MINISTRY OF HEALTH PROTECTION OF UKRAINE

ODESSA NATIONAL MEDICAL UNIVERSITY

Department of Orthopedic Dentistry

APPROVED

Vice-rector for scientific and pedagogical work

_____ Eduard BURYACHKIVSKY

«_1_» _09_ 2023

WORKING PROGRAM IN THE DISCIPLINE OF

SIMULATION DENTISTRY IN ORTHOPEDIC DENTISTRY

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: 7 Hours: 210 Content Modules: 1	Branch of knowledge 22 "Health care" Specialty 221 "Dentistry" Level of higher education Second (master's)	*Full-time education* *Mandatory discipline*
		Year of training5
		Semester IX-X
		Lectures (0 hours)
		Seminars (0 hours)
		Practical (124 hours)
		Laboratory (0 hours)
		Independent work (86 hours)
		including individual tasks (0 hours)
		Final control form- diff. test

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

Goalteaching is the achievement of the goals of the discipline "Simulation Dentistry in Orthopedic Dentistry", which are established on the basis of the OPP for training 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 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:study of the mandatory discipline "Simulation Dentistry in Orthopedic Dentistry" is: 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 the formation of elements of such competences:

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):

ZK3. Ability to apply knowledge in practical activities.
ZK6. Skills in using information communication technologies.
ZK8. Ability to adapt and act in a new situation.
ZK9. Ability to identify, pose and solve problems.
ZK10. The ability to be critical and self-critical.
ZK11. Ability to work in a team.

Special(SK):

SK1. Ability to collect medical information about the patient and analyze clinical data.
SK2. The ability to interpret the results of laboratory and instrumental research.
SK3. Ability to diagnose: determine preliminary, clinical, final, accompanying diagnosis, emergency conditions.
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.
SK7. The ability to determine the tactics of managing patients with
diseases of the organs and tissues of the oral cavity and maxillofacial area with accompanying somatic diseases.
SK8. Ability to perform medical and dental manipulations.

Program learning outcomes (PRL):

PRN 1. Identify and identify leading clinical symptoms and syndromes (according to list 1); according to standard methods, using preliminary data of the patient's anamnesis, 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 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).

PRN 23. Perform emergency medical aid manipulations using standard schemes under any circumstances based on the diagnosis of an emergency (according to list 4) in limited time (according to lists 6, 7).

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

- **Know:**

The purpose of teaching the educational discipline "Simulation Dentistry in Orthopedic Stomatology" is the professional formation of a future specialist capable of solving clinical problems using the acquired knowledge and skills from the

discipline, which involves the integration of the teaching of the discipline with therapeutic, surgical and pediatric dentistry.

- **Be able:**

The main tasks of studying the educational discipline "Simulation Dentistry in Orthopedic Dentistry" are: to teach applicants to conduct examinations of 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.

3. Content of the academic discipline

Topic No. 1.Replacement of defects of hard tissues of teeth with tabs, stump and pin structures. Clinical and laboratory stages of production.

Replacement of defects of hard tissues of teeth with tabs, stump and pin structures. Clinical and laboratory stages of production.

Topic No. 2. Restoration of teeth after endodontic treatment. Designs of standard pins and custom-made pins. Indications for use. Complication.

Restoration of teeth after endodontic treatment. Designs of standard pins and custom-made pins. Indications for use. Complication.

Topic No. 3. Indications for replacement of defects of the crown part of the tooth. Temporary permanent restorations. Indications, production methods. Protection of vital teeth during the manufacture of fixed orthopedic structures.

Indications for replacement of defects of the crown part of the tooth. Temporary permanent restorations. Indications, production methods. Protection of vital teeth during the manufacture of fixed orthopedic structures.

Topic No. 4. Indications for replacement of partial dentition defects with fixed prostheses. Temporary permanent restorations. Indications, production methods.

Indications for replacement of partial dentition defects with fixed prostheses. Temporary permanent restorations. Indications, production methods.

Topic No. 5.Ceramic veneers - Indications and contraindications for manufacturing. Features of tooth preparation. Manufacturing technologies. Adhesive technique for fixing veneers.

Ceramic veneers - Indications and contraindications for manufacturing. Features of tooth preparation. Manufacturing technologies. Adhesive technique for fixing veneers.

Topic No. 6.Indications, clinical and laboratory stages of manufacturing aesthetic restorations using metal-free technologies. Errors and complications.

Indications, clinical and laboratory stages of manufacturing aesthetic restorations using metal-free technologies. Errors and complications.

