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**Federal State Autonomous Educational Institution of Higher Education
PEOPLES' FRIENDSHIP UNIVERSITY OF RUSSIA
NAMED AFTER PATRICE LUMUMBA
RUDN University
Institute of Medicine**

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

COURSE SYLLABUS

Prosthodontics (simple prosthetics)

course title

Recommended by the Didactic Council for the Education Field of:

31.05.03 Dentistry

field of studies / speciality code and title

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

Dentistry

higher education programme profile/specialisation title

1. COURSE GOAL(s)

The goal of the course "Prosthodontics (simple prosthetics)" is to train a dentist who can diagnose and plan the prosthetic stage of the complex treatment of patients with diseases of the dentoalveolar system, taking into account the individual characteristics of the course of the disease and the age of the patient.

2. REQUIREMENTS FOR LEARNING OUTCOMES

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

Table 2.1. List of competences that students acquire through the course study

Competence code	Competence descriptor	Competence formation indicators (within this course)
GC-1	Being able to implement critical analysis of problem situations based on systems approach, develop an action strategy.	GC-1.1. Analysing the problem situation as a system identifying its components and links between them.
GPC-5	Being able to examine a patient to determine a diagnosis while solving professional tasks	GPC-5.1. Gathering anamnesis by analyzing the patient's complaints, making a physical examination at a dental appointment.
		GPC-5.2. Formulating a preliminary diagnosis and deciding on laboratory and instrumental examinations of a dental patient.
		GPC-5.3. Compiling medical documentation for a dental patient in accordance with regulatory requirements.
		GPC-5.8. Conducting differential diagnosis with other diseases/conditions, including the urgent ones.
		GPC-5.9. Making a diagnosis according to the current international classification of diseases and health problems.

GPC-6	Being able to prescribe non-drug and drug treatment, monitor its efficacy and safety when solving professional tasks	GPC-6.1. Developing a plan for dental disease treatment considering the diagnosis, age, and clinical picture in accordance with the current procedures for the provision of medical care, clinical guidelines (treatment protocols) on the provision of medical care considering the medical care standards.
		GPC-6.2. Selecting medical products (including dental materials) for drawing up a comprehensive plan for dental disease treatment. Following up the treatment of a patient.
PC-1	Being able to make an examination of a patient to determine a diagnosis.	PC-1.1. Making an initial examination and/or reexamination of a patient to make a preliminary diagnosis.
		PC-1.2. Receiving information from patients (their relatives/legal representatives); conducting a questionnaire survey of patients regarding their general health status; identifying concomitant diseases to make a preliminary diagnosis.
		PC-1.3. Detecting if patients have dentoalveolar, facial anomalies, deformities and prerequisites for their development, defects in the crowns of teeth and dentition based on the patient examination; laboratory, instrumental, and additional examinations in order to make a preliminary/final diagnosis.
		PC-1.4. Detecting if patients have risk factors for oncopathology (including various background processes, precancerous conditions) based on laboratory, instrumental and additional examinations to make a preliminary/final diagnosis.
		PC-1.5. Making a preliminary/final diagnosis based on the patient examination; laboratory and instrumental examinations.

PC-2	Being able to prescribe, monitor the efficacy and safety of non-drug and drug treatment	PC-2.6. Providing prosthetic treatment for persons with defects in teeth, dentition within the temporization procedure, rehabilitation of single defects in the dentition, dental prostheses of up to three units (excluding dental implants prosthetics), partial and complete removable laminar denture using modern treatment methods approved for use in medical practice.
PC-6	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	PC-6.1. Searching for medical information based on evidence-based medicine, interpreting data from scientific publications and/or preparing a presentation to make medical information, the results of scientific research public.

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

Competence code	Competence descriptor	Previous courses/modules*	Subsequent courses/modules*
CC-1.	Able to carry out a critical analysis of problem situations based on a systematic approach, to develop an action strategy.	Cariesology and the disease of hard dental tissues.	<ul style="list-style-type: none"> • Prosthodontics of edentulous patient • Prosthodontics (complex prosthetics)
GPC-5.	Able to conduct a patient examination in order to establish a diagnosis in solving professional problems	Cariesology and the disease of hard dental tissues.	<ul style="list-style-type: none"> • Prosthodontics of edentulous patient • Prosthodontics (complex prosthetics)

