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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

educational division (faculty/institute/academy) as higher education programme 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:

Dentistry

higher education programme profile/specialisation title

2024-2025

1. COURSE GOAL(s)

The goal of the course “Innovative Technologies in Dentistry” is to equip students with the knowledge 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 FOR LEARNING OUTCOMES

Mastering the course (module) “Innovative Technologies in Dentistry” is aimed at the development of the following competences /competences in part: (GPC)- 8, (PC) – 2.

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

Competence code	Competence descriptor	Competence formation indicators (within this course)
GPC – 8	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.
PC –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 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-8.1.	Applying basic fundamental physical and	Mathematics Physics Science of Dental Materials	Obstetrics Physiotherapy of Dental Diseases Preparation for and Passing the State Exam State Exam (Computer Testing)

	chemical knowledge to deal with professional tasks.	Chemistry of Biogenic Elements	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)
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)

* 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 “**Innovative technologies in dentistry**” is 2 credits (72 academic hours).

Type of academic activities		Total academic hours	Semesters/training modules			
			3			
<i>Contact academic hours</i>		34	34			
including:						
Lectures (LC)						
Lab work (LW)		34	34			
Seminars (workshops/tutorials) (S)						
<i>Self-studies</i>		29	29			
<i>Evaluation and assessment (exam/passing/failing grade)</i>		9	9			
Course workload	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
Module 1 Noninvasive technologies in the treatment	Method of chemical-mechanical removal of carious lesions. Carisolv system.	LW
	Dental preparation Saforaïd for the treatment of dental caries.	LW
	Air-abrasive and water-abrasive methods of treatment of dental diseases.	LW
	The method of treatment of dental caries - ozone therapy.	LW
	Remotherapy. Deep fluoridation of hard tooth tissues.	LW
Module 2 The infiltration method	The infiltration method-ICON.	LW
Module 3 Minimally invasive technologies	Principles of minimal invasive techniques. Diagnostic fissure preparation. Fissurotomia	LW
	Tunnel preparation.	LW
	Ultrasonic preparation of dental hard tissues.	LW
	Laser preparation of hard tooth tissues.	LW
Module 4 A.R.T. method of treatment of teeth	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.	LW
	Errors and complications when using minimally invasive techniques.	LW

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.	

7. RESOURCES RECOMMENDED FOR COURSE STUDY

Main readings:

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

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/>

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

1. The set of lectures on the course “Innovative Technologies in Dentistry”.
2. The laboratory workshop (if any) on the course “Innovative Technologies in Dentistry”.
3. The guidelines for writing a course paper / project (if any) on the course “Innovative Technologies in Dentistry”.
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 - 8, PC – 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 Conservative Dentistry

Department, Associate Professor

Z.S. Khabadze

position, department

signature

name and surname

Head of Educational Process of

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I.V. Bagdasarova

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HEAD OF EDUCATIONAL DEPARTMENT:

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