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ФИО: Ястребов Олег Александрович  
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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**

**Operative Dentistry: Cariology and Hard Tissues Diseases**

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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

**2024**

## 1. COURSE GOAL(s)

The goal of the course "**Cariology and diseases of hard tooth tissues**" is to equip students with the knowledge about diseases of hard tooth tissues with outpatient dental therapeutical care and a set of measures aimed at the prevention of caries and diseases of hard tooth tissues.

## 2. REQUIREMENTS FOR LEARNING OUTCOMES

Mastering the course (module) «**Cariology and diseases of hard tooth tissues**» is aimed at the development of the following competences /competences in part: GPC 2, 5, 6; PC – 1,2 .

*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>
GPC – 2	Being able to analyse the results of their own professional activity to prevent professional errors	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-5.2. Formulating a preliminary diagnosis and drawing up a plan for laboratory and instrumental examinations of a dental patient
		GPC-5.3. Compiling medical documentation for a dental patient in accordance with regulatory requirements
		GPC-5.4. 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 account the standards of dental care.
		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

Competence code	Competence descriptor	Competence formation indicators (within this course)
		<p>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 safety of non-drug and drug treatment	<p>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.</p> <p>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>

Competence code	Competence descriptor	Competence formation indicators (within this course)
		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.
		PC-2.5. Conducting a specialized appointment for adults and/or children, monitoring the course of treatment of caries, non-carious dental diseases, pulpitis, periodontal disease, periodontitis, jawbone tissue, peripheral nervous system of the maxillofacial area, temporomandibular joint, salivary glands, diseases of the mucous tunic of mouth, with the exception of precancers, using modern treatment methods approved for use in medical practice

### 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	1 Endodontics 2 Periodontics 3 Local pain relief and anesthesiology in dentistry 4 Dental prosthetics (simple prosthetics) 5 Prosthetics with no teeth 6 Oral surgery

			<p>7 Gerontostomatology and diseases of the oral mucosa</p> <p>8 Oral and Maxillofacial Surgery</p> <p>9 Dental prosthetics</p> <p>10 Head and Neck Diseases</p> <p>11 Implantology and reconstructive surgery of the oral cavity</p>
GPC –5	Being able to examine patients to determine a diagnosis when solving professional tasks	<p>1 Propedeutics</p> <p>2 Local anesthesia and anesthesiology in dentistry</p> <p>3 Materials Science</p>	<p>1 Endodontics</p> <p>2 Periodontics</p> <p>3 Local pain relief and anesthesiology in dentistry</p> <p>4 Dental prosthetics (simple prosthetics)</p> <p>5 Prosthetics with no teeth</p> <p>6 Oral surgery</p> <p>7 Gerontostomatology and diseases of the oral mucosa</p> <p>8 Oral and Maxillofacial Surgery</p> <p>9 Dental prosthetics</p> <p>10 Head and Neck Diseases</p> <p>11 Implantology and reconstructive surgery of the oral cavity</p>
GPC –6	Being able to prescribe non-drug and drug treatment, monitor its efficacy and safety when solving professional tasks	<p>1 Propedeutics</p> <p>2 Local anesthesia and anesthesiology in dentistry</p> <p>3 Materials Science</p>	<p>1 Endodontics</p> <p>2 Periodontics</p> <p>3 Local pain relief and anesthesiology in dentistry</p> <p>4 Dental prosthetics (simple prosthetics)</p> <p>5 Prosthetics with no teeth</p> <p>6 Oral surgery</p>

			<p>7 Gerontostomatology and diseases of the oral mucosa</p> <p>8 Oral and Maxillofacial Surgery</p> <p>9 Dental prosthetics</p> <p>10 Head and Neck Diseases</p> <p>11 Implantology and reconstructive surgery of the oral cavity</p>
PC –1	Being able to make an examination of a patient in order to determine a diagnosis.	<p>1. Prevention and communal dentistry</p> <p>2. Propaedeutics</p> <p>3. Local anesthesia and anesthesiology in dentistry</p> <p>4. Material Science</p>	<p>1. Endodontics</p> <p>2 Periodontics</p> <p>3Local pain relief and anesthesiology in dentistry</p> <p>4 Dental prosthetics (simple prosthetics)</p> <p>5 Prosthetics with no teeth</p> <p>6 Oral surgery</p> <p>7 Gerontostomatology and diseases of the oral mucosa</p> <p>8 Oral and Maxillofacial Surgery</p> <p>9 Dental prosthetics</p> <p>10 Head and Neck Diseases</p> <p>11 Implantology and reconstructive surgery of the oral cavity</p>
PC –2	Being able to prescribe, monitor the efficacy and safety of non-drug and drug treatment	<p>1. Prevention and communal dentistry</p> <p>2. Propaedeutics</p> <p>3. Local anesthesia and anesthesiology in dentistry</p> <p>4. Material Science</p>	<p>1. Endodontics</p> <p>2 Periodontics</p> <p>3Local pain relief and anesthesiology in dentistry</p> <p>4 Dental prosthetics (simple prosthetics)</p> <p>5 Prosthetics with no teeth</p> <p>6 Oral surgery</p> <p>7 Gerontostomatology and diseases of the oral mucosa</p>

			8 Oral and Maxillofacial Surgery 9 Dental prosthetics 10 Head and Neck Diseases 11 Implantology and reconstructive surgery of the oral cavity
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\* 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 is 8 credits (288 academic hours).

