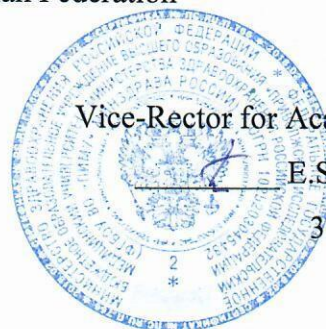


Federal State Budgetary Educational Institution of Higher Education  
"Privolzhsky Research Medical University"  
Ministry of Health of the Russian Federation



APPROVED

Vice-Rector for Academic Affairs

E.S. Bogomolova

31 August 2021

## WORKING PROGRAM

Name of the academic discipline: **Research methods in dentistry**

Specialty: **31.05.03 - DENTISTRY**

Qualification: **DENTIST**

Department: **ORTHOPEDIC DENTISTRY AND ORTHODONTICS**

Mode of study: **(FULL-TIME)**

Labor intensity of the academic discipline: **36 academic hours**

Nizhny Novgorod  
2021


The working program has been developed in accordance with the Federal State Educational Standard for the specialty 31.05.03 «DENTISTRY» approved by Order of the Ministry of Science and Higher Education of the Russian Federation № 984 dated August 12, 2020.

**Developers of the working program:**

- Saakyan M.Yu., Doctor of Medical Sciences, Associate Professor, Head of the Department of Orthopedic Dentistry and Orthodontics «PRMU»;
- Goryacheva I. P., Candidate of Medical Sciences, Associate Professor of the Department of Orthopedic Dentistry and Orthodontics «PRMU»;
- Velmakina I. V., Candidate of Medical Sciences, Associate Professor of the Department of Orthopedic Dentistry and Orthodontics «PRMU»;
- Alekseeva N.A., Candidate of Medical Sciences, Associate Professor of the Department of Orthopedic Dentistry and Orthodontics «PRMU»;

The program was reviewed and approved at the meeting of the Department of Orthopedic Dentistry and Orthodontics «PRMU» (Protocol № 1 of 30.08.2021).

Head of the Department,  
Doctor of Medical Sciences, Associate Professor

 (Saakyan M.Yu.)

30 August 2021

AGREED

Deputy Head of EMA ph.d. of biology  Lovtsova L.V.

30 August 2021

## **1. The purpose and objectives of mastering the academic discipline — Research methods in dentistry**

- **1.1. The purpose of mastering the discipline:** (*participation in forming the relevant competencies*): UC – 1, PC – 6, PC – 7.
- **1.2. Tasks of the discipline:**

To achieve this goal, the following tasks must be solved:

1. to familiarize students with the principles of organization and operation of the orthopedic dentistry clinic and dental laboratory;
2. to teach the peculiarities of examination of patients with defects and deformities of teeth and dentition, periodontal and TMJ diseases, deformities and defects of the maxillofacial region, pathological conditions of the dental system associated with an anomaly of the development of the dental system;
3. to teach the basics of diagnosis and planning of orthopedic treatment;
4. to teach students the methods of conducting the clinical stages of manufacturing fixed and removable denture structures;
5. to familiarize students with the laboratory stages of manufacturing various fixed and removable dentures;
6. to familiarize with possible complications in orthopedic treatment with fixed and removable dentures and methods of their elimination and prevention.

The objectives of mastering the discipline are also to master the necessary stock of theoretical knowledge and practical skills, the ability to use them in the treatment of patients, knowledge of the fundamental and organizational principles of orthopedic dentistry, dental materials science and dental prosthetic technology, prevention measures and recognition of major dental diseases, possession of clinical methods of treatment of orthopedic patients.

### **1.3. Requirements to the deliverables of mastering the discipline.**

As a result of completing the discipline, the student should

#### **To know:**

1. Principles of dispensary dental observation of various age-sex and social groups of the population, rehabilitation of patients
2. Maintenance of standard accounting and reporting medical documentation in medical organizations of dental profile
3. The complex relationship between dental health, nutrition, general health, diseases, and the use of medicines
4. General principles and features of the diagnosis of hereditary diseases and congenital anomalies.
5. Occlusion, biomechanics of the dental system.
6. Properties of dental materials and preparations used in dental practice,
7. Dental instruments and equipment
8. Stages of development of orthopedic dentistry, the role of leading scientists in the development of the discipline. Principles of the organization of the orthopedic office and department, methods of disinfection and sterilization of dental equipment and instruments
9. Classification, properties, indications for the use of impression materials, rules for working with them;

10. Methods of examination of the patient in the clinic of orthopedic dentistry, filling out the medical history, rules of deontology;
11. Principles and sequence of tooth preparation for stamped, solid-cast, plastic, combined and ceramic crowns;
12. Technology of various types of fixed prostheses;
13. Principles of formation of cavities during prosthetics with tabs, methods of modeling tabs;
14. Features of treatment of patients with manifestations of intolerance to dental materials used in the manufacture of fixed prostheses.
15. Types of bites
16. Biomechanics of the maxillofacial system, occlusal theories in intact dentition;

