Ministry of Health of Ukraine
Poltava State Medical University

Department of ORTHODONTICS

«AGREED»
Guarantor of the educational-professional program in specialty Dentistry
_____ O. SHESHUKOVA

"____"_____2024

«APPROVED»
Chairman of the Academic Council of the International Faculty
_____ L. BURYA

Minutes as of _____ 2024 No.__

SYLLABUS

Medical practice of «Children's dentistry»
Module №2 «Medical practice by orthodontics»
SYLLABUS

educational and professional level	second (master's) level of higher education
field of knowledge	22 «Health»
specialty	221 «Dentistry»
educational qualification	Master of Dentistry
professional qualification	dentist
form of education	daytime
course and semester of study of the academic discipline	V course IX semester

«**RESOLVED»**
at the meeting of the Department of Orthodontics

Head of the Department_____ L. Smaglyuk

Minutes as 27 of august 2024 No. 1

Poltava-2024

DATA OF THE TEACHERS TEACHING THE DISCIPLINE

Surname, name, patronymic of teachers, scientific degree, academic title	Smaglyuk Lyubov Vikentievna, Doctor of Medical Sciences, Professor Karasiunok Anna Evgenievna, Ph.D., Associate professor Voronkova Anna Vladimirovna, Ph.D. D., Associate professor Lyakhovskaya Anastasia Vitalievna Ph.D., Associate professor
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MAIN CHARACTERISTICS OF THE EDUCATIONAL DISCIPLINE

The volume and characteristics of the academic discipline

Module №2. «Medical practice by orthodontics».

Number of credits / hours – 1.0 / 30, of which:
Lectures (h.) –
Practical (seminars) (h.) – 6
Independent work (hours) – 24
Type of control: final modular control (FMC)
The nature of the discipline (normative / selective) – selective
Year of study – V
Semesters – IX

DISCIPLINE POLICY

The policy of the academic discipline is regulated by a system of requirements that a lecturer imposes on a student in the study of the discipline and is based on the principles of academic integrity. Requirements may relate to attendance (prohibition of absences, delays, etc.); rules of conduct in the classroom (active participation, fulfillment of the required minimum of training activities, disconnection of mobile telephones, etc.); incentives and penalties (in what cases points can be accrued or deducted, etc.).

It is recommended to develop the policy of academic discipline taking into account the norms of the legislation of Ukraine on academic integrity, the Statute, the Regulations of PSMU and other normative documents.

Regulation on the organization of the educational process at PSMU https://www.pdmu.edu.ua/storage/department-npr/docs_links/OaN2nwysLPFAUDRvuDPvFSpzM1j9E9CwQQkgr93b.pdf

Regulation on the organization of self-directed work of students at PSMU, Regulation on retaking missed classes and making up unsatisfactory grades by the recipients of higher education at PSMU https://www.pdmu.edu.ua/storage/department-npr/docs_links/d2v3WhcBOWnuedYRoBKRe7k1xnl4KtbB2r2NR2CG.pdf
Regulation on the appeal claim for the results of final control of academic performance for recipients of higher education, Regulation on rating the recipients of higher education at PSMU, Regulation on the financial incentives for academic success of students at PSMU and others.

Description of the academic discipline

Medical practice in pediatric dentistry provides for students to independently acquire practical skills in educational and professional program 221 "Dentistry". It is held at the time when the 5th year students of the Faculty of Dentistry acquired knowledge of pediatric dentistry (pediatric therapeutic dentistry, orthodontics, pediatric surgical dentistry).

Substantive module 2 "Medical practice by orthodontics" provides for the mastery of practical skills related to the issues of antenatal and postnatal periods of development of the dental-jaw apparatus, anatomical and morphological features of the oral cavity of a newborn, morphological and functional characteristics of temporary, replaceable and permanent periods of occlusion, mastering examination methods an orthodontic patient, understanding the processes occurring in the periodontal tissues under the influence of orthodontic equipment; mastering the basic dental manipulations and research methods for orthodontic patients to establish a diagnosis and select the correct treatment method and mastering the existing methods of treating orthodontic patients with various types of dental-jaw anomalies and deformities. Industrial practice in pediatric dentistry Substantive module 2 "Industrial practice in orthodontics" is selective.

Prerequisites and post requisites of the academic discipline (interdisciplinary connections)

Discipline	knowledge	**Skills**
1	*2*	*3*
1. Previously disciplines		
Histology	Features of the development and histological structure of the jaws, alveolar ridge, soft tissues of the maxilla, enamel, dentin, tooth pulp.	Distinguish between histological structures of the dento-jaw area organs and the tooth
Anatomy	Features of soft tissues, structure of bone tissue, circulatory system, innervation of the maxillofacial region in children. Features of the structure of temporary and permanent teeth	Distinguish between the main anatomical features and structures of the soft tissues of the dento-jaw area.
Pediatrics	The order of the clinical	Conduct a general clinical

	examination of the patient. General principles of treatment and clinical examination of children.	examination of the patient. Specify the features of the functioning of the systems of the child's body in different age periods.
X-ray and radiology	Additional methods for examining the tissues of the PMO. X-ray techniques, styling.	Be able to schedule the necessary examination of the child. Read and interpret the results of additional methods of examination of the dento-jaw area.
2. Next disciplines		
Orthopedic dentistry	Timely provision of qualified treatment in case of dentoalveolar deformity.	To prescribe and treat dental-jaw deformities (production of removable and non-removable structures).