GPC-6.	Able to prescribe, monitor the effectiveness and safety of non-drug and drug treatment in solving professional problems	Cariesology and the disease of hard dental tissues.	<ul style="list-style-type: none"> • Prosthodontics of edentulous patient • Prosthodontics (complex prosthetics)
PC-1.	Able to conduct examination of the patient to establish a diagnosis.	<ul style="list-style-type: none"> • Cariesology and the disease of hard dental tissues. • Propaedeutics of dental diseases 	<ul style="list-style-type: none"> • Prosthodontics of edentulous patient • Prosthodontics (complex prosthetics)
PC-2.	Capable of prescribing, monitoring the efficacy and safety of non-drug and drug treatments	<ul style="list-style-type: none"> • Cariesology and the disease of hard dental tissues. • Propaedeutics of dental diseases 	<ul style="list-style-type: none"> • Prosthodontics of edentulous patient • Prosthodontics (complex prosthetics)
PC-6.	Able to analyze and publicly present medical information based on evidence-based medicine, to participate in scientific research, to introduce new methods and techniques aimed at protecting public health	<ul style="list-style-type: none"> • Cariesology and the disease of hard dental tissues. • Propaedeutics of dental diseases 	<ul style="list-style-type: none"> • Prosthodontics of edentulous patient • Prosthodontics (complex prosthetics)

4. COURSE WORKLOAD AND ACADEMIC ACTIVITIES

The total workload of the course "Prosthodontics (simple prosthetics)" 2 credits (72 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	
Classes (total) ac.h.	51	51	
Including:			
Lectures (LC)	-	-	
Lab work (LW)	51	51	
Seminars (workshops/tutorials) (S)	-	-	
<i>Self-studies</i>	18	18	
<i>Evaluation and assessment (exam/passing/failing grade)</i>	3	3	
Total course workload	academic hours	72	72
	credits	2	2

* To be filled in regarding the higher education programme correspondence training mode.

5. COURSE CONTENTS

Table 5.1. Course contents and academic activities types

Course module title	Course module contents (topics)	Academic activities types
Section 1. Methods of examination of patients in the clinic of prosthetic dentistry. Organization of prosthetic dental care.	Topic 1.1 Modern equipment, facilities, and instruments at the workplace of an prosthetic dentist (familiarization with the workplace in the simulation class). Pathology of hard dental tissues. Classification. Etiology, Clinical Presentation. Diagnosis. Methods of examining patients with defects of hard dental tissues in the clinic of prosthetic dentistry: clinical examination methods, additional examination methods, radiological examination methods. Medical documentation, ICD-10. Features of completing outpatient medical records (form 43-y) for patients with defects of hard dental tissues.	LW
	Topic 1.2 Characteristics of impressions and impression materials. Features of obtaining alginate impressions in patients with pathology of hard dental tissues. Quality assessment criteria for alginate impressions. Obtaining plaster models. Analysis of diagnostic models. Differential diagnosis.	

Section 2. Methods of prosthetic treatment of patients with defects of hard dental tissues by inlays.	Topic 2.1 Treatment of patients with pathology of hard dental tissues. Types of dental prostheses that restore the anatomical form and size of a destroyed tooth crown. Selection of prosthetic treatment method depending on IRODZ (Index of Relative Destruction of Tooth Crown). Black's cavity classification, MOD. Indications and contraindications for inlay prosthetics. Types and classification of inlays. Clinical requirements for inlays. Familiarization with the CEREC computer program for virtual inlay modeling.	LW
	Topic 2.2 Materials for manufacturing inlays. Clinical and laboratory stages of inlay fabrication. Features of tooth preparation for various types of inlays. Modern materials and technologies for manufacturing inlays in prosthetic dentistry.	LW
Section 3. Methods of prosthetic treatment of patients with defects of hard dental tissues by crowns.	Topic 3.1 Artificial crowns. Types and classification of artificial crowns. Indications and contraindications for prosthetics with artificial crowns. Clinical requirements that artificial crowns must meet. Materials for manufacturing artificial crowns. Temporary plastic crowns. Indications and contraindications. Fitting of a plastic crown. Disadvantages of plastic crowns. Familiarization with the clinical method of manufacturing a temporary plastic crown from an impression using the direct method.	LW
	Topic 3.2 Features of tooth preparation when manufacturing metal stamped crowns. Quality assessment criteria for tooth preparation. Prevention of errors and complications at the tooth preparation stage for crowns.	LW
	Topic 3.3 Artificial crowns. Clinical and laboratory stages of prosthetics with metal stamped crowns. Clinical stage of fitting a metal stamped crown. Requirements that a metal stamped crown must meet and quality assessment criteria. Possible errors at the stages of manufacturing metal stamped crowns and complications when using them.	