**Be able to:**

1. Collect a complete medical history of the patient, including data on the condition of the oral cavity and teeth, conduct a survey of the patient and relatives (collect biological, medical, psychological and social information)
2. Interpret the results of examinations, make a preliminary diagnosis to the patient, outline the scope of additional studies to clarify the diagnosis
3. Formulate a clinical diagnosis
4. Maintain medical documentation of various types of dental outpatient and inpatient institutions
5. Promote a healthy lifestyle,
6. To carry out work on the promotion of dental health aimed at the prevention of hereditary and congenital diseases
7. Make a diagnostic impression, cast a model
8. Evaluate the effectiveness and safety of the treatment
9. Apply methods of asepsis and antiseptics, medical instruments, medical devices for laboratory diagnostic and therapeutic purposes
10. To carry out odontopreparation, to control laboratory production of a crown, and also to make their correction, to carry out indirect restoration of a tooth crown
11. Work with dental instruments, materials, tools and equipment.
12. Determine the degree of mobility of teeth;
13. Determine the malleability and mobility of the oral mucosa;
14. Dissect cavities under tabs;
15. Prepare teeth for stamped, solid-cast, plastic, combined, metal-ceramic and ceramic crowns;
16. Perform application, infiltration, and conduction anesthesia when preparing teeth for fixed dentures;
17. Read radiographs (sighting, panoramic, orthopantomograms);
18. Simulate tabs on the phantom and in the oral cavity;
19. Prepare the plaster and get an impression with it, as well as compose and glue it;
20. Get impressions with elastic impression materials, cast models;
21. Store and fix tabs;
22. To store and fix metal, plastic and combined crowns;
23. Prepare cement for fixing fixed prostheses;
24. Work with fast-hardening plastics;
25. To plaster the jaw models into the articulator;

**Possess:**

1. Methods of maintaining medical accounting and reporting documentation in medical organizations

2. Assessments of the state of dental health of the population of various age and gender groups
3. Methods of general clinical examination of children and adults
4. Clinical methods of examination of the maxillofacial area
5. The algorithm of making a preliminary diagnosis to patients and, if necessary, with their subsequent referral to additional examinations and to specialist doctors
6. The method of reading various types of radiographs
7. Determination of dental indices
8. Methods of diagnosis and treatment of defects of hard tissues of teeth with orthopedic structures

## **2. Position of the academic discipline in the structure of the General Educational Program of Higher Education (GEP HE) of the organization.**

2.1 The discipline research methods in dentistry refers to the core part of Block 1 of GEP HE. The discipline is studied in the fourth semester.

Orthopedic dentistry is a profile discipline of paramount importance. The main task of the Department of Orthopedic Dentistry is the theoretical and practical training of a doctor capable of solving issues of prevention, diagnosis and treatment of dental diseases. The general preventive orientation of the orthopedic dentist will be most fully disclosed to the student during the general medical examination of the population, which allows you to get acquainted with all dental diseases, their treatment local and general, preventive manipulations, as well as recommendations and tips that certainly accompany the therapeutic and preventive activities of the doctor.

Based on the knowledge gained by the student at the general clinical, general biological, dental departments and the Department of Children's Diseases, to teach students the peculiarities of prevention, clinic, diagnosis and treatment of dental diseases. To prepare a doctor who is able to work in a medical and preventive institution after the internship.

Orthopedic dentistry includes such a volume of theoretical material and practical skills that allows you to observe the principle of continuity of clinical training in the main sections of the discipline (prevention, therapy, orthodontics, surgery) and related specialties, providing an opportunity to teach, treat, study and put into practice new methods of prevention, treatment and medical examination.

Research methods in dentistry are used in the formation of the content of the final state certification in the specialty dentistry.

### **2.2. The following knowledge, skills and abilities formed by previous academic disciplines are required for mastering the discipline:**

human anatomy, radiation diagnostics and therapy, histology with embryology, pathological anatomy and physiology, normal physiology, pharmacology, microbiology, propaedeutic dentistry, therapeutic dentistry.

### **2.3. Mastering the discipline is required for forming the following knowledge, skills and abilities for subsequent academic disciplines:**

therapeutic dentistry, surgical dentistry, orthodontics, pediatric dentistry.

## **3. Deliverables of mastering the academic discipline and metrics of competence acquisition**

Mastering the discipline aims at acquiring the following universal (UC) or/and general professional (GPC) or/and professional (PC) competencies:

p/n o.	Comp etence code	The content of the competence (or part of it)	Code and name of the competence acquisition metric	As a result of studying the discipline, students should:		
				To know	Be able to	Possess
1.	UC-1	He is able to carry out a critical analysis of problem situations based on a systematic approach, to develop a strategy of actions	IUC 1.1 Knows: methods of critical analysis and evaluation of modern scientific achievements; basic principles of critical analysis IUC 1.2 is able to: acquire new knowledge based on analysis, synthesis, etc.; collect data on complex scientific problems related to the professional field; search for information and solutions based on actions, experiment and experience IUC 1.3 Has practical experience: research of the problem of professional activity with the use of analysis, synthesis and other methods of intellectual activity; development of an action strategy for solving professional problems	Methods of information analysis and synthesis	Think abstractly, analyze and synthesize information.	Abstract thinking, analysis and synthesis of the received information
2.	PC -6	Readiness to collect, analyze complaints and other information from the patient (relatives/legal representatives), his anamnesis data, interpretation of examination results, laboratory, instrumental, pathoanatomic	IPC 6.1 Knows: The methodology of collecting complaints and anamnesis from patients (their legal representatives). Methods of physical examination of patients (examination, palpation, percussion, auscultation). The procedure for providing medical care to adults with dental diseases The procedure for providing medical care to children with dental diseases Clinical recommendations on the provision of medical care to patients with dental diseases Standards of medical care IPC 6.2.Can:	International Statistical Classification of Diseases.	Apply the International Statistical Classification of Diseases	The methodology for determining the main pathological conditions and syndromes in patients in accordance with the International Statistical Classification of Diseases.

