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**Federal State Autonomous Educational Institution of Higher Education**  
**PEOPLES' FRIENDSHIP UNIVERSITY OF RUSSIA**  
**RUDN University**

**Institute of Medicine**

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educational division (faculty/institute/academy) as higher education programme developer

## **COURSE SYLLABUS**

### **Prosthodontics (simple prosthetics)**

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course title

**Recommended by the Didactic Council for the Education Field of:**

### **31.05.01 General Medicine**

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field of studies / speciality code and title

**The course instruction is implemented within the professional education programme of higher education:**

**General Medicine**

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higher education programme profile/specialisation title

**2022-2023**

## 1. COURSE GOAL(s)

The goal of the course «**Prosthodontics simple prosthetics**» is to equip students with knowledge and skills in prevention, diagnostics, prosthetic treatment methods of diseases of the dentition; able to provide outpatient dental prosthetic care to patients with defects of hard dental tissues.

## 2. REQUIREMENTS FOR LEARNING OUTCOMES

Mastering the course (module) «**Prosthodontics simple prosthetics**» is aimed at the development of the following competences /competences in part: (GPC)-5, 6, (GC)-1, (PC)-1, 2, 6.

*Table 2.1. List of competences that students acquire through the*

<b>Competence code</b>	<b>Competence</b>	<b>Indicators of Competence Formation</b> (within the framework of this discipline)
GC-1	Being able to implement critical analysis of problem situations based on systems approach, develop an action strategy.	GC-1 A student should be able to implement critical analysis of problem situations based on systems approach, develop an action strategy.
GPC-5	Being able to examine patients to determine a diagnosis when solving professional tasks	GPC-5 A student should be able to examine patients to determine a diagnosis when solving professional tasks
GPC-6	Being able to prescribe non-drug and drug treatment, monitor its efficacy and safety when solving professional tasks	GPC-6 A student should be able to prescribe non-drug and drug treatment, monitor its efficacy and safety when solving professional tasks
PC-1	Being able to make an examination of a patient in order to determine a diagnosis	PC-1 A student should be able to make an examination of a patient in order to determine a diagnosis
PC-2	Being able to prescribe, monitor the efficacy and safety of non-drug and drug treatment	PC-2 A student should be able to prescribe, monitor the efficacy and safety of non-drug and drug treatment
PC-6		PC-6 A student should be able to analyze and present in public medical information based on evidence-based medicine, participate in

<b>Competence code</b>	<b>Competence</b>	<b>Indicators of Competence Formation (within the framework of this discipline)</b>
	Being able to analyze and present in public medical information based on evidence-based medicine, participate in scientific research, introduce new methods and techniques aimed at protecting public health	scientific research, introduce new methods and techniques aimed at protecting public health

### **3.COURSE IN HIGHER EDUCATION PROGRAMME STRUCTURE**

The course refers to the core/variable/elective\* component of (B1) block of the higher educational programme curriculum.

\* - Underline whatever applicable.

Within the higher education programme students also master other (modules) and / or internships that contribute to the achievement of the expected learning outcomes as results of the course study.

*Table 3.1. The list of the higher education programme components/disciplines that contribute to the achievement of the expected learning outcomes as the course study results*

<b>Competence Code</b>	<b>The competence</b>	<b>Previous Disciplines</b>	<b>Subsequent disciplines</b>