The purpose of studying the educational discipline is:

- To isolate and identify the leading clinical symptoms and syndromes according to standard methods, using the preliminary data of the patient's history, patient examination data, knowledge about the person, his organs and systems, establish a probable nosological or syndromic preliminary clinical diagnosis of a dental disease.
- Collect information about the general condition of the patient, evaluate the psychomotor and physical development of the patient, the state of the organs of the maxillofacial region, estimate information regarding the diagnosis based on the results of laboratory and instrumental examination,.
- Assign and analyze laboratory, functional and / or instrumental examination of a patient for differential diagnosis of diseases.
- Determine the final clinical diagnosis, adhering to the relevant ethical and legal standards, by making a decision and logical analysis of the obtained subjective and objective data of the clinical, additional examination, clarifying the diagnosis under the supervision of a doctor in a medical institution.
- To make a diagnosis of emergency conditions under any circumstances (at home, on the street, in a hospital), in an emergency, martial law, lack of information and limited time.
- Plan and implement measures for the prevention of dental diseases among the population to prevent the spread of dental diseases.
- Analyze the epidemiological state and carry out measures for mass and individual, general and local drug and non-drug prevention of dental diseases.
- Determine the plan of treatment of a dental disease by making an informed decision on the existing algorithms and standard schemes.
- Determine the nature, principles of the regime of work, rest and the necessary diet in the treatment of dental diseases on the basis of a previous or final clinical diagnosis by making a decision based on existing algorithms and standard schemes.
- Determine the tactics of patient treatment with somatic pathology by making a decision based on the existing algorithms and standard schemes.

- Carry out the treatment of main dental diseases based on existing algorithms and standard schemes under the supervision of doctor in a clinics.
- To organize the medical and evacuation measures among the population, military personnel, in an emergency, including martial law, during the deployment of stages of medical evacuation, taking into account the existing system of medical and evacuation support.
- Determine the tactics of providing emergency medical care using the recommended methods, in all circumstances, based on the diagnosis of an emergency in a limited time.
- Analyze and evaluate government, social and health information using standard approaches and computer information technology.
- Assess the influence of the environment on the health of the population in a medical institution using standard methods.

The main objective of studying the discipline is:
- conducting clinical and additional methods of orthodontic patients examining, filling out the medical history and other medical documentation, decoding Cephalometrics, interpreting photometric data, X-ray images, the ability to conduct and analyze the results of examining an orthodontic patient, justification and formulation of a preliminary and final diagnosis, making a treatment plan, correction and activation of orthodontic appliances, determination of the basis for the prevention of the most spread dental-jaw anomalies and deformities.

Competencies and learning outcomes, the formation of which is facilitated by the discipline (integral, general, special, competency matrix).

According to the requirements of the standard, the discipline "Orthodontics" ensures that students acquire the following competencies:

Integral:

- The ability to solve complex problems and problems in the field of health care in the specialty "Dentistry" in the professional activity of an orthodontist or in the process of education, include research and / or innovation.

General:

1. Ability for abstract thinking, analysis and synthesis; the ability to learn and be trained according to contemporary medicine.
2. Knowledge and understanding of the subject area and understanding of the profession.
3. Ability to apply knowledge in practical situations.
4. Ability to communicate in the state language, both orally and in writing form; the ability to communicate in a second language.
5. Skills in the use of information and communication technologies.
6. Ability to search, process and analyze information from various sources.
7. Ability to adapt and act in a new situation; the ability to work autonomously.
8. Ability to define and solve the problems.
9. Ability to choose a communication strategy.
10. Ability to work in a team.
11. Skills of interpersonal interaction.
12. Ability to act on the basis of ethical considerations (motives).

13. Skills to carry out safe activities.
14. Ability to assess and ensure the quality of work.
15. Striving to preserve the environment.
16. Ability to act in a socially responsible and civilly conscious manner.

- **Special:**

1. Taking medical information about the patient's condition.
2. Evaluation of the results of laboratory and instrumental research methods for an orthodontic patient.
3. Clinical diagnosis of dental-jaw anomalies and deformities.
4. Planning and conduction of manipulation for the prevention of dento-jaw anomalies and deformities.
5. Determination of the nature and principles of treatment of patients with dental-jaw anomalies and deformities.
6. Performing medical and dental procedures.
7. Assessment of the influence of the environment on the development of the dento-jaw system in the antenatal and postnatal periods of human development.
8. Medical record keeping.
9. Development of state, social and medical information.