	<p>and other studies in order to recognize the condition or establish the presence or absence of dental disease, symptoms, syndromes of dental diseases, establishment of nosological forms in accordance with International statistical classification of diseases and health-related problems and other regulatory documents of the Ministry of Health of the Russian Federation (Procedure for medical care, Standard of Medical Care, Clinical recommendations on medical care, etc.)</p>	<p>interpret the results of examination, laboratory, instrumental, pathoanatomic and other studies in order to recognize the condition or establish the presence or absence of dental disease, symptoms, syndromes of dental diseases, the establishment of nosological forms in accordance with the International Statistical Classification of Diseases and Health-related Problems and other regulatory documents of the Ministry of Health of the Russian Federation (Procedure for medical care, Standard of medical care, Clinical recommendations on the provision of medical care, etc.)</p> <p>Develop a treatment plan for children and adults with dental diseases in accordance with the procedures for providing medical care, clinical recommendations, taking into account the standards of medical care.</p> <p>IPC 6.3 Has practical experience: interpretation of the results of examination, laboratory, instrumental, pathoanatomic and other studies in order to recognize the condition or establish the presence or absence of dental disease, symptoms, syndromes of dental diseases, the establishment of nosological forms in accordance with the International Statistical Classification of Diseases and Health-related</p>			
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			<p>Problems, and other regulatory documents of the Ministry of Health of the Russian Federation (Procedure for medical care, Standard of medical care, Clinical recommendations on the provision of medical care, etc.)</p> <p>Development of a treatment plan for children and adults with dental diseases, taking into account the diagnosis, age and clinical picture in accordance with the current procedures for providing medical care, clinical recommendations, taking into account the standards of medical care</p>			
3.	PC -7	<p>Ability to determine the tactics of management of patients with various dental diseases in accordance with Clinical recommendations and other regulatory documents of the Ministry of Health of the Russian Federation in outpatient and day hospital conditions, taking into account the age of the patient.</p>	<p>IPC 7.1 Knows:  Methods of drug and non-drug treatment, medical indications for the use of medical devices for dental diseases  Groups of medicines used to provide medical care in the treatment of dental diseases; the mechanism of their action, medical indications and contraindications to the appointment; compatibility, possible complications, side effects, adverse reactions, including serious and unforeseen  Principles, techniques and methods of anesthesia, selection of the type of local anesthesia in the treatment of dental diseases  Methods of preventing or eliminating complications, side effects, adverse reactions, including serious and unforeseen, that occurred during the examination or treatment of</p>	<p>Tactics of management of patients with diseases of the dental system.</p>	<p>To determine the tactics of management of patients with diseases of the dental system.</p>	<p>Tactics of management of patients with diseases of the dental system.</p>



		<p>patients with diseases of the teeth, pulp, periodontal, periodontal, oral and lip mucosa</p> <p>Materials science, technologies, equipment and medical products used in dentistry</p> <p>Anatomy of the head, maxillofacial region, features of blood supply and innervation; structure of teeth; histology and embryology of the oral cavity and teeth, the main disorders of embryogenesis</p> <p>IPC 7.2.Can:</p> <p>Develop a treatment plan for children and adults with dental diseases in accordance with the procedures for providing medical care, clinical recommendations, taking into account the standards of medical care</p> <p>To select and prescribe medications, medical devices (including dental materials), dietary nutrition, therapeutic and wellness regimen for the treatment of children and adults with dental diseases in accordance with the current procedures for providing medical care, clinical recommendations, taking into account the standards of medical care</p> <p>Determine medical indications and contraindications to local anesthesia techniques of the maxillofacial region</p> <p>To carry out local anesthesia (application, infiltration, conduction) in children and adults with dental diseases</p> <p>Perform medical interventions, including</p>			
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		<p>therapeutic, in children and adults with dental diseases on an outpatient basis (excluding repeated endodontic treatment):</p> <ul style="list-style-type: none"> <li>- individual oral and dental hygiene training, selection of oral hygiene products and items</li> <li>- controlled brushing of teeth</li> <li>- professional oral and dental hygiene</li> <li>- injection of drugs in the maxillofacial region</li> <li>- local application of remineralizing drugs in the tooth area</li> <li>- deep fluoridation of tooth enamel</li> <li>- sealing the fissure of the tooth with a sealant</li> <li>- professional teeth whitening</li> <li>- grinding of hard tooth tissues</li> <li>- restoration of the tooth by filling using dental cements, chemical curing materials, photopolymers</li> <li>-restoration of teeth with violation of the contact point</li> <li>- restoration of the tooth with filling material using anchor pins</li> <li>- applying a devitalizing paste</li> <li>- pulpotomy (amputation of the crown pulp)</li> <li>- pulp extirpation</li> <li>- instrumental and medical treatment of a well-traversed root canal</li> <li>- temporary filling of the root canal with a drug</li> <li>- filling of the root canal of the tooth with paste, gutta-percha pins</li> <li>- removal of supergingival and subgingival dental deposits in the tooth area</li> </ul>			
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		<p>(by manual method)</p> <ul style="list-style-type: none"> <li>- ultrasound removal of supra-gingival and subgingival dental deposits in the tooth area</li> <li>- closed curettage for periodontal diseases in the tooth area</li> <li>- application of a therapeutic bandage for periodontal diseases in the area of one jaw</li> <li>- prescribing drug therapy for diseases of the oral cavity and teeth</li> <li>- appointment of dietary therapy for diseases of the oral cavity and teeth</li> </ul> <p>Perform medical interventions, including surgical, in children and adults with dental diseases on an outpatient basis (excluding the removal of retentive and dystopian teeth):</p> <ul style="list-style-type: none"> <li>- tooth extraction</li> <li>- removal of a temporary tooth</li> <li>- permanent tooth removal</li> <li>- opening and drainage of an odontogenic abscess</li> </ul> <p>To carry out step-by-step sanitation of the oral cavity (excluding sanitation of the oral cavity in children in the conditions of an anesthetic manual)</p> <p>Perform medical interventions, including orthopedic, in adults with dental diseases on an outpatient basis (excluding prosthetics on dental implants, technologies for automated manufacturing of orthopedic structures, complete removable plate and clasp prostheses):</p> <ul style="list-style-type: none"> <li>- obtaining anatomical and functional impressions</li> <li>- restoration of the tooth</li> </ul>			
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		<p>with a crown</p> <ul style="list-style-type: none"> <li>- restoration of the integrity of the dentition with fixed bridges</li> <li>- prosthetics with partial removable plate prostheses</li> <li>- correction of removable orthopedic construction</li> <li>- removal of a non-removable orthopedic structure</li> </ul> <p>Interpret the results of X-ray examinations of the maxillofacial region</p> <p>To consult children and adults with diseases of the mucous membrane of the mouth and lips, to determine indications for referral to specialist doctors</p> <p>Prevent or eliminate complications, side effects, undesirable reactions, including unforeseen ones, resulting from diagnostic or therapeutic manipulations, the use of medicines and (or) medical devices, non-drug treatment</p> <p>IPC 7.3 Has practical experience:</p> <p>Selection and appointment of medicines, medical devices (including dental materials) for the treatment of dental diseases in children and adults in accordance with the current procedures for the provision of medical care, clinical recommendations, taking into account the standards of medical care</p> <p>Prescribing dietary nutrition, therapeutic and health regime for the treatment of dental diseases in children and adults in accordance with the current procedures for providing medical care, clinical recommendations, taking</p>			
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		<p>into account the standards of medical care</p> <p>Performing medical interventions in children and adults with dental diseases in accordance with the current procedures for providing medical care, clinical recommendations, taking into account the standards of medical care</p> <p>Evaluation of the results of medical interventions in children and adults with dental diseases</p> <p>Selection of the type and implementation of local anesthesia (application, infiltration, conduction) in children and adults with dental diseases</p> <p>Evaluation of the effectiveness and safety of the use of medicines, medical devices and non-drug treatment in children and adults with dental diseases</p> <p>Counseling children and adults with diseases of the mucous membrane of the mouth and lips, determining indications for referral to specialist doctors</p> <p>Selection and appointment of medicines and medical devices, taking into account the diagnosis, age and clinical picture of dental disease in accordance with the procedures for providing medical care, clinical recommendations, taking into account the standards of medical care</p> <p>Determination of methods of administration, regimen and dose of drugs</p> <p>Selection and appointment of non-drug treatment for children and adults with dental diseases in</p>			
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			<p>accordance with the procedures for providing medical care, clinical recommendations, taking into account the standards of medical care</p> <p>Prevention and treatment of complications, side effects, adverse reactions, including unforeseen ones, resulting from diagnostic or therapeutic manipulations, the use of medicines and (or) medical devices, non-drug treatment at a dental appointment</p> <p>Providing medical care to children and adults with sudden acute diseases, conditions, exacerbation of chronic diseases without obvious signs of a threat to the patient's life in an urgent form</p> <p>The use of medicines and medical devices in the provision of emergency medical care</p>			
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**4. Sections of the academic discipline and competencies that are formed when mastering them**