GC-1	Being able to implement critical analysis of problem situations based on systems approach develop an action strategy	Cariesology and diseases of tooth hard tissues Fixed prosthodontics (simple prosthodontics)	Complex prosthodontics Gnathology and functional diagnostics of temporomandibular joint
GPC-5	Being able to examine patients to determine a diagnosis when solving professional tasks	Cariesology and diseases of tooth hard tissues Fixed prosthodontics (simple prosthodontics)	Complex prosthodontics Gnathology and functional diagnostics of temporomandibular joint
GPC-6	Being able to prescribe non-drug and drug treatment, monitor its efficacy and safety when solving professional tasks	Cariesology and diseases of tooth hard tissues Fixed prosthodontics (simple prosthodontics)	Complex prosthodontics Gnathology and functional diagnostics of temporomandibular joint
PC-1	Being able to make an examination of a patient in order to determine a diagnosis.	Cariesology and diseases of tooth hard tissues Propaedeutics of dental diseases Fixed prosthodontics (simple prosthodontics)	Cariesology and diseases of tooth hard tissues Propaedeutics of dental diseases Fixed prosthodontics (simple prosthodontics)
PC-2	Being able to prescribe, monitor the efficacy and safety of non-drug and drug treatment	Cariesology and diseases of tooth hard tissues Propaedeutics of dental diseases Fixed prosthodontics (simple prosthodontics)	Complex prosthodontics Gnathology and functional diagnostics of temporomandibular joint
PC-6	Being able to analyze	Cariesology and diseases of tooth hard tissues Propaedeutics of dental diseases Fixed prosthodontics	Complex prosthodontics Gnathology and functional diagnostics of temporomandibular joint

#### 4. COURSE WORKLOAD AND ACADEMIC ACTIVITIES

The total workload of the course is \_\_\_\_\_ credits (\_\_\_\_\_ academic hours).

Table 4.1. Types of academic activities during the periods of higher education programme mastering (**full-time training**)\*

Type of academic activities	Total academic hours	Semesters/training modules
		5
Contact academic hours	51	51
including:		
Lectures (LC)		
Lab work (LW)	30	30
Seminars (workshops/tutorials) (S)		
Self-studies	21	21
Evaluation and assessment (exam/passing/failing grade)		
<b>Total workload of the discipline</b>	ac.h.	<b>72</b>
	credits	<b>2</b>

#### 5. COURSE CONTENTS

Table 5.1. Course contents and academic activities types

Course module title	Course module contents (topics)	Academic activities types
<b>Module 1</b> Methods of examination of patients in the clinic of prosthetic dentistry. Organization of prosthetic dental care.	<b>1.1.Topic</b> Modern equipment, machines, tools at the workplace of a prosthodontist. Medical documentation, rules for filling it.  Sanitary and anti-epidemic measures. Methods of examination of patients in the clinic of prosthetic dentistry: clinical and additional. Additional survey methods. Xray methods of examination. Indications for X-ray examination. "Reading" of X-rays. Methods for determining the functional state of the dentition (static, functional). Medical documentation and rules for filling it. Medical case as a scientific medical and legal document.	<b>LW</b>

Course module title	Course module contents (topics)	Academic activities types
	<p><b>Topic 1.2</b>  Pathology of hard tissues of teeth. Classification. Etiological factors, clinic. Diagnostics. Basic and additional diagnostic methods. Diagnostic models. Characterization of impressions and impression materials. Features of alginate impression materials. Assessment of the quality of impressions. Getting plaster models. Analysis of diagnostic models. Differential diagnosis. Features of filling out a medical outpatient card (form 43-u) for patients with defects in dental hard tissues.</p>	
<p><b>Module 2</b>  Methods of prosthetic treatment of patients with defects of hard dental tissues by inlays.</p>	<p><b>2.1. Topic 2.1</b>  Treatment of pathology of hard tissues of teeth. Types of dentures that restore the anatomical shape and size of the destroyed tooth crown. The choice of the method of orthopedic treatment depending on the index of destruction of the clinical crown. Cavity classifications. Indications and contraindications for inlay prosthetics. Types, classification of inlays. Clinical requirements for inlays.</p>	<p><b>LW</b></p>
	<p>Materials for making inlays. Methods for modeling inlays (clinical and laboratory). Clinical and laboratory stages of making inlays. Features of preparation for various types of inlays. Modern materials and technologies for the manufacture of inlays in prosthetic dentistry.</p>	<p><b>LW</b></p>
<p><b>Module 3</b>  Methods of prosthetic treatment of patients with defects of hard dental tissues by crowns.</p>	<p><b>Topic 3.1</b>  Artificial crowns. Types, classification of artificial crowns. Indications and contraindications for prosthetics with artificial crowns. Clinical requirements for artificial crowns. Materials for the manufacture of artificial crowns.</p>	<p><b>LW</b></p>
	<p><b>Topic 3.2</b>  Features of preparation of teeth in the manufacture of stamped metal crowns. Criteria for assessing the quality of tooth preparation. Prevention of errors and complications at the stage of preparing teeth for crowns.</p>	<p><b>LW</b></p>