	<p>Topic 3.4. Prosthetic treatment with metal crowns obtained by casting, CAD/CAM milling, and 3D printing. Indications and contraindications. Principles, methodologies, and features of tooth preparation. Technique for forming a subgingival margin, its shape, and position relative to the gingiva. Familiarization with the CEREC computer program for virtual assessment of tooth stump preparation quality.</p>	LW
<p>Topic 3.5 Working and auxiliary impressions. Intraoral scanning. Familiarization with the CEREC computer program for virtual modeling of an artificial crown.</p>		

	<p>Topic 3.6. Artificial combined crowns. Features of preparation with a margin. Materials for crown veneering. Features of frameworks for metal-plastic and metal-ceramic crowns. Working two-layer, two-stage silicone impressions.</p>	
<p>Topic 3.7. PFM (Metal-ceramic) crowns. Stages of manufacturing metal-ceramic crowns. Shade selection stage in prosthetic treatment of patients with defects of hard dental tissues. Instrumental method.</p>		
<p>Topic 3.8. PFM (Metal-ceramic) crowns. Metal-ceramic crowns. Features of clinical stages of prosthetics. Checking for adequate space for applying veneering material. Shade selection of veneering material. Correction of occlusal relationships. Possible errors at clinical and laboratory stages of manufacturing metal-ceramic crowns, their consequences, and methods of correction. Disadvantages of combined crowns. Determining the density of crown fit to the tissues of the tooth stump.</p>		
<p>Topic 3.9. Prosthetic treatment of defects of hard dental tissues with metal-free crowns. Indications and contraindications for their use. Features of tooth preparation.</p>		
<p>Topic 3.10. Prosthetics of defects of hard tissues of tooth crowns. Occlusal fitting stage. Familiarization with the CEREC computer program for virtual approximal and occlusal fitting of dental prostheses.</p>		

Section 5. Methods of prosthetic treatment of patients with defects of hard dental tissues. Clinical stage of prosthesis fixation.	Topic 5.1. Clinical stage of fixing an prosthetic construction. Temporary vs. permanent fixation; cement vs. adhesive fixation. Types of cements and materials used for fixing crowns, inlays, and post-and-core constructions. Features of adhesive fixation technique. Familiarization with methods of temporary and permanent cement fixation of crowns.	LW
	Topic 5.2. Methods of debonding dental prostheses. Familiarization with the technique for removing temporarily and permanently fixed metal-free and metal crowns, and with the technique of using spring-type crown removers.	
Section 4. Methods of prosthetic treatment of patients with total destruction of the crown of the tooth.	Topic 4.1. Complete absence (destruction) of the tooth crown: examination methods and prosthetic treatment. Types of prosthetic post-and-core constructions (anchor posts, cast post-and-core inlays, post teeth). Indications for selecting a post-and-core treatment method depending on the clinical condition of the subgingival portion of the root. Requirements that the root and its periapical tissues must meet for prosthetics. Modern technologies for manufacturing post-and-core constructions. Restoration with cast post-and-core constructions. Preparation of the subgingival portion and root canal. Direct method of modeling a wax pattern of a cast post-and-core inlay. Technique for obtaining a precision impression from a tooth root prepared for a post-and-core construction.	LW

5. 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)
<i>Self-studies</i>	An auditorium for independent work of students (can be used for seminars and consultations), equipped with a set of specialized furniture and computers with access to the EIOS.	

<p>Lab-work</p>	<p>An auditorium for laboratory work, individual consultations, current control, and intermediate certification, equipped with a set of specialized furniture and equipment.</p>	<ol style="list-style-type: none"> 1. Phantom workstation with water, electricity, compressed air, and aspiration supply, with local lighting and drawers for instruments and materials, dental handpiece, and head phantom with silicone cheeks and dental arches (models type "Zarnitsa" ChVN 28-A in the "oral cavity") – 14 units 2. Metal examination instrument set in tray – 14 units 3. Perforated metal impression tray, upper arch, size №3 – 14 units 4. Perforated metal impression tray, lower arch, size №3 – 14 units 5. Silicone bowl for mixing plaster – 14 units 6. Spatula for mixing alginate – 14 units 7. Measuring cups for powder and water (set) – 7 units 8. Rubber base №3 for upper model – 14 units 9. Rubber base №3 for lower model – 14 units 10. Plaster knife – 14 units 11. Electronic household scales, 500 g capacity – 7 units 12. Vibrating table – 7 units 13. Office scissors – 14 units 14. Safety glasses or face shield – 14 units 15. Screwdriver for attaching phantom teeth – 14 units 16. Turbine handpiece (with button lock or key for inserting/removing burs) – 14 units 17. Occlusal mirror – 14 units 18. Syringe/Saliva ejector – 14 units 19. Glass slab for mixing cement – 14 units 20. Scalpel – 14 units 21. Special silicone knife – 14 units 22. Articulator – 14 units 23. Dental laboratory handpiece – 14 units 24. Metal spatula for mixing cement – 14 units 25. Wide serpentine smoother – 14 units 26. Straight attachment for micromotor – 14 units 27. Crown removers of various types – 7 units 28. Speed-increasing attachment for micromotor – 14 units
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		<p>29. Air-driven micromotor for phantom workstation – 14 units 30. Pliers for spreading edges of a cut crown – 7 units 31. Assistina apparatus – 1 unit</p> <p>CONSUMABLES (per student):</p> <ol style="list-style-type: none"> 1. Alginate impression material – 300 g 2. Silicone impression material Belast 0 + catalyst + correcting material – 60+25+10 g 3. Medical plaster – 600 g 4. Turbine diamond fissure bur – 0.3 5. Turbine diamond tapered bur – 0.3 6. Turbine diamond torpedo bur 1350 – 0.3 7. Turbine diamond round bur, 1 mm diameter – 0.3 8. Carbide wheel bur for cutting metal stamped crowns (crown saw) – 1 9. Turbine carbide bur for cutting metal crowns – 0.3 10. Carbide bur for plastic – 1 11. Phantom tooth 3.6 with screw and washer for lower jaw model type "Zarnitsa" ChVN-A28 – 1 12. Phantom tooth 2.1 with screw and washer for upper jaw model type "Zarnitsa" ChVN-A28 – 1 13. Steel stamped crown for tooth 3.6 – 1 14. Cold-cure plastic "Belacril Tempo" – 5.0 g 15. Zinc sulfate cement (Water Dentin) for crown fixation – 5 g 16. Zinc phosphate cement for crown fixation – 5 g 17. Material for temporary fixation "Tempofix" – 0.2 g 18. Modeling wax – 5 g 19. Distilled water – 200 ml 20. Narrow medical adhesive tape – 20 cm 21. Vaseline oil – 3 ml 22. Vaseline – 5 g 23. Cotton pad – 5 pcs 24. Paper napkins – 4 pcs 25. Anhydrin – 1 ml 26. Oil for Assistina – 3 ml
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7. RESOURCES RECOMMENDED FOR COURSE STUDY

