MINISTRY OF HEALTH PROTECTION OF UKRAINE

ODESSA NATIONAL MEDICAL UNIVERSITY

Department of Orthopedic Dentistry

APPROVED

Vice-rector for scientific and pedagogical work

_____ Eduard BURYACHKIVSKY

«___» _____ 2023

WORKING PROGRAM IN THE DISCIPLINE OF

BASIC TECHNOLOGIES OF MANUFACTURING DENTAL DENTURES

Higher level: second (master's)

Field of knowledge: 22 "Health care"

Specialty: 221 "Dentistry"

Educational and professional: "Dentistry"

2023

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

Developers:
Head of the Department of Orthopedic Dentistry, Doctor of Medicine Sciences, Professor P.D. Rozhko, Associate Professor, Candidate of Medical Sciences. Shakhnovskyi I.V., head teaher of the department, assistant Cherednychenko A.V.

The work program was approved at the meeting of the Department of Orthopedic Stomatology. Protocol No. 11 of "30" 06 2023.
Head of the department _____ Pavlo ROZHKO

Agreed with the guarantor of the EPP _____ Anatoliy GULYUK

Approved by the subject cycle methodical commission for dental disciplines of ONMedU. Protocol No. 1 of "28" 08 2023

Head of the subject cycle methodical commission for dental disciplines _____ Volodymyr KRYKLYAS

Revised and approved at the meeting of the Department of Orthopedic Dentistry Protocol No. __from "__"_____20__year.
Head of the department _____Pavlo ROZHKO

Revised and approved at the meeting of the Department of Orthopedic Dentistry Protocol No. __from "__"_____20__year.
Head of the department _____Pavlo ROZHKO

1. Description of the academic discipline

Name of indicators	Field of knowledge, specialty, specialization, level of higher education	Characteristics of the academic discipline
The total number of: Credits: 3 Hours: 90 Content modules: 1	Branch of knowledge 22 "Health care" Specialty 221 "Dentistry" Second level of higher education (master's)	*Full-time education* *Elective discipline*
		Year of training: 2
		Semester III-IV
		Lectures (0 hours)
		Seminars (0 hours)
		Practical (30 hours)
		Laboratory (0 hours)
		Independent work (60 hours)
		including individual tasks (0 hours)
		Final control form- balance

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

Goalteaching an elective course«Basic technologies of manufacturing dental prostheses»is the achievement of the goals of the discipline «Orthopedic Dentistry», which are established on the basis of the OPP for the training of a doctor in the specialty «Dentistry» in accordance with the block of its content modules and is the basis for building the content of this elective course. The description of goals is formulated through skills in the form of target tasks (actions). On the basis of the final goals for the content module, specific goals are formulated in the form of certain skills (actions), target tasks that ensure the achievement of the final goal of studying the discipline.

Task:studying a course of choiceBasic technologies of manufacturing dental prostheses»there are: to teach students of higher education to examine patients in a clinical office using dental equipment and tools; to teach applicants to analyze diagnostic models of patients with various types of pathology of the maxillofacial apparatus; on the basis of clinical thinking, choose methods of restoring defects of teeth and dental rows; to teach applicants to perform practical skills during the clinical reception of patients with various defects of the dento-maxillofacial apparatus; teach applicants to solve situational problems with a clinical orientation.

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

Integral competence(IR):

IR. The ability to solve typical and complex specialized tasks and problems in the field of health care in the specialty "Dentistry", in professional activities or in the learning process, which involves conducting research and/or implementing innovations and is characterized by the complexity and uncertainty of conditions and requirements.

General(ZK):

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

ZK3. Ability to apply knowledge in practical activities.

ZK7. Ability to search, process and analyze information from various sources.

Special(SK):

SK4. The ability to plan and carry out measures for the prevention of diseases of the organs and tissues of the oral cavity and maxillofacial area.

SK5. The ability to design the process of providing medical care: to determine the approaches, plan, types and principles of treatment of diseases of the organs and tissues of the oral cavity and maxillofacial area.

SK9. The ability to treat the main diseases of the organs and tissues of the oral cavity and maxillofacial area.

SK14. Ability to maintain regulatory medical documentation.

Program learning outcomes (PRL):

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 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:

– history of emergence, development and current state of dental science;

– etiology, pathogenesis, classification, clinical manifestations, modern diagnostic standards, differential diagnosis, treatment, emergency care, prevention, prognosis of dental diseases and their complications;

– modern achievements in the field of scientific research.

