MINISTRY OF HEALTH OF UKRAINE

ODESSA NATIONAL MEDICAL UNIVERSITY

Department of Orthodontics

APPROVED
Vice-rector for scientific and pedagogical work

_____ Eduard BURYACHKIVSKY

September 1, 2023

WORKING PROGRAM IN THE DISCIPLINE "GNATOLOGICAL ORTHODONTICS"

Level of higher education: second (master's)

Branch of knowledge:22 "Health care"

Specialty:221 "Dentistry"

Educational and professional program: Dentistry

2023

The program is based on the educational-professional program "Dentistry", training of the second (master's) level of higher education in the specialty 221 "Dentistry" in the field of knowledge 22 "Health", approved by the Academic Council of ONMedU (protocol No. 8 of June 29, 2023).

Developers:
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The work program was approved at the meeting of the Department of Orthodontics
Protocol No. 13 from "30". 06 2023

Head of the department _____ Volodymyr GOROKHIVSKY

Agreed with the guarantor of OPP _____ Anatoliy GULYUK

Approved by the subject cycle methodical commission for dental disciplines of ONMedU
Protocol No. 1 from "29". 08 2023

Head of the subject cycle methodical commission on dental disciplines of ONMedU

_____ Volodymyr KRYKLYAS

Reviewed and approved at a meeting of the department _____
_____
Protocol No. ___ of "___" _____ 20__

Head of Department _____ _____
(signature) (First Name Surname)

Reviewed and approved at a meeting of the department _____
_____
Protocol No. ___ of "___" _____ 20__

Head of Department _____ _____
(signature) (First Name Surname)

1. Description of the academic discipline

Name of indicators	Field of knowledge, specialty, specialization, level of higher education	Characteristic academic discipline
The total number of: Credits: 3 Hours: 90 Content modules: 1	Branch of knowledge 22 "Health care" Specialty 221 "Dentistry" The second level of higher education (master's)	*Full-time form of education* *Elective discipline*
		Year of training 4
		Semester VII-VIII
		Lectures (0 hours)
		Seminars (0 hours)
		Practical (30 hours)
		Laboratory (0 hours)
		Independent work (60 hours)
		including individual tasks (0 hours)
		*Final control form*test

2. The purpose and tasks of the educational discipline, competences, program learning outcomes.

Goal: Training of highly qualified specialists who are able to use acquired competences to solve complex problems and problems in the field of dentistry

Task:

1. deepening the knowledge of the Acquirers regardinganatomy and physiology of the masticatory apparatus, biomechanics of TMJ.

2.Study of basic and additional methods of TMJ examination, etiology and pathogenesis of development of various types of muscle and joint dysfunction, planning of their treatment.

The process of studying the discipline is aimed at forming elements of the following competencies:

- **General (ZK):**

  ZK2. - Knowledge and understanding of the subject area and understanding of professional activity.

  ZK3. - Ability to apply knowledge in practical activities. ZK9. - Ability to identify, pose and solve problems.

- **Special (SK):**

SK1 - Ability to collect medical information about the patient and analyze clinical data.

SK2. - Ability interpret result laboratory andinstrumental research.

SK3. - Ability to diagnose: determine preliminary, clinical, final, accompanying diagnosis, emergency conditions.

SK5. - Ability to the design of the process of providing medical care: determine approaches, plan, species and principles treatmentdiseases of the organs and tissues of the oral cavity and maxillofacial area.

SK8. - Ability to perform medical and dental manipulations. SK9. - The ability to treat the main diseases of the organs and tissues of the oral cavity and maxillofacial area.

Program learning outcomes (PRL):

PRN 1. To highlight and identify leading clinical symptoms and syndromes (for 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)

PRN 3. Appoint and analyze additional (mandatory and optional) examination methods (laboratory, X-ray, functional and/or instrumental) according to list 5, patients with diseases of organs and fabrics oral cavities and maxillofacial region for carrying outdifferential diagnosis diseases (according to list 2).

PRN 4. Determine the final clinical diagnosis in compliance with the relevant ethical and legal norms, by making a reasoned decision and logical analysis of the received subjective and objective data of clinical, additional examination, carrying out differential diagnosis under the control of the supervising physician in the conditions medical institution (according to list 2.1).