Course module title	Course module contents (topics)	Academic activities types
	<p><b>Topic 3.3.</b>  Artificial crowns. Clinical and laboratory stages of prosthetics with metal stamped crowns. Clinical stage of fitting a metal swaged crown. Requirements to be met by a metal swaged crown and quality assessment criteria. Determination of the depth of immersion in the gingival groove. The presence of contact points, the tightness of the edge of the crown to the tooth tissues, analysis of restoration of the shape of the dentition, determination of contact with antagonists. Possible errors at the clinical and laboratory stages of the manufacture of stamped metal crowns and complications during their use.</p>	LW
	<p><b>Topic 3.4.</b>  Prosthetic treatment with cast all-metal crowns. Indications and contraindications. Principles, techniques, features of tooth preparation. The method of forming the gingival ledge, its shape, location in relation to the gum. Methods of expansion (retraction) of the periodontal sulcus. Fitting a cast all-metal crown. Clinical requirements to be met by all-metal cast crowns.  Determination of the tightness of the crown to the tooth tissues</p>	LW
	<p><b>Topic 3.5.</b>  Artificial cast all-metal crowns. Laboratory stages of manufacturing a cast all-metal crown. Features of making working models. Technique of precision casting of metal alloys. Characteristics of metal alloys for the manufacture of solid structures. Composition, properties. Requirements to be met by alloys for metal-ceramic crowns.  Working and additional impressions.</p>	LW

Course module title	Course module contents (topics)	Academic activities types
	<p><b>Topic 3.6.</b> Artificial combined crowns. Features of preparation with a shoulder. Materials for veneering crowns. Features of the frameworks of metal-plastic and metal-ceramic crowns. Working silicone two-layer one-step and two-step impressions</p>	<p><b>LW</b></p>
<p><b>Topic 3.7.</b> Metal-ceramic crowns. Laboratory stages of production of metal-ceramic crowns. Ceramic facing materials: composition, properties. Correction of the color of the cladding. Glazing of a metal-ceramic crown. Occlusal fit.</p>		
<p><b>Topic 3.8.</b> Metal-ceramic crowns. The peculiarity of the clinical stages of prosthetics. Checking the availability of space for the application of the facing material. Selection of the color of the facing material. Fitting a metal-ceramic crown in the oral cavity. Correction of the occlusal relationship. Possible errors at the clinical and laboratory stages of the manufacture of metalceramic crowns, their consequences and methods. Disadvantages of combined crowns.</p>		
<p><b>Topic 3.9.</b> Prosthetic treatment of dental hard tissue defects with ceramic crowns. Indications and contraindications for their use. Features of preparation of teeth. Obtaining impressions. Clinical and laboratory stages of manufacturing. Materials for the manufacture of ceramic crowns, their composition, properties. The stage of choosing the color in the orthopedic treatment of patients with defects in the hard tissues of the teeth. Hardware method.</p>		
<p><b>. Topic 3.10.</b> Artificial crowns. Acrylic crowns. Indications and contraindications. Clinical and laboratory</p>		