MATRIX OF COMPETENCIES

№	Competence	Knowledge	Skills (Integration)	Communication	Autonomy and responsibility
	General competences				
1	Ability for abstract thinking, analysis and synthesis; the ability to learn and be modernly trained.	Know the current trends in the development of the industry and indicators that characterize them.	To be able to analyze professional information, make informed decisions, acquire modern knowledge.	Establish appropriate communication to reach the goal.	Be responsible for the timely obtaining of modern knowledge.
2	Knowledge and understanding of the subject area and understanding of the profession.	Know the features of the professional activity of a dentist.	Be able to carry out professional activities, needs updating and integration of knowledge.	Form a communication strategy in professional activities.	Be responsible for continuous professional development with a high level of autonomy.
3	The ability to apply knowledge in practical situations.	Know the methods of implementing knowledge in solving practical	Be able to use professional knowledge to solve practical problems.	Establish links with subjects of practical activity.	Be responsible for the validity of the decisions.

		problems.			
4	Ability to communicate in the state language both orally and in written form. Ability to communicate in a foreign language.	Know the state language, including professional direction. Know a foreign language at a level sufficient for professional communication.	To be able to use the state language and a foreign language for the implementation of professional activities and communication.	Form a communication strategy in professional activities.	Be responsible for continuous professional development with a high level of autonomy.
5	Skills in the use of information and communica-tion technologies.	Have up-to-date knowledge in the field of information and communication technologies used in professional activities.	To be able to use information and communication technologies in the professional industry, updating and integration of knowledge.	Use information and communication technologies in professional activities.	Be responsible for the continuous development of professional knowledge and skills.
6	Ability to search, process and analyze information from various sources.	Have the necessary knowledge in the field of information technology used in professional activities.	To be able to use information technology in the professional field to search, process and analyze new information from various sources.	Use information technology in professional activities.	Be responsible for the continuous development of professional knowledge and skills.
7	Ability to adapt and act in a new situation; the ability to work autonomously .	Know the methods of implementing knowledge in solving practical problems.	Be able to use professional knowledge to adapt and act in a new situation.	Establish links with practitioners.	Be responsible for the quality of professional tasks in a new situation.
8	Ability to identify, formulate and solve problems.	Know the methods of implementing knowledge in identifying, formulating and solving problems of professional activity.	To be able to use professional knowledge to identify, formulate and solve problems of professional activity.	Establish links with subjects of practical activity in order to identify, formulate and solve problems of professional activity.	Be responsible for the validity of the made decisions in solving of problems in professional activity.
9	Ability to choose a	Know the methods of	Be able to use knowledge to select a	Form a communication	Be responsible

	communicatio n strategy.	implementing knowledge in choosing a strategy for communicating with patients and colleagues.	communication strategy with patients and colleagues.	strategy in professional activities.	for continuous professional development with a high level of autonomy.
10	Ability to work in a team.	Know ways to collaborate when working in a team.	Be able to use knowledge to choose a communication strategy during collective interaction..	Form a communication strategy in professional activities.	Be responsible for continuous professional development.
11	Interpersonal skills.	Know the ways of interpersonal interaction when communicating with colleagues and patients.	To be able to use knowledge to choose a communication strategy during interpersonal interaction.	To form a communication strategy in professional activity..	Be responsible for continuous professional development with a high level of autonomy..
12	Ability to act on the basis of ethical considerations (motives).	Know the moral and ethical principles of a medical specialist and the rules of professional subordination..	Use in practice the moral and ethical principles of a medical specialist and the rules of professional subordination..	Observe during professional activity the moral and ethical principles of a medical specialist and the rules of professional subordination..	Be personally responsible for the observance of the moral and ethical principles of the medical specialist and the rules of professional subordination..
13	Safe activity skills.	The ability to assess the level of hazard when performing professional tasks.	Be able to carry out professional activities in compliance with safety rules.	Provide quality professional performance work in compliance safety rules..	Carry personal compliance while observing safety rules while performing professional tasks.

14	Ability to assess and ensure the quality of work performed.	Ability to measure and ensure quality in performing professional tasks.	Know methods for assessing performance indicators..	Be able to provide high-quality performance of professional work.	Make connections to ensure quality work is done.
15	Committed to preserving the environment.	The ability to assess the state of the environment.	Be able to analyze indicators of environmental quality.	Ensure high-quality performance of professional tasks in an environmentally friendly manner.	To carry out personal compliance while observing the rules of preservation of the environment while performing professional tasks.
16	Ability to act in a socially responsible and civic-conscious manner.	Know your social and civil rights and responsibilities..	Form your civic consciousness, be able to act in accordance with it.	Ability communicate your public and social position.	Be responsible for your civic position and activities.
	Special (professional competencies)				
1	Collection of medical information about the patient's condition.	Know the algorithms for interviewing a dental patient with dental-maxillary anomalies.	Be able to interview a patient or his relatives, highlight the main complaints. To assess the general condition and condition of the dental-jaw apparatus: teeth, dentition, oral mucosa.	Observe the requirements of ethics, bioethics and deontology when communicating with the patient or his parents.	Be responsible for adhering to the principles of examination of the orthodontic patient.
2	Assessment of the results of functional, laboratory and instrumental research methods.	Know the standard methods of conducting examinations and laboratory tests..	To be able to prescribe and analyze anthropometric measurements of diagnostic models of the jaws, face and head of the patient,	Reasonably prescribe and evaluate the results of examination and laboratory tests..	Be responsible for making decisions on the assessment of examinations and