n/a	Competence code	Section name of the discipline	The content of the section in teaching units
1	UC-1, PC-6, PC-7	Research methods in dentistry	The study of types and methods of examination of patients in the clinic of orthopedic dentistry. Conducting clinical examination methods. Additional methods of examination, indications for their purpose.

**5. Volume of the academic discipline and types of academic work**

Type of educational work	Labor intensity		Labor intensity by semester (AH)						
	volume in credit units (CU)	volume in academic hours (AH)	4	5	6	7	8	9	10
Classroom work,	0,61	22	22						

including									
Lectures (L)	0,06	2	2						
Laboratory practicum (LP)*									
Practicals (P)	0,56	20	20						
Seminars (S)									
Student's individual work (SIW)	0,38	14	14						
Mid-term assessment exam									
<b>TOTAL LABOR INTENSITY</b>	<b>1</b>	<b>36</b>	<b>36</b>						

## 6. Content of the academic discipline

### 6.1. Sections of the discipline and types of academic work

№	Name of the section of the academic discipline	Types of academic work* (in AH)						total
		L	LP	P	S	SIW		
1	Research methods in dentistry.	2		20		14	36	
	<b>TOTAL</b>	<b>2</b>		<b>20</b>		<b>14</b>	<b>36</b>	

\* - L – lectures; LP – laboratory practicum; P – practicals; S – seminars; SIW – student's individual work.

### 6.2. Thematic schedule of educational work types:

#### 6.2.1 Thematic schedule of lectures

№	Name of lecture topics	Volume in AH						
		Semester 4	Semester 5	Semester 6	Semester 7	Semester 8	Semester 9	Semester 10
1	Diagnostic methods in orthopedic dentistry.	2						
	<b>TOTAL (total - 2 AH)</b>	<b>2</b>						

#### 6.2.2. The thematic plan of laboratory practicums

Laboratory workshops on research methods in dentistry are not provided by federal state educational standard

#### 6.2.3. Thematic plan of practicals

Practical classes on research methods in dentistry are not provided by federal state educational standard

#### 6.2.4. Thematic plan of seminars

№	Name of seminar topics	Volume in AH						
		Semester 4	Semester 5	Semester 6	Semester 7	Semester 8	Semester 9	Semester 10
1	Methods of studying occlusion and diagnosis of occlusive disorders. Using the T-SCAN device to study occlusion. Practical part: reproduction of the central, anterior and lateral occlusions, the posterior contact	5						

	position, checking the presence of super contacts by students with each other using occlusion paper.								
2	Methods of studying the function of the muscles of the maxillofacial region. Clinical methods. Gnathodynamometry. Electromyography. Myotonometry. Practical part: palpation of masticatory muscles, conducting EMG by students from each other	5							
3	Methods of TMJ research. Clinical and radiological methods. Phonoarthrography. Axiography. MRI. The use of the K-7 device in the diagnosis of TMJ diseases. Practical part: obtaining diagnostic models of the jaws, the imposition of the facial arch, palpation and auscultation of the TMJ, the study of CT of the TMJ.	5							
4	Methods of periodontal examination. Clinical research methods. Rheoparodontography. Ultrasound Dopplerography. Laser Doppler flowmetry. Echoosteometry. Periotestmetry. Biochemical analysis of gingival fluid. Gum biomicroscopy. Thermometry. The practical part: examination of periodontal disease by students from each other, determination of periodontal indices.	5							
	TOTAL (total - 20 AH)	20							

