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Federal State Autonomous Educational Institution of Higher Education
PEOPLES' FRIENDSHIP UNIVERSITY OF RUSSIA NAMED AFTER
PATRICE LUMUMBA
RUDN University named after Patrice Lumumba

Medical Institute

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

COURSE SYLLABUS

INNOVATIVE TECHNOLOGIES IN DENTISTRY

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

Goals and objectives of the discipline: Dentistry is one of the fastest growing branches of medicine. The emergence of new technologies in dentistry contributes to the development of science: research and laboratory experiments. Formation of students' ability to use modern innovative methods of diagnosis and treatment of dental pathology is the main goal of this discipline.

2. REQUIREMENTS to LEARNING OUTCOMES

The mastering of the discipline «**Innovative technologies in dentistry**» is aimed at the formation of the following competencies of students:

General Professional Competences (GPC)- 8

Professional Competences (PC) – 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
General Professional Competence GPC – 8 (8.1; 8.2),	Being able to use main physical and chemical, mathematic and scientific notions and methods when dealing with professional tasks.	GPC-8.1. Applying basic fundamental physical and chemical knowledge to deal with professional tasks. GPC-8.2. Using applied natural science knowledge to deal with professional tasks.
Professional Competence PC –2 (2.2)	Being able to prescribe, monitor the efficacy and safety of non-drug and drug treatment	PC-2.2. Selecting drugs and medical devices (including dental materials) for dental disease treatment assessing the possible side effects of taking medicinal drugs..

3. THE COURSE IN THE HIGHER EDUCATION PROGRAMME STRUCTURE

The course «**Innovative technologies in dentistry**» 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 «Periodontology».

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

No	Code and name of competence	Previous disciplines	Subsequent disciplines (groups of disciplines)
General professional competences			
GPC-8.1.	Applying basic fundamental physical and chemical knowledge to deal with professional tasks.	Mathematics Physics Science of Dental Materials Chemistry of Biogenic Elements	Obstetrics Physiotherapy of Dental Diseases Preparation for and Passing the State Exam State Exam (Computer Testing) State Exam (Interdisciplinary Interview)
GPC-8.2.	Using applied natural science knowledge to deal with professional tasks.	Mathematics Physics Biology	Obstetrics Physiotherapy of Dental Diseases Dental Modeling of Teeth Preparation for and Passing the State Exam State Exam (Computer Testing) State Exam (Interdisciplinary Interview)
Professional Competence			
PC-2.2.	Selecting drugs and medical devices (including dental materials) for dental disease treatment assessing the possible side effects of taking medicinal drugs	Innovative Techniques in dentistry Local anesthesia and anesthesiology in dentistry	Clinical Pharmacology 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 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)

4. THE DISCIPLINE WORKLOAD AND ACADEMIC ACTIVITIES

The total workload of the discipline "**Innovative technologies in dentistry**" is equal to **2** credits.

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

Type of educational work	Total hours	Semesters			
		III			
Classroom activities (total)	34	34			
among them	-	-			
<i>Lectures</i>					
<i>Practical classes (PC)</i>					
<i>Seminars (S)</i>					
<i>Laboratory classes (LC)</i>	34	34			
Of them in interactive form (IF)	3	3			
Independent work (total)	36	36			
Total workload of disciplines	ac. hours 72				
	credits 2				

Practical classes/seminars are not provided.

5. THE COURSE CONTENTS AND ACADEMIC ACTIVITIES

Table 5.1. The content of the discipline

№	Section name disciplines	Section contents
1	Noninvasive technologies in the treatment	Method of chemical-mechanical removal of carious lesions. Carisolv system.
		Dental preparation Saforaid for the treatment of dental caries.
		Air-abrasive and water-abrasive methods of treatment of dental diseases.
		The method of treatment of dental caries - ozone therapy.
		Remotherapy. Deep fluoridation of hard tooth tissues.
2	The infiltration method	The infiltration method-ICON.
3	Minimally invasive technologies	Principles of minimal invasive techniques.
		Diagnostic fissure preparation.
		fissurotomy
		Tunnel preparation.
4	A.R.T. method of treatment of teeth	Ultrasonic preparation of dental hard tissues.
		Laser preparation of hard tooth tissues.
		Indications and contraindications for the use of A.R.T. techniques.
		Hand tools used for minimally invasive tooth treatment techniques.
		Filling materials: glass ionomer cements, compomers, flowable composites.
		Errors and complications when using minimally invasive techniques.

Table 5.2. The types of academic activities

№	Name of discipline section	L	LC	CPC	Total hours
1	Non-invasive treatments		10	10	20
2	Method of infiltration of hard tissues of the tooth		2	9	11
3	Minimally invasive technologies.		12	9	21

4	A.R.T. method of dental treatment.		10	10	20
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Table 5.3 Laboratory classes

№	The name of the practical classes of the discipline	The amount per semester		
		III		
1	Method of chemical-mechanical removal of carious lesions. Carisolv system.	2		
2	Dental preparation Saforaïd for the treatment of dental caries.	2		
3	Air-abrasive and water-abrasive methods of treatment of dental diseases.	2		
4	The method of treatment of dental caries - ozone therapy.	2		
5	Remotherapy. Deep fluoridation of hard tooth tissues.	4		
6	The infiltration method-ICON.	4		
7	Principles of minimal invasive techniques. Diagnostic fissure preparation. fissurotomia	4		
8	Tunnel preparation.	2		
9	Ultrasonic preparation of dental hard tissues.	2		
10	Laser preparation of hard tooth tissues.	2		
11	Indications and contraindications for the use of A.R.T. techniques. Hand tools used for minimally invasive tooth treatment techniques. Filling materials: glass ionomer cements, compomers, flowable composites.	4		
12	Errors and complications when using minimally invasive techniques.	4		
	Total: 34	34		

6. CLASSROOM EQUIPMENT AND TECHNOLOGY SUPPORT REQUIREMENT

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. Modern Operative Dentistry, ed. Carlos Rocha Gomes Torres, ISBN 978-3-030-31772-0 (eBook), Springer.

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 " Innovative technologies in dentistry " 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

DEVELOPERS:

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Head of Educational Process of Conservative Dentistry Department, Associate Professor	_____ signature	I.V. Bagdasarova
Associate Professor of Conservative Dentistry Department	_____ signature	M.K. Makeeva

HEAD OF DEPARTMENT:

Head of Conservative Dentistry Department, Associate Professor	_____	Z.S. Khabadze
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HEAD OF HIGHER EDUCATIONAL PROGRAMME:

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