PRN 8. Determine approach, plan, kind and principle treatment dental disease (by list 2) by adoption evidence-based ones algorithms and standard schemes. PRN 11. Conduct treatment basic dental diseases according to the existing ones algorithms and standard schemes under the control of the supervising physician in the conditions of a medical institution (according to the list 2.1).

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

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

As a result of studying the academic discipline, the student of higher education must:

Know:

- anatomical and physiological features of the structure of the chewing apparatus;
- TMJ biomechanics;
- etiology and pathogenesis of the development of muscle and joint dysfunctions;
- basic and additional methods of diagnosis of patients with muscle and joint dysfunction;
- clinical and biological bases of orthodontic treatment;
- the main ones principles and methods treatment patients with muscular andjoint dysfunctions;
- types of splints; planning splint therapy
- peculiarities of the algorithm of action in the treatment of patients on a splint;
- retention period, him duration and rationale; speciesretention devices;

Be able:

- analyze the results of the patient's examination;
- to determine maxillofacial anomalies and deformations according to classification; Six keys to occlusion according to Andrews.
- determine the features of the child's growth and development in the antenatal and postnatal periods;
- to have basic and additional methods of diagnosis of patients with muscle and joint dysfunction;
- determine the clinical and biological basis of treatment;
- draw up an action algorithm in the treatment of patients with muscle and joint dysfunction;;
- determine indications for complex methods of treatment of muscle and joint dysfunction;;
- patient treatment planning;
- determine the retention period, its duration and rationale; types of retention devices;

3. Content of the academic discipline

Topic 1. Anatomical and physiological features of the structure of the chewing apparatus. Biomechanics of TMJ

Topic 2. Types of muscle and joint dysfunctions. Etiology and pathogenesis of their development.

Topic 3. Basic and additional methods of examination of patients with muscle and joint dysfunctions. Treatment planning for patients with muscle and joint dysfunctions. Determination of the need for orthosurgery, removal, compensation.

Topic 4. Use of myogymnastics and physiotherapy for patients with muscle and joint dysfunctions.

Topic 5. Types of splints. The choice of splint - therapy

Topic 6. Concept of retention period. Factors that ensure the stability of treatment results (aesthetic, functional, morphological). Removable and non-removable retention devices, their advantages and disadvantages. The concept of disease recurrence.

4. The structure of the academic discipline

Topic name	Number of hours					
	That's all	Including				
Topic	That's all	Lectures	Seminars	Practically not	The laboratory does not	SRS
Content module 1.						
Topic 1. Anatomical and physiological features of the structure of the chewing apparatus. Biomechanics of TMJ	14	0	0	4	0	10
Topic 2. Types of muscle and joint dysfunctions. Etiology and pathogenesis of their development.	16	0	0	6	0	10
Topic 3. Basic and additional methods of examination of patients with muscle and joint dysfunctions. Treatment planning for patients with muscle and joint dysfunctions. Determination of the need for orthosurgery, removal, compensation.	16	0	0	6	0	10
Topic 4. Use of myogymnastics and physiotherapy for patients with muscle and joint dysfunctions.	14	0	0	4	0	10

Topic 5. Types of splints. The choice of splint - therapy distalizer.	16	0	0	6	0	10
Topic 6. Concept of retention period. Factors that ensure the stability of treatment results (aesthetic, functional, morphological). Removable and non-removable retention devices, their advantages and disadvantages. The concept of disease recurrence.	14	0	0	4	0	10
In total	90	0	0	30	0	60

5. Topics of lectures / seminars / practical / laboratory classes

5.1. Topics of lectures

Lectures are not provided.

5.2. Topics of seminar classes

Practical classes are not provided.

5.3. Topics of practical classes

No	Topic	hours
1.	Anatomical and physiological features of the structure of the chewing apparatus. Biomechanics of TMJ	4
2.	Types of muscle and joint dysfunctions. Etiology and pathogenesis of their development.	6
3.	Basic and additional methods of examination of patients with muscle and joint dysfunctions. Treatment planning for patients with muscle and joint dysfunctions. Determination of the need for orthosurgery, removal, compensation.	6

4.	Use of myogymnastics and physiotherapy for patients with muscle and joint dysfunctions.	4
5.	Types of splints. The choice of splint - therapy	6
6.	Concept of retention period. Factors that ensure the stability of treatment results (aesthetic, functional, morphological). Removable and non-removable retention devices, their advantages and disadvantages. The concept of disease recurrence.	4
	In total	30

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5.4. Topics of laboratory classes

Laboratory classes are not provided.