### 6.2.5. Types and topics of student's individual work (SIW)

p/ n o.	Types and topics of SIW	Volume in AH per semester						
		4	5	6	7	8	9	10
1	Work with lecture material, which provides for the elaboration of lecture notes and educational literature, solving situational problems.	6						
2	Search and review of literature and electronic sources of information on an individually given course problem, writing an abstract on a given problem, preparing for discussion and control work.	4						
3	Writing medical records, working	4						



	with electronic educational resources posted on the educational portal of the Academy.							
	TOTAL (total - 14ACH)	14						

### 7. **Types of assessment formats for ongoing monitoring and mid-term assessment**

The final state certification is conducted at the Department of Orthopedic Dentistry in the 10th semester. To conduct the final state certification in dentistry in the 5th year in the 10th semester, exam tickets, tests, practical tasks are used. During classes, only the current monitoring of academic performance is carried out.

The following methods of control are used for the current control of academic performance at the department:

- control works;
- individual survey;
- testing;
- writing essays;
- solving situational problems

№	Se me ster No.	Types of control		Name of section of academic discipline	Competence codes	Assessment formats		
						types	number of test questions	number of test task options
1.	4	Curren t monit oring	Control of mastering the topic	Research methods in dentistry	UC-1, PC-6, PC-7	Test tasks	20	80
			Monitoring the student's individual work			Testing of practica l skills	4	4
			Exam/ Credit			Intervie w	4	12
2.	4	Mid- term assess ment	Exam/ Credit			Situatio nal tasks	2	10
						Writing a fragem t of the medical history	1	1

**Examples of evaluation tools:**

**Example of test tasks:**

OCCLUSAL CURVES ARE KNOWN:

sagittal,  
transversal,  
sagittal and transversal.

**DETERMINE THE SEQUENCE OF ACTIONS FOR THE DIAGNOSIS OF  
MUSCULOSKELETAL DYSFUNCTION OF THE TMJ**

electromyography of masticatory muscles  
analysis of lower jaw movements  
TMJ tomography  
palpation of the masticatory muscles  
palpation of the TMJ  
examination of the oral cavity  
analysis of occlusal relationships of dentition

**TERMS OF USE OF OCCLUSIVE SPLINTS IN TMJ DISEASES:**

one week,  
two weeks,  
one month,  
3-6 months.

**SPECIFY ORTHOPEDIC METHODS OF TREATMENT OF PATIENTS WITH  
NEUROMUSCULAR DYSFUNCTIONAL SYNDROME.**

autogenic training,  
therapeutic gymnastics,  
medical treatment,  
hypnosis,  
local anesthesia,  
physiotherapy treatment,  
correction of occlusion,  
application of the Petrosov limiting tire,  
the use of an occlusive mouth guard (splint).

**ABSOLUTE INDICATIONS FOR GENERAL ANESTHESIA DURING DENTAL  
PREPARATION ARE:**

inability to perform dental preparation under local anesthesia  
intolerance to local anesthetics  
inefficiency of local anesthetics  
an insurmountable fear of dental interventions

**Example of situational tasks:**

**Task №1**

The patient (36 years old) applied to the clinic with complaints about the destruction of crowns 1.1, 1.3, 2.2 and the absence of 2.3.

Objectively: 1.1; 1.3; 2.2 - destroyed to the level of the gum. The roots are stable. Percussion is painless. 2.3 missing. 3.6, 3.7 are destroyed to the level of the gum, mobility of the 1st degree, percussion is weakly painful. The tooth-alveolar elongation is 2.6, 2.7 by 4 mm.

4.6 is missing. 4.7, 4.8 have a mesial slope.

Dental Formula: 87654R2R 1R045678  
87054321 12345RR8

On the R-gram, the channels 1.3; 1.1; 2.2 are not sealed, 1.3 is the expansion of the periodontal gap, in the periapical region of the tooth 1.1 is the rarefaction of bone tissue with clear

boundaries with a diameter of 3 mm, in the area of the tip of the tooth 2.2 is the rarefaction of bone tissue with clear boundaries with a diameter of 5 mm. Channels 3.6, 3.7 are not sealed, rarefaction of bone tissue in the bifurcation area 3.6. Foci of rarefaction of bone tissue in the area of the tips of the roots of a rounded shape with clear boundaries with a diameter of 3 mm of the tooth 3.6, a diameter of 5 mm of the tooth 3.7.

Questions:

1. Make a diagnosis.
2. What additional diagnostic methods should be prescribed to the patient.
3. Make a plan for preparing the oral cavity for prosthetics.

Task №2

A 62-year-old patient went to the clinic with complaints of pain and mobility 14 and 44. It was found out from the anamnesis that 2 years ago most of the teeth on the upper and lower jaw were removed, and 2 weeks after the removal, 2 removable plate prostheses were made. He was not given any instructions to re-apply.

Objectively: the face is symmetrical, chin and nasolabial folds are moderately pronounced.

Dental formula: 
$$\begin{array}{cccccccc|cccccccc} 0 & 0 & 0 & 0 & 4 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 7 & 0 & 0 & 4 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 7 & 0 \end{array}$$

The ratio of the jaws is orthognathic. All teeth have mobility of 1 degree. In the position of the central occlusion, only 14 and 44 are tightly closed.

Questions: 1. Make a diagnosis.

2. What additional diagnostic methods should be prescribed to the patient.
3. Make a treatment plan.

Task №3

The patient, 55 years old, went to the clinic with complaints about the lack of teeth. From the anamnesis it was revealed that the patient suffers from hypertension, vegetative-vascular dystonia, gastric ulcer. Has a fear of dental manipulations.