Be able:

– Carry out the latest methods of treatment in dentistry;

– Analyze dental information in modern directories, scientific and professional periodicals;

– Conduct research according to the chosen methods;

3. Content of the academic discipline

Topic No. 1. Clinical examination of patients with defects of teeth and dental rows. Special examination methods. Drawing up a treatment plan. Preparation of documentation. Oral cavity preparation for prosthetics.

Clinical examination of patients with defects of teeth and dental rows. Special examination methods. Diagnosis and its components. Drawing up a treatment plan. Drawing up a treatment plan. Peculiarities of preparing the oral cavity for prosthetics with various types of prostheses.

Topic No. 2. Modern technologies for the production of inlays, pin designs, and artificial crowns.

The main types of microprostheses. Indications for making tabs. Contraindications for making tabs. Tab requirements. Clinical and laboratory stages of making tabs. Materials used for making tabs. The main types of pin structures. Indications for pin structures. Contraindications for the manufacture of pin structures. Requirements for pin structures. Clinical and laboratory stages of manufacturing pin structures. Materials used for the manufacture of pin structures. Indications for the manufacture of artificial crowns. Requirements for artificial crowns. Types of artificial crowns. Clinical and laboratory stages of manufacturing stamped crowns.

Topic No. 3. Manufacturing technologies of stamped-soldered bridge-like prostheses, solid-cast bridge-like prostheses.

Bridge-like prostheses. Constructions. Defects of tooth rows according to Betelman and Kennedy. Indications for the use of bridge prostheses Types of supporting elements and intermediate part, methods of their connection. Classification. Manufacturing technology of

stamped and soldered bridge-like prosthesis.

Topic No. 4. Modern manufacturing technologies of single-cast bridge prostheses with veneers. Technologies of casting solid restorations.

Partial secondary dentition, features of prosthetics with modern metal-ceramic bridge prostheses. Clinical and laboratory stages of production of solid bridge prostheses. Innovative main and auxiliary materials for the production of solid prostheses.Physico-chemical propertiesbasic and auxiliary materials. Selection of metal alloys for metal-ceramic restorations. Modern technology of cast solid restorations. Innovativeceramic materials. Types of connection of the ceramic lining with the metal frame of the prosthesis.

Topic No. 5. Modern manufacturing technologies of partial removable plate prostheses.

Removable dentures. Constructions. Indications for the use of partial removable lamellar prostheses. Design of partial removable prostheses. The mechanism of transmission of chewing pressure during the use of removable prostheses. Methods of fixing partial removable prostheses. Types of bases for removable prostheses. Artificial teeth used in the manufacture of removable prostheses. Clinical and laboratory stages of manufacturing partial removable prostheses.

Topic No. 6. Modern manufacturing technologies of braced prosthesis structures.

Bügel prostheses. Constructions. Indications and contraindications for the manufacture of brace prostheses. Requirements for brace prostheses. Peculiarities of the construction of braced prostheses. Clinical and laboratory stages of the production of brace prostheses.

Topic No. 7. Modern manufacturing technologies of complete removable lamellar prostheses. Test.

Complete removable dentures. Classification of edentulous jaws according to Schroeder, Kisller and Oxman. Lund's classification of the pliable zones of the mucous membrane. Classification of the state of the oral mucosa according to Supli. Design of complete removable prostheses. Classifications of toothless jaws. Clinical and laboratory stages of manufacturing complete removable prostheses.Test.

4. The structure of the academic discipline

Topic name	Number of hours		
	That's all	including	
		Practical	SRS
Topic No. 1. Clinical examination of patients with defects of teeth and dental rows. Special examination methods. Drawing up a treatment plan. Preparation of documentation. Oral cavity preparation for prosthetics.	18	6	12
Topic No. 2. Modern technologies for manufacturing tabs, pin structures, artificial crowns.	12	4	8
Topic No. 3. Manufacturing technologies of stamped and soldered bridge-like prostheses, solid-cast bridge-like prostheses.	12	4	8
Topic No. 4. Modern manufacturing technologies of single-cast bridge prostheses with facings. Technologies of casting solid restorations.	12	4	8
Topic No. 5. Modern manufacturing technologies of partial removable lamellar prostheses.	12	4	8
Topic No. 6. Modern technologies for the production of braced prosthesis structures.	12	4	8
Topic No. 7. Modern manufacturing technologies of complete removable lamellar prostheses. Test.	12	4	8
Only hours	90	30	60

