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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**

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

**COURSE SYLLABUS**

**Modern Endodontics**

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course title

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

**31.05.03 Dentistry**

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field of studies / speciality code and title

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

**Dentistry**

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higher education programme profile/specialisation title

## 1. COURSE GOAL(s)

The goal of the course “Modern Endodontics” is to equip students with the knowledge of clinic, diagnosis and treatment of complicated caries; to form the clinical thinking of the future specialist; establish causal relationships between the manifestations of the disease and the patient's complaints; substantiate the diagnosis, draw up an adequate plan for examination and treatment, using modern materials and new technologies.

## 2. REQUIREMENTS FOR LEARNING OUTCOMES

Mastering the course (module) «Modern Endodontics» is aimed at the development of the following competences /competences in part: PC-1, PC-2

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

<b>Competence code</b>	<b>Competence descriptor</b>	<b>Competence formation indicators (within this course)</b>
PC-1	Being able to make an examination of a patient in order to determine a diagnosis.	PC-1.1. Making an initial examination and/or reexamination of a patient in order 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 in order 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 on the basis of the patient examination; laboratory, instrumental, and additional examinations in order to make a preliminary/final diagnosis.
PC –2	Being able to prescribe, monitor the efficacy and safety of non-drug and drug treatment	PC-2.1. Organizing the provision of emergency and urgent medical care for acute dental diseases, conditions, exacerbation of chronic diseases, which pose a threat to the patient’s life, or without obvious signs of a threat to the patient’s life.  PC-2.2. Selecting drugs and medical devices (including dental materials) for dental disease treatment assessing the possible side effects of taking medicinal drugs

		<p>PC-2.3. Consulting patients on methods for treating dental diseases drawing up a comprehensive treatment plan which justifies the most appropriate tactics and assesses possible complications caused by using this technique.</p> <p>PC-2.4. Selecting the type of local anesthesia/anesthesia and assessing the possible complications caused by using it.</p>
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### 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>Competence descriptor</b>	<b>Previous courses/modules*</b>	<b>Subsequent courses/modules*</b>
PC-1.1.	Making an initial examination and/or reexamination of a patient in order to make a preliminary diagnosis.	Immunology, Clinical Immunology Local anesthesia and anesthesiology in dentistry Propaedeutics of Dental Diseases	Health and Safety Otorhinolaryngology Obstetrics Endodontics Gerontostomatology and diseases of the oral mucosa Periodontics Oral surgery Gnathology and Temporomandibular Joint's Functional Diagnostics Prosthodontics (Simple Prosthetics) Prosthodontics of Edentulous Patient Prosthodontics (Complex Prosthetics) Maxillofacial Prosthodontics Head and Neck Diseases Pediatric Maxillofacial Dentistry Maxillofacial and Orthognathic Surgery Pediatric Dentistry Orthodontics and Pediatric Prosthodontics Medical Genetics in Dentistry Medical Rehabilitation Implantology and Reconstructive Surgery Modern Endodontics Aesthetic Restoration