Objectively: the face is symmetrical, the height of the lower third of the face has not been changed. Dental formula: missing 35, 44, 45. 36 under the seal located on the occlusal and distal contact surfaces, treated 20 years ago. On the X-ray, the medial channels are not sealed to the tip, in the area of the medial root there is a rarefaction of bone tissue with clear contours, with a diameter of 3 mm. There are no changes in the distal root area, the canal is sealed to the tip, evenly throughout.

1. Make a diagnosis.
2. Make a treatment plan.
3. What additional diagnostic methods should be prescribed to the patient.

Task № 4

A 35-year-old patient came to the clinic with complaints about the absence of 24.

Objectively: 24 are missing, there are carious cavities on the mesial surface 25 and distal surface 23. Probing is painful along the enamel-dentine border. Percussion is painless.

1. Make a diagnosis.
2. What additional examination methods are needed.

3. Make an orthopedic treatment plan.

Task №5

A 40-year-old patient complained of difficulty chewing food and pain in the right temporal region.

Objectively: the face is symmetrical, the skin is physiologically colored, when opening the mouth, a zigzag movement of the lower jaw is observed. Palpation of the masticatory and temporal muscles on the right is painful. The height of the lower third of the face has not been changed. The mucous membrane is pale pink, without visible pathological changes, moderately moistened. The teeth are stable. The bite is a deep incisor overlap.

Dental formula: 87654321 12345678  
87054321 12345678

Tooth 4.6 was removed 10 years ago, 4.7 touches the antagonist tooth only with a distal buccal bump. In the central occlusion, multiple contacts between antagonistic teeth are determined. When the lower jaw is shifted to the left, the contacts between teeth 1.7 and 4.7, 1.8 and 4.8 are determined, on the left – the teeth are separated.

Questions:

1. Make a diagnosis.
2. What type of premature contacts was detected during the examination.
3. Describe the closure of teeth in central, anterior and lateral occlusions in persons with orthognathic bite.
4. Suggest an orthopedic treatment plan.

**8. Educational, methodological and informational support for mastering the academic discipline (printed, electronic publications, the Internet and other network resources)**

**8.1. Key literature references**

n/a	Name according to bibliographic requirements	Number of instances	
		in the library	at the department
1	2	3	4
1	Orthopedic Dentistry (faculty course): textbook – 9th ed., reprint. Shcherbakov, L.M. Mishnev; edited by V.N. Trezubov. Moscow:GEOTAR – Media, 2019. – 688 p.	24 + electronic resource <a href="http://www.studmedlib.ru/ru/book/ISBN9785970445914.html">http://www.studmedlib.ru/ru/book/ISBN9785970445914.html</a>	1
2	Orthopedic dentistry (non-removable dental prosthetics): textbook O.R. Kurbanov, A.I. Abdurakhmanov, S.I., Abakarov. Moscow: GEOTAR – Media, 2015. – 456 p.	73 + electronic resource <a href="http://www.studmedlib.ru/book/ISBN9785970432945.html">http://www.studmedlib.ru/book/ISBN9785970432945.html</a>	1
3	Functional occlusion: from the temporomandibular joint to smile planning. Dawson P.E. Publishing house:Practical Medicine Russia, 2016 - 592	1	4
4	Orthopedic dentistry: textbook. – 2nd Edited by E.S. Kalivrajian, I.Yu. Lebedenko, E.A. Bragina, I.P. Ryzhova.ed. Moscow: GEOTAR-Media, 2018. – 800 p.	<a href="https://www.rosmedlib.ru/book/ISBN9785970437056.html?custom_pat_file=rosmedlib&amp;custom_pat_id=boo">https://www.rosmedlib.ru/book/ISBN9785970437056.html?custom_pat_file=rosmedlib&amp;custom_pat_id=boo</a>	1

		<a href="#">k.main_frame.(id)&amp;custom_pat_use_id=book.main_frame.(x)&amp;XPartner=medknigaservis</a>	
5	Diseases of the oral mucosa: a textbook. O. A. Uspenskaya, E. N. Zhulev. NizhGMA Publishing House, 2017. – 504 p.	20	1
6	Treatment of periodontal diseases: a textbook. E. N. Zhulev, N. V. Kruglova, A. V. Kochubeynik NizhGMA Publishing House, 2016. – 160 p.	48	1
7	Orthopedic dentistry. Zhulev E.N. Moscow: Medical Information Agency, 2012 – 824 p.	31 + electronic resource.	1
8	Integrative dentistry (monograph). Zhulev E.N., Troshin V.D. Publishing house NizhGMA – 2014 - 651c.	24 + electronic resource	1

### 8.2. Further reading

n/a	Name according to bibliographic requirements	Number of instances	
		in the library	at the department
1	2	3	4
1.	Preliminary treatment of patients before dental prosthetics. Study guide. Trezubov V. N. 2009, Moscow, publishing house MIA	1	1
2.	Orthopedic treatment of periodontal diseases. The most important issues of dentistry. Kopeikin V. N. M., Triad-X. – 1998	3	1
3.	Orthopedic dentistry (test tasks). Zhulev E.N. Shcherbakov A.S 2004. N.Novgorod publishing house NizhGMA	56	1
4.	Dental ceramics. Current aspects of clinical application. To. Hemmerle. 2011 Moscow: Publishing house "Abc of the dentist"	1	1
5.	Precision and Aesthetics. Clinical and dental stages of dental prosthetics Massironi D., Paschetta R., Romeo D. 2008 Moscow: Publishing house "Abc of the dentist"	1	1
6.	Fundamentals of dental preparation for the manufacture of cast metal, metal-ceramic and ceramic restorations. G. Schillinburg, R. Jacobi, S. Brackett. 2011 Moscow: Publishing house "Abc of the dentist"	1	1

