-Based Caries Prevention // Springer. – 2016. --196 p.
24. Edwina Kidd, Ole Fejerskov Essentials of Dental Caries / fourth edition // Oxford University Press. – 2016. – 209 p.
25. Jorge Perdigão Tooth Whitening an Evidence-Based Perspective // Springer. – 2016. -- 268 p.
26. Linda Greenwall Tooth whitening techniques / Second Edition // CRC Press. – 2017. – 367 p.
27. Hargreaves, Harold E. Goodis, Franklin R. Tay Seltzer and Bender' s Dental Pulp. Second Edition / edited by Kenneth M. // Quintessence Publishing. – 2012. -- 512 p.
28. Louis H. Berman, Kenneth M. Hargreaves, Ilan Rotstein Cohen's Pathways of the Pulp / Twelfth edition // Elsevier. – 2021. -- 3488 p.

29. Thomas Kvist Apical Periodontitis in Root-Filled Teeth. Endodontic Retreatment and Alternative Approaches // Springer International Publishing. – 2018. -- 140 p.
30. Ilan Rotstein, John I. Ingle Ingle's Endodontics 7 // PMPH-USA. – 2019. -- 1271 p.
31. Mahmoud Torabinejad, Ashraf F. Fouad, Shahrokh Shabahang Endodontics. Principles and Practice / Sixth edition // Elsevier. – 2021. -- 501 p.
32. V. Gopikrishna Grossman's endodontic practice / 14th edition // Wolters Kluwer Health. – 2021. -- 517 p.
33. Nestor Cohenca Disinfection of Root Canal Systems. The Treatment of Apical Periodontitis // John Wiley. -- 2014. -- 371 p.
34. Bobby Patel Endodontic Diagnosis, Pathology, and Treatment Planning. Mastering Clinical Practice // Springer. – 2015. -- 323 p.
35. Bettina Basrani Endodontic Irrigation. Chemical Disinfection of the Root Canal System // Springer. – 2015. -- 325 p.
36. Bettina Basrani Endodontic Radiology / Second Edition // John Wiley. – 2012. -- 446 p.

16. Information resources

- <http://www.nature.com/bdj/journal/v213/n9/abs/sj.bdj.2012.1007.html?foxtrotcallback=true>
- https://www.ncbi.nlm.nih.gov/labs/journals/practic-periodontics-aesthet-dent/?issue=9002247_000012_000008
- http://www.quintpub.com/journals/ejed/journal_contents.php?journal_name=EJED&t=1#.WcqsZdSLSt8
- [http://onlinelibrary.wiley.com/journal/10.1111/\(ISSN\)1708-8240](http://onlinelibrary.wiley.com/journal/10.1111/(ISSN)1708-8240)
- <http://www.scadent.org/node/9>
- <http://eurendodj.com/eng/sayfalar/97/Aims-and-Scope>
- [http://onlinelibrary.wiley.com/journal/10.1111/\(ISSN\)1365-2591](http://onlinelibrary.wiley.com/journal/10.1111/(ISSN)1365-2591)
- [http://onlinelibrary.wiley.com/journal/10.1111/\(ISSN\)1747-4477](http://onlinelibrary.wiley.com/journal/10.1111/(ISSN)1747-4477)
- <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3881297/>
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- <http://www.jendodon.com/>
- https://www.researchgate.net/publication/259722825_Pathogenesis_of_Apical_Periodontitis_a_Literature_Review
- http://dental-ss.org.ua/load/kniga_stomatologia_terapecticheskaia/8
- http://stomatbook.blogspot.com/p/blog-page_14.html
- http://nashol.com/2011041354397/propedevtika-stomatologicheskikh_zabolevanii-skorikova-la-volkov-va-bajenova-np.html
- <http://www.booksmed.com/stomatologiya/2393-propedevtika-stomatologicheskikh-zabolevaniy-skorikova.html>
- http://dental-ss.org.ua/load/kniga_stomatologia_terapecticheskaia/8
- http://stomatbook.blogspot.com/p/blog-page_14.html
- <http://www.booksmed.com/stomatologiya/153-terapecticheskaya-stomatologiya-borovskij.html>

- https://discovery.dundee.ac.uk/ws/portalfiles/portal/41496491/Author_Accepted_Manuscript.pdf
- https://www.dec.gov.ua/wp-content/uploads/2024/05/smd_869_23052024.pdf

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