6. Independent work of a student of higher education

No. z/p	**Topic**	**Numberhours**
1.	Topic 1. Preparation for practical classes 1-2	10
2.	Topic 2. Preparation for practical classes 3 - 5	10
3.	Topic 3. Preparation for practical classes 6-8	10
4.	Topic 4. Preparation for practical classes 9-10	10
5.	Topic 5. Preparation for seminar classes 11-13	10
6.	Topic 6. Preparation for seminar classes 14-15	10
	In total	60

7. Teaching methods

Practical training:conversation, discussion of problematic situations, discussion of clinical situations, role-playing games, solving clinical situational problems, practicing patient examination skills, instruction and practicing skills on simulation dummies.

Independent work:independent work with recommended basic and additional literature, with electronic information resources. Independent practice of practical skills.

8. Forms of control and evaluation methods (including criteria for evaluating learning outcomes)

Current control:oral survey, testing, assessment of performance of practical skills, assessment of communication skills during role-playing, solving situational clinical tasks, assessment of activity in class.

Final control:test.

Evaluation of the current educational activity in a practical session

Assessment success the study of subjects of the discipline is carried out according to the traditional 4-point scale. At the end of the study of the discipline, the current success rate is calculated as the average current score, that is, the arithmetic average of all the grades received by the graduate student on a traditional scale, rounded to a whole number.

Current evaluation criteria in practical training

Rating	Evaluation criteria
"5"	The applicant is fluent in the material, takes an active part in discussing and solving a situational clinical problem, confidently demonstrates practical skills during the examination of a sick child and the interpretation of clinical, laboratory and instrumental research data, expresses his opinion on the subject of the lesson, demonstrates clinical thinking.
"4"	The applicant has a good command of the material, participates in the discussion and solution of a situational clinical problem, demonstrates practical skills during the examination of a sick child and the interpretation of clinical, laboratory and instrumental research data with some errors, expresses his opinion on the subject of the lesson, demonstrates clinical thinking.
"3"	The applicant does not have sufficient knowledge of the material, is unsure of participating in the discussion and solution of the situational clinical problem, demonstrates practical skills during the examination of a sick child and the interpretation of clinical, laboratory and instrumental data studies with significant errors.
"2"	The acquirer does not possess the material, does not participate in the discussion and solution of the situational clinical problem, does not demonstrate practical skills during the examination of a sick child and interpretation of data clinical, laboratory and instrumental research.

Credit is given to the applicant who completed all tasks of the work program of the academic discipline, took an active part in practical classes, completed and defended an individual assignment and has an average current grade of at least 3.0 and has no academic debt.

Assessment is carried out: at the last lesson before the beginning of the examination session - with the tape system of learning, at the last lesson - with the cyclical system of learning. The credit score is the arithmetic mean of all components according to the traditional four-point scale and has a value that is rounded according to the statistics method with two decimal places after the decimal point.

9. Distribution of points received by students of higher education

The obtained average score for the academic discipline for applicants who have successfully mastered the work program of the academic discipline is converted from a traditional four-point scale to points on a 200-point scale, as shown in the table:

Conversion table of a traditional assessment into a multi-point scale

Traditional four-point scale	Multipoint 200-point scale
Excellent ("5")	185 - 200
Good ("4")	151 - 184
Satisfactory ("3")	120-150
Unsatisfactory ("2")	Below 120

A multi-point scale (200-point scale) characterizes the actual success of each applicant in learning the educational component. The conversion of the traditional grade (average score for the academic discipline) into a 200-point grade is performed by the information and technical department of the University.

According to the obtained points on a 200-point scale, the achievements of the applicants are evaluated according to the ECTS rating scale. Further ranking according to the ECTS rating scale allows you to evaluate the achievements of students from the educational component who are studying in the same course of the same specialty, according to the points they received.

