PRIVATE HIGHER EDUCATIONAL INSTITUTION
"INTERNATIONAL ACADEMY OF ECOLOGY AND MEDICINE"
Department of Dentistry

"APPROVED"

Acting Head of the Department
_____ Oleksandr BIDA

WORKING PROGRAM OF EDUCATIONAL DISCIPLINE

"Orthodontics"

LEVEL OF HIGHER EDUCATION Second (master's) level

DEGREE OF HIGHER EDUCATION Master's degree

BRANCH OF KNOWLEDGE 22 Healthcare

SPECIALTY 221 Dentistry

COURSE __ 3 __

Reviewed and approved
at the meeting of the Department of Dentistry
Protocol No. 1 of "31". 08. 2022

Kyiv 2022

Working program of educational discipline “Orthodontics” for the training of students of the second (master's) level of higher education in the specialty 221 Dentistry.

Developers: Doctor of Medicine, Prof. Kuts V.P. , assistant V.V. Shabranska

Approved by the Central Methodical Council of the Academy Protocol No. 1 of 31.08 2022

Agreed

First Vice-Rector Oleksandra SOROKA

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INTRODUCTION

The working educational program was drawn up in accordance with the following regulatory documents :

the Law of Ukraine "On Higher Education" dated 07.1.2014 No. 1556-VII; by the order of the Ministry of Education and Culture of Ukraine of June 24, 2019 No. 879 "On approval of the standard of higher education in specialty 221 "Dentistry" for the second (master's) level of higher education"; the educational and professional program (OPP) of specialist training in specialty 221 "Dentistry" for the second (master's) level of higher education; the educational program of the educational discipline " Orthodontics ".

Description of the educational discipline (abstract): "Orthodontics" is an educational discipline that enables students to acquire knowledge of etiology, pathogenesis, clinic, diagnosis, prevention and treatment of dento-jaw anomalies and deformations, as well as defects of dental rows. Teaching the discipline "Orthodontics" in the 3rd year gives students the opportunity to study the age-related features of the development of the maxillofacial apparatus, methods of examination, diagnosis and the basic principles of treatment of orthodontic patients. The teaching of the discipline "Orthodontics" is aimed at mastering the special (professional) competencies of students, which are later used to establish a diagnosis and choose the correct method of treatment, as well as the formation of the student's responsibility, as a future specialist, for the level of his training and improvement during his studies and professional activity .

The subject of study of the educational discipline "Orthodontics" is the acquisition of knowledge :

- Age-related features of the development of the maxillofacial apparatus of a person in the antenatal and postnatal period
- Morpho-functional characteristics of temporary, variable and permanent periods of occlusion
- Characteristics of physiological and pathological types of bites
- Classifications of maxillofacial anomalies and deformations
- Methods and sequence of examination of orthodontic patients (clinical and additional)
- Classification and characteristics of orthodontic equipment
- Basic principles and methods of treatment of patients with dento-jaw anomalies and deformities

Interdisciplinary connections:

"Orthodontics" as an educational discipline:

- It is based on the knowledge obtained at general biological (human anatomy, histology, embryology and cytology, medical biology, medical chemistry, biological and bioorganic chemistry, medical physics), general clinical (propaedeutics of internal medicine, general surgery, otolaryngology), dental departments (prevention of dental diseases, children's therapeutic dentistry, therapeutic dentistry, surgical and orthopedic dentistry, propaedeutics of orthopedic dentistry)

- Integrates teaching with these disciplines

- Forms the ability to apply the acquired knowledge of orthodontics in the process of further education and professional activity

1. The purpose and tasks of the educational discipline

1.1. The goal of teaching the discipline "Orthodontics" in the 3rd year is to master the methods of examination and diagnosis of patients with dento-maxillofacial anomalies and deformations, the basic principles and methods of treatment, as well as the impact of orthodontic equipment on periodontal tissues and the temporomandibular joint.

1.2. The main tasks of studying the discipline "Orthodontics" are

- carry out examinations of orthodontic patients
- to analyze the results of the examination of a patient with dento-maxillofacial anomalies and deformations
- justify and formulate a preliminary diagnosis
- justify and formulate c indromic orthodontic diagnosis
- carry out differential diagnosis in orthodontics
- to determine leading symptoms and syndromes in orthodontics
- demonstrate mastery of the moral and deontological principles of a medical specialist and the principles of professional subordination at an orthodontic appointment
- carry out primary and secondary prevention of maxillofacial anomalies and deformations

1.3. Competencies and learning outcomes, the formation of which is facilitated by the discipline "Orthodontics" in the 3rd year

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

- Integral:

  The ability to solve complex tasks and problems in the field of health care in the specialty "Dentistry" in the professional activity of an orthodontist or in the training process, which involves conducting research and/or implementing innovations

- General :

  1. Ability to abstract thinking, analysis and synthesis ; the ability to learn and be modernly educated

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 ; the ability to communicate in a second language
5. Skills in using information and communication technologies
6. Ability to search, process and analyze information from various sources
7. Ability to adapt and act in a new situation ; ability to work autonomously
8. Ability to identify, pose and solve problems
9. Ability to choose a communication strategy
10. Ability to work in a team
11. Interpersonal skills
12. The ability to act on the basis of ethical considerations (motives)
13. Skills of performing safe activities
14. The ability to evaluate and ensure the quality of the work performed
15. The desire to preserve the environment
16. The ability to act socially responsibly and civically

- Special :

1. From taking medical information about the patient's condition

2. Evaluation of the results of laboratory and instrumental research methods

3. Establishing a clinical diagnosis of dento-jaw anomalies and deformations

4. Planning and implementation of measures for the prevention of dento-maxillofacial anomalies and deformations

5. Determination of the nature and principles of treatment of maxillofacial anomalies and deformations

6. Performing medical and dental manipulations

7. Assessment of the influence of the environment on the development of the maxillofacial apparatus in the antenatal and postnatal periods

8. Maintenance of medical documentation

9. Processing of state, social and medical information

Matrix of competences

No	Competence	Knowledge	Skill	Communication	Autonomy and responsibility
	General competences				
1.	Ability to abstract thinking, analysis and synthesis; the ability to learn and be modernly educated.	To know the current trends in the development of the industry and the indicators characterizing them.	Be able to analyze professional information, make informed decisions, acquire up-to-date knowledge.	Set the appropriate ones connections to achieve goals .	To be responsible for the timely acquisition of modern knowledge.
2.	Knowledge and understanding of the subject area and understanding of the profession.	To know the peculiarities of the professional activity of a dentist.	To be able to carry out professional activities that require 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.	Ability to apply knowledge in practical situations.	Know the methods of implementing knowledge in solving practical tasks .	Be able to use professional knowledge to solve practical problems .	Establish connections with subjects of practical activity.	To be responsible for the validity of the decisions made.
4.	Ability to communicate in the national language both orally and in writing. Ability to communicate in a	Know the state language, including the professional direction. Possess a foreign language at a level sufficient for	Be able to use the state language and a foreign language for professional activities and communication.	Form a communication strategy in professional activities.	Be responsible for continuous professional development with a high level of autonomy .