Course module title	Course module contents (topics)	Academic activities types
	stages of prosthetics with acrylic crowns. Features of tooth preparation. Fitting a acrylic crown. Disadvantages of acrylic crowns. Temporary crowns. One-stage (clinical) fabrication of temporary acrylic crowns. Technique and materials for temporary fixation.	
<b>Module 4</b> Methods of prosthetic treatment of patients with total destruction of the crown of the tooth.	<b>Topic 4.1.</b> Complete absence (destruction) of the tooth crown. Etiology. Methods of orthopedic treatment with complete destruction of the tooth crown. Types of prosthetic pin structures (anchor pins, stump pin tabs, pin teeth). Indications for choosing a method of treatment with a pin construction, depending on the clinical condition of the gingival part of the root. Requirements to be met by the root and its periapical tissues for prosthetics.	LW
	<b>Topic 4.2.</b> Modern technologies for the manufacture of pin structures.	LW
	<b>Topic 4.3.</b> Restoration with stump pin structures. Preparation of the gingival part and root canal. Direct method of making a wax composition with a pin. An indirect method of making a postcore structure.	LW
<b>Module 5</b> Methods of prosthetic treatment of patients with defects of hard dental tissues. Clinical step: cementation of restorations.	<b>Topic 5.1.</b> Clinical stage of fixation of the orthopedic structure. Fixation is a temporary constant; cement, adhesive. Types of cements and materials used for fixing crowns, inlays, veneers, post structures. Features of the adhesive fixation technique. Factors influencing the choice of the fixation technique	LW
	<b>Topic 5.2.</b> Crowns removal techniques, sawing and debonding tools and techniques.	LW

## 6. CLASSROOM EQUIPMENT AND TECHNOLOGY SUPPORT REQUIREMENTS

*Table 6.1. Classroom equipment and technology support requirements*

Type of academic activities	Classroom equipment	Specialised educational / laboratory equipment, software, and materials for course study (if necessary)
Lab work	An auditorium for laboratory individual consultations, monitoring and intermediate certification	<p>Set of specialized furniture: a double student desk -13, a chair for a teacher; LCD panel, a monoblock personal computer, a video camera on a tripod, a metal cabinet for storing equipment, a built-in cabinet for materials and tools - 6 pcs, a sink, a mobile garbage can with a lid for at least 200 liters, a glass cabinet with visual aids - types of dentures.</p> <p>Metal safe, four-section for storing handpieces and burs</p> <p>Computers with the CEREC 3D program - 14 pieces.</p> <p>Specialized educational / laboratory equipment and materials: Dental light-curing lamps -14. Photopolymerizer for individual spoons -7.</p> <p>Dental motors - 14.</p> <p>Dental electric spatulas - 14 pcs.</p> <p>Water baths - 4 pcs.</p> <p>Stands with types of dentures and instruments.</p> <p>Instruments:</p> <p>Diagnostic models with various defects of hard tissues - 12 sets each.</p> <p>Samples of dentures: inlays, crowns, post constructions - 12 sets</p> <p>Modeling wax - 12 sets</p> <p>Anvil - 3</p> <p>Hammer for fitting crowns - 3</p> <p>Beak forceps -3</p> <p>Crampon pliers-3</p> <p>Crown scissors -3</p> <p>Silicone base impression material, 900 g per group</p> <p>Impression trays No. 3 for the upper and lower jaws of 14</p> <p>Plastic for temporary crowns 10 g per student</p> <p>Light-curing resin for modeling inlays, 10g per student</p> <p>Material for adhesive cementation of crowns - 0.5 g per student</p> <p>Vaseline - 14 tubes</p> <p>Temporary fixation material - 5 g per student</p> <p>Insulating cotton swabs ro 2 per student</p> <p>Glass for mixing cement – 14</p> <p>.</p>
Lab work	An auditorium for laboratory studies,	tables under simulators and dental simulators "Saratoga Spa" blocks of a doctor [2 turbine hoses M4] and an assistant [multifunctional pistol, saliva ejector, vacuum cleaner], a multifunctional pedal, a Venturi aspiration system with a