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

5.1. Topics of lectures
Lectures are not provided

5.2. Topics of seminar classes
Seminar classes are not provided

5.3. Topics of practical classes

No	Topic name	Number of hours
1.	Clinical examination of patients with defects of teeth and dental rows. Special examination methods. Drawing up a treatment plan. Preparation of documentation. Oral cavity preparation for prosthetics.	6
2.	Modern technologies for manufacturing tabs, pin structures, artificial crowns.	4
3.	Manufacturing technologies of stamped and soldered bridge-like prostheses, solid-cast bridge-like prostheses.	4
4.	Modern manufacturing technologies of single-cast bridge prostheses with facings. Technologies of casting solid restorations.	4
5.	Modern manufacturing technologies of partial removable lamellar prostheses.	4
6.	Modern technologies for the production of braced prosthesis structures.	4
7.	Modern manufacturing technologies of complete removable lamellar prostheses. Test.	4
	Together	**30**

5.4. Topics of laboratory classes
Laboratory classes are not provided.

6. Independent work of a student of higher education

No	Topic name	Number of hours
1.	Preparation for the seminar class. Topic No. 1. Clinical examination of patients with defects of teeth and dental rows. Special examination methods. Drawing up a treatment plan. Preparation of documentation. Oral cavity preparation for prosthetics.	12
2.	Preparation for the seminar class. Topic No. 2 Modern technologies for the production of inlays, pin structures, and artificial crowns.	8
3.	Preparation for the seminar class. Topic No. 3. Manufacturing technologies of stamped-soldered bridge-like prostheses, solid-cast bridge-like prostheses.	8
4.	Preparation for the seminar class. Topic No. 4. Modern manufacturing technologies of single-cast bridge prostheses with veneers. Technologies of casting solid restorations.	8
5.	Preparation for the seminar class. Topic No. 5. Modern manufacturing technologies of partial removable plate prostheses.	8
6.	Preparation for the seminar class. Topic No. 6. Modern manufacturing technologies of braced prosthesis structures.	8

7.	Preparation for the seminar class. Topic No. 7. Modern manufacturing technologies of complete removable lamellar prostheses. Test.	8
	Together	**60**

7. Teaching methods

Practical training:conducting control of knowledge, abilities and skills of applicants, posing a general problem by the teacher and discussing it with the participation of applicants, completing tasks with their discussion.

Independent work:independent work with recommended basic and additional literature, with electronic information resources.

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

Current control:evaluation of the activity of the applicants in the conversation, discussion; the ability to formulate and defend one's position.

Final control:test.

Evaluation of the current educational activity in a practical lesson:oral survey, evaluation of reports and the ability to formulate and defend one's position, evaluation of activity in the lesson, evaluation of the performance of practical skills.

Evaluation criteria for the practical lesson on the national scale:

Rating	Evaluation criteria
Excellent "5"	The applicant perfectly mastered the theoretical material of the subject of the lesson, demonstrates deep and comprehensive knowledge of the relevant topic, the main provisions of scientific primary sources and recommended literature, thinks logically and constructs an answer, freely uses the acquired theoretical knowledge when analyzing practical material, expresses his attitude to certain problems, demonstrates high level of assimilation of practical skills.
OK "4"	The applicant has well mastered the theoretical material of the lesson, has the main aspects from primary sources and recommended literature, presents it in a reasoned way; has practical skills, expresses his thoughts on certain problems, but certain inaccuracies and errors are assumed in the logic of the presentation of theoretical content or in the performance of practical skills.
Satisfactory "3"	In general, the applicant has mastered the theoretical knowledge of the educational topic, orients himself in primary sources and recommended literature, but answers unconvincingly, confuses concepts, additional questions cause uncertainty or lack of stable knowledge in the student; when answering questions of a practical nature, reveals inaccuracies in knowledge, does not know how to evaluate facts and phenomena, connect them with future activities, makes mistakes when performing practical skills
Unsatisfactory "2"	The applicant has not mastered the educational material of the topic, does not know scientific facts, definitions, is almost not oriented in primary sources and recommended literature, lacks scientific thinking, practical skills are not formed.

*Test*awarded 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 cycle system of learning. The credit score is the arithmetic mean of all components on a traditional four-point scale and has a value that is rounded using the statistical method with two decimal places after the decimal point.