			<p>Observing and Assisting a Dentist (Oral Surgery)</p> <p>Observing and Assisting a Dentist (Operative Dentistry and Endodontics)</p> <p>Observing and Assisting a Dentist (Prosthodontics)</p> <p>Observing and Assisting a Dentist (Pediatric)</p> <p>Observing and Assisting a Dentist (General Dentistry), Including Research Practice</p> <p>Preparation for and Passing the State Exam</p> <p>State Exam (Computer Testing)</p> <p>State Exam (Interdisciplinary Interview)</p>
PC-1.2.	<p>Receiving information from patients (their relatives/legal representatives); conducting a questionnaire survey of patients regarding their general health status; identifying concomitant diseases in order to make a preliminary diagnosis.</p>	<p>Immunology, Clinical Immunology</p> <p>Local anesthesia and anesthesiology in dentistry</p>	<p>Health and Safety</p> <p>Otorhinolaryngology</p> <p>Ophthalmology</p> <p>Obstetrics</p> <p>Endodontics</p> <p>Gerontostomatology and diseases of the oral mucosa</p> <p>Periodontics</p> <p>Oral surgery</p> <p>Gnathology and Temporo-Mandibular Joint's</p> <p>Functional Diagnostics</p> <p>Prosthodontics (Simple Prosthetics)</p> <p>Prosthodontics of Edentulous Patient</p> <p>Prosthodontics (Complex Prosthetics)</p> <p>Maxillofacial Prosthodontics</p> <p>Head and Neck Diseases</p> <p>Pediatric Maxillofacial Dentistry</p> <p>Maxillofacial and Orthognathic Surgery</p> <p>Pediatric Dentistry</p> <p>Orthodontics and Pediatric Prosthodontics</p> <p>Medical Genetics in Dentistry</p> <p>Medical Rehabilitation</p> <p>Implantology and Reconstructive Surgery</p> <p>Modern Endodontics</p> <p>Observing and Assisting a Dentist (Oral Surgery)</p> <p>Observing and Assisting a Dentist (Operative Dentistry and Endodontics)</p> <p>Observing and Assisting a Dentist (Prosthodontics)</p> <p>Observing and Assisting a Dentist (Pediatric)</p> <p>Observing and Assisting a Dentist (General Dentistry), Including Research Practice</p> <p>Preparation for and Passing the State Exam</p> <p>State Exam (Computer Testing)</p> <p>State Exam (Interdisciplinary Interview)</p>
PC-1.3.	<p>Detecting if patients have dentoalveolar, facial anomalies, deformities and prerequisites for</p>	<p>Immunology, Clinical Immunology</p>	<p>Health and Safety</p> <p>Endodontics</p> <p>Gerontostomatology and diseases of the oral mucosa</p> <p>Periodontics</p>

	<p>their development, defects in the crowns of teeth and dentition on the basis of the patient examination; laboratory, instrumental, and additional examinations in order to make a preliminary/final diagnosis.</p>		<p>Gnathology and Temporo-Mandibular Joint's Functional Diagnostics  Prosthodontics (Simple Prosthetics)  Prosthodontics of Edentulous Patient  Prosthodontics (Complex Prosthetics)  Pediatric Maxillofacial Dentistry  Maxillofacial Prosthodontics  Pediatric Dentistry  Orthodontics and Pediatric Prosthodontics  Medical Genetics in Dentistry  Medical Rehabilitation  Three-dimensional Computer Modeling of Teeth  Modern Endodontics  Aesthetic Restoration  Observing and Assisting a Dentist (Operative Dentistry and Endodontics) Observing and Assisting a Dentist (Prosthodontics)  Observing and Assisting a Dentist (Pediatric)  Observing and Assisting a Dentist (General Dentistry), Including Research Practice  Cone Beam Computed Tomography in the Diagnosis Planning and Evaluation of the Effectiveness of Dental Solutions  Preparation for and Passing the State Exam  State Exam (Computer Testing)  State Exam (Interdisciplinary Interview)</p>
PC-2.1.	<p>Organizing the provision of emergency and urgent medical care for acute dental diseases, conditions, exacerbation of chronic diseases, which pose a threat to the patient's life, or without obvious signs of a threat to the patient's life.</p>	<p>Local anesthesia and anesthesiology in dentistry</p>	<p>Endodontics  Gerontostomatology and diseases of the oral mucosa  Periodontics  Oral surgery  Maxillofacial and Orthognathic Surgery  Head and Neck Diseases  Pediatric Dentistry  Orthodontics and Pediatric Prosthodontics  Implantology and Reconstructive Surgery  Modern Endodontics  Observing and Assisting a Dentist (Oral Surgery)  Observing and Assisting a Dentist (Pediatric)  Observing and Assisting a Dentist (General Dentistry), Including Research Practice  Preparation for and Passing the State Exam  State Exam (Computer Testing)  State Exam (Interdisciplinary Interview)</p>
PC-2.2.	<p>Selecting drugs and medical devices (including dental materials) for dental disease treatment</p>	<p>Innovative techniques in dentistry  Local anesthesia and anesthesiology in dentistry</p>	<p>Clinical Pharmacology  Endodontics  Gerontostomatology and diseases of the oral mucosa  Periodontics  Oral surgery</p>

