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Federal State Autonomous Educational Institution of Higher Education

PEOPLES' FRIENDSHIP UNIVERSITY OF RUSSIA
RUDN University

Institute of Medicine

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

COURSE SYLLABUS

Modern Endodontics

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

2022-2023

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 : **(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**

(in accordance with the Federal State Educational Standard of Higher Education (FSES) 3++ 31.05.03 Dentistry).

Table 2.1. The list of competencies formed by students during the development of the discipline (results of the mastering of the discipline)

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

Competence code	Competence descriptor	Competence formation indicators (within this course)
GC-3		GPC-2.1. Analysing the causes of professional errors, therapeutic failures and conflict situations;
		GPC-2.2. Providing scientific arguments for and implementing recommendations aimed at improving the medical and legal training of dentists, preventing professional errors, adverse outcomes and conflict situations
GPC –5	Being able to examine patients to determine a diagnosis when solving professional tasks	GPC-5.1. Gathering anamnesis by analysing the patient's complaints, making a physical examination at a dental appointment.
		GPC-2.2. Providing scientific arguments for and implementing recommendations aimed at improving the medical and legal training of dentists, preventing professional errors, adverse outcomes and conflict situations.
		GPC-5.3. Compiling medical documentation for a dental patient in accordance with regulatory requirements
		GPC-5.4. Referring a patient to a laboratory examination in case there are medical indications in accordance with the current procedures for the provision of medical care, clinical guidelines (treatment protocols) on the provision of medical care taking into

Competence code	Competence descriptor	Competence formation indicators (within this course)
		<p>account the standards of dental care.</p> <p>GPC-5.5. Referring a patient to an instrumental examination in case there are medical indications in accordance with the current procedures for the provision of medical care, clinical guidelines (treatment protocols) on the provision of dental care taking into account the standards.</p> <p>GPC-5.9. Making a diagnosis based on the current international statistical classification of diseases and health problems.</p>
GPC –6	Being able to prescribe non-drug and drug treatment, monitor its efficacy and safety when solving professional tasks	<p>GPC-6.1. Developing a plan for dental disease treatment taking into account 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 taking into account the medical care standards.</p> <p>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</p>
PC-1	Being able to make an examination of a patient in order to determine a diagnosis.	<p>PC-1.1. Making an initial examination and/or reexamination of a patient in order to make a preliminary diagnosis.</p> <p>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.</p> <p>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.</p>
PC-2	Being able to prescribe, monitor the efficacy and	PC-2.1. Organizing the provision of emergency and urgent medical care for acute

Competence code	Competence descriptor	Competence formation indicators (within this course)
	safety of non-drug and drug treatment	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
		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.
		PC-2.4. Selecting the type of local anesthesia/anesthesia and assessing the possible complications caused by using it.

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*
GPC – 2	Being able to analyse the results of their own professional activity to prevent professional errors	1 Propedeutics 2 Local anesthesia and anesthesiology in dentistry 3 Materials Science 4 Cariology 5 Endodontics	Periodontics Gerontostomatology and diseases of the oral mucosa Implantology and reconstructive surgery of the oral cavity
GPC – 5	Being able to examine patients to	1 Propedeutics 2 Local anesthesia and	Periodontics

	determine a diagnosis when solving professional tasks	anesthesiology in dentistry 3 Materials Science 4 Cariology 5 Endodontics	
GPC – 6	Being able to prescribe non-drug and drug treatment, monitor its efficacy and safety when solving professional tasks	1 Propedeutics 2 Local anesthesia and anesthesiology in dentistry 3 Materials Science 4 Cariology 5 Endodontics	Gerontostomatology and diseases of the oral mucosa
PC –1	Being able to make an examination of a patient in order to determine a diagnosis.	1. Prevention and communal dentistry 2. Propaedeutics 3. Local anesthesia and anesthesiology in dentistry 4. Material Science 5 Cariology 6 Endodontics 7 Periodontology 8 Dental prosthetics (simple prosthetics) 9 Prosthetics with no teeth 10 Oral surgery 11 3D Technologies in dentistry 12 Dental Assistant practice (dental surgeon) 13 Dental Assistant Practice (therapeutic dentist) 14 Dental Assistant Practice (prosthetic dentist)	Oral and Maxillofacial Surgery Dental prosthetics Head and Neck Diseases Implantology and reconstructive surgery of the oral cavity
PC-2	Being able to prescribe, monitor the efficacy and safety of non-drug and drug treatment-	1. Prevention and communal dentistry 2. Propaedeutics 3. Local anesthesia and anesthesiology in dentistry 4. Material Science 5 Cariology 6 Endodontics	Periodontics Gerontostomatology and diseases of the oral mucosa Implantology and reconstructive surgery of the oral cavity Oral and Maxillofacial Surgery

		7 Dental prosthetics (simple prosthetics)	Dental prosthetics Head and Neck Diseases
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4. COURSE WORKLOAD AND ACADEMIC ACTIVITIES

The total workload of the course 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			
<i>Contact academic hours</i>					
including:					
Lectures (LC)					
Lab work (LW)					
Seminars (workshops/tutorials) (S)	30	30			
<i>Self-studies</i>	15	15			
<i>Evaluation and assessment (exam/passing/failing grade)</i>	9	9			
Course workload	academic hours	72	72		
	credits	2	2		

5. COURSE CONTENTS

Table 5.1. Course contents and academic activities types

Type of academic activities	Total academic hours	Semesters/training modules
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.	LC, IW
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	LC, IW
Section 3 Preparing	Topic 3.1 Isolation of the working	LC, IW

the patient for endodontic treatment.	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.	
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.	LC, IW
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	LC, IW
Section 6 Systemic pharmacotherapy in endodontics.	Topic 6.1 Non-steroidal anti-inflammatory drugs, antibiotics, immunomodulating agents, complex antihomotoxic drugs.	LC, IW
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 of work with complex anatomy of the root canal system. Topic 7.2 The use of MTA in the closure of perforations at various levels, apexification and apexogenesis, direct and indirect pulp capping, pulpotomy. 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.	LC, IW

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 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	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.	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.

7. RESOURCES RECOMMENDED FOR COURSE STUDY

1. software_ - there is Microsoft office 2012 software for practical training
2. resources of the information and telecommunication network "Internet":
3. 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
 - e. EBS "Doe" <http://e.lanbook.com/>
4. Databases and search engines:
 - a. PUBMED
 - b. SCOPUS abstract database <http://www.elsevierscience.ru/products/scopus/>
 - c. WHO Documentation Center <http://whodc.mednet.ru/>
5. *Main readings:*
 - a. Essentials of operative dentistry. Учебное пособие. М.: ГЕОТАР-МЕДИА. 2019, 512 р. 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.
 - b. Cariology and Non-carious Lesions Daurova F. Yu., Khabadze Z.S, Makeeva V.K. Kogevnikova L.A Учебное пособие/Москва 2107
 - c. 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
 - d. 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.
 - e. 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.

*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).

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position, department

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name and surname

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