	foreign language.	professional communicatio n.			
5.	Skills in using information and communica tion technologie s.	Have modern knowledge in the field of information and communicatio n technologies used in professional activities .	To be able to use information and communication technologies in a professional field that requires updating and integration of knowledge.	Use information and communication technologies in professional activities .	Be responsible for 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 technologies used in professional activities .	To be able to use information technologies in the professional field to find, process and analyze new information from various sources.	Use information technologies in professional activities .	Be responsible for continuous development of professional knowledge and skills.
7.	Ability to adapt and act in a new situation; ability to work autonomou sly.	Know the methods of implementing knowledge in solving practical tasks.	To be able to use professional knowledge for adaptation and actions in a new situation .	Establish connections with subjects of practical activity.	To be responsible for the quality of the performance of professional tasks in a new situation .
8	Ability to identify, pose and solve problems.	Know the methods of implementing knowledge in identifying, setting and solving problems of professional activity.	Be able to use professional knowledge to identify, pose and solve problems of professional activity .	Establish connections with subjects of practical activity with for the purpose of detection, formulation and solution problems of professional activity .	To be responsible for the validity of the decisions made regarding the solution problems of professional activity .
9	Ability to choose a communica tion	Know the methods of implementing knowledge in	Be able to use knowledge to choose a communication	Form a communication strategy in professional	Be responsible for continuous professional development

	strategy.	choosing a communicatio n strategy with patients and colleagues.	strategy with patients and colleagues.	activities.	with a high level of autonomy .
10	Ability to work in a team.	Know the ways of collective interaction while working in a team.	To 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	Skills of interperson al interaction.	Know the methods of interpersonal interaction when communicatin g with colleagues and patients.	To be able to use knowledge to choose a communication strategy during interpersonal interaction	Form a communication strategy in professional activities.	Be responsible for continuous professional development with a high level of autonomy .
12	The ability to act on the basis of ethical considerati ons (motives).	Know the moral and ethical principles of a medical specialist and the rules of professional subordination.	Use the moral and ethical principles of a medical specialist and the rules of professional subordination in practical activities.	To observe the moral and ethical principles of a medical specialist and the rules of professional subordination during professional activity.	To bear personal responsibility for observing the moral and ethical principles of a medical specialist and the rules of professional subordination.
13	Skills of performing safe activities.	The ability to assess the level of danger when performing professional tasks.	Be able to carry out professional activities in compliance with safety rules	To ensure quality performance of professional compliance work safety rules .	Be personally responsible for compliance with safety rules when performing professional tasks.

14	The ability to evaluate and ensure the quality of the work performed.	The ability to evaluate and ensure quality in the performance of professional tasks .	Know the methods of evaluating performance quality indicators.	Be able provide quality performance of professional work	Establish connections to ensure quality performance of works.
15.	The desire to preserve the environment.	The ability to assess the state of the environment.	Be able to analyze environmental quality indicators .	To ensure quality performance of professional tasks tasks in terms of environmental protection.	To bear personal responsibility for compliance with the rules of environmental protection when performing professional tasks.
16	The ability to act socially responsibly and civically.	Know your social and public rights and responsibilities .	To form one's civic consciousness, to be able to act in accordance with it .	Ability convey their public and social position	To bear responsibility for one's civic position and activity .
	Special (professional competences)				
1.	From taking medical information about the patient's condition	Know the algorithms of interviewing a dental patient with dento-maxillofacial anomalies	Be able to conduct a survey of the patient or his relatives, highlight the main complaints. Assess the general condition and condition of the maxillofacial apparatus : teeth, dental rows, mucous membrane of the oral cavity.	To comply with the requirements of ethics, bioethics and deontology when communicating with the patient or his parents.	Be responsible for compliance with the principles of examination of an orthodontic patient
2.	Evaluation of the results of functional, laboratory and instrumental research	Know the standard methods of conducting examinations and laboratory tests	Be able to prescribe and analyze anthropometric measurements of diagnostic models of the patient's jaws, face and	It is reasonable to assign and evaluate the results of examination and laboratory tests	Be responsible for decision-making regarding the evaluation of examinations and results of laboratory

	methods		head, examination of breathing, speech, swallowing, radiological methods of examination of the maxillofacial area		studies
3.	Establishing a clinical diagnosis of maxillofacial anomalies and deformations (according to list 2)	To know the clinical manifestations of dento-jaw anomalies and deformations	To be able to classify dento-mandibular anomalies and deformities, distinguish and identify leading clinical symptoms and syndromes. Determine the final clinical diagnosis using previously obtained data of subjective and objective methods of examination and carrying out differential diagnosis (according to list 1)	It is reasonable to establish a clinical diagnosis of an orthodontic patient	Be responsible for the accuracy of the formulation of the diagnosis
4.	Planning and implementation of measures for the prevention of dento-maxillofacial anomalies and deformations	To know preventive measures of dento-maxillofacial anomalies and deformations	To be able to analyze and carry out measures of primary and secondary prevention of maxillofacial anomalies and deformations	Plan and implement measures for mass and individual prevention of dento-maxillofacial anomalies and deformations	Be responsible for the timeliness and effectiveness of preventive measures regarding dento-maxillofacial anomalies and deformations
5.	Determination of the nature and	Have specialized knowledge	Be able to draw up a treatment plan for patients with	It is reasonable to choose a treatment	Be responsible for treatment regimens for

	principles of treatment of maxillofacial anomalies and deformations	about the principles and methods of treatment of maxillofacial anomalies and deformations	dento-jaw anomalies and deformities according to existing algorithms and treatment standards in accordance with the list of dental manipulations (according to list 7)	regimen for a patient with dento-jaw anomalies and deformities	patients with dento-maxillofacial anomalies and deformities
6.	Performing medical and dental manipulations	Know the list of medical and dental manipulations according to the list Appendix 7	Be able to perform medical and dental manipulations according to the list Appendix 7		To be responsible for the quality of medical and dental manipulations
7.	Assessment of the influence of the environment on the development of the maxillofacial apparatus in the antenatal and postnatal periods	To know the features of the climate-geographical, social, and economic characteristics of the region of residence of the orthodontic patient. To know the impact of environmental, social, and occupational hazards on the state of the dental and jaw apparatus and the human body in general.	Assess the influence of exogenous and endogenous factors on the condition and development of the maxillofacial apparatus, in particular. To determine risk factors for the occurrence of pathological changes in orthodontic patients.	To be able to explain to the patient or his parents the impact of environmental, social, and professional hazards on the state of the dental and jaw apparatus and the human body in general.	Bear responsibility for the lack of knowledge and its application regarding the climate-geographical, social, economic characteristics of the region of residence of the orthodontic patient
8.	Maintenance of medical	The list of necessary medical	out the necessary medical documentation	Be able to cooperate, exchange the	To be responsible for the timeliness

	documentation	documentation of a dentist to be filled out at a dental appointment (according to the order of the Ministry of Health No. 110 of February 14, 2012)	when conducting an orthodontic appointment: form 43-1 /o No. 435 dated 05.29.2013 "Medical card of a dental patient; No. 037/o "Dentist's daily record sheet" ; No. 039-2/o "Dentist's work accounting diary. Be able to issue referrals for consultations of other specialists, X-ray, functional and laboratory examination	necessary information about the patient's condition with specialized specialists	and correctness of medical documentation
9.	Processing of state, social and medical information	Know the methods of processing state, social, medical information	Be able to analyze and evaluate government, social and medical information	Use standard approaches to information evaluation, use computer information technologies	Be responsible for processing state, social and medical information

Learning outcomes :

Integrative final program learning outcomes, the formation of which is facilitated by the study discipline "Orthodontics"

1. Conduct professional activities in social interaction based on humane and ethical principles
2. To identify future professional activity as socially significant for human health
3. Apply knowledge of general professional disciplines in professional activity
4. Use the results of independent search, analysis and synthesis of information from various sources to solve typical tasks of professional activity

Learning outcomes for the discipline

1. Identify and identify leading clinical symptoms and syndromes (according to list 1); according to standard methods, using the previous data of the patient's history, the data of the patient's examination, knowledge about the person, his

organs and systems, establish a probable nosological or syndromic preliminary clinical diagnosis of a dental disease (according to list 2).

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 (according to list 5).

3. Assign and analyze laboratory, functional and/or instrumental examination (according to list 5) of a patient with a dental disease for the differential diagnosis of diseases (according to list 2).

4. Formulate the final clinical diagnosis, adhering to 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 head physician in the conditions of a medical institution.