Topic No. 7.Replacement of partial dentition defects with bridge prostheses. Biomechanics of bridge prostheses.

Replacement of partial dentition defects with bridge-like prostheses. Biomechanics of bridge prostheses.

Topic No. 8.Clinical and technological limitations in the planning of bridge prostheses from different materials.

Clinical and technological limitations in the planning of bridge prostheses from different materials.

Topic No. 9.Replacement of partial dentition defects with removable lamellar prostheses. Choice of design and material. Design features, complications. Clinical and laboratory stages.

Replacement of partial dentition defects with removable lamellar prostheses. Choice of design and material. Design features, complications. Clinical and laboratory stages.

Topic No. 10.Substitution of partial defects of the dentition with fixed prostheses. Choice of design and material. Fixation systems. Indications and contraindications for replacing defects of the dentition with fixed dentures. Design features, complications Clinical and laboratory stages.

Substitution of partial defects of the dentition with fixed prostheses. Choice of design and material. Fixation systems. Indications and contraindications for replacing defects of the dentition with fixed dentures. Design features, complications Clinical and laboratory stages.

Topic No. 11.Complete removable prosthetics. Clinical stages of production.

Complete removable prosthetics. Clinical stages of production.

Topic No. 12.Complete removable prosthetics. Laboratory stages of production.

Complete removable prosthetics. Laboratory stages of production.

Topic No. 13.Implantation, indications, examination of the patient. Planning. Component parts of the implant. Methods of connecting the abutment to the implant. Abutments, types, indications for use.

Implantation, indications, examination of the patient. Planning. Component parts of the implant. Methods of connecting the abutment to the implant. Abutments, types, indications for use.

Topic No. 14.Peculiarities of prosthetics using dental implants. Permanent prosthetics supported by implants. Clinical and laboratory stages of production.

Peculiarities of prosthetics using dental implants. Permanent prosthetics supported by implants. Clinical and laboratory stages of production.

Topic No. 15.Removable and conditionally removable prostheses with support on implants. Clinical and laboratory stages of production.

Removable and conditionally removable prostheses with support on implants. Clinical and laboratory stages of production.

Topic No. 16.Excessive abrasion of the hard tissues of the teeth. Etiology, pathogenesis, clinical forms. Orthopedic methods of treatment and prevention.

Excessive abrasion of the hard tissues of the teeth. Etiology, pathogenesis, clinical forms. Orthopedic methods of treatment and prevention.

Topic No. 17.Traumatic occlusion. Etiology, pathogenesis. Diagnostic methods. Treatment and prevention.

Traumatic occlusion. Etiology, pathogenesis. Diagnostic methods. Treatment and prevention.

Topic No. 18.Examination of patients with periodontal tissue diseases. Analysis of the odonto-periodontogram. Diagnostic methods. Tasks and planning of orthopedic interventions in the complex treatment and prevention of

periodontal diseases.
Examination of patients with periodontal tissue diseases. Analysis of the odonto-periodontogram. Diagnostic methods. Tasks and planning of orthopedic interventions in the complex treatment and prevention of periodontal diseases.
Topic No. 19.Tires and prosthetic tires, classification. Removal of traumatic occlusion, temporary and permanent splinting; designs of removable and non-removable tires and prosthetic tires. Indication.
Tires and prosthetic tires, classification. Removal of traumatic occlusion, temporary and permanent splinting; designs of removable and non-removable tires and prosthetic tires. Indication.
Topic No. 20.Clinical and laboratory stages of manufacturing removable and non-removable tires. Advantages and disadvantages of splinting methods. Immediate prostheses.
Clinical and laboratory stages of manufacturing removable and non-removable tires. Advantages and disadvantages of splinting methods. Immediate prostheses.
Topic No. 21. Temporomandibular joint disease. Etiology, clinic, differential diagnosis, treatment. Drawing up a treatment plan. Orthopedic methods of treatment of TMJ dysfunctions.
Temporomandibular joint disease. Etiology, clinic, differential diagnosis, treatment. Drawing up a treatment plan. Orthopedic methods of treatment of TMJ dysfunctions.