	assessing the possible side effects of taking medicinal drugs		Maxillofacial and Orthognathic Surgery Head and Neck Diseases Pediatric Dentistry Orthodontics and Pediatric Prosthodontics Physiotherapy of Dental Diseases Implantology and Reconstructive Surgery Modern Endodontics Aesthetic Restoration Observing and Assisting a Dentist (Oral Surgery) Observing and Assisting a Dentist (Pediatric) Observing and Assisting a Dentist (General Dentistry), Including Research Practice Preparation for and Passing the State Exam State Exam (Computer Testing) State Exam (Interdisciplinary Interview)
PC-2.3.	Consulting patients on methods for treating dental diseases drawing up a comprehensive treatment plan which justifies the most appropriate tactics and assesses possible complications caused by using this technique.	Medical Elementology Bioelements in Medicine	Endodontics Gerontostomatology and diseases of the oral mucosa Periodontics Pediatric Dentistry Orthodontics and Pediatric Prosthodontics Clinical Dentistry Modern Endodontics Observing and Assisting a Dentist (Pediatric) Observing and Assisting a Dentist (General Dentistry), Including Research Practice Preparation for and Passing the State Exam State Exam (Computer Testing) State Exam (Interdisciplinary Interview)
PC-2.4.	Selecting the type of local anesthesia/anesthesia and assessing the possible complications caused by using it.	Propaedeutics of Dental Diseases	Clinical Pharmacology Endodontics Gerontostomatology and diseases of the oral mucosa Periodontics Pediatric Dentistry Orthodontics and Pediatric Prosthodontics Modern Endodontics Observing and Assisting a Dentist (Pediatric) Observing and Assisting a Dentist (General Dentistry), Including Research Practice Preparation for and Passing the State Exam State Exam (Computer Testing) State Exam (Interdisciplinary Interview)

\* To be filled in according to the competence matrix of the higher education programme.

#### 4. COURSE WORKLOAD AND ACADEMIC ACTIVITIES

The total workload of the course "Modern Endodontics" is 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			
		10 (A)			
<i>Contact academic hours</i>	34	34			
including:					
Lectures (LC)					
Lab work (LW)	34	34			
Seminars (workshops/tutorials) (S)					
<i>Self-studies</i>	35	35			
<i>Evaluation and assessment (exam/passing/failing grade)</i>	3	3			
<b>Course workload</b>	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 Basic aspects of modern endodontics.	Topic 1.1. Endodontics or implantation: criteria for choosing a treatment method. Topic 1.2. Key stages of endodontic treatment and modern standards for each of them. Topic 1.3. Methods of endodontic treatment: indications and contraindications.	LW
Section 2 Diagnostics in endodontics.	Topic 2.1 Basic diagnostic methods. Additional diagnostic methods. Topic 2.2 Differential diagnosis of endodontic pathology. The most common diagnostic errors	LW
Section 3 Preparing the patient for endodontic treatment.	Topic 3.1 Isolation of the working field. Topic 3.2 Creating an access cavity depending on the group membership and anatomical features of the teeth. Primary navigation, creation of a "carpet path" and the formation of a root canal.	LW
Section 4 Disinfection of the root canal system.	Topic 4.1 Microbiology of the root canal system. Topic 4.2 Irrigation solutions. Techniques for activating irrigation solutions. Preparations for disinfection of root canals between visits.	LW
Section 5 Obturation of root canals.	Topic 5. Sealers and pastes. Lateral condensation of cold gutta-percha. Monopin method. Modified lateral condensation, application of gutta-percha on a carrier, vertical compaction of heated gutta-percha	LW
Section 6 Systemic pharmacotherapy in endodontics.	Topic 6.1 Non-steroidal anti-inflammatory drugs, antibiotics, immunomodulating agents, complex antihomotoxic drugs.	LW
Section 7 Correction of errors and complications in endodontic practice.	Topic 7.1 Formation of the access cavity using burs and ultrasonic tips: indications for use, quality standards and feasibility. Elimination of steps in the root canal, tactics	LW

	<p>of work with complex anatomy of the root canal system.</p> <p>Topic 7.2 The use of MTA in the closure of perforations at various levels, apexification and apexogenesis, direct and indirect pulp capping, pulpotomy.</p> <p>Topic 7.3 Re-treatment of root canals filled with plastic and hardening materials. Tactics of work in the presence of a foreign body in the root canal.</p>	
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\* - to be filled in only for **full**-time training: *LC* - lectures; *LW* - lab work; *S* - seminars.