5. Plan and implement measures to prevent dental diseases among the population to prevent the spread of dental diseases.
6. Analyze the epidemiological situation and carry out mass and individual, general and local drug and non-drug prevention measures for dental diseases.
7. Determine the nature of the treatment of dental disease (according to list 2) by making a reasoned decision according to existing algorithms and standard schemes.
8. 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.
9. Carry out the treatment of the main dental diseases according to the existing algorithms and standard schemes under the control of the head doctor in the conditions of a medical institution (according to list 2.1).
10. Determine the tactics of providing emergency medical care, using the recommended algorithms, under any circumstances based on the diagnosis of an emergency condition in limited time (according to list 4).
11. Analyze and evaluate government, social and medical information using standard approaches and computer information technologies.
12. Assess the impact of the environment on the state of health of the population in the conditions of a medical institution according to standard methods

After completing the study of the discipline "Orthodontics" in the 3rd year, students should know :

- growth and formation of jaw bones in the age aspect
- concept of norm in orthodontics
- clinical methods of examination of children with dento-jaw anomalies and deformations
- anthropometric methods of examination
- methods of research of speech, respiratory, masticatory function and swallowing function
- x-ray examination methods
- techniques of teleradiography
- basic principles and methods of treatment of patients with dental and jaw anomalies and deformations

After completing the study of the discipline "Orthodontics" in the 3rd year, students should be able to :

- Analyze the results of the examination of a patient with dental and jaw anomalies and deformities
- Carry out preventive measures in the group with risk factors
- To determine the leading syndromes and symptoms in the orthodontic clinic
- Identify congenital and acquired defects of the maxillofacial area
- Demonstrate mastery of the moral and deontological principles of a medical specialist and the principles of professional subordination at an orthodontic appointment
- Justify and formulate a preliminary clinical diagnosis of maxillofacial anomalies and deformations
- Justify and formulate a syndromic orthodontic diagnosis
- Conduct differential diagnosis of diseases in orthodontics
- Carry out differential diagnosis of somatic diseases that require special tactics of patient management in childhood
- Conduct examinations of orthodontic patients
- Carry out primary and secondary prevention of dental and jaw anomalies and deformations

2. Information volume of the academic discipline

120 hours, 4 ECTS credits are allocated to the study of the academic discipline.

Module #1.
"Diagnosis of dental and jaw anomalies and deformations"
Content module #1.

Age-specific features of the development of the human dentition apparatus .

Specific goals:

- to know the stages of development of the dental and jaw apparatus in the fetal period;
- to know the stages of development of the dental and jaw apparatus in the postnatal period;
- to know the peculiarities of the development of chewing muscles in children;
- to know the morpho-functional characteristics of the temporary bite period;
- to know the morpho-functional characteristics of the variable bite period;
- to know the morpho-functional characteristics of the constant bite period;
- know the characteristics of orthognathic bite;
- define "occlusion key";
- to know the periods of formation of bite height.

Topic No. 1:

Stages of development of the dental and jaw apparatus in the age aspect: intrauterine, postnatal. Embryonic development of the face and jaws. Anatomical and physiological features of the oral cavity and temporomandibular joint of a newborn.

Topic #2:

Growth and formation of jaw bones in the age aspect. Features of the development of chewing muscles in children. Factors that ensure normal development and growth of the dento-jaw apparatus.

Morphological and functional features of the temporary bite. Its main periods. Tsilinsky's symptom, its prognostic significance. Final planes according to LJ Boume and A. Schwarz.

Variable bite, its morphological and functional characteristics. Stages of bite height formation and jaw growth.

Morpho-functional characteristics of a permanent bite.

Topic No. 3:

Concept of norm in orthodontics.

Orthognathic bite, its characteristics. Keys of occlusion according to E. Engle and Andrews. Physiological and pathological bites, their general morphological and functional characteristics. Periods of formation of bite height. Interrelationship and interdependence of the form and function of the dento-jaw apparatus.

Content module #2.

Methods of examination of a patient with dento-maxillary anomalies and deformations.

Specific goals:

- to know the method of collecting anamnesis from an orthodontic patient;
- to know the method of conducting a clinical examination of an orthodontic patient;
- to know the classifications of dento-maxillofacial anomalies and deformations;

- know the methodology of anthropometric, graphic, photometric methods of additional examination;
- to know the methodology of conducting functional tests (swallowing, chewing and breathing);
- to know the methodology of palatographic research;
- describe dental, axial images, orthopantomogram;
- know the method of deciphering teleroentgenograms (face and profile);
- make and substantiate the preliminary and final diagnosis of the orthodontic patient based on basic and additional research methods;
- know the requirements for maintaining medical records.

Topic No. 4:
Clinical methods of examination of children with dento-jaw anomalies and deformations.

Clinical examination of an orthodontic patient. Features of clinical examination. Study of anamnestic data: patient's complaints, mother's condition during pregnancy (toxicosis, infectious diseases, injuries, stress, work in hazardous production, etc.), course of childbirth; the presence of hereditary diseases in the child (making a pedigree); nature of infant feeding, assessment of teething; the presence of bad habits in the patient, filling in the medical history.

Study of objective data of an orthodontic patient. Determination of the configuration of the face (the patient's profile, the proportionality of the parts of the face, the thickness and position of the lips, the shape and position of the chin.

Examination of the oral cavity. Study of the anatomical structure of the soft tissues of the oral cavity, attachment of the frenulum of the lips and tongue, etc.

Determination of the number of teeth, their condition and position relative to the dental row. The shape of the dental arches, their ratio in three mutually perpendicular directions. Physiological and pathological bites, their general morphological and functional characteristics.

Filling in medical history. Establishing a preliminary diagnosis based on clinical examination data. Its constituent parts.

Topic No. 5:
Anthropometric methods of examination of orthodontic patients.

Anthropometric measurements on diagnostic models and in the oral cavity. Study of the dimensions of the crown part of temporary and permanent teeth (index of P. Ton, Bolton, Z.I. Dolgopolova).

Measurement of transverse dimensions of tooth rows in permanent and temporary periods of occlusion according to the method of A. Pona, Linder and Hart, Z. I. Dolgopolova. Measurement of the sagittal dimensions of the tooth rows in the permanent and temporary periods of occlusion according to the Korkhouse method, Z.I. Dolgopolova

Determination of the degree of narrowing (expansion), shortening (elongation) of dental arches.

Topic No. 6:
Anthropometric survey methods.

Anthropometric survey methods. Measuring the width, length and dimensions of the apical base according to the method of House and N.G. Snaginoi Determining the lack of space in the dental arch for an abnormally located tooth. Measurement of the height of the palatine vault according to the method of H. Korkhauz, L.V. Ilyina-Markosyan, Dolgopolova Z.I. etc. Establishing the proportionality of the development of segments of tooth rows according to the method of H.G. Gerlach. Measurement of the longitudinal length of tooth rows according to the Nance method. Diagnostics of symmetry of tooth rows according to the method of Fuss and Schwartz.

Topic No. 7:
Graphic methods of diagnostics.
Study of the shape of tooth rows by graphic and geometric methods (symmetroscopy, photosymmetroscopy, symmetry, parallelography). Construction of the Hawley-Herbert-Herbst diagram.

Topic No. 8:
Methods of research of speech and respiratory function.

Signs of mouth breathing. The influence of impaired breathing on the formation of the jaw and jaw apparatus and the body as a whole. Functional breathing test. Breath-holding tests (Stange test, Gench test). Spirometry, vital capacity of the lungs (LVC) in patients with dento-jaw anomalies.

Characteristics of language function. Methods of studying the state of language function. Methods of palatography: direct and indirect. Advantages of palatography in studying the state of speech function in patients with dento-jaw anomalies and deformations. Peculiarities of articulation zones in normal and malocclusion.

Topic No. 9:
Research methods of masticatory function and swallowing.

Research methods of masticatory function: static; dynamic; electrotensodynamometry according to S.I. Tril, V.P. Vozniuk and others; chewing samples; mastication, myotonometry, electromyography and others. Concepts of "chewing force", "chewing efficiency", "chewing pressure", "chewing power".

Features of the type of swallowing, their characteristics.