			examination of breathing, speech, swallowing, X-ray methods of examining the dental-maxillofacial region.		laboratory results.
3.	Clinical diagnosis of dental-jaw anomalies and deformities.	Know the clinical manifestations of dento-jaw anomalies and deformities.	To be able to classify dental-maxillary anomalies and deformities, to isolate and identify the leading clinical symptoms and syndromes. Determine the final clinical diagnosis using the preliminary data obtained from subjective and objective methods of examination and differential diagnosis.	Reasonably establish the clinical diagnosis of an orthodontic patient.	Be responsible for the accuracy of the diagnosis.
4.	Planning and implementation of measures for the prevention of dento-jaw anomalies and deformities.	Know the measures of preventive orientation of dento-jaw anomalies and deformities.	To be able to analyze and carry out measures of primary and secondary prevention of dental-jaw anomalies and deformities.	To plan and implement measures for mass and individual prevention of dental-jaw anomalies and deformities.	Be responsible for the timeliness and effectiveness of preventive measures for dental-jaw anomalies and deformities.
5.	Determination of the nature and principles of treatment of dental-jaw anomalies and deformities.	Have specialized knowledge of the principles and methods of treatment of dental-jaw anomalies and deformities.	To be able to draw up a treatment plan for patients with dental-jaw anomalies and deformities according to existing algorithms and treatment standards in accordance with the list of dental procedures.	It is reasonable to select a treatment regimen for a patient with dental-jaw anomalies and deformities.	Be responsible for the treatment regimens for patients with dental-jaw anomalies and deformities.

6.	Performing medical and dental procedures.	Know the list of medical and dental procedures.	Be able to perform medical and dental procedures.		Be responsible for the quality of medical and dental procedures.
7.	Evaluations of the environmental impact on the development of the dental-jaw apparatus in the antenatal and postnatal periods.	Know the features of the climatic-geographical, social, economic characteristics of the region of residence of the orthodontic patient. Know the impact of environmental, social, occupational hazards on the condition of the dentition and the human body as a whole.	To assess the influence of exogenous and endogenous factors on the state and development of the dental-jaw apparatus, in particular. Determine risk factors for pathological changes in orthodontic patients.	To be able to explain to the patient or his parents the influence of environmental, social, occupational hazards on the condition of the dental-jaw apparatus and the human body as a whole.	To be responsible for the lack of knowledge and its application in relation to the climatic-geographical, social, economic characteristics of the region of residence of the orthodontic patient.
8.	Maintaining medical records.	The list of necessary medical documentation of the dentist to fill out at the dental appointment (according to the order of the Ministry of Health No. 110 dated 02.14.2012).	Fill out the necessary medical documentation when conducting orthodontic reception: forms 43-1 / o No. 435 of 05/29/2013 "Medical card of a dental patient; No. 037 / o" Sheet of daily records of the work of a dentist "; No. 039-2 / o" Diary of the work of a dentist ... To be able to issue a referral for consultations of other specialists, X-ray, functional and	To be able to cooperate, exchange the necessary information about the patient's condition with specialized specialists.	Be responsible for the timeliness and correctness of medical documentation.

			laboratory examination.		
9.	Development of state, social and medical information.	Know the methods of processing state, social, medical information.	Be able to analyze and evaluate government, social and health information.	Use standard approaches to assessing information, use computer information technology.	Responsible for the processing of government, social and health information.

Learning outcomes for the discipline:

After completion of the study of the discipline, students must

- know:

- growth and formation of jaw bones in terms of age;
- the concept of the norm in orthodontics;
- clinical methods of examination of patients with dental-jaw anomalies and deformities;
- anthropometric methods of examination;
- research methods of speech, respiratory, chewing and swallowing functions;
- X-ray examination methods;
- Cephalometrics techniques;
- basic principles and methods of treatment of patients with dental-jaw anomalies and deformities;
- classification of dento-jaw anomalies and deformities;
- modern concepts of etiology, pathogenesis, clinical manifestations of various anomalies and deformations of individual teeth, dentition and forms of malocclusion;
- methods of treatment and dental-jaw anomalies and deformities;
- dispensary groups for the supervision of orthodontic patients;
- main syndromes in orthodontics;
- prevention of risk factors of dental-jaw anomalies and deformities.

