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Federal State Autonomous Educational Institution of Higher Education

PEOPLES' FRIENDSHIP UNIVERSITY OF RUSSIA

RUDN University

Medical Institute

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

COURSE SYLLABUS

Cariology and diseases of hard tooth tissues

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:**

Specialty

higher education programme profile/specialisation title

1. THE GOALS OF MASTERING THE DISCIPLINE

The goal of mastering the academic discipline "**Cariology and diseases of hard tooth tissues**" is the training of a dentist who can provide patients with 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.. *The objectives of the discipline are:*

- development of diagnostic methods used in the examination of patients with diseases of hard tissues of teeth;
- mastering the planning of therapeutic treatment of patients with diseases of dental hard tissues;
- Formation of theoretical and practical skills in the therapeutic treatment of patients with diseases of hard tissues of teeth in outpatient-polyclinic conditions;
- development of detection, elimination and prevention of possible complications in the treatment of diseases of hard tissues of teeth.
- training of students in the preparation of medical records (medical records of inpatient or outpatient patients, incapacity cards, statistical coupons, etc.);
- Familiarization of students with the principles of organization and operation of treatment and prevention institutions of various types;
- training of students in the provision of first aid to dental patients in the event of emergence of emergency conditions;
- the formation of communication skills with the patient, taking into account ethics and deontology, depending on the revealed pathology and characterological features of patients;
- the formation of the student's communication skills with the team.

2. REQUIREMENTS to LEARNING OUTCOMES

The mastering of the discipline «**Cariology and diseases of hard tooth tissues**» is aimed at the formation of the following competencies of students:

General Professional Competences (GPC)- 2, 5, 6

Professional Competences (PC) – 1,2

(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)

Competences	Competence name	General Professional Competence Achievement Indicator
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<p>GPC –6 (6.1,6.2)</p>	<p>Being able to prescribe non-drug and drug treatment, monitor its efficacy and safety when solving professional tasks</p>	<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>
<p>Professional Competence PC-1 (1.1,1.2,1.3)</p>	<p>Being able to make an examination of a patient in order to determine a diagnosis.</p>	<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>
<p>PC –2 (2.1,2.2, 2.3, 2.4, 2.5)</p>	<p>Being able to prescribe, monitor the efficacy and safety of non-drug and drug treatment</p>	<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</p>

		<p>dental disease treatment assessing the possible side effects of taking medicinal drugs</p> <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> <p>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</p>
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3. THE COURSE IN THE HIGHER EDUCATION PROGRAMME STRUCTURE

The course «**Cariology and diseases of hard tooth tissues**» refers to the Compulsory Disciplines of block B1 of the Higher Education Program Curriculum.

Within the framework of the Educational Program, students also master other disciplines and/or practices that contribute to expected learning outcomes of the course «**Cariology and diseases of hard tooth tissues**».

Table 3.1. List of Higher Education Program disciplines that contribute to expected learning outcomes

2

№	Code and name of competence	Previous disciplines	Subsequent disciplines (groups of disciplines)
General cultural competences			
General professional competences			
	GPC – 2(2.1; 2.2), GPC –5(5.1,5.2,5.3, 5.4, 5.5,5.9), GPC –6 (6.1,6.2)	1 Propedeutics 2 Local anesthesia and anesthesiology in dentistry 3 Materials Science	1 Endodontics 2 Periodontics 3Local pain relief and anesthesiology in dentistry 4 Dental prosthetics (simple prosthetics) 5 Prosthetics with no teeth 6 Oral surgery

			7 Gerontostomatology and diseases of the oral mucosa 8 Oral and Maxillofacial Surgery 9 Dental prosthetics 10 Head and Neck Diseases 11 Implantology and reconstructive surgery of the oral cavity
Professional competence			
	PC –1(1.1,1.2,1.3), PC –2 (2.1,2.2, 2.4, 2.5)	1. Prevention and communal dentistry 2. Propaedeutics 3. Local anesthesia and anesthesiology in dentistry 4. Material Science	1. Endodontics 2 Periodontics 3Local pain relief and anesthesiology in dentistry 4 Dental prosthetics (simple prosthetics) 5 Prosthetics with no teeth 6 Oral surgery 7 Gerontostomatology and diseases of the oral mucosa 8 Oral and Maxillofacial Surgery 9 Dental prosthetics 10 Head and Neck Diseases 11 Implantology and reconstructive surgery of the oral cavity

4. THE DISCIPLINE WORKLOAD AND ACADEMIC ACTIVITIES

The total workload of the discipline "**Cariology and diseases of hard tooth tissues**" is equal to **8 credits**.