The role of swallowing in the development of the maxillofacial apparatus. Diagnosis of swallowing disorders. Functional swallowing test. Clinical functional tests according to R. Frenkel.

Topic No. 10:
Photometry in orthodontics.

Head photometry. Photographs of the head in profile and face.

Main anthropometric points and measurement parameters. Analysis of the face and profile of the patient's face and the proportionality of its parts.

Topic #11:
X-ray examination methods.

Indications for their use **in** orthodontic practice Types of X-ray examination of an orthodontic patient.

Target shots. Pictures in axial projection.

Methodology of orthopantomography. Features of the image of the object. Significance in the diagnosis of dental-maxillofacial anomalies. Bone and dental age of the child, their diagnostic value.

Techniques of computer tomography, magnetic resonance imaging (MRI). Radiographic studies of the temporomandibular joint.

Topic No. 12:
Techniques of teleradiography (direct and lateral).

Methodology of profile and direct teleroentgenography.

Decoding teleroentgenograms according to A.M. Schwartz.

Topic No. 13:
Methods of teleradiography.

Decoding teleroentgenograms according to Downes, E.M. Ricketts et al. Basic anthropometric landmarks.

Basic cranio-, gnatho- and profilometric measurements. The value of teleradiography in the differential diagnosis of dento-maxillofacial anomalies and deformations, as well as in the prognosis of orthodontic treatment.

X-ray classification of dento-jaw anomalies based on the data of teleroentgenographic studies. The main forms of bite anomalies: gnathic (skeletal), tooth-alveolar and mixed.

Topic No. 14:
Classifications of maxillofacial anomalies and deformations.

Definition of concepts: "anomaly", "deformation", "congenital", "acquired", "hereditary". Existing classifications of dental and jaw anomalies and deformations.

The principle of their construction, advantages and disadvantages, similarities and differences.

Classification by E. Engel (1889), classification by A.Ya. Katz (1939, 1961), classification by L.V. Ilyinoi-Markosyan (1967), classification by Yu.V. Kurlyandskyi (1957), classification by A.I. Betelman (1965, 1966), classification by D.A. Kalvelis (1964, 1967), classification by H.A. Kalamkarov (1972, 1978), classification by L.P. Grigorieva (1984), WHO classification (Geneva, 1968), IKH - 10.

Establishing the final diagnosis and its components.

Content module #3.
Basic principles and methods of treatment of patients with dental and jaw anomalies and deformations.

Specific goals:

- know the classification of orthodontic equipment;
- characterize mechanically operating equipment;

- to characterize functionally operating equipment;
- to characterize functionally guiding operating equipment;
- to characterize orthodontic equipment of combined action;
- to know the processes occurring in periodontal tissues under the influence of orthodontic equipment;
- to know the processes occurring in the TMJ under the influence of orthodontic equipment;
- know the forces used during orthodontic treatment;
- to know methods of treatment of orthodontic patients;
- be able to draw up an orthodontic treatment plan;
- be able to choose orthodontic equipment for treatment depending on the clinical situation;
- have the skills of correction and activation of orthodontic equipment;
- to be able to carry out preventive measures to prevent the occurrence of orthodontic pathology.

Topic No. 15:
Classifications of orthodontic equipment.

Classification of orthodontic devices: according to the principle of action, according to the method and place of action, according to the type of resistance, according to the place of placement, according to the method of fixation, according to the type of construction, according to the purpose.

Basic structural elements of orthodontic equipment.

Topic No. 16:
Characteristics of functionally active and functionally guiding equipment and their structural elements.

The main structural elements of functionally active and functionally guiding equipment. Features and mechanism of their action. Main representatives. Age indications for use.

Topic No. 17:
Characteristics of mechanically acting apparatus and apparatus of combined action, their structural elements.

The main structural elements of functionally active and functionally guiding equipment. Features and mechanism of their action. Main representatives. Age indications for use.

Topic No. 18:
Theories of periodontal tissue reconstruction (Florence, Kingsley-Walkhoff and Oppenheim). Biomechanics of tooth movement in three mutually perpendicular planes. Morphological changes in periodontal tissues during tooth movement.

Modern views and the role of domestic scientists in the development and scientific substantiation of periodontal tissue reconstruction processes (Kalvelis D.A., Kalamkarov H.A., Poznyakova A.I., Raizman S.S., etc.). Biomechanics of horizontal tooth movement according to D.A. Kalvelis. Reconstruction of tissues under the influence of vertical load of supporting teeth (Vasilevska Z.F.).

Morphological changes in the palatine suture during expansion of the upper jaw (Vares E.Ya., Mukhina A.D., Kalamkarov H.A., etc.).

Forces used in orthodontics. Distribution of forces according to A.M. Schwartz and their characteristics. Justification of the use of small, optimal and intermittent forces in hardware treatment.

Topic No. 19: Peculiarities of reconstruction of the temporomandibular joint during orthodontic treatment. Forces according to A.M. Schwartz

Morphological changes in the temporomandibular joints during instrumental movement of the lower jaw. Peculiarities of resorption and apposition processes.

Reactive changes in the mucous membrane of the oral cavity when using orthodontic appliances.

Topic No. 20:
Methods of treatment of orthodontic patients.

Indications for orthodontic treatment. Preventive direction and complexity of orthodontic treatment. The possibility of self-regulation of maxillofacial anomalies. Dispensary in orthodontics.

Methods used in the treatment of orthodontic patients (biological, hardware, surgical, physiotherapeutic, prosthetic).

Biological or functional method. Masticatory and facial muscles as an object of functional therapy. The preventive nature of the functional method, its founders (A. Kerbitz, Rogers, etc.). Further development of this method in our country and other countries (Betelman A.I., R. Frenkel, Duizings, Kurylenko BC, Horoshilkina F.Ya., Napadov M.A.). A set of myogymnastics exercises without apparatus and with apparatus.

Functional loading of facial muscles, masticatory muscles and tongue muscles with the help of speech exercises - logopedic myogymnastics. A complex of exercises for the articulation apparatus of the oral cavity.

Topic No. 21:
Hardware method of treatment of orthodontic patients.

General characteristics of the method. Classifications of orthodontic devices. Features of functionally acting, functionally guiding, mechanically acting and combined orthodontic equipment. Indications for use depending on the age period.

Topic No. 22:
Physiotherapy methods of treatment of orthodontic patients.

Non-drug: therapy, ultrasound, low-frequency therapeutic vibration, laser irradiation, galvanization and pulsed electrical stimulation. Medicinal: electrophoresis, ultraphonophoresis. Effectiveness of massage and mechanotherapy in the treatment of orthodontic patients. Indications for use.

Topic No. 23:
Surgical methods of treatment of orthodontic patients.

Surgical methods used in the treatment of orthodontic patients: 1) intervention within the soft tissues of the oral cavity; 2) within the dental rows; 3) within the alveolar bud; 4) within the basal parts of the jaws and other parts of the skull.

Topic No. 24:
Final modular control.