The ECTS scale is a relative-comparative rating, which establishes the applicant's belonging to the group of better or worse among the reference group of fellow students (faculty, specialty). An "A" grade on the ECTS scale cannot be equal to an "excellent" grade, a "B" grade to a "good" grade, etc. When converting from a multi-point scale, the limits of grades "A", "B", "C", "D", "E" according to the ECTS scale do not coincide with the limits of grades "5", "4", "3" according to the traditional scale. Acquirers who have received grades of "FX" and "F" ("2") are not included in the list of ranked acquirers. The grade "FX" is awarded to students who have obtained the minimum number of points for the current learning activity, but who have not passed the final examination. A grade of "F" is assigned to students who have attended all classes in the discipline, but have not achieved a grade point average (3.00) for the current academic activity and are not admitted to the final examination.

Applicants who study in one course (one specialty), based on the number of points scored in the discipline, are ranked on the ECTS scale as follows:

Conversion of the traditional grade from the discipline and the sum of points on the ECTS scale

Evaluation on the ECTS scale	Statistical indicator
AND	Top 10% achievers
IN	The next 25% of earners
WITH	The next 30% of earners
D	The next 25% of earners
IS	The next 10% of earners

10.Methodical support

- Working program of the academic discipline
- Syllabus
- Methodical developments for practical classes
- Multimedia presentations
- Situational clinical tasks

11.LIST OF THEORETICAL QUESTIONS

1. What is biomechanics?
2. What are the types of tooth movement?
3. What are the anatomical and physiological features of the structure of the chewing apparatus?
4. TMJ biomechanics?
5. Anatomical and physiological features of TMJ structure?

6. What are the types of muscle dysfunction?
7. What is the etiology and pathogenesis of the development of muscle dysfunction?
8. What are the types of joint dysfunctions?
9. What is the etiology and pathogenesis of the development of joint dysfunction?
10. What are the main methods of examination of patients with muscle and joint dysfunctions?
11. What are the additional methods of examination of patients with muscle and joint dysfunctions?
12. What is myogymnastics?
13. Indications for myogymnastics?
14. Physiotherapy of patients with muscle and joint dysfunctions.
15. What are the types of splints?
16. Indications for the use of splint therapy
17. What are the factors that ensure the stability of treatment results?
18. What types of retention devices are distinguished?
19. What are the requirements for retention devices?

12. Recommendedliterature

Main:

1. Flis P.S. Orthodontics. Vinnytsia: "New Book", 2019. 308 p.
2. Flis P.S., Leonenko G.P., Filonenko V.V., Doroshenko N.M. Under the editorship FlisaP.S. "Orthodontics. DentognathicAnomalies and Deformations". "Medicine", Kyiv 2015. 176 p.
3. Flis P.S., Vlasenko A.Z., Chupina A.O. Orthodontic manufacturing technology and orthopedic constructions in children's vits". Kyiv: "Medicine", 2013. 256 p.
4. Okeson, JP (2015). Temporomandibular disorders: etiology and classification. In S. Kandasamy, C. Greene, D. Rinchuse, J. Stockstill (Eds), TMD and Orthodontics (pp. 19-36)

ADDITIONAL LITERATURE:

1. Stefan Williams. A brief guide to telentgenography. Under the editorship Prof. PS Fleece. Lviv, 2006.
2. Kuroedova V.D., Zhdan V.N., Halych L.B. et al. Atlas of orthodontic appliances. Poltava: "Divosvit", 2011. 156 p.
3. Laura Mitchell, "An introduction to orthodontics", Oxford University Press, 2019 - 368 p.
4. Suslova O. V., Stetsenko D. V., Kordonets E. L. Zheliznyak N. A. Biometric methods of research in orthodontics (educational and methodological manual). Odessa: Odessa National Medical University, 2018. 37 p.
5. Padhraig Fleming, Jadbinder Seehra Fixed orthodontic appliances, Springer nature Switzerland AG, 2019 – 166p

13. Information resources

1. State Expert Center of the Ministry of Health of Ukrainehttp://www.dec.gov.ua/index.php/ua/
2. Laura Mitchell, "An introduction to orthodontics", 2013 - 336 p.
3. National Scientific Medical Library of Ukraine http://library.gov.ua/
4. National Library of Ukraine named after V.I. Vernadskyi http://www.nbuv.gov.ua/