7.	<p>"Dentistry", "New in stomatology", "Quintessence", "Dentart", "STM", "Panorama of orthopedic dentistry", "Clinical dentistry", "Dent-art"  Periodical literature – dental journals. Various publishing houses of the cities: Moscow, St. Petersburg and N. Novgorod</p>	One copy for each release period.	0
8.	<p>Fixed prostheses: theory, clinic and laboratory equipment, 5th edition Zhulev E. N. 2010, Moscow, "Medical Information Agency»</p>	24 + electronic resource	1
9.	<p>Partial removable prostheses (theory, clinic and laboratory equipment): A guide for doctors. 2nd edition. Zhulev E.N. 2011. Moscow, "Medical Information Agency</p>	73 + electronic resource	1
10.	<p>Clinic, diagnosis and orthopedic treatment of periodontal diseases. Zhulev E. N. 2003, N.Novgorod, NizhGMA publishing house</p>	53	1

11.	Metal-ceramic prostheses. Study guide. Zhulev E. N. 2004, N. Novgorod, NizhGMA publishing house	57	1
12.	Orthopedic dentistry. The phantom course. Zhulev E.N., Kuryakina N.V., Mitin N.V. Moscow, Medical Information Agency, 2011. – 720 p.	100	1
13.	Maxillofacial orthopedic dentistry Zhulev E.N., Arutyunov S.D., Lebedenko I.Yu. Moscow: Medical Information Agency, 2008 – 156 p.	31 + electronic resource.	1
14.	Fixed prostheses: theory, clinic and laboratory equipment, 5th edition Zhulev E. N. 2010, Moscow, "Medical Information Agency	24 + electronic resource	1

15.	Partial removable prostheses (theory, clinic and laboratory equipment): A guide for doctors. 2nd edition. Zhulev E.N. 2011. Moscow, "Medical Information Agency".	73 + electronic resource	1
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### 8.3. Electronic educational resources for teaching academic subjects

#### 8.3.1. Internal Electronic Library System of the University (IELSU)

<i>Name of the electronic resource</i>	<i>Brief description (content)</i>	<i>Access conditions</i>	<i>Number of users</i>
Internal Electronic Library System (EBS)	The works of the academic staff of the Academy: textbooks and manuals, monographs, collections of scientific papers, scientific articles, dissertations, abstracts of dissertations, patents.	from any computer located on the Internet, using an individual login and password [Electronic resource] – Access mode: <a href="http://95.79.46.206/login.php">http://95.79.46.206/login.php</a>	Not limited

#### 8.3.2. Electronic educational resources acquired by the University

<i>Name of the electronic resource</i>	<i>Brief description (content)</i>	<i>Access conditions</i>	<i>Number of users</i>
Electronic database "Student Consultant"	Educational literature + additional materials (audio, video, interactive materials, test tasks) for higher medical and pharmaceutical education. Publications are structured by specialties and disciplines in accordance with the current Federal State Educational Standards of Higher Education.	from any computer on the Internet, using an individual login and password [Electronic resource] – Access mode: <a href="http://www.studmedlib.ru/">http://www.studmedlib.ru/</a>	General PIM subscription
Electronic library system "Bukap"	Educational and scientific medical literature of Russian publishers, including translations of foreign publications.	from any computer located on the Internet by login and password, from the computers of the Academy. The subscription editions are available for reading. [Electronic resource] – Access mode: <a href="http://www.books-up.ru/">http://www.books-up.ru/</a>	General PIM subscription
"Bibliopoisk"	Integrated "single window"	PIM has access to the demo	General PIM



	<p>search service for electronic catalogs, EBS and full-text databases.</p> <p>The results of a single search in the demo version include documents from domestic and foreign electronic libraries and databases available to the university as part of a subscription, as well as from open access databases.</p>	<p>version of the Bibliopisk search engine:  <a href="http://bibliosearch.ru/pimu">http://bibliosearch.ru/pimu</a>.</p>	<p>subscription</p>
<p>Domestic electronic periodicals</p>	<p>Periodicals on medical subjects and on higher school issues</p>	<p>- from the academy's computers on the electronic library platform eLIBRARY.RU          -magazines Media Sphere Publishing house - from library computers or provided by the library at the request of the user          [Electronic resource] – Access mode:  <a href="https://elibrary.ru/">https://elibrary.ru/</a></p>	
<p>International scientometric database "Web of Science Core Collection"</p>	<p>Web of Science covers materials on natural, technical, social, and humanitarian sciences; takes into account the mutual citation of publications developed and provided by Thomson Reuters; has built-in capabilities for searching, analyzing, and managing bibliographic information.</p>	<p>Access is free from PIM computers          [Electronic resource] – Access to the resource at:  <a href="http://apps.webofknowledge.com">http://apps.webofknowledge.com</a></p>	<p>Access is free from PIM computers</p>

### 8.3.3 Open access resources

<i>Name of the electronic resource</i>	<i>Brief description (content)</i>	<i>Access conditions</i>
<p>Federal Electronic Medical Library (FEMB)</p>	<p>It includes electronic analogues of printed publications and original electronic publications that have no analogues recorded on other media (dissertations, abstracts, books, magazines, etc.).          [Electronic resource] – Access mode: <a href="http://нэб.рф/">http://нэб.рф/</a></p>	<p>from any computer located on the Internet</p>
<p>Scientific Electronic Library eLIBRARY.RU</p>	<p>The largest Russian information portal in the field of science, technology, medicine and education, containing abstracts and full texts of scientific articles and publications. [Electronic resource] – Access</p>	<p>from any computer located on the Internet.</p>

	mode: <a href="https://elibrary.ru/">https://elibrary.ru/</a>	
Open Access Scientific Electronic Library CyberLeninka	Full texts of scientific articles with annotations published in scientific journals of Russia and neighboring countries. [Electronic resource] – Access mode: <a href="https://cyberleninka.ru/">https://cyberleninka.ru/</a>	from any computer located on the Internet
Russian State Library (RSL)	Abstracts for which there are copyright agreements with permission for their open publication [Electronic resource] – Access mode: <a href="http://www.rsl.ru/">http://www.rsl.ru/</a>	from any computer located on the Internet
Legal reference system "Consultant Plus"	Federal and regional legislation, judicial practice, financial advice, comments on legislation, etc. [Electronic resource] – Access mode: <a href="http://www.consultant.ru/">http://www.consultant.ru/</a>	from any computer located on the Internet
Official website of the Ministry of Health of the Russian Federation	National clinical guidelines [Electronic resource] – Access mode: <a href="http://cr.rosminzdrav.ru">cr.rosminzdrav.ru</a> - Clinical recommendations	from any computer located on the Internet