4. The structure of the academic discipline

Topic	In total	Practice occupation	SRS
Topic No. 1.Replacement of defects of hard tissues of teeth with tabs, stump and pin structures. Clinical and laboratory stages of production. Topic No. 2. Restoration of teeth after endodontic treatment. Designs of standard pins and custom-made pins. Indications for use. Complication. Topic No. 3. Indications for replacement of defects of the crown part of the tooth. Temporary permanent restorations. Indications, production methods. Protection of vital teeth during the manufacture of fixed orthopedic structures. Topic No. 4. Indications for replacement of partial dentition defects with fixed prostheses. Temporary permanent restorations. Indications, production methods. Topic No. 5.Ceramic veneers - Indications and contraindications for manufacturing. Features of tooth preparation. Manufacturing technologies. Adhesive technique for fixing veneers. Topic No. 6.Indications, clinical and laboratory stages of manufacturing aesthetic restorations using metal-free technologies. Errors and	80	48	32

complications. Topic No. 7.Replacement of partial dentition defects with bridge prostheses. Biomechanics of bridge prostheses. Topic No. 8.Clinical and technological limitations in the planning of bridge prostheses from different materials.			
Topic No. 9.Replacement of partial dentition defects with removable lamellar prostheses. Choice of design and material. Design features, complications. Clinical and laboratory stages. Topic No. 10.Substitution of partial defects of the dentition with fixed prostheses. Fixation systems. Indications and contraindications for replacing defects of the dentition with fixed dentures. Design features, complications Clinical and laboratory stages. Topic No. 11.Complete removable prosthetics. Clinical stages of production. Topic No. 12.Complete removable prosthetics. Laboratory stages of production.	40	24	16
Topic No. 13.Implantation, indications, examination of the patient. Planning. Component parts of the implant. Methods of connecting the abutment to the implant. Abutments, types, indications for use. Topic No. 14.Peculiarities of prosthetics using dental implants. Permanent prosthetics supported by implants. Clinical and laboratory stages of production. Topic No. 15.Removable and conditionally removable prostheses with support on implants. Clinical and laboratory stages of production.	30	18	12
Topic No. 16.Excessive abrasion of the hard tissues of the teeth. Etiology, pathogenesis, clinical forms. Orthopedic methods of treatment and prevention. Topic No. 17.Traumatic occlusion. Etiology, pathogenesis. Diagnostic methods. Treatment and prevention. Topic No. 18.Examination of patients with periodontal tissue diseases. Analysis of the odonto-periodontogram. Diagnostic methods. Tasks and planning of orthopedic interventions in the complex treatment and prevention of periodontal diseases.	56	32	24

Topic No. 19.Tires and prosthetic tires, classification. Removal of traumatic occlusion, temporary and permanent splinting; designs of removable and non-removable tires and prosthetic tires. Indication. Topic No. 20.Clinical and laboratory stages of manufacturing removable and non-removable tires. Advantages and disadvantages of splinting methods. Immediate prostheses. Topic No. 21. Temporomandibular joint disease. Etiology, clinic, differential diagnosis, treatment. Drawing up a treatment plan. Orthopedic methods of treatment of TMJ dysfunctions.			
Differentiated scoring.	4	2	2
Hours in general:	210	124	86

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 lessons

No Topics	Topic name	Number of hours
1.	Replacement of defects of hard tissues of teeth with tabs, stump and pin structures. Clinical and laboratory stages of production.	6
2.	Restoration of teeth after endodontic treatment. Designs of standard pins and custom-made pins. Indications for use. Complication.	6
3.	Indications for replacement of defects of the crown part of the tooth. Temporary permanent restorations. Indications, production methods. Protection of vital teeth during the manufacture of fixed orthopedic structures.	6
4.	Indications for replacement of partial dentition defects with fixed prostheses. Temporary permanent restorations. Indications, production methods.	6
5.	Ceramic veneers - Indications and contraindications for manufacturing. Features of tooth preparation. Manufacturing technologies. Adhesive technique for fixing veneers.	6
6.	Indications, clinical and laboratory stages of manufacturing aesthetic restorations using metal-free technologies. Errors and complications.	6