9. Distribution of points received by higher education applicants

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 rate of each applicant in mastering 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
- Methodical recommendations for independent work

11. Questions for preparing for the final control

1. Clinical examination of patients with defects of teeth and dental rows.
2. Special methods of examination of patients in the orthopedic department.
3. Diagnosis and its components.
4. Drawing up a treatment plan for an orthopedic patient.
5. Drawing up documentation of a dentist-orthopedic doctor.
6. Peculiarities of preparing the oral cavity for prosthetics.
7. The main types of microprostheses.
8. Indications for making tabs. Contraindications for making tabs. Tab requirements.
9. Clinical and laboratory stages of making tabs.
10. Materials used for making tabs.
11. The main types of pin structures.
12. Indications for pin designs. Contraindications for the manufacture of pin structures.
13. Requirements for pin structures.
14. Clinical and laboratory stages of manufacturing pin structures.
15. Materials used for the manufacture of pin structures.
16. Indications, contraindications for the manufacture of artificial crowns. Requirements for artificial crowns.
17. Types of artificial crowns.
18. Clinical and laboratory stages of manufacturing stamped crowns.
19. Bridge-like prostheses. Constructions.
20. Defects of tooth rows according to Betelman and Kennedy.
21. Indications for the use of bridge prostheses.
22. Types of supporting elements and the intermediate part, methods of their connection. Classification.
23. Manufacturing technology of stamped and soldered bridge-like prosthesis.
24. Partial secondary dentition, features of prosthetics with modern metal-ceramic bridge prostheses.
25. Clinical and laboratory stages of production of solid bridge prostheses.
26. Innovative main and auxiliary materials for the production of solid prostheses.Physico-chemical propertiesbasic and auxiliary materials.
27. Selection of metal alloys for metal-ceramic restorations.
28. Modern technology of cast solid restorations.
29. Innovativeceramic materials. Types of connection of the ceramic lining with the metal frame of the prosthesis.
30. Removable dentures. Constructions.
31. Indications for the use of partial removable lamellar prostheses.
32. Design of partial removable prostheses. The mechanism of transmission of chewing pressure during the use of removable prostheses.
33. Methods of fixing partial removable prostheses.
34. Types of bases for removable prostheses.

35. Artificial teeth used in the manufacture of removable prostheses.
36. Clinical and laboratory stages of manufacturing partial removable prostheses.
37. Bügel prostheses. Constructions.
38. Indications and contraindications for the manufacture of brace prostheses. Requirements for brace prostheses.
39. Peculiarities of the construction of braced prostheses.
40. Clinical and laboratory stages of the production of brace prostheses.
41. Complete removable dentures. Classification of edentulous jaws according to Schroeder, Killer and Oxman.
42. Classification of mucosal pliability zones according to Lund. Classification of the condition of the mucous membrane of the oral cavity according to Supli.
43. Design of complete removable prostheses. Clinical and laboratory stages of manufacturing complete removable prostheses.

12. Recommended Books

Main (basic):

1. Orthopedic dentistry: textbook / M.M. Rozhko, V.P. Nespryadko, I.V. Paliychuk et al. - 2020
2. Dentistry: in 2 books. — Kn. 2: Textbook for Med. universities, institutes, acad. — 2nd edition. Approved by the Ministry of Health / Ed. M.M. Horn — K., 2018. — 992 p., color. ed., TV pal., (art. 3 pr.).
3. Materials science in dentistry: a study guide / [Korol D.M., Korol M.D., Ojubeiska O.D. etc.]; in general ed. King D.M. – Vinnytsia: New book, 2019. – 400 p.

Auxiliary

1. Nespryadko V.P., Rozhko M.M. Orthopedic dentistry. Kyiv. Plus book, 2003.
2. Rozhko M.M., Nespryadko V.P., Mykhaylenko T.N. etc. Prosthetic equipment. – K.; Plus book, 2006. – 544 p.
3. Humetskyi R.A., Rozhko M.M., Zavadka O.E., Skrypnikov P.M. Complications of local anesthesia in the maxillofacial region: Manual in 3 volumes - Lviv: Ivano-Frankivsk: Poltava: Nautilus Publishing House, 2002. - 231 p.
4. Korol M.D., Korobeynikov L.S., Kindiy D.D., Yarkovy V.V. Ojubeiska O.D. Tactics of curation of patients in the clinic of orthopedic dentistry. Poltava: Astraya, 2003 – 52 p.
5. Korol M.D., Korobeynikov L.S., Kindiy D.D., Yarkovy V.V. Workshop on orthopedic dentistry. Part II. Poltava: PP "Formika", 2002. - 168 p.
6. Bida V.I. Replacement of dentition defects with fixed denture structures. Lecture. - Kyiv, 2001. - 26 p.

13. Electronic information resources

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