3. The structure of the academic discipline

Names of content modules and topics	Number of hours					
	Full-time					
	In total	including				
		l	p	lab	ind.	S.S.
1	2	3	4	5	6	7
Module 1						
Content module 1 . Age-specific features of the development of the human dentition.						
1 Stages of development of the dental and jaw apparatus - intrauterine, postnatal. Anatomical and physiological features of the oral cavity and temporomandibular joint. 2 Growth and formation of jaw bones in the age aspect. Features of the development of chewing muscles in children.	6.5	0.5	3			3
Morphofunctional characteristics of temporary, mixed and permanent bite.	6.5	0.5	3			3
Content module 2. Methods of examination of a patient with maxillofacial anomalies and deformations.						
3 The concept of the norm in orthodontics. Orthognathic bite, its characteristics. Keys of occlusion according to E. Engle and Andrews. Physiological and pathological types of bites.	6.5	0.5	3			3
4 Periods of formation of bite height. The significance of Tsilinsky's symptom in the process of forming a permanent bite. Final planes along L. J. _ Boume and A. _ M. _ Schwarz .	7.5	0.5	3			4
5 Clinical methods of examination of children with	7.5	0.5	3			4

dental and jaw anomalies and deformations. Anthropometric methods of examination of orthodontic patients.						
6 Methods of research of speech and respiratory function. Research methods of masticatory function and swallowing.	7.5	0.5	3			4
7 Photometry in orthodontics.	9	1	4			4
8 Diphzalik			4			5
Together	60	4	26			30
Content module #3. Basic principles and methods of treatment of patients with dental and jaw anomalies and deformations.						
X-ray examination methods.	5.5	0.5	3			2
Techniques of teleradiography (direct and lateral).	5.5	0.5	3			2
Classifications of dental-maxillofacial anomalies and deformations.	5.5	0.5	3			2
Classifications of orthodontic equipment.	5.5	0.5	3			2
Theories of reconstruction of periodontal tissues (Florence, Kingsley-Walkhoff and Oppenheim). Modern theories of periodontal tissue reconstruction under the influence of orthodontic equipment. Peculiarities of reconstruction of the temporomandibular joint during orthodontic treatment. Forces according to A.M. Shvarts.	4.5	0.5	3			1
Methods of treatment of orthodontic patients. Hardware treatment.	5.5	0.5	3			2
Surgical methods of treatment of orthodontic patients.	5.5	0.5	3			
Physiotherapy methods of treatment of orthodontic patients.	5.5	0.5	3			2
Principles of organizing orthodontic care for the population. Preparation for orthodontic treatment.	6	1	3			2
Harmful habits in the	6	1	3			2

development of CKD.						
Diff. exam	9		4			5
In total	60	6	34			20
Total hours per year	120	10	60			50

Thematic plan of lectures on orthodontics
For students of the 3rd year of the 5th semester of 2020-2021

No.	Topics of lectures	Hours
1	Orthodontics. Definition. Stages of development. Problems. Structure. The role of domestic scientists in the development of the discipline. Teeth, dentition, bite. Classifications of maxillofacial anomalies and deformations.	2
2	Peculiarities of clinical examination of orthodontic patients. Medical history. Diagnosis of maxillofacial anomalies and deformations.	2
	Together	4

Thematic plan of practical classes in orthodontics
For students of the 3rd year of the 5th semester of the IAEM 2022-2023.

No.	Topic	hours
1	Stages of development of the dental and jaw apparatus - intrauterine, postnatal. Anatomical and physiological features of the oral cavity and temporomandibular joint. Growth and formation of jaw bones in the age aspect. Features of the development of chewing muscles in children.	3
2	Morphofunctional characteristics of temporary, mixed and permanent bite.	3
3	Concept of norm in orthodontics. Orthognathic bite, its characteristics. Keys of occlusion according to E. Engle and Andrews. Physiological and pathological types of bites.	3
4	Periods of formation of bite height. The significance of Tsilinsky's symptom in the process of forming a permanent bite. Final planes along L. J. _ Boume and A. _ M. _ Schwarz .	3
5	Clinical methods of examination of children with dental and jaw anomalies and deformations. Anthropometric methods of examination of orthodontic patients.	3
6.	Methods of research of speech and respiratory function. Research methods of masticatory function and swallowing.	3
7.	Photometry in orthodontics.	4

8.	Diff. exam	4
	In total	26

Thematic plan of lectures on orthodontics
For students of the 3rd year of the 6th semester of the IAEM 2022-2023

No.	Topic of lectures	Hours
1	Additional methods of examination of children for dental and jaw anomalies and deformations.	2
2	Methods of treatment of dental and jaw anomalies and deformations. Characteristics of orthodontic equipment and the mechanism of reconstruction of the chewing apparatus under its influence.	2
3	Prevention of dental and jaw anomalies and deformations in children and adults.	2
	In total	6

Thematic plan of practical classes in orthodontics
For students of the 3rd year of the 6th semester of the IAEM 2022-2023 n.y.

No.	Topic	Hours
1	X-ray examination methods.	3
2	Techniques of teleradiography (direct and lateral).	3
3	Classifications of dental-maxillofacial anomalies and deformations.	3
4	Classifications of orthodontic equipment.	3
5	Theories of reconstruction of periodontal tissues (Florence, Kingsley-Walkhoff and Oppenheim). Modern theories of periodontal tissue reconstruction under the influence of orthodontic equipment. Peculiarities of reconstruction of the temporomandibular joint during orthodontic treatment. Forces according to A.M. Shvarts.	3
6.	Methods of treatment of orthodontic patients. Hardware treatment.	3
7.	Surgical methods of treatment of orthodontic patients.	3
8.	Physiotherapy methods of treatment of orthodontic patients.	3
9.	Principles of organizing orthodontic care for the population. Preparation for orthodontic treatment.	3
10.	Harmful habits in the development of CKD.	
11.	Diff. exam	4
	In total	34

7. Topics of laboratory classes

According to the curriculum, there are no laboratory classes.

8. Independent work

No	Subject of classes	Number hours
1.	**Preparation for practical, seminar classes (theoretical, development of practical skills, abilities)**	**40**
2.	**Preparation for test**	**10**
	In total:	**50**

9. Individual tasks

Individual work of students is a form of organization of education with the aim of deepening, generalizing and consolidating the knowledge that students acquire in the process of learning, as well as applying this knowledge in practice, that is, an individual educational and research task.

10. Tasks for independent work

- Decoding teleroentgenogram according to the Schwartz method .
- Decoding teleroentgenogram according to the Ricketts method .
- Interpretation of the teleroentgenogram according to the Steiner method .
- Interpretation of teleroentgenogram according to the SassouniPlus method .
- Interpretation of the orthopantomogram.
- Methodology of photometry.

11.Teaching methods

- ***Explanatory and illustrative method or informational and receptive.***

Students acquire knowledge at lectures, from educational or methodical literature, through an on-screen guide in a "ready" form, lectures, discussions.

- ***Reproductive method (reproduction - reproduction)***

Students' activities in practical classes are algorithmic in nature, that is, they are carried out according to instructions, prescriptions, rules in similar situations, similar to the sample shown, at the outpatient reception of patients.

- ***Problem presentation method.***

In practical classes, the teacher poses a problem, formulates a cognitive task based on various sources and means, and students become witnesses and co-participants of scientific research, take part in the department's GDR.

- ***Partial search, or heuristic, method.***

It consists in the organization of an active search for a solution to the proposed cognitive tasks during self-study.
The work takes place under the guidance of the teacher, or based on heuristic programs and instructions.

- ***Research method.***

Students independently study literature, sources, conduct observations, work on the Internet and perform other activities of a search nature.

- ***Business game as a method of active learning.***

12. Control methods

Methods of evaluating current educational activities

Evaluation is one of the final stages of the student's educational activity and determination of the success of the study. The evaluation procedure and methodology significantly affect the final results, the possibility of analysis, and the statistical reliability of the evaluations. That is why standardized methods should be preferred in the evaluation: testing, structured written works, structured according to the procedure of control of practical skills in conditions close to real ones. According to the content, it is necessary to evaluate the level of formation of abilities and skills, which are defined in the educational and qualification characteristics and reflected in the curriculum of the relevant academic discipline.

The procedure for evaluating the educational activity of students in the disciplines studied under the KMSONP is regulated by the "Instructions for evaluating the educational activity of students in the conditions of the implementation of the European credit transfer system for the organization of the educational process" (Letter of the Ministry of Health of Ukraine dated 04.15.2014).

The grade for the module is defined as ***the sum of the grades*** of the current educational activity (in points) and the final module control grade (in points), which is given when evaluating theoretical knowledge and practical skills in accordance with the lists determined by the discipline program.

The maximum number of points awarded to students for mastering all topics of the module (credit) is 200, including 120 points (60%) for the current educational activity, 80 points (40%) based on the results of the final control.