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

Type of educational work		Total hours	Semesters			
			IV	V	VI	
<i>Contact academic hours</i>		176	54	68	54	
including:		-	-	-		
Lectures (LC)						
Lab work (LW)						
Seminars (workshops/tutorials) (S)		176	54	68	54	
Of them in interactive form (IF)		10	3	4	3	
<i>Self-studies</i>		112	34	40	38	
<i>Evaluation and assessment (exam/passing/failing grade)</i>						
<b>Course workload</b>	academic hours	288				
	credits	8	2	3	3	

\* 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
Organization and equipment of the dental office.	Norms and requirements for the organization of a dental office. Infection control. Ergonomics. Deontological principles in the treatment of caries and non-carious lesions of hard tissues of teeth.	S
Examination of a dental patient.	Medical card of the dental patient. Methods of examination of the dental patient: basic, additional.	S

Course module title	Course module contents (topics)	Academic activities types
Etiology, pathogenesis of dental caries.	The structure of hard tissues of teeth. Determination of tooth decay. Etiology, pathogenesis of dental caries. Classification.	S
Tooth decay.	Caries of enamel. Dental caries. Caries of cement. Clinical picture, diagnostic methods, differential diagnostics.	S
Methods of treatment of dental caries.	A choice of a technique of treatment of caries of enamel, dentin, cement. Materials and means for the treatment of dental caries.	S
Non-cariou lesions of hard tissues of teeth	Non-cariou lesions of the teeth that occur before teething: hypoplasia, hyperplasia, fluorosis, hereditary tooth structure disorders; symptoms of late congenital syphilis; change in color during the formation of teeth. Non-cariou lesions of teeth arising after their eruption: tooth pigmentation and plaque, erosion of hard tissues, wedge-shaped defect, erosion of teeth, hyperesthesia, tooth trauma. Etiology, pathogenesis. Clinical picture, diagnosis, differential diagnosis, treatment.	S
Dental Bleaching	Tooth discoloration. Dental Bleaching	S
Restoration of teeth.	Determination of indications for the restoration of teeth. Stages of aesthetic restoration. An integrated approach to the treatment of dental caries and non-cariou lesions of hard tooth tissues.	S
Mistakes and complications in the diagnosis and treatment of diseases of hard tissues of teeth.	Identification, elimination and prevention of errors and complications in the diagnosis and treatment of diseases of hard tissues of teeth.	S

\* - 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	A classroom for laboratory work, individual consultations, current and mid-term assessment; equipped with a set of specialised furniture and machinery.	List of specialised laboratory equipment, machinery, stands, etc.
Seminar	A classroom for conducting seminars, group and individual consultations, current and mid-term assessment; equipped with a set of specialised furniture and technical means for multimedia presentations.	List of specialised equipment, stands, visual posters, etc.
Computer Lab	A classroom for conducting classes, group and individual consultations, current and mid-term assessment, equipped with personal computers (in the amount of ___ pcs), a board (screen) and technical means of multimedia presentations.	List of specialised software installed on computers for mastering the discipline
Self-studies	A classroom for independent work of students (can be used for seminars and consultations), equipped with a set of specialised furniture and computers with access to the electronic information and educational environment.	

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

## 7. RESOURCES RECOMMENDED FOR COURSE STUDY

### *Main readings:*

software\_ - there is Microsoft office 2012 software for practical training

1. resources of the information and telecommunication network "Internet":
2. 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/>
3. Databases and search engines:

- a. PUBMED
- b. SCOPUS abstract database [http://www.elsevier.com/locate/scopus/](http://www.elsevier.com/locate/scopus)
- c. WHO Documentation Center <http://whodc.mednet.ru/>

4. Literature:

- 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-caries 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 “Operative dentistry cariology and hard tissues diseases”
- 2. The laboratory workshop (if any).on the course “Operative dentistry cariology and hard tissues diseases”
- 3. The guidelines for writing a course paper / project (if any) on the course “Operative dentistry cariology and hard tissues diseases”
- 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, 5, 6, PC – 1, 2 ) 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 Educational Process  
of Conservative Dentistry  
Department, Associate  
Professor

\_\_\_\_\_

position, department

Associate Professor of  
Conservative Dentistry  
Department

\_\_\_\_\_

position, department

signature

signature

I.V. Bagdasarova

\_\_\_\_\_

name and surname

M.K. Makeeva

\_\_\_\_\_

name and surname

**HEAD OF EDUCATIONAL DEPARTMENT:**

Head of Conservative  
Dentistry Department,  
Associate Professor

\_\_\_\_\_

name of department

signature

Z.S. Khabadze

\_\_\_\_\_

name and surname

**HEAD  
OF HIGHER EDUCATION PROGRAMME:**

Deputy Director of MI for  
Academic Affairs

\_\_\_\_\_

position, department

signature

S.N. Razumova

\_\_\_\_\_

name and surname