Main readings:

1. Veeraiyan, D. N. Essentials of Prosthodontics / D. N. Veeraiyan. — New Delhi : Jaypee Brothers Medical Publishers (P) Ltd, 2024. — 492 p. — ISBN 978-93-5465-819-8.
<https://www.jaypeedigital.com/eReader/chapter/9789354658198/ch9>
2. Prosthetic 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.
3. 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)
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
5. Guide to practical exercises in prosthetic dentistry for 3rd year students / edited by I. Yu. Lebedenko, V. V. Erichev, B. P. Markov / (Authors: S. D. Arutyunov, etc.) allowance. - M. : Practical Medicine, 2006. (Part I. - 432 s).

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 prosthetic dentistry [Text]: Textbook for universities. - M.: Medical Information Agency, 2003. - 128 p. : ill. - ISBN 5-89481-135-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.

Resources of the information and telecommunications network "Internet":

1. RUDN ELS and third-party ELS, to which university students have access based on concluded agreements:
 - RUDN Electronic Library System - RUDN EBS <http://lib.rudn.ru/MegaPro/Web>
 - ELS "University Library Online" <http://www.biblioclub.ru>
 - EBS Yurayt <http://www.biblio-online.ru>
 - ELS "Student Consultant" www.studentlibrary.ru
 - EBS "Lan" <http://e.lanbook.com/>
 - EBS "Trinity Bridge"

2. Databases and search engines:

- electronic fund of legal and normative-technical documentation <http://docs.cntd.ru/>
- Yandex search engine <https://www.yandex.ru/>
- Google search engine <https://www.google.ru/>
- abstract database SCOPUS <http://www.elsevierscience.ru/products/scopus/>

Educational and methodological materials for independent work of students in the development of the discipline of the discipline "Prosthodontics (simple prosthetics)":

1. Electronic versions of textbooks
2. Presentations on the topics of the classes
3. Video materials

posted in accordance with the current procedure on the discipline page in TUIS!

1. A course of lectures on the discipline "_____".
2. Laboratory workshop on the discipline "_____" (in the presence of laboratory work).
3. Guidelines for the implementation and execution of a term paper / project in the discipline "_____" (if there is a CG / CP).
- 4.

* - all educational and methodological materials for independent work of students are placed in accordance with the current procedure on the page of the discipline in TUIS!

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

Evaluation materials and point-rating system* for assessing the level of competence formation (GC-1, GPC-5, GPC-6, PC-1, PC-2, PC-6.) based on the results of mastering the discipline "Prosthodontics (simple prosthetics)" are presented in the Appendix to this Work Program of the discipline.

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:

Professor of the Department
of prosthetic dentistry

position, department

M. V. Bykova

signature

name and surname

HEAD OF EDUCATIONAL DEPARTMENT:
of prosthetic dentistry

name of department

I. Yu. Lebedenko

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**HEAD
OF HIGHER EDUCATION PROGRAMME:**
First Deputy Director of Institute

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S.N. Razumova

name and surname