7.	Replacement of partial dentition defects with bridge-like prostheses. Biomechanics of bridge prostheses.	6
8.	Clinical and technological limitations in the planning of bridge prostheses from different materials.	6
9.	Replacement of partial dentition defects with removable lamellar prostheses. Choice of design and material. Design features, complications. Clinical and laboratory stages.	6
10.	Substitution of partial defects of the dentition with fixed prostheses. Fixation systems. Indications and contraindications for replacing defects of the dentition with fixed dentures. Design features, complications Clinical and laboratory stages.	6
11.	Complete removable prosthetics. Clinical stages of production.	6
12.	Complete removable prosthetics. Laboratory stages of production.	6
13.	Implantation, indications, examination of the patient. Planning. Component parts of the implant. Methods of connecting the abutment to the implant. Abutments, types, indications for use.	6
14.	Peculiarities of prosthetics using dental implants. Permanent prosthetics supported by implants. Clinical and laboratory stages of production.	6
15.	Removable and conditionally removable prostheses with support on implants. Clinical and laboratory stages of production.	6
16.	Excessive abrasion of the hard tissues of the teeth. Etiology, pathogenesis, clinical forms. Orthopedic methods of treatment and prevention.	6
17.	Traumatic occlusion. Etiology, pathogenesis. Diagnostic methods. Treatment and prevention.	4
18.	Examination of patients with periodontal tissue diseases. Analysis of the odonto-periodontogram. Diagnostic methods. Tasks and planning of orthopedic interventions in the complex treatment and prevention of periodontal diseases.	6
19.	Tires and prosthetic tires, classification. Removal of traumatic occlusion, temporary and permanent splinting; designs of removable and non-removable tires and prosthetic tires. Indication.	6
20.	Clinical and laboratory stages of manufacturing removable and non-removable tires. Advantages and disadvantages of splinting methods. Immediate prostheses.	6
21.	Temporomandibular joint disease. Etiology, clinic, differential diagnosis, treatment. Drawing up a treatment plan. Orthopedic methods of treatment of TMJ dysfunctions.	4
22.	Differentiated scoring	2
	In total	124

5.4. Topics of laboratory classes

Laboratory classes are not provided.

6. Independent work of a student of higher education.

No topics	Topic name	Number of hours
1.	Preparation for the practical session: Replacement of defects of hard tooth tissues with inlays, stump and pin designs. Clinical and laboratory stages of production.	4
2.	Preparation for the practical session: Restoration of teeth after endodontic treatment. Designs of standard pins and custom-made pins. Indications for use. Complication.	4
3.	Preparation for the practical lesson: Indications for replacing defects of the crown part of the tooth. Temporary permanent restorations. Indications, production methods. Protection of vital teeth during the manufacture of fixed orthopedic structures.	4
4.	Preparation for the practical session: Indications for replacing partial defects of the dentition with fixed prostheses. Temporary permanent restorations. Indications, production methods.	4
5.	Preparation for the practical lesson: Ceramic veneers - Indications and contraindications for manufacturing. Features of tooth preparation. Manufacturing technologies. Adhesive technique for fixing veneers.	4
6.	Preparation for the practical session: Indications, clinical and laboratory stages of manufacturing aesthetic restorations using metal-free technologies. Errors and complications.	4
7.	Preparation for the practical lesson: Replacement of partial defects of the dentition with bridge-like prostheses. Biomechanics of bridge prostheses.	4
8.	Preparation for the practical lesson: Clinical and technological limitations when planning bridge prostheses from different materials.	4
9.	Preparation for the practical lesson: Replacement of partial defects of the dentition with removable lamellar prostheses. Choice of design and material. Design features, complications. Clinical and laboratory stages.	4
10.	Preparation for the practical session: Replacement of partial defects of the dentition with brace prostheses. Fixation systems. Indications and contraindications for replacing defects of the dentition with fixed dentures. Design features, complications Clinical and laboratory stages.	4
11.	Preparation for practical training: Complete removable prosthetics. Clinical stages of production.	4
12.	Preparation for practical training: Complete removable prosthetics. Laboratory stages of production.	4
13.	Preparation for the practical session: Implantation, indications,	4

	examination of the patient. Planning. Component parts of the implant. Methods of connecting the abutment to the implant. Abutments, types, indications for use.	
14.	Preparation for practical classes: Peculiarities of prosthetics using dental implants. Permanent prosthetics supported by implants. Clinical and laboratory stages of production.	4
15.	Preparation for practical classes: Removable and conditionally removable prostheses with support on implants. Clinical and laboratory stages of production.	4
16.	Preparation for the practical lesson: Excessive abrasion of the hard tissues of the teeth. Etiology, pathogenesis, clinical forms. Orthopedic methods of treatment and prevention.	4
17.	Preparation for the practical session: Traumatic occlusion. Etiology, pathogenesis. Diagnostic methods. Treatment and prevention.	4
18.	Preparation for the practical lesson: Examination of patients with periodontal tissue diseases. Analysis of the odonto-periodontogram. Diagnostic methods. Tasks and planning of orthopedic interventions in the complex treatment and prevention of periodontal diseases.	4
19.	Preparation for the practical session: Tires and tires-prostheses, classification. Removal of traumatic occlusion, temporary and permanent splinting; designs of removable and non-removable tires and prosthetic tires. Indication.	4
20.	Preparation for practical classes: Clinical and laboratory stages of manufacturing removable and non-removable tires. Advantages and disadvantages of splinting methods. Immediate prostheses.	4
21.	Preparation for the practical lesson:Temporomandibular joint disease. Etiology, clinic, differential diagnosis, treatment. Drawing up a treatment plan. Orthopedic methods of treatment of TMJ dysfunctions.	4
22.	Preparation for differentiated assessment	2
	In total	86

7. Teaching methods

Practical training:is based on previously prepared methodical material — a set of tasks of varying complexity to be performed by students of higher education in class, diagnostic tools. It includes monitoring the knowledge, skills and abilities of students of higher education, posing a general problem by the teacher and discussing it with the participation of students of higher education, completing tasks with their discussion.