## **9. Material and technical support for mastering an academic discipline**

### **9.1. List of premises for classroom activities for the discipline**

The department is located on the basis of the dental polyclinic of PIMU, where there are: three offices for 4 chairs (40 sq.m.) 2 offices for 3 chairs (18 sq.m each), a functional diagnostics room. Lecture hall with 150 seats.

### **9.2. List of equipment for classroom activities for the discipline**

The staff of the department provides teaching of orthopedic dentistry to students of 2,3,4,5 courses of the Faculty of Dentistry and FOIS, as well as orthodontics to students of the 4th, 5th courses of the Faculty of Dentistry and FOIS.

#### Lecture classes:

- a set of electronic multimedia presentations,
- an audience equipped with presentation equipment: a projector, a screen, a laptop.

#### Practical exercises:

Classes at the department are held in two shifts, about 25-30 students are engaged at the same time. The classrooms are equipped with modern equipment, including dental units: Azimut-200 – 8 pieces., CHIRANA- 2 pieces., Siger – 4 pieces. and Stomadent – 1 piece, SIRONA-1 pieces, LEGRIN – 2 pieces, as well as all the equipment, tools and materials necessary for conducting the educational process, ensuring admission patients and the manufacture of prostheses and orthodontic devices.

The department has created a large fund of X-ray studies, including CT of the maxillofacial region and museum exhibits of various types of prostheses and orthopedic devices in all sections of orthopedic dentistry and orthodontics (257 items).

The department has the opportunity to use computing and office equipment for scientific and pedagogical purposes: 8 personal computers, a copier, a scanner, a multimedia projector; the educational and laboratory equipment necessary to ensure the educational process is regularly

updated: presentations, museum exhibits, collections of videos on the stages of orthopedic treatment; the department has a video camera, digital the camera. Classrooms are equipped with posters, stands and showcases corresponding to the subject of classes, as well as chalkboards for writing. The department has stands providing information for students of all courses, separate stands are dedicated to the history of the department, scientific achievements in the field of orthopedic dentistry, patents and inventions of employees, there is an information stand for patients.

Internet resources are a significant support in providing educational and methodological materials.

In order to ensure the high quality of the educational process and the development of clinical and practical skills in the orthopedic treatment of various nosological forms of diseases, students master practical skills on 10 dental simulation devices from A-dec.

The department has a modern material base of research, which is replenished with modern equipment:

- 1) apparatus for the study of microcirculation LAKK-01 (2003), providing research at a high scientific level;
- 2) diagnostic complex "Neuromyostom" for electromyography (2009),
- 3) parallellometer (2010).
- 4) T-scan 3. Apparatus for the diagnosis of occlusive disorders (2017).
- 5) Cone-beam computed tomography – PAX-I3D. Conducting and analyzing CT scans of the maxillofacial region (2015).
- 6) Individual articulator SAM-3. Analysis of diagnostic models.

### 9.3. A set of licensed and freely distributed software, including domestic production

<b>Item no.</b>	<b>Software</b>	<b>number of licenses</b>	<b>Type of software</b>	<b>Manufacturer</b>	<b>Number in the unified register of Russian software</b>	<b>Contract No. and date</b>
1	Wtware	100	Thin Client Operating System	Kovalev Andrey Alexandrovich	1960	2471/05-18 from 28.05.2018
2	MyOffice is Standard. A corporate user license for educational organizations, with no expiration date, with the right to receive updates for 1 year.	220	Office Application	LLC "NEW CLOUD TECHNOLOGIES"	283	without limitation, with the right to receive updates for 1 year.
3	LibreOffice		Office Application	The Document Foundation	Freely distributed software	
4	Windows 10 Education	700	Operating systems	Microsoft	Azure Dev Tools for Teaching	

					Subscription	
5	Yandex. Browser		Browser	«Yandex»	3722	
6	Subscription to MS Office Pro for 170 PCs for FGBOU VO "PIMU" of the Ministry of Health of Russia	170	Office Application	Microsoft		23618/HN10030 LLC "Softline Trade" from 04.12.2020

**10. List of changes to the working program (to be filled out by the template)**

Federal State Budgetary Educational Institution of Higher Education  
 "Privolzhsky Research Medical University"  
 Ministry of Health of the Russian Federation  
 (FSBEI HE "PRMU" of the Ministry of Health of Russia)

Department of  
*Orthopedic dentistry and orthodontics*

**CHANGE REGISTRATION SHEET**

working program for the academic discipline

**Research methods in dentistry**

Field of study / specialty / scientific specialty: **31.05.03 - DENTISTRY**

Training profile: \_\_\_\_\_  
*(name) - for master's degree programs*

Mode of study: FULL-TIME

Position	Number and name of the program section	Contents of the changes made	Effective date of the changes	Contributor's signature
1				

Approved at the department meeting  
 Protocol No. \_\_\_\_\_ of \_\_\_\_\_ 20\_\_

Head of the Department,  
 Doctor of medical sciences, associate professor  
 M.Y. Saakyan

\_\_\_\_\_ (decryption)  
 (signature)