Assessment of current educational activities

The general goal of control is subordinated to the main task of ensuring a high theoretical and scientific level of educational work and, therefore, quality training of personnel. The specific purpose of control is to determine the quality of assimilation of educational material, the degree of compliance of the formed competencies with the goals and tasks of educational training disciplines .

Principles of control : comprehensive nature, systematicity, purposefulness, objectivity, effectiveness, unity of requirements, constant improvement of all its forms and methods.

Effective functioning of the pedagogical control system requires compliance with certain conditions:

- teachers and students, evaluating the state of educational work, act according to uniform and agreed criteria, the rationale of which is known to everyone from afar ;
- o prices obtained as a result of control are considered non- - violating, not subject to doubt both by those who control and by those who are controlled, since they are based on objective criteria known to both parties ;
- control and its results require publicity so that anyone can carefully study them, draw reasonable conclusions on the basis of this, which encourage active positive work aimed at the necessary adjustment of the educational process .

for the control of knowledge , abilities and skills :

- **objectivity** — creation of conditions under which the knowledge , abilities and skills of students would be maximally accurately manifested , putting forward uniform requirements, fair treatment of each student, the inadmissibility of the presence of elements of bias, the desire to find negative facts or impose purely personal views of the supervisor on certain theoretical problems, methodological techniques, etc.; at the same time, it should be remembered that the objectivity of control is incompatible with a liberal attitude to shortcomings and mistakes, superficiality and narrowness in the analysis and assessment of the work being checked;
- **reasonableness of assessments** — their argumentation ;
- **systematicity** — an important psychological factor that contributes to the formation of such qualities as organization and discipline , forms perseverance and focus on goal achievement;
- **an individual and differentiated approach to the assessment of knowledge , abilities and skills** involves the use of such didactic conditions under which psychological tension is reduced, the peculiarities of the student 's nervous system , his character, potential opportunities, abilities, etc. are taken into account, thanks to which the teacher becomes capable as fully as possible , more correctly and objectively in identifying and evaluating the knowledge of each student ;
- **comprehensiveness and optimality** presupposes: firstly , adequacy control of learning goals, that is, the content side of control should control what students were taught and take into account the amount of material that needs to be learned; second, the validity of the control, it should cover the entire scope of knowledge, skills and abilities that is controlled ; Third, reliability — stability of the results, obtained by repeated control after a certain time, as well as the closeness of the results during control by different teachers;
- **the professional orientation** of control, which is determined by the target training of a specialist and thereby contributes to increasing the motivation of the cognitive activity of students — future specialists.

Forms of control:

- according to the coverage of students: frontal, individual, paired, group;
- by method of implementation : oral, written;
- according to the method of organization : control by the teacher, mutual control, self-control;

- by the use of teaching aids : control using printed aids, volume aids (models, dummies, simulators, devices), technical aids, computer systems, including those with support for multimedia files;
- by level of standardization : standardized, non-standardized.

Each of the forms of control has its own characteristics and is conditioned by its goal , content , and method and the nature of learning.

An **oral survey** makes it possible to control not only knowledge , but also verbal abilities, helps to correct speech errors . Reproducing the material contributes to its better memorization , active use of scientific concepts, which is impossible without sufficient application of them in speech .

Pysmov e the survey helps to find out the level of assimilation of the material, but the possibility of writing off should be excluded and students should be carefully monitored during this survey. Written assignments require a considerable amount of the teacher's time to review.

An integral element of the system of the educational process in higher medical educational institutions of III and IV levels of school accreditation is **testing** as a standardized evaluation method that meets the new goals and objectives of higher medical education and promotes individualization and control of the educational process and is designed to ensure the quality of training of the future doctor.

All forms of control, with their skillful implementation, are accompanied by instructions, advice and recommendations of the teacher to the student. Control in all cases enables the auditee to learn lessons from the inspection of his work and draw correct conclusions for the future.

Assessment and marking .

The practical application of any form of pedagogical control ends with evaluations and marks .

Assessment is a method and result of establishing the fact of conformity or non-conformity of acquired knowledge and formed abilities and skills learning goals and objectives. The assessment also predicts identification of reasons that hindered learning and means of organizing educational activities to eliminate gaps in knowledge .

Mark - numerical and analogue of the assessment and has several rank values.

The basis for assessing the quality of students' knowledge , abilities, and skills is the requirements of programs in academic disciplines , but regardless of the specifics of the subject, the general requirements are as follows :

- understanding and degree of assimilation of the question, completeness, which is measured by the amount of software knowledge about the object being studied;
- depth, which characterizes the set of connections between knowledge realized by students;
- methodological organization of knowledge;
- familiarization with the main literature of the academic discipline , and at the - same time with modern periodical domestic and foreign literature in the specialty;

- the ability to apply theory in practice, to solve situational problems , etc.; operability , that is, the number of situations in which the student can apply - his knowledge in practice ;
- familiarization with the history and current state of science and perspectives - of its development;
- logic, structure, response style and the student's ability to defend the proposed scientific and theoretical propositions, awareness, generalization, concreteness;
- flexibility, that is, the student's ability to independently find situations in which knowledge is applied ;
- strength of knowledge.

In the process of pedagogical control, it should be taken into account that :

- it is impractical to control what should be mastered by the student at the level recognition , primary representation or recognition ;
- control should not be used if the teacher is sure that all students will cope with the task 100%, at the same time , sometimes it is appropriate to give such tasks that most students can cope with, because in this way students' faith in their own abilities is stimulated;
- well-organized step-by-step control reduces the need for final control or makes the latter unnecessary at all;
- it is necessary to vary the means of control;
- creation of a calm and friendly atmosphere during the control process contributes to the better work of students and has a positive effect on its results.

the student's **current educational activity is carried out** when mastering each topic of the module by assigning a rating on a 4-point traditional scale, at the end of the module the average rating is calculated, which is converted into points.

The maximum number of points for the student's current educational activity is **120 points.**

Assessment of students' independent work, which is provided for in the topic together with classroom work, is carried out during the ongoing control of the topic in the corresponding classroom lesson. The evaluation of topics that are submitted only for independent work and are not included in the topics of classroom training sessions is controlled during the defense of the essay and during the final module control.

13. Form of final control of study success

The final module control is carried out upon completion of the study of all topics of the module (content modules) in the last session of the module. Students who have completed all types of work provided for in the curriculum and who have studied the module and scored at least the minimum number of points are admitted to the final examination.

The final module control is standardized and includes control of theoretical and practical training. The theoretical part of the PMK consists of 25 test tasks (2 points each - a total of 50 points) and 1 theoretical question and 2 practical tasks, which are evaluated for 10 points. Practical training is evaluated based on the student's ability to perform a patient examination, differential diagnosis of diseases,

establish a diagnosis, reasonably choose a treatment method, perform basic dental manipulations on phantoms (80 points in total). **The final module control** is credited to the student if he scored at least **50** points out of a possible 80. The **total** number of points for each module is 200.

Final semester certification

Compilation of semester final certifications (SPA, exams).

Students who have fulfilled all the requirements of the curriculum are allowed to take the final certification, and in the individual curriculum (report book) there is a note about admission to the SPA.

The last final module control of the academic discipline subject to SPA is conducted in the form of an exam. For students with a normative (shortened) term of study, the semester final certification is not conducted in the 2nd year of study.

The exam is taken by a commission approved by the order of the rector, consisting of: an examiner, members of the commission - representatives of the dean's office and specialized departments , in the presence of the teacher who last taught in this student group.

The grade for the exam corresponds to the scale:

Grade "5" - 80-71 points;

Grade "4" - 70-61 points;

Grade "3" - 60-50 points;

Grade "2" - less than 50 points.

The results of the student's completion of the SPA (exam) are recorded in the "Students' Performance Information in the Discipline" and sealed with the signatures of the examiner and members of the commission, after which the results of the SPA are announced to the students.