Independent work:development of educational material, preparation for practical classes.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: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. At the last lesson of the academic year, the current academic performance is calculated - the average current score (the arithmetic mean of all current grades on a traditional scale, rounded to two decimal places).

Final control:differentiated credit.

Evaluation of the current educational activity in a practical session: 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 applicant; 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.

Only those applicants who have fulfilled the requirements of the training program in the discipline, have no academic debt and their average score for the current educational activity in the discipline is at least 3.00 are admitted to the differentiated credit.

Evaluation of the results of the students' training during the final control - differentiated assessment

The content of the evaluated activity	Scores
1. A theoretical question	1
2. A practical task on permanent prosthetics according to the OSKI type	2
3. Practical task on removable prosthetics according to the OSKI type	1

Criteria for evaluating the results of the students' training during the final control - differentiated assessment

Rating	Evaluation criteria
Excellent "5"	The student of higher education has firmly mastered the theoretical material, has a deep and comprehensive knowledge of the content of the educational component, thinks logically and constructs an answer, freely uses the acquired theoretical knowledge when answering questions during the final control, is able to highlight the essential features of what he has learned by means of operations of synthesis, analysis, identify causal -consequences, form conclusions and generalizations, demonstrates a high level of mastery of practical skills.
OK "4"	The student of higher education has mastered the theoretical material well, he presents it in a reasoned way; demonstrates practical skills, expresses his thoughts on certain problems, but when teaching some issues, there is a lack of sufficient depth and argumentation, some insignificant inaccuracies and minor mistakes are allowed. The acquirer is able to distinguish the essential features of the studied subject by means of operations of synthesis and analysis, to identify cause-and-effect relationships in which there may be some insignificant errors, to form conclusions and generalizations;
Satisfactory "3"	The student of higher education generally mastered the theoretical knowledge of the educational component, but without a deep comprehensive analysis, justification and argumentation, makes significant inaccuracies and mistakes, the student has problems when identifying the essential features of the subject, when identifying cause-and-effect relationships and forming conclusions .
Unsatisfactory "2"	The student of higher education has not mastered the educational material of the educational component, does not know scientific facts, definitions, practical skills are almost not formed, the student has an unsystematic selection of random features of the studied, does not know how to perform the simplest operations of analysis and synthesis, generalizations and conclusions.

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 of the academic discipline
— Methodical developments for practical classes

11. Questions for preparing for the final control

1. Indications and contraindications for the manufacture of metal-ceramic structures
2. Sequence and rules of tooth preparation. Selection of tools. Forms of ledges. The choice of the method of retraction of the gingival margin (mechanical, chemical, surgical and combined), depending on the clinical situation.
3. The technology of obtaining an accurate impression. Selection of printing masses.
4. Evaluation of the finished metal-ceramic structure. Possible errors and complications at various stages of production, ways to prevent them and methods of elimination
5. Classification of teeth defects (Kurylenko, Black). Index of destruction of the occlusal surface of the tooth (Milikevych).
6. Indications for the manufacture of veneers. Requirements Comparative characteristics of veneers made by different technologies. General principles of tooth