Table 4.1. Types of academic activities during the period of the HE program mastering

Type of educational work	Total hours	Semesters			
		IV	V	VI	
Classroom activities (total)	176	54	68	54	
among them	-	-	-		
<i>Lectures</i>					
<i>Practical classes (PC)</i>	176	54	68	54	
<i>Seminars (S)</i>					
<i>Laboratory classes (LC)</i>					
Of them in interactive form (IF)	10	3	4	3	
Independent work (total)	112	34	40	38	
Total workload of disciplines	ac. hours 288				
	credits 8	2	3	3	

5. THE COURSE CONTENTS AND ACADEMIC ACTIVITIES

Table 5.1. The content of the discipline

№	Section name disciplines	Section contents
1	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.
2	Examination of a dental patient.	Medical card of the dental patient. Methods of examination of the dental patient: basic, additional.
3	Etiology, pathogenesis of dental caries.	The structure of hard tissues of teeth. Determination of tooth decay. Etiology, pathogenesis of dental caries. Classification.
4	Tooth decay.	Caries of enamel. Dental caries. Caries of cement. Clinical picture, diagnostic methods, differential diagnostics.
5	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.
6	Non-carious lesions of hard tissues of teeth	Non-carious 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-carious 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.
7	Dental Bleaching	Tooth discoloration. Dental Bleaching
8	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-carious lesions of hard tooth tissues.
9	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.

Table 5.2. The types of academic activities

№	Name of discipline section	L	LC	CPC	Total hours
1	Organization and equipment of the dental office.		30	14	44
2	Examination of a dental patient.		24	20	44
3	Etiology, pathogenesis of dental caries.		14	10	24
4	Diagnosis of tooth decay.		24	15	39
5	Methods of treatment of dental caries.		30	15	45
6	Non-carious lesions of hard tissues of teeth. Non-carious lesions of hard tissues of teeth after eruption		24	10	34

7	Dental Bleaching		10	8	18
8	Restoration of teeth.		10	10	20
9	Errors and complications in the diagnosis and treatment of diseases of hard tissues of teeth.		10	10	20

Table 5.3. Laboratory classes

№	The name of the practical classes of the discipline	The amount per semester		
		IV	V	VI
1.	Organization of the work of the dental therapeutic cabinet. Norms and requirements for the organization of dental care. Equipping a dental office.	9		
2.	Ergonomics. Ethics and deontology in dentistry. Basic principles of asepsis in therapeutic dentistry. Infection control	9		
3	Medical documentation. Medical card of the dental patient. Sections of the medical map, the rules for filling them. Methods of examination of the dental patient: basic (interrogation, external examination, examination of the oral cavity), index assessment of the condition of the teeth, periodontium.	9		
4.	Special examination methods for diagnosis of initial caries and non-carious lesions: vital staining, transillumination, laser fluorescence, etc. Additional examination methods: electric pulp test, X-ray study, laboratory methods.	9		
5.	Structure and function of organs and tissues of the oral cavity. Mucous membrane of the oral cavity. Saliva and oral fluid. Saliva composition, saliva function. Protective mechanisms of the oral cavity.	9		
6.	Theories of the origin of dental caries. Etiology of dental caries. Pathogenesis. Classification. Prevalence and intensity of dental caries. Risk factors. Caries resistance.	9		
1.	Modern restorative materials, cavity linings. Adhesive systems		4	
2.	Anesthesia. Anesthetics. Urgent cases		4	
3.	Patient examination methods. Hygiene indices. Outpatient card scheme. Scheme of the course history of the disease.		8	
4.	Oral fluid. Dental deposits, methods of their removal. Tooth decay. Theories of the origin of dental caries.		4	
5.	Tooth decay. Etiology and pathogenesis of the disease. Prevalence and intensity of dental caries. Caries resistance. Classifications (ICD-10).		4	
6.	Caries of enamel. The stage of the chalky spot. Special examination methods for the diagnosis of initial caries: vital staining, transillumination, laser fluorescence, etc.		4	
7.	Caries of enamel (superficial caries). Clinic, diagnostics of enamel caries. Methods of treatment and prevention.		4	
8.	Caries of dentin. Clinic, diagnosis, prevention		4	
9.	Caries of cement. Clinic, diagnosis, prevention and treatment		4	
10.	Fissure caries. Modern methods of diagnosis, treatment of disease prevention.		4	