14. Scheme of accrual and distribution of points received by students

Conversion of a traditional 4-point scale into a multi-point (maximum 120 points) – conversion of the total current success rate for the module – is carried out only after the current class, which precedes the final module control. The conversion is carried out according to the following algorithm:

– the student's average grade on a traditional 4-point scale obtained during current classes belonging to this module is calculated (to the nearest hundredth of a point);

– in order to obtain a converted multi-point total assessment of current success for the module, the average assessment obtained on a traditional 4-point scale must be multiplied by a factor of 24. The exception is the case when the average assessment on a traditional 4-point scale is 2 points. In this case, the student receives 0 points on a multi-point scale;

– the current grade point average is calculated based on the total number of classes in the module, not on the number actually attended by the student.

Correspondence of the average score of the current academic performance according to the traditional one 4-point scale to the total evaluation of the current success rate for the module

The minimum converted sum of current success points for all modules of the discipline **is 72 points.**

The average score of the current academic performance on a traditional 4-point scale	Points for current performance after GPA conversion
2.00	0
2.05	49
2.10	50
2.15	52
2.20	53
2.25	54
2.30	55
2.35	56
2.40	58
2.45	59
2.50	60
2.55	61
2.60	62
2.65	64
2.70	65
2.75	66
2.80	67
2.85	69
2.90	70
2.95	71
3.00	72
3.05	73
3.10	74
3.15	75
3.20	77
3.25	78
3.30	79
3.35	80
3.40	82
3.45	83
3.50	84
3.55	85
3.60	86
3.65	87
3.70	89

3.75	90
3.80	92
3.85	93
3.90	94
3.95	95
4.00	96
4.05	97
4.10	98
4.15	99
4.20	101
4.25	102
4.30	103
4.35	104
4.40	106
4.45	107
4.50	108
4.55	109
4.60	110
4.65	111
4.70	113
4.75	114
4.80	115
4.85	116
4.90	118
4.95	119
5.00	120

The result of the final module control is evaluated in points (the traditional 4-point evaluation is not assigned). The maximum number of points of the final modular control is 80 points. The minimum number of points of the final module control, at which the control is considered passed, is 50 points.

The maximum number of points per module is 200 points. The PMK assessment criteria are determined by the department, approved by the cyclic methodical commission on the implementation of the credit-module system of education and brought to the attention of students at the beginning of the study of the discipline (the first lecture and practical session).

Discipline assessment

The evaluation of the discipline "Therapeutic Dentistry" is given only to students who have passed all the modules of the discipline. According to the decision of the Academic Council, incentive points can be added to the number of points in the discipline for students who have scientific publications or won prizes for participation in Olympiads in the discipline among universities of Ukraine, student conferences, etc. The objectivity of evaluating the educational activity of

students must be checked by statistical methods (by the correlation coefficient between the current success rate and the results of the final module control).

The grade for the discipline is issued by the department 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 the 4-point scale of disciplines and for all departments is the same (according to the table).

Transferring the average number of points for all modules provided by the discipline program into a traditional grade for 4-point scale

The average number of points for all modules provided by the discipline program	Traditional assessment for 4-point scale
120 - 149.99	"3"
150 - 179.99	"4"
180 - 200	"5"

The grade from the discipline is not converted from the ECTS grade.

The grade for the discipline is issued to the student no later than on the next working day after the last final module control.

If the student does not retake at least one final module test before the beginning of the new semester, he receives a traditional grade of "2" and an ECTS grade of "F" for the discipline, which is the basis for expelling the student.

LIST OF THEORETICAL QUESTIONS
to the final modular control in the discipline "Orthodontics"
MODULE No. 1: "Diagnosis of dental and jaw anomalies and deformations"
Content module No. 1

"Age-specific features of the development of the human maxillofacial apparatus".

1. Orthodontics - definition, purpose and tasks. Domestic and foreign scientists who contributed to the development of orthodontics.
2. Development of the dental and jaw apparatus in the intrauterine period. Features of the formation of the hard palate.
3. Periods of in utero laying of temporary and permanent teeth.
4. Peculiarities of the oral cavity of a newborn and their importance in the process of formation of the dental-mandibular apparatus.
5. Morpho-functional characteristics of the temporary bite.
6. Periods of temporary bite.
7. Tsilinsky's symptom and its prognostic significance.
8. Final planes according to LG Boume and AM Schwars.
9. Morpho-functional characteristics of the variable bite period.
10. Morpho-functional characteristics of a permanent bite.
11. Physiological and pathological types of bites.
12. Orthognathic bite and its characteristics.
13. Keys of occlusion according to E. Engle and Andrews.

14. Peculiarities of the development of chewing muscles in children.
15. Peculiarities of the structure of the temporomandibular joints in children, gradual improvement of the movements of the lower jaw.
16. Factors ensuring the growth and development of jaws.
17. Periods of formation of bite height.
18. The concept of "norm" in orthodontics.

Content module No. 2

"Methods of examination of patients with dento-jaw anomalies"

1. Peculiarities of clinical examination of patients with dental and jaw anomalies and deformities.
2. Peculiarities of objective examination of orthodontic patients.
3. Determination of the sizes of the crown part of temporary and permanent teeth.
4. Measurement of the width of the dental arches according to the Pohn method.
5. Determination of the length of tooth rows by the Korchhaus method.
6. Measurement of the height of the palatine vault by the Korchhaus method.
7. Establishing the proportionality of the development of dental segments according to the method of H.G. Herlach.
8. A graphic method of studying the shape of dental arches according to the Hawley-Herbert-Herbst method.
9. Measurement of models of jaws according to the method of N.G. Snaginoi
10. Methods of conducting direct and indirect palatography.
11. Characteristics of speech function in normal conditions and with abnormalities and deformations of the dental and jaw apparatus.
12. The influence of impaired nasal breathing on the formation of the jaw and jaw apparatus and the body as a whole.
13. Breath test method.
14. Features of the type of swallowing, their characteristics.
15. The role of swallowing in the development of maxillofacial anomalies. Diagnosis of impaired swallowing.
16. Clinical functional tests according to R. Frenkel.
17. Research methods of masticatory function.
18. Photometric research methods. Basic anthropometric landmarks.
19. X-ray methods of studying the dental and jaw apparatus in children. Aiming and axial radiography of teeth, orthopantomography, teleroentgenography.
20. Decoding teleroentgenograms according to A.M. Schwartz. Craniometric measurements,
their purpose, diagnostic significance.
21. Gnathometric measurements according to A.M. Schwartz, their diagnostic value.
22. Profilometric measurements according to A.M. Schwartz, their diagnostic value.
23. The role of teleradiography in diagnosis and forecasting the results of orthodontic treatment.
24. Classifications of dental-maxillofacial deformations and anomalies according to E.N. Englem and A.Ya. Katzem their distinguishing features.

25. Classification of dental-maxillofacial deformities and anomalies according to D.A. Kalvelis, A.I. Betelman, V.Yu. Kurlyandskii, L.V. Ilyina-Markosyan. The principle of their construction.
26. Advantages of the classification of dental-maxillofacial deformities and anomalies proposed by the WHO.

Content module No. 3

"Basic principles and methods of treatment of patients with dental and jaw anomalies and deformities."