preparation for veneers. Clinical and laboratory stages of prosthetics with veneers.
7. CAD/CAM manufacturing technology.
8. Fixation of veneers (adhesive technique of fixation on composite cements)
9. General principles of cavity formation for tabs. Formation of cavities of I, II, III, IV, V class according to Blak.
10. Designs of tabs (inlay, onlay, overlay, inlay). Clinical and laboratory stages of prosthetics with cast metal inserts.
11. Indications and contraindications for replacement of defects of hard tissues of teeth, ceramic inserts, crowns, technology of their manufacture.
12. Cast and collapsible cast stump inserts: manufacturing technology and indications for use.
13. Indications and contraindications for the replacement of dental defects with non-removable structures.
14. Biomechanics of bridge prostheses. Requirements and selection of abutment teeth for fixed bridge-like structures. Constructions of bridge prostheses.
15. Indications and clinical and laboratory stages of production of cast and metal-ceramic bridge prostheses.
16. Errors and possible complications of permanent prosthetics.
17. Temporary prosthetics indication and method of implementation. Clinical and laboratory stages of production. Comparative characteristics of various methods of manufacturing temporary crowns.
18. Possible complications of preparation of hard tissues of teeth and ways to prevent them.
19. Periodontological aspects of tooth preparation. Methodology of subgingival dissection. The location of the edges of the crowns depending on the type of artificial crown (stamped, cast, cast combined).
20. Fixation of non-removable structures with various types of fixing cements. Factors that affect the quality of fixation of a fixed structure.
21. Indications and contraindications for the manufacture of various designs of partial removable prostheses (plate, buckle, combined). Design features of various types of partial removable prostheses and methods of their fixation.
22. Biomechanics of the functioning of a partial removable prosthesis. Selection of supporting elements when planning the design of a partial removable prosthesis, preparation of supporting teeth, determination of the limits of the prosthesis.
23. Errors and complications in the restoration of dentition defects with partial removable prostheses.
24. Partial absence of teeth, which is complicated by deformation of the dental rows; morphological and functional changes of the maxillofacial apparatus.
25. Mechanisms of formation of dento-jaw deformations. Clinical forms of deformities that arose as a result of partial absence of teeth.
26. Preparation of the maxillofacial system for prosthetics in the presence of maxillofacial deformities (prosthetic, surgical, orthodontic).
27. Etiology and pathogenesis, clinical manifestations of pathological wear of hard tissues of teeth. Morphological features of human teeth in normal and pathological wear.
28. Complications with pathological tooth wear, which is accompanied by a decrease in the interalveolar height and TMJ dysfunction. Orthopedic treatment depending on

clinical forms and complications.
29. Traumatic occlusion. Diagnostics. Clinical signs. Morphological and functional changes in the maxillofacial apparatus in the presence of traumatic occlusion.
30. Etiology, clinic and treatment of direct and reflected traumatic node. Indications, sequence and rules of selective grinding of teeth.
31. Types of supercontacts. Super contacts on the working and balancing side.
32. The value of selective grinding for the prevention of functional overload of teeth.
33. Anatomical and physiological characteristics of the chewing apparatus in periodontitis and periodontitis.
34. Classification of periodontal tissue diseases. Examination of a patient with periodontitis and periodontitis.
35. Kurlyandskyi's odontoparodontogram: concept of functional pathology; reserve and residual capacity of the periodontium.
36. Types of stabilization of tooth rows. Biomechanical bases of tooth splinting
37. Tasks of orthopedic interventions in the complex treatment of periodontal diseases. Preliminary preparation of dental rows before prosthetics. Temporary splinting. Types and indications for use.
38. Etiology, diagnosis, clinic and orthopedic methods of treatment of localized and generalized periodontitis. The role of local factors.
39. Removable and non-removable designs of dental prostheses in the complex treatment of localized and generalized periodontitis and.
40. Direct prosthetics. Indications, clinical and technological stages of manufacturing and use of immediate prostheses.
41. Errors and complications in the treatment of patients with periodontitis and periodontitis.
42. Etiology and pathogenesis of TMJ dysfunctions. Caps, their classification, indications for use. Prevention of TMJ dysfunctions.
43. Leading clinical symptoms and syndromes in occlusion-articulation syndrome. Leading clinical symptoms and syndromes in neuromuscular syndrome.
44. Types of displacement of the articular heads (hypermobility, dislocation, subluxation). Types of displacement of the articular disc (subluxation, dislocation, prolapse).
45. Clinical signs of dysfunctional conditions. Tactics of managing a patient with TMJ dysfunction. Methods of orthopedic treatment.
46. Prosthetics using dental implants. Indications and necessary conditions for prosthetics using dental implants.
47. Planning the design of a dental prosthesis with support on implants depending on clinical conditions and the use of different types of abutments.
48. Designs of dental implants and components. Indications for the use of various types of abutments.
49. Advantages and disadvantages of various types of abutment-implant connections. Types of gum formers, their choice depending on the biotype of the gums.
50. Peculiarities of clinical and laboratory stages in prosthetics on implants. Peculiarities of removing impressions (closed spoon method and open spoon method).