- be able to:

1. To analyze the results of examination of an orthodontic patient:
- with individual teeth anomalies (size, shape, number, structure, eruption);
- with anomalies in the position of individual teeth (vestibulo-oral, mesio-distal, supra- and infra-occlusion, torto-occlusion, crowding, etc.);
- with anomalies of the dentition (shape, size);
- with malocclusion (in the sagittal, vertical, transversal planes).
2. Determine the dispensary observation groups for orthodontic patients:
- with individual teeth anomalies (size, shape, number, structure, eruption);
- with anomalies in the position of individual teeth (vestibulo-oral, mesio-distal, supra- and infra-occlusion, torto-occlusion, crowding, etc.);
- with anomalies of the dentition (shape, size);
- with malocclusion (in the sagittal, vertical, transversal planes).
3. To prescribe preventive measures in a group with risk factors:
- with anomalies of individual teeth (size, shape, number, structure, eruption);
- with anomalies in the position of individual teeth (vestibulo-oral, mesio-distal, supra-

and infra-occlusion, torto-occlusion, crowding, etc.);
- with anomalies of the dentition (shape, size);
- with malocclusion (in the sagittal, vertical, transversal planes).
4. Determine the leading symptoms in orthodontics:
- psycho-emotional state;
- disorders of posture;
- facial asymmetry;
- disorders of the proportionality of the face;
- disorders of the face profile;
- shortening of the upper lip;
- the severity of the folds of the face;
- the state of the function of lips closing;
- the state of the chewing function;
- the state of the respiratory function;
- the state of the swallowing function;
- the state of the speech function;
- the state of the TMJ function;
- restriction in opening the mouth;
- periodontal disease;
- the condition of individual teeth;
- the position of individual teeth;
- disorders of the shape of the dentition;
- malocclusion in the sagittal, vertical, transversal planes.
5. To identify congenital and acquired defects of the maxillofacial region.
6. Demonstrate moral and deontological principles of a medical specialist and the principles of professional subordination at an orthodontic appointment.
7. Substantiate and formulate a preliminary clinical diagnosis of dentoalveolar anomalies and deformities to the patient:
- with anomalies of individual teeth (size, shape, quantity, structure, eruption);
- with anomalies in the position of individual teeth (vestibulo-oral, mesio-distal, supra- and infra-occlusion, torto-occlusion, crowding, etc.);
- with anomalies of the dentition (shape, size);
- with malocclusion (in the sagittal, vertical, transversal planes).
8. Substantiate and formulate a syndromic diagnosis in orthodontic practice with:
- violation of posture;
- facial asymmetry;
- disorder of the proportionality of the face;
- disorder of the face profile;
- shortening of the upper lip;
- severity of natural facial folds;
- disorder of the function of lips closing;
- disorder of the function of chewing;
- respiratory dysfunction;
- dysfunction of swallowing;
- disorder of speech function;
- TMJ dysfunction;

- restriction in opening the mouth;
- periodontal disease;
- disorder of the condition of individual teeth;
- disorder of the position of individual teeth;
- disorder of the shape of the dentition;
- malocclusion in the sagittal, vertical, transversal planes.

9. To carry out differential diagnostics of diseases of the dental-jaw system:
- with anomalies in the size of individual teeth;
- with anomalies in the shape of individual teeth;
- with anomalies in the number of individual teeth;
- with diastema and trema;
- with crowded teeth;
- with tortoanomaly;
- with the vestibulo-oral position of the teeth;
- with prognathia (distal occlusion);
- with progeny (mesial occlusion);
- with an open bite;
- with a deep bite;
- with one - or two-sided cross bite.

10. Conduct differential diagnosis of somatic diseases, special management tactics for orthodontic patients with:
- heart defects;
- endocrine pathology;
- pathology of the musculoskeletal system;
- epilepsy;
- bronchial asthma;
- diabetes mellitus;
- HIV / AIDS;
- viral hepatitis;
- diphtheria;
- tuberculosis.

11. To examine the orthodontic patients:
- with anomalies of individual teeth (size, shape, quantity, structure, eruption)
- with anomalies in the position of individual teeth (vestibulo-oral, mesio-distal, supra- and infra-occlusion, torto-occlusion, crowding, etc.);
- with anomalies of the dentition (shape, size)
- with malocclusion (in the sagittal, vertical, transversal planes).

12. To carry out prevention of the most frequent dentoalveolar anomalies:
- with anomalies of individual teeth (size, shape, quantity, structure, eruption)
- with anomalies in the position of individual teeth (vestibulo-oral, mesio-distal, supra- and infra-occlusion, torto-occlusion, crowding, etc.);
- with anomalies of the dentition (shape, size)
- with malocclusion (in the sagittal, vertical, transversal planes).

The structure of the discipline:

Names of content modules and topics	Number of hours				
	Including				
	Total	Lectures	Seminars	Practical	ISW
1	2	3	4	5	6
Medical practice of «Children's dentistry»	150	-	-	30	120
Module №2 – Medical practice in pediatric therapeutic dentistry	90	-	-	18	72
«Medical practice by orthodontics»					
Topic 1. Organization of orthodontic care. The etiology and pathogenesis of malocclusion. Risk factors of the malocclusion development identification. Features of malocclusion prevention at the antenatal period. Main methods and especially malocclusion and deformations prevention at the postnatal period. Prevention of bad habits. Periods of child development. State of the dental and maxillofacial region in different periods of the occlusion formation.	12			2	10
Topic 2. Modern methods of malocclusion diagnostic. Methods of treatment in orthodontics. Features of the orthodontic appliances construction. Features of malocclusion' treatment in a temporary, mixed and permanent occlusion. Malocclusion treatment with fixed appliances.	12			2	10
Тема 3. Final module control.	6			2	4
Модуль 3 – Medical practice in pediatric surgical dentistry	30	-	-	6	24
Total for module 2	30	-	-	6	24