1. Classifications of orthodontic equipment according to A.I. Betelman and F.Ya. Horoshilkina
2. Functional orthodontic equipment, its characteristics and purpose.
3. Functionally guiding orthodontic equipment, its characteristics and purpose.
4. Mechanically operating equipment, its characteristics and purpose.
5. Orthodontic devices of combined action, its characteristics and purpose.
6. Morphological changes in periodontal tissues during tooth movement.
7. The theory of reconstruction of bone tissue during hardware movement of Florence's teeth.
8. The theory of bone tissue reconstruction during the Valkhoff-Kingsley appliance movement of teeth.
9. Oppenheim's theory of bone tissue reconstruction during instrumental tooth movement.
10. The modern theory of reconstruction of tooth bone tissue D.A. Kalvelis.
11. The theory of reconstruction of solid tissues S.S. Raisman.
12. The theory of reconstruction of solid tissues A.I. Pozniakova.
13. Biomechanics of horizontal tooth movement according to D.A. Kalvelis.
14. Morphological changes in the palatine suture during expansion of the upper jaw.
15. Forces used in orthodontics. Justification of application.
16. Distribution of forces according to A.M. Schwartz and their characteristics.
17. Morphological changes in the TMJ during hardware movement of the lower jaw.
18. Basic principles and methods of orthodontic treatment of maxillofacial anomalies and deformations.
19. Characteristics of the biological method of treatment.
20. Characteristics of the hardware method of treatment.
21. Characteristics of surgical treatment methods.
22. Physiotherapy methods of treatment of orthodontic patients, indications for use.
23. The main methods of preventing the occurrence of dental and jaw anomalies and deformations.
24. Principles of organizing orthodontic care for the population.
25. Dispensation of children of preschool children's institutions according to risk groups.
26. The role of heredity, bad habits, the state of the ENT organs on the occurrence of orthodontic pathology.

LIST OF PRACTICAL SKILLS AND JOBS
to the final modular control in the discipline "Orthodontics"
MODULE No. 1: "Diagnosis of dental and jaw anomalies and deformations"

1. To be able to examine an orthodontic patient :
   - be able to collect anamnesis;
   - to be able to carry out clinical methods of examination of an orthodontic patient;
   - to be able to carry out auxiliary methods of examination of an orthodontic patient;
   - be able to establish a preliminary diagnosis.
2. Be able to fill in a medical history.
3. Be able to take impressions from the upper and lower jaws with different impression materials.
4. Be able to hold control models.
5. Be able to conduct clinical diagnostic tests.
6. Be able to carry out auxiliary research methods according to Pon, Korkhouse, Gerlach, Snaginiy.
7. Be able to decipher a lateral teleroentgenogram.
8. Ability to write dental, axial X-rays and orthopantomogram.
9. Be able to establish a final diagnosis.
10. Include an orthodontic treatment plan.
11. Be able to determine the design of the orthodontic apparatus.
12. Be able to fill out an outfit for a dental laboratory.
13. Be able to fit and hand over an orthodontic appliance.
14. Be able to correct and activate the device.
15. Be able to determine the lack of space in the dental row for abnormally located teeth on diagnostic models and in the oral cavity.
16. Be able to determine the depth and condition of teeth or retained teeth on radiographs.
17. Be able to conduct palatography.
18. Be able to determine the state of the swallowing function.
19. Be able to conduct a breath test.
20. Be able to determine the configuration of the face and the proportionality of the parts of the face.
21. Be able to draw up a plan of preventive measures to prevent dental-maxillofacial anomalies and deformations.
22. Be able to determine the risk group of dental-maxillofacial anomalies and deformations.
23. Include the necessary set of myogymnastics exercises.
24. Be able to determine a set of preventive measures aimed at preventing the development of permanent dental-jaw-facial deformations.

15. Methodological support

The department has created and uses methodological developments for students and teachers to prepare for the current control and methodological developments for independent work of students in Ukrainian, Russian and English languages.

1. Exemplary and working training programs in the discipline "Orthodontics" for students of the 3rd year.
2. Thematic plans of lectures and practical classes.
3. Methodological developments
4. Cases with tasks for the current and final level of knowledge

16. Recommended literature.

BASIC LITERATURE:

1. Flis P.S., Leonenko G.P., Filonenko V.V., Doroshenko N.M. Under the editorship FlisaP . S. _ "Orthodontics. Dentognathic Anomalies and Deformations". - " Medicine ", Kyiv , 2015 . - 176 p .
2. FlisP . S. , VlasenkoA . Z. , Chupina A. Oh _ " Technology of manufacturing orthodontic and orthopedic structures for children ". - Kyiv : " Medicine ", 2013 . - 256 c.
3. Laura Mitchell , " An introduction to orthodontics " , 2013 - 336 p.
4. Laura Mitchell, "Basic Orthodontics", 2017 - 376 p.

ADDITIONAL LITERATURE :

1. Flis P.S., Tril S.I., Vozniuk V.P. "Children's dental prosthetics". - Kyiv: "Medicine", 2011 - 200 p.
2. Flis P.S. Orthodontics. - Vinnytsia: "New Book", 2007. - 308 p.
3. Stefan Williams. A brief guide to telentgenography. Under the editorship Prof. PS Fleece. - Lviv, 2006.
4. Doroshenko S.I., Kulginskyi E.A. Basics of teleradiography. - K.: Zdorovya, 2007. - 70 p.
5. Kuroedova V.D., Zhdan V.N., Halych L.B. et al. Atlas of orthodontic appliances. - Poltava: "Divosvit", 2011 - 156 p.
6. Flis P.S., Omelchuk M.A., Rashchenko N.V. etc. Orthodontics. - K.: Medicine", 2008 - 360 p.
7. Flys P.S., Omelchuk N.A., Rashchenko N.V. and others. Orthodontics. - K.: Medicine", 2008 - 336 p.
8. Flis P.S., Tril S.I., Vozniuk V.P., Leonenko H.P. Children's dental prosthetics. - Kyiv: Medicine, 2011 - 192 p.
9. Flis P.S., Tril S.I., Voznyuk V.P., Leonenko H.P. Pediatric Dental Prosthetics - Kyiv: Medicine, 2012 - 176 p.

10. Bennett J., R. McLoughlin under the editorship of Prof. Flysa P.S. "Mechanics of orthodontic treatment with straight arch technique", Lviv: "GalDent", 2001.
11. Golovko N.V. Prevention of dento-jaw anomalies. – Vinnytsia: New Book, 2005.
12. Golovko N.V. Orthodontics. – Vinnytsia: Nova kniga, 2008. – 220 p.
13. Declan Millett, Richard Welbury. Solving problems in orthodontics and pediatric dentistry. - M.: MEDpress-Inform, 2009. - 199 p.
14. Kanyura O.A., Savychuk N.O., Golubchikov M.V. The main directions of reforming the children's dental service. - Kyiv: Medicine, 2010.
15. Kuroyedova V.D., Dmytrenko M.I. Modern methods of prevention of maxillofacial anomalies and deformations// World of Orthodontics. - Kyiv: Visnyk Stomatologii, 2003. - No. 1(4), p. 6-9
16. McLaughlin R., J. Bennett, X. Trevisi / under the editorship of Prof. Flysa P.S. Systematized mechanics of orthodontic treatment. - Lviv: GalDent, 2005.
17. Malanchuk V.O., Borysenko A.V., Flis P.S. and others. Basics of stomatology. - Kyiv: "Medicine", 2009.
18. Persin L.S. Orthodontics M. OJSC "Medicina", 2004.
19. Persin L.S. Orthodontics. Modern methods of diagnosis of maxillofacial anomalies. Guide for doctors. - M.: LLC "IZPC "Informknyga", 2007. - 248 p.
20. Ravinda Nanda. Biomechanics and aesthetics in clinical orthodontics. - M.: MEDpress-Inform, 2009. - 386 p.
21. Stefan Williams. A brief guide to telentgenography. Under the editorship Prof. PS Fleece. - Lviv, 2006.
22. Stanislav V. Majevski. Dental gnathology. - Lviv: GalDent, 2008.
23. William R. Proffitt. Modern orthodontics. - M.: MEDpress-Inform, 2006. - 559 p.
24. Flis P.S., Vlasenko A.Z., Chupina A.O. Technology of manufacturing orthodontic and orthopedic structures in childhood. - Kyiv: Medicine, 2013 - 256 c.
25. Frank Netzel, Christian Schulz. Practical guide to orthodontic diagnostics. Analysis and tables for use in practice / Nauch. ed. ed. in Russian I'm from. Ph.D. M.S. Dragomiretskaya. Trans. with German - Lviv: GalDent, 2006. - 176 p.

17. Information resources

1. National textbooks in Ukrainian and English.
2. Electronic textbook.
3. A workbook.
4. Methods.
5. Reference books.
6. Website of the university and department.