Type of academic activities	Classroom equipment	Specialised educational / laboratory equipment, software, and materials for course study (if necessary)
	<p>monitoring and intermediate certification, containing 15 sets of specialized furniture</p>	<p>centralized electric pump, dental phantom models FRASAKO (Germany) on a minitorce with an articulator, models of the upper and lower jaws of the CHVN type 28 (Zarnitsa, Russia) with a face mask and pneumatic or mechanical adjustment of the phantom position along 2 axes in the form of a long table for 12 vis-a-vis vis-a-vis 2 and four-seater modules in the shape of a "chamomile" Wooden chair with a back on wheels for a dental technician -20 pcs. Special sink in stainless steel with two sinks and a plaster sump.  Plaster tables for 14 workplaces.  Waste bin with a cover for 250 liters. Dental chair with a lamp and a Frasaco chaise phantom with an articulator with models of the upper and lower jaws of the CHVN 28 type (Zarnitsa, Russia) with a face mask and mechanical adjustment of the phantom position along 2 axes.  Wall screen and multimedia projector Epson.  Dell LCD panel with a diagonal of at least 120cm.  Specialized educational / laboratory equipment and materials:  Portable vibration table - 4.  Trimmer -1.  Vacuum plaster mixer - 1.  Scales for plaster,  Apparatus for cleaning and lubricating handpieces "Assistina" -1.  Denture cleaning steam jet - 1.  Vacuumformer-1.  Tools:  Disposable examination kits 400 kits;</p> <p>Models of the upper and lower jaws CHVN 28A - 14 sets  Protective screens of the dentist -14  Spatulas for mixing plaster -14  Silicone flasks for mixing gypsum-14,  Plaster knife - 14  Dental spatula - 14 pcs.  Inspection Tool Sets -14 Sets  Table lamps on brackets-14 pcs  Impression trays number 3 for the upper and lower jaws,</p>

Type of academic activities	Classroom equipment	Specialised educational / laboratory equipment, software, and materials for course study (if necessary)
		metal, perforated, 14 each. Alginate mass 200 g per student Gypsum grade 2 500 g per student Zarnitsa teeth for CHVN28A - No. 36 - 2 people per student No. 34, 1; No. 11 - 1 tooth each. Dissection burs - set of 5 Vladmiv burs for every 5 students. Carbide core saw - 1 per 5 students. Articulating paper 100 microns thick - 2 sheets for each student C-silicone for impressions - a set of 900 grams of bulk and corrective for each group of students Cement-retained material - 5 g per student Insulating cotton swabs ro 2 per student Glass for mixing cement - 14

## 7. RESOURCES RECOMMENDED FOR COURSE STUDY

### *Main readings:*

#### a) basic literature

1. Orthopedic dentistry: textbook / S.D. Arutyunov, E.A. Bragin, S.I. Burlutskaya [and others]; edited by E.S. Kalivradjian, I.Yu. Lebedenko, E.A. Bragin, I.P. Ryzhova. - 3rd ed., Rev. and add. - M.: GEOTAR-Media, 2020 .-- 800 p. : ill. - ISBN 978-5-9704-5272-1: 2200.00.
2. Technology of dental and maxillary prosthetics [Text]: a guide for practical training / V. N. Trezubov, E. A. Bulycheva, S. D. Arutyunov. - Moscow: Practical Medicine, 2020 .-- 167 p. : ill., color. silt ; 25 cm. - Bibliography: p. 167 (10 titles). - 500 copies - ISBN 978-5-98811-582-3 (in translation)
3. Guide to practical exercises in orthopedic dentistry for 3rd year students / edited by I. Yu. Lebedenko, V. V. Elichev, B. P. Markov / (Authors: S. D. Arutyunov, etc.) allowance. - M.: Practical Medicine, 2006. (Part I. - 432 s).
4. Denture technology: textbook / S.D. Arutyunov, D.M. Bulgakova, M.G. Grishkina [and others]; ed. M.M. Rasulova, T.I. Ibragimova, I. Yu. Lebedenko. - 2nd ed., Rev. and add. - M.: GEOTAR-Media, 2016 .-- 384 p. - ISBN 978-5-9704-3830-5.  
[http://lib.rudn.ru/MegaPro/UserEntry?Action=Rudn\\_FindDoc&id=475755&idb=0](http://lib.rudn.ru/MegaPro/UserEntry?Action=Rudn_FindDoc&id=475755&idb=0)