Thematic plan of lectures

№	Names of topics	Number of hours
	Not provided by the curriculum	

Seminar topics by modules

№	Names of topics	Number of hours
1	Not provided by the curriculum	

Practical topics by module

№	Names of topics	Number of hours
1.	Organization of orthodontic care. The etiology and pathogenesis of malocclusion. Risk factors of the malocclusion development identification. Features of malocclusion prevention at the antenatal period. Main methods and especially malocclusion and deformations prevention at the postnatal period. Prevention of bad habits. Periods of child development. State of the dental and maxillofacial region in different periods of the occlusion formation.	2
2.	Modern methods of malocclusion diagnostic. Methods of treatment in orthodontics. Features of the orthodontic appliances construction. Features of malocclusion' treatment in a temporary, mixed and permanent occlusion. Malocclusion treatment with fixed appliances.	2
3.	Final module control.	2
	Total for module 2.	6

Individual extracurricular work

№	Names of topics	Number of hours
1	Preparation for practical, (theoretical, development of practical skills and abilities) classes	16
2. Self-study of topics that are not included in the classroom plan		
2.1	Traumatic injuries of teeth and jaws in children. Clinic, diagnostics, differential diagnostics, treatment.	2
3	Individual EW - writing prophylactic conversations with patients.	2
4	Preparation for the final modular control.	4
	Total for module 2	24

Individual tasks

1. Annotation of additional literature on the topic submitted for independent mastery.
2. Work in a research circle with the presentation of abstracts for the conference and reports at student scientific conferences.

List of theoretical questions

1. Orthodontics – definition. Goals and objectives. Domestic and foreign scientists who contributed to the development of orthodontics.
2. The main biological factors that ensure the growth and formation of the dento-jaw system.
3. Physico-chemical and clinic- biological properties of the main materials used for the manufacture of orthodontic appliances.
4. Determination of the degree of manifestation of morphological and functional disorders in the dento-jaw area and the difficulties of orthodontic treatment.
5. Planning of orthodontic treatment based on the patient's contact with the doctor (1-4

types of patients, depending on the behavior).
6. Causes of teeth and dentition defects in children, their diagnosis and classification (K.N. Shamsiev, E.Y. Simanovskaya, T.V. Sharova, L.M. Demner, Z.S. Vasilenko and S.I. Treel)
7. Clinic, diagnostics and treatment of defects of the crown part of the tooth in children. Rational design of dentures.
8. Methods of prosthetics of defects of the crown part of temporary teeth, indications for their use.
9. Anatomical and functional changes in the chewing appliances of children in the formation of defects in teeth and dentitions and their consequences.
10. Methods of orthopedic treatment in the absence of crown part of permanent teeth in children. Possible errors and their consequences.
11. Clinical and biological substantiation of children's dental prosthesis. Concepts of scientists regarding the feasibility of making dentures in children.
12. Indications, contraindications for replacement of dental defects in children with fixed prosthetics.
13. Features of dental defects replacing in children with removable denture.
14. Complete absence of teeth in children, its causes. Indications for the use of complete removable prosthetics, features of their construction, methods of fixation, replacement times.
15. Effect of removable dentures on prosthetic tissue and periodontal disease, mucosal disease, caused by dentures, and their treatment.
16. Features of prosthetics treatment of complicated defects of dentition in children.
17. Features of complex orthopedic treatment of children with adentia.
18. Trauma of teeth and jaws in children, classification, etiology, diagnostics, treatment tactics.
19. Traumatic tooth injuries in children. Features of their clinic and diagnostics. Tactics of treatment. Terms of orthopedic surgery.
20. Clinical features of fractures of the upper jaw in children and their orthopedic treatment.
21. Orthopedic treatment of defects of the upper jaw in children after partial resection due to malignant tumor.
22. Mechanism of displacement of lower jaw fractures with one-sided mental fracture, methods of their orthopedic treatment in children.
23. The mechanism of displacement of lower jaw fractures with a bilateral fracture in the area of the angle and the peculiarities of their orthopedic treatment in children.
24. Mechanism of displacement of lower jaw fractures with a bilateral mental fracture, orthopedic treatment of them in children.
25. Congenital malformations, their causes, diagnosis, classification.
26. Morphological and functional disorders in the dento-jaw system with upper lip cleft, alveolar process cleft, hard and soft palate.
27. Characteristics of various construction of obturators and indications for their use in children with upper lip cleft, alveolar process cleft, hard and soft palate.
28. Clinical and laboratory stages of the production of Andersen-Houple appliances.
29. Constructive features, principle of action, indications for use.
30. Clinical and laboratory stages of manufacture of Frankle appliances 1-4 types, their

design features, principle of operation, indications for use.
31. Morphological and functional disorders in the dento-jaw system associated with the pathology of the endocrine system.
32. Constructive features and principle of bracket systems.
33. The choice of the treatment methods of orthodontic patients, taking into account the type of behavior and the complexity of treatment.
34. Determination of difficulty degree of treatment.
35. Prevention of possible complications during orthodontic treatment.
36. Causes of relapse of orthodontic pathology.