## 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)
Lecture	A lecture hall for lecture-type classes, equipped with a set of specialised furniture; board (screen) and technical means of multimedia presentations.	
Lab-work	An auditorium for laboratory work, individual consultations, current control and intermediate certification, equipped with a set of specialized furniture and equipment.	Available - 4 phantom classes with 78 head modules with built-in jaws with artificial teeth for practicing methods of treating dental diseases. Also for practicing manual skills in preparation on the latest dental simulator with the 3D function VirT EaSy Dental (manufactured in France) - 4 modules with programs for the treatment and implantation of teeth..
Seminar	An auditorium for conducting seminar-type classes, group and individual consultations, current control and intermediate certification, equipped with a set of specialized furniture and technical means for multimedia presentations.	Technical means: TOSHIBA X 200 multimedia projector, ASUS F9E Core2 DUO T 5750 laptop, Internet access. Software: Microsoft products (OC, office suite, including MS Office/Office 365, Teams, Skype) a list of specialized equipment, stands, visual posters, etc. List of specialized equipment, stands, visual posters, etc.
Self-studies	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.	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.

\* The premises for students' self-studies are subject to **MANDATORY** mention

## 7. RESOURCES RECOMMENDED FOR COURSE STUDY

### *Main readings:*

1. Essentials of operative dentistry. Учебное пособие. М.: ГЕОТАР-МЕДИА. 2019, 512 p. Гриф УМО: регистрационный номер рецензии 571 ЭКУ от 20 декабря 2018 года. Daurova F.Yu., Makeeva M.K., Khabadze Z.S., Vayts S.V., Zoryan A.V., Bagdasarova I.V.
2. Cariology and Non-carries Lesions Daurova F. Yu., Khabadze Z.S, Makeeva V.K. Kogevnikova L.A Учебное пособие/Москва 2107
3. Tutorial guide of operative dentistry for dental students of second and third year of education, Daurova F. Yu., Khabadze Z.S., Makeeva V.K. Москва, 2016
4. Tests and tasks for students of 2nd year for discipline "Cariology". Current control. М.: РУДН. 2020, 132 с. Daurova F. Yu., Makeeva M/K/Vayts S. V., Khabadze Z.S.
5. Основы кариесологии в тестах и заданиях: тестовый контроль и оценка уровня знаний. (Fundamentals of cariesology in tests and tasks: Competency and knowledge assessment). Учебно-методические рекомендации на английском языке. М.: Изд-во РУДН. 2018, 88 с. Хабадзе З.С., Багдасарова И.В., Зорян А.В., Карнаева А.С., Кожевникова Л.А.

### *Internet sources*

1. EBS of RUDN University and third-party EBS to which university students have access on the basis of concluded agreements:
  - a. Electronic library system RUDN - EBS RUDN <http://lib.rudn.ru/MegaPro/Web>
  - b. EBS "University Library Online" <http://www.biblioclub.ru>
  - c. EBS Yurayt <http://www.biblio-online.ru>
  - d. EBS "Student Consultant" [www.studentlibrary.ru](http://www.studentlibrary.ru)
  - e. EBS "Doe" <http://e.lanbook.com/>
2. Databases and search engines:
  - a. PUBMED
  - b. SCOPUS abstract database <http://www.elsevierscience.ru/products/scopus/>
  - c. WHO Documentation Center <http://whodc.mednet.ru/>

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

1. The set of lectures on the course “Modern Endodontics”.
2. The laboratory workshop (if any) on the course “Modern Endodontics”.
3. The guidelines for writing a course paper / project (if any) on the course “Modern Endodontics”.
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- 2.1, 2.2, 5.1, 5.2, 5.3, 5.4, 5.5, 5.9, 6.1, 6.2; PC – 1.1, 1.2, 1.3, 2.1, 2.2, 2.3, 2.4) 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:**

Head of Conservative Dentistry  
Department, Associate Professor

Z.S. Khabadze

position, department

signature

name and surname

Head of Educational Process of  
Conservative Dentistry Department,  
Associate Professor

I.V. Bagdasarova

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**HEAD OF EDUCATIONAL DEPARTMENT:**

of Conservative Dentistry

Z.S. Khabadze

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**HEAD**

**OF HIGHER EDUCATION PROGRAMME:**

First Deputy Director of Institute of  
Medicine for Academic Affairs in  
the field of Dentistry

S.N. Razumova

position, department

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name and surname