51. Methods of modeling frames of conditionally removable and removable structures. Advantages and disadvantages of conditionally removable and removable structures.
52. Indications and necessary conditions for removable prosthetics using dental implants.
53. Principles of occlusion formation during prosthetics on implants, features of partial and complete adentity.
54. Errors and complications of dental implantation at the orthopedic stage of patient treatment and after treatment.
55. Clinical and functional examination methods. Occlusionography. Axiography.
56. Additional methods of examination: radiography, galvanometry, electromyography, rheography, electroodontology, gnathodynamometry, diagnostic models, periotest.
57. Electromyography, technique, informativeness at the stages of orthopedic treatment.
58. Preparation of the oral cavity for dental prosthetics, surgical, therapeutic, orthodontic, orthopedic, psychological types) their scope and significance.
59. Classification of dentition defects according to Betelman, Kennedy. Their importance in the clinic of orthopedic dentistry.
60. Articulation. Movements of the lower jaw. Mechanism, main parameters of movements. Phases of chewing movements according to Guizi. The Christensen phenomenon. Value in the design of complete removable prostheses.
61. Anatomy of the occlusal surface of teeth and tooth rows Concept of dental, alveolar and basal arches. Occlusal curves (Speye and Wilson). Factors that ensure the stability of teeth.
62. Factors of occlusion (articular path; Bennett's movement; occlusal plane - Spee, Wilson; morphology of occlusion; incisal path; distance between articular heads).
63. Pain. Analgesia Analgesia methods in orthopedic dentistry. Medical and pharmacological means of pain relief. Possible errors and complications of analgesia (dizziness, collapse, anaphylactic shock), clinical signs, scope of emergency care.
64. Indications for the manufacture of artificial crowns. Classifications. Requirements Comparative characteristics of artificial crowns. Clinical and laboratory stages of making crowns.
65. Anatomical and physiological features of the oral cavity with partial loss of teeth. Selection and substantiation of the designs of partial removable prostheses for included and distally unrestricted defects of the dentition.
66. Obtaining impressions during the manufacture of partial removable prostheses. Requirements for impressions. Methods of fixing partial removable prostheses. The role of biophysical and mechanical methods of strengthening removable prostheses.
67. Abutment teeth, their significance for fixation of prostheses. Types of strengthening prostheses. Selection of supporting teeth. Classification of paper clips. Ways of connecting clasps with prostheses.
68. Value of anatomical retention elements for fixation of partial removable prostheses. Clipless prostheses. Indications for their use.
69. Determination and fixation of central occlusion in cases of I, II and III groups of dentition defects.

70. The choice of the design of a dental prosthesis in the presence of one tooth on the upper or lower jaws.
71. Laboratory stages of manufacturing partial removable prostheses. Materials used for this.
72. Indications for the manufacture of partial removable prostheses with a metal base. Clinical and laboratory stages of production.
73. Replacement of tooth row defects with brace prostheses. Indications and contraindications for the manufacture of brace prostheses. Structural elements of bygel prostheses and their meaning.
74. Diagnostic models. Requirements for them, production rules. Planning of the design of brace prostheses. Parallelometry. Purpose, task. Methods and stages of parallelometry. Selection of supporting teeth.
75. The system of clasps. Indications for their use. Classification. Components of crackers.
76. Attachés Classification. Indications for use.
77. Lithuania frames of braced prostheses on fire-resistant models. Duplication of models. Duplication materials.Requirements for the frame of the brace prosthesis.
78. Metal shrinkage compensation. Molding masses. Metal alloys for the manufacture of braced prostheses.
79. The shape, size and position of the arch of the brace prosthesis on the upper and lower jaws depending on the topography of the tooth row defect.
80. Fitting and correction of a partial removable prosthesis. Mechanism and terms of adaptation to partial removable prostheses. Rules for using partial removable prostheses.
81. The effect of removable prostheses on the tissues of the oral cavity. Diagnosis, clinic and treatment of prosthetic stomatitis
82. Artificial teeth. Manufacturing methods, materials. Rules for selecting artificial teeth for placement in removable prostheses. Rules for placing artificial teeth. Fixation in the base of the removable prosthesis.
83. Compression and casting pressing of plastics. Materials, equipment. Methods of plastering models in a cuvette, plastic packaging
84. Stages of polymerization of plastics. Preparation of plastic for packaging. Modes of polymerization. Insulating materials.
85. Laboratory stages of manufacturing partial removable prostheses from thermoplastic materials. Comparative characteristics of prostheses with plastic and thermoplastic bases. Materials used for manufacturing the bases of removable prostheses. Positive and negative properties.
86. Evaluation of the quality of polymerization of base materials. Porosity, types, causes and methods of elimination.
87. Temporary and transitional prosthetics. Biomechanics of prosthetics on implants.
88. Indications and clinical and technological stages of manufacturing non-removable cast tires and prosthetic tires.
89. Classifications of alveolar process atrophy. (according to Schroeder, Keller, Oxman).Morphological features of the structure of edentulous jaws, which should be taken into account when manufacturing complete removable prostheses.
90. Determination of the central ratio of the jaws in the complete absence of teeth
91. Placement of teeth in full dentures. Checking the construction and fitting of