List of practical tasks and works

1. To be able to determine the need for therapeutic, surgical, orthodontic care during dental examination of children and adolescents and to make a sequence of manipulations.
2. To be able to determine the indications for the choice of complex treatment of the orthodontic patient.
3. Be able to determine the degree of complexity of orthodontic treatment.
4. To be able to check up an orthodontic appliances or children's prosthesis at first visit.
5. To be able to correct and activate the orthodontic appliances.
6. To be able to fix removable and fixed children's dentures.
7. To be able to stimulate orthodontic treatment.
8. To be able to make selectively teeth abrasion.
9. To be able to make a plan of preventive measures to prevent orthodontic pathology.
10. To be able to define a group of the risk of orthodontic pathology.
11. To be able to model the basis of a removable orthodontic appliances.
12. To be able to recognize the syndromes of diseases of the endocrine system, which is manifested in the oral cavity.
13. To be able to provide orthodontic care to children with trauma of teeth and jaws depending on the age of the child, the characteristic of the injury and its term.
14. To be able to carry out orthodontic treatment for children with complicated defects of dentitions.
15. To be able to provide orthodontic care for upper lip cleft and alveolar process cleft.

Final control form

The Final modular control of Module 2. On-the-job medical practice in pediatric dentistry Module 2 "On-site medical practice in orthodontics" is carried out after completing the practice in accordance with the schedule. The presence of a diary completed in accordance with the form and certified by the signature of the head of the practice and the final report is mandatory for the student's admission to the final modular control (Appendix 1-2).

The final module control of Module 2 assesses theoretical and practical training, and consists of two parts: the first is an assessment of the industrial practice report, the second is carried out orally, the answers to two theoretical questions, practical skills and the description of the X-ray image are evaluated.

The result of the final modular control is evaluated in points (the traditional 4-point assessment is not given). The maximum number of BCI points is 80 points. The

minimum number of BCI points, at which the control is considered passed, is 50 points. The maximum number of points for a module is 200 points.

Accrual scheme and distribution of points that students receive

The conversion of the assessment of the traditional 4-point scale into a multi-point scale (maximum 120 points) – conversion of the total assessment of the current performance for the module – is carried out only after the current lesson, preceding the final module control. Conversion is performed according to the following algorithm:

- the average student's grade is calculated according to the traditional 4-point scale, obtained during the current classes related to this module (with an accuracy of hundredths of a point);
- to obtain a convertible multi-point total assessment of the current performance for the module, the average grade obtained on the traditional 4-point scale must be multiplied by a factor of 24. The exception is the case when the average grade on the traditional 4-point scale is 2 points. In this case, the student receives 0 points on a multi-point scale;
- the average grade of the current academic performance is calculated on the total number of lessons in the module, and not on the actually attended by the student.

Table 1.

Correspondence of the average mark to the current academic performance in the traditional 4-point scale of the total assessment of the current performance per module

Average grade of current academic performance on a traditional 4-point scale	Points for current performance after conversion of the average	Average grade of current academic performance on a traditional 4-point scale	Points for current performance after conversion of the average
2,00	0	3,55	85
2,05	49	3,60	86
2,10	50	3,65	87
2,15	52	3,70	89
2,20	53	3,75	90
2,25	54	3,80	92
2,30	55	3,85	93
2,35	56	3,90	94
2,40	58	3,95	95
2,45	59	4,00	96
2,50	60	4,05	97
2,55	61	4,10	98
2,60	62	4,15	99
2,65	64	4,20	101
2,70	65	4,25	102
2,75	66	4,30	103
2,80	67	4,35	104
2,85	69	4,40	106
2,90	70	4,45	107
2,95	71	4,50	108
3,00	72	4,55	109
3,05	73	4,60	110
3,10	74	4,65	111
3,15	75	4,70	113

3,20	77	4,75	114
3,25	78	4,80	115
3,30	79	4,85	116
3,35	80	4,90	118
3,40	82	4,95	119
3,45	83	5,00	120
3,50	84		

The minimum converted sum of points of current performance for all modules of all disciplines of all departments is the only one and is 72 points.

Before conducting the FMC, the head of the educational part of the department receives information from the dean's office under his personal signature. The teacher who conducts the FMC is appointed by the head of the department and approved in the appropriate schedule.

The teacher who conducted the FMC calculates and sets the number of points in the "Journal of the academic group work", "Journal of attendance and student progress" and the student's individual curriculum no later than the next day and fixes it with a personal signature. The teacher leading the group, during the next day after drawing up the final modular control, calculates the total number of points for the module (the sum of the points of the current progress and the points of the final modular control). The maximum number of points for a module is 200 points. The teacher leading the group, within the next working day after drawing up the final module control, assigns points for the module "Journal of the work of the academic group" and fills in the corresponding columns "Journal of attendance and student progress" and in the "Statement of the final module control", which the head of the educational parts of the department are transferred to the dean's office the same day.

The criteria for evaluating the FMC are determined by the department, approved by the cyclic methodological commission and communicated to the students at the beginning of the discipline study (the first practical lesson).