### additional readings

1. Prosthetic dentistry [Text]: Textbook / V.N. Kopeikin [and others]; Ed. V.N. Kopeikina, M.Z. dental faculties of medical universities). - ISBN 5-225-04598-Mirgazizova. - 2nd ed., Add. - M.: Medicine, 2001 .-- 624 p. : ill. - (Educational literature for students 7: 276.00.56.6 - O-70
2. I.Yu. Lebedenko, T.I. Ibragimov, A.N. Ryakhovsky  
Functional and instrumental research methods in orthopedic dentistry [Text]: Textbook for universities. - M.: Medical Information Agency, 2003. - 128 p. : ill. - ISBN 589481-135-X: 260.00.56.6 - L33.
3. Fixed prosthetics: the technology of manufacturing a steel stamped crown [Electronic resource]: Teaching aid / L.S. Sergeeva. - SPb. : Publishing house "Lan", 2018. - 52 p. - (Textbooks for universities. Special literature). - ISBN 978-5-8114-2863-2.
4. Prosthetic dentistry: national leadership / ed. I.Yu. Lebedenko, S.D. Arutyunova, A.N. Ryakhovsky. - GEOTAR - Media, 2016 .-- 824 p.

### *Internet (based) sources*

- 1. Electronic libraries with access for RUDN students:
  - Electronic library network of RUDN – ELN RUDN <http://lib.rudn.ru/MegaPro/Web>
  - ELN «University Library online» <http://www.biblioclub.ru>
  - ELN Urait <http://www.biblio-online.ru>
  - ELN «Student Advisor» [www.studentlibrary.ru](http://www.studentlibrary.ru)
  - ELN «Lan» <http://e.lanbook.com/>
- 2. Databases and search engines:
  - electronic fund of legal and regulatory and technical documentation <http://docs.cntd.ru/>
  - search system Yandex <https://www.yandex.ru/>
  - search system Google <https://www.google.ru/>
  - abstract database SCOPUS <http://www.elsevierscience.ru/products/scopus/>

### *Training toolkit for self- studies to master the course \*:*

1. The set of lectures on the course “Prosthodontics simple prosthetics”
2. The laboratory workshop (if any).on the course “Prosthodontics simple prosthetics”
3. The guidelines for writing a course paper / project (if any) on the course “Prosthodontics simple prosthetics”.
4. ....

\* The training toolkit for self- studies to master the course is placed on the course page in the university telecommunication training and information system under the set procedure.

## **8. ASSESSMENT TOOLKIT AND GRADING SYSTEM\* FOR EVALUATION OF STUDENTS’ COMPETENCES LEVEL UPON COURSE COMPLETION**

The assessment toolkit and the grading system\* to evaluate the competences formation level ((GPC)-5, 6, (GC)-1, (PC)-1, 2, 6.) upon the course study completion are specified in the Appendix to the course syllabus.

\* The assessment toolkit and the grading system are formed on the basis of the requirements of the relevant local normative act of RUDN University (regulations / order).

**DEVELOPERS:**

**Developers:**

Professor of the Department  
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Head of the Department  
of prosthetic dentistry,  
Professor

Lebedenko I. Yu.

The head of programe,  
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Razumova

**DEVELOPERS:**

Professor of the Department  
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Bykova M. V

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**HEAD OF EDUCATIONAL DEPARTMENT:**

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Lebedenko I. Yu.

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**HEAD  
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First Deputy Director of Medical

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