complete removable prostheses. Mechanism of adaptation to complete dentures.
92. Classification of susceptibility of the mucous membrane of edentulous jaws (Lund, Suple). Buffer zones according to Gavrylov. Values for selecting the fingerprint acquisition method
93. Movable, immobile, passively mobile mucous membrane. Transition fold. Neutral zone. Topography of the neutral zone on the upper and lower jaws. Anatomical features of edentulous jaws, which are important for fixation of plate removable prostheses.
94. Classification of impressions for the manufacture of complete removable prostheses (by the height of the edges, the degree of imprinting of the mucous membrane). Impression masses, their properties, indications for use.
95. Fixation, stabilization, balance of complete removable prostheses and factors that provide them.
96. Methods of obtaining functional impressions of edentulous jaws.
97. One-time method of manufacturing individual wax spoons for the upper and lower jaws. The method of obtaining functional prints with their help (Vasylenko's method).
98. Herbst's method of functional imprinting. Functional tests, their clinical rationale.
99. Production of rigid individual spoons. Fitting individual spoons according to the Herbst method to the upper and lower jaws (functional tests).
100. Manufacturing rules and requirements for wax templates with occlusal rollers in prosthetics with complete removable prostheses.
101. Aesthetic and functional disorders with changes in the interalveolar height. Fixation of the lower jaw in a neutral position. samples Checking the correctness of determining the central ratio of the jaws.
102. Classification of devices that reproduce the movements of the lower jaw
103. Joint theory of articulation (Guisey, Ganau, Bonneville)
104. Spherical theory of articulation (Monson, Sapozhnikov)
105. Extraoral methods of registration of individual movements of the lower jaw. (axiography)
106. Methodology of Efron, Katz, Gelfand
107. Landmarks for installing artificial teeth. Placement of artificial teeth in complete dentures.
108. Anatomical setting of teethSetting of teeth according to M.E. Vasyliev, on a spherical surface.
109. Verification of the design of complete removable prostheses. Putting on full dentures. Adaptation. Rules and recommendations for using complete dentures.
110. Pathological impact of materials used in orthopedic dentistry. Differential diagnosis, treatment and prevention.
111. Etiology and pathogenesis of TMJ dysfunctions. Leading clinical symptoms and syndromes in TMJ dysfunctions (occlusion-articulation syndrome, neuromuscular syndrome, habitual subluxation, dislocation, persistent functional displacement of the lower jaw, bite that decreases).
112. Clinical signs of dysfunctional conditions. Melkimo dysfunction index. Data of clinical and special (additional) methods for various clinical variants of the course and complications.

12. Recommended Books

Main:

1. Orthopedic dentistry: textbook / M.M. Rozhko, V.P. Nespryadko, I.V. Paliichuk and others.

2. M.M. Rozhko, V.P. Nespryadko, I.V. Paliychuk et al. Prosthetic technique: textbook - Kyiv, "Knyga-plus", 2016. - 604 p.

3. Gasyuk P.A., Kostenko E.Ya., Shcherba V.V., Savchyn V.Ya. Prosthetics for complete loss of teeth. – Uzhhorod, 2013. Zakarpattia publishing house. - 222 p.

Auxiliary:

1. Dentistry: in 2 books. — Book 1: textbook (University III-IV years) / M.M. Rozhko, Z.B. Popovych, V.D. Kuroyedova .. -K.: VSV "Medicine", 2012. - 872 p.

2. Chulak L.D., Shuturminskyi V.G. Clinical and laboratory stages of manufacturing dental prostheses. Odesa. Odesa honey. University, 2009, 318 p

3. Makeev V.F., Stupnytskyi R.M. Theoretical foundations of orthopedic stomatology (educational manual). –Lviv: LNMU named after Danylo Halytskyi, 2010, -394 p.

4. Flis P.S., Bannyk T.M. Technique of manufacturing removable prostheses.-K.: Medicine. - 2008. - 254.

5. Gitlan E.M., Krot M.K. Manual on bygel prosthetics. - K.: Zdorovya, 2001. - 140p.

6. 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.

7. 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.

8. Nidzelskyi M.Ya. Mechanisms of adaptation to dental prostheses. – Poltava: Techservice Company LLC, 2003. – 116 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/