When assessing FMC, marks for all control tasks are taken into account. A student is allowed to defend the final modular control, who has 100% completed the proposed number of practical skills, set them down in writing. The maximum number of points for the industrial practice diary is equal to 40 points, the minimum number of points is 30 points:

40-38 points – gets a student who has written out the proposed number of manipulations and thoroughly described them at a sufficiently high theoretical level.

37-34 points – gets a student who has written out the proposed number of manipulations and provided them with a description, but made minor mistakes.

33-30 points – is received by a student who stated in writing the proposed number of manipulations and provided them with a description, but made significant mistakes.

29 or less points – gets a student who has written out the proposed number of manipulations and provided them with a theoretical description, but at the same time made gross significant mistakes.

The score for the oral part, which consists of two theoretical questions, a practical skill and a description of an X-ray image, is calculated as follows: the minimum number is 20 points, the maximum is 40 points. Each assignment (two theoretical questions, practical skill and x-ray) is assessed:

- 9-10 points – the student owns at least 90% of knowledge on the oral part. Well-

versed in subject terminology. Clearly formulates the answers to the questions posed. The practical task is carried out in full.

- 7-8 points – the student has knowledge in the amount of at least 75-89% in the oral part, makes minor mistakes, which he corrects. The practical task is carried out in full, minor errors are allowed.

- 5-6 points – the student has knowledge on the topic in the amount of at least 60-74% in the oral part. The answers are not accurate enough; leading questions correct them. Does not complete the practical task in full.

- 0 points – the student did not show the required minimum knowledge within 59% in the oral part. Unable to answer leading questions, uses inaccurate wording. Have no practical skills.

The number of points on the BCI is calculated by the formula:

FMC points = points for the internship diary + points for the first theoretical question + points for the second theoretical question + points for practical skill + points for the description of the X-ray image.

Minimum points:

30 pts. + 5 pts. + 5 pts. + 5 pts. + 5 pts. = 50 pts.

Maximum points:

40 pts. + 10 pts. + 10 pts. + 10 pts. + 10 pts. = 80 pts.

Students who, during their studies in Module 2, have a FMC of 4.5 to 5.0, are exempted from compiling FMC and automatically (by agreement) receive a final grade in accordance with Table 2.

Table 2.

Average score of continuous progress	Compliance with balls for FMC	Compliance with points for the module	Traditional mark
4,5	69	164	4
4,6	70	167	
4,7	71	170	5
4,8	73	180	
4,9	77	190	
5,0	80	200	

A student, according to the results of passing the FMC, received a result of less than 50 points, is obliged to retake the BCI according to the schedule no more than 2 times.

Training methods

- *Verbal* (lectures, explanations, stories, conversations, instructions).
- *Visual* (observation, illustrations, demonstrations).
- *Practical* (various types of exercises, graphic work, practice).

Control methods

- oral control;
- written control;
- test control;
- graphic control;

- computer control;
- practical control;
- methods of self-control and self-assessment.

Methodological support

1. Working curriculum.
2. Work program of industrial medical practice.
3. Syllabus from industrial medical practice.
4. Methodical instructions for independent work of students in preparation for a practical lesson and in the lesson.
5. List of questions and practical skills in the IMC.
6. Visual Aids.
7. Educational and methodical literature.

Recommended literature

The main literature

1. Смаглюк Л. В. Academic History of Decease in Orthodontics / Л. В. Смаглюк, Н. В. Кулиш, Г. В. Воронкова // – Полтава: Бліц стійл, –2018. – 120 с.
2. Flis P. S. Orthodontics. – Kyiv, MEDICINE, 2008, – 336 p.
3. Flis P. S. Pediatric dental prosthetic. –Kyiv, MEDICINE, –2012. – 176 p.
4. Смаглюк Л. В. Basic course of orthodontics: навчальний посібник / Л. В. Смаглюк, Г. В. Воронкова, А. В. Ляховська // – Полтава: Копі Центр А. Ткаліч, 2021. – 192 с.
5. Смаглюк Л. В. Propaedeutics of Orthodontics: електронний навчальний посібник для студентів, лікарів-інтернів і практикуючих лікарів / Л. В. Смаглюк, А. Є. Карасюнок, А. В. Ляховська, Г. В. Воронкова // – Полтава: 2023.

Secondary literature

1. Ghafari J. Cephalometric superimposition on the cranial base: A review and comparison of four methods// A.J.O.:1987: 62: 403-413
2. *Laura Mitchell*, **An introduction to orthodontics**, 2013, – 244 p.
3. Melsen I.L. The cranial base//Acta Odontologica Scandinavica :1974:32:suppl.

Information resources:

1. Pubmed. – Режим доступу: http://www.ncbi.nlm.nih.gov/pubmed/
2. Google Scholar – Режим доступу: https://scholar.google.com.ua/
3. BASE. – Режим доступу: https://www.base-search.net/
4. European Journal of Orthodontics. – Mode of access: https: //academic.oup.com/ejo
5. Angle Orthodontist. – Mode of access: http://www.angle.org/?code=angf-site

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