11.	Treatment methods. Insulating and medicated pads. Features of the treatment of caries of occlusal and proximal surfaces. The choice of filling material.		8	
12.	Tooth restoration. Stages of the adhesive technique.		4	
13.	Errors and complications in the diagnosis and treatment of dental caries.		4	
14.	Protection of course history of the disease.		4	
15.	Current testing "Caries". Test tasks.		4	
1.	Non-carious lesions of teeth arising during follicular development: hypoplasia, enamel and dentine hyperplasia. Etiology, pathogenesis, clinic, diagnostics, differential diagnostics, treatment.			3
2.	Enamel and dentin hyperplasia. Etiology, pathogenesis, pathological changes in tooth tissues, classification, clinical picture, diagnosis, differential diagnosis, treatment, drugs for complex remineralizing therapy, oral hygiene features, prevention.			3
3.	Endemic fluorosis. Etiology, pathogenesis, clinic, diagnostics, differential diagnostics, treatment.			3
4.	Anomalies of development, teething, discoloration.			3
5.	Hereditary disorders of development of hard tissues of the tooth. Imperfect amelogenesis. Imperfect dentinogenesis. Stenton-Capdepona Syndrome. Imperfect osteogenesis. Etiology, clinic, diagnostics, differential diagnostics, treatment.			3
6.	Non-carious lesions of teeth arising after their eruption. Traumatic lesions of the teeth (tooth contusion, dislocation complete, incomplete, impacted, fracture of the crown and root of the tooth, combined tooth trauma). Etiology, peculiarities of patient examination, classification, pathological changes, clinical picture, diagnosis, differential diagnosis, treatment, features of oral hygiene.			3
7.	Attrition of hard tooth tissues. Etiology, pathological changes in tooth tissues, classification, clinical picture, diagnosis, differential diagnosis, treatment, features of oral hygiene			3
8.	Hyperesthesia. Etiology, classification, clinic, diagnosis, differential diagnosis, treatment, features of oral hygiene			3
9.	Necrosis of hard tissues of the tooth (acidic, cervical, drug and toxic, radiation, computer). Etiology, pathogenesis, pathological changes in tooth tissues, classification, clinical picture, diagnosis, differential diagnosis, treatment, features of oral hygiene.			3
10.	Erosion of dental hard tissues. Etiology, classification, clinic, diagnosis, differential diagnosis, treatment, features of oral hygiene. Wedge-shaped defect. Etiology, pathological changes in tooth tissues, classification, clinical picture, diagnosis, differential diagnosis, treatment, features of oral hygiene.			3
13.	Wedge-shaped defect. Etiology, pathological changes in tooth tissues, classification, clinical picture, diagnosis, differential diagnosis, treatment, features of oral hygiene.			3
14.	Discoloration of teeth.			5

	Teeth whitening. Review of bleaching methods. Side effects of whitening drugs. Long-term whitening results			
15.	Vital bleaching			5
16.	Internal (devital) bleaching. Professional bleaching			5
15.	Current test control under the section "Non-cariou lesions of teeth". Protection of medical history under the section of non-cariou dental lesions			3
16.	Methods for the treatment of caries and non-cariou lesions of hard dental tissues, using various techniques of preparation, the choice of filling material.			3
17.	Restoration of teeth. Determination of the need for the restoration of teeth. Anatomical features of incisors and canines, reproduced in the restoration. Colour. Methods for determining color.			3
18.	Boundary control on the discipline "dental caries and diseases of hard dental tissues"			3
	Total: 176	54	68	54

6. CLASSROOM EQUIPMENT AND TECHNOLOGY SUPPORT REQUIREMENT

To conduct classes in the discipline "Cariesology and diseases of hard tissues of teeth" are used rooms 254, 255, 241,355 - phantom classes (Miklukho-Maklaya st., 10a), equipped with dental units - a dentist module and a patient simulator,

there are dental instruments, consumables, personal protective equipment. For various sections of the discipline, presentations, situational tasks, business games, test tasks have been created and applied. Classrooms 255,254 have a multimedia projector; personal computer, audio and video materials.

For the implementation of the educational and therapeutic process used classrooms and treatment rooms, equipped with special equipment (dental units, portable drill, phantoms, models) and the necessary materials (tools, medicines, filling materials). Each audience has a multimedia complex. Each audience has a multimedia complex (laptop, beamer).

7. RECOMMENDED SOURSES for COURSE STUDIES

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. Literature:
 - a. 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.

- 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.

8. EVALUATION TOOLKIT AND GRADE SYSTEM FOR ASSESSMENT

Evaluation Toolkit (ET) and a point-rating system (PRS)* for assessment the level of competence formation (part of competencies) based on the results of mastering the discipline "Cariesology and diseases of hard tissues of teeth" are presented in the Appendix to this Work Program of the discipline.

* - ET and PRS are formed on the basis of the requirements of the relevant local regulatory act of the RUDN

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