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

MEDICAL INFORMATICS

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 "Medical Informatics" is to equip students with the basic knowledge of modern computer and information technologies in general medicine, health care and dentistry.

2. REQUIREMENTS FOR LEARNING OUTCOMES

Mastering the course (module) "Medical Informatics" is aimed at the development of the following competences /competences in part: (GPC)-13.

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

Competence code	Competence descriptor	Competence formation indicators (within this course)
GPC-13	Able to solve standard tasks of professional activity using information, bibliographic resources, biomedical terminology, information and communication technologies, taking into account the basic requirements of information security	**GPC-13.1** Be able to use modern information and communication tools and technologies in professional activities
		GPC-13.2 Be able to follow the rules of information security in professional activities

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

Code	Competence descriptor	Previous Disciplines (Modules)*	Subsequent Disciplines (Modules)*
GPC-13	Able to solve standard tasks of professional activity using information, bibliographic resources,		Public health and health care Telemedicine

Code	Competence descriptor	Previous Disciplines (Modules)*	Subsequent Disciplines (Modules)*
	biomedical terminology, information and communication technologies, taking into account the basic requirements of information security		

4. COURSE WORKLOAD AND ACADEMIC ACTIVITIES

The total workload of the course is 3 credits (108 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				
		1				
Contact academic hours	*51*	*51*				
including:						
Lectures (LC)						
Lab work (LW)	51	51				
Seminars (workshops/tutorials) (S)						
Self-studies	*30*	*30*				
Evaluation and assessment (exam/passing/failing grade)	*27*	*27*				
Course workload	academic hours_	**108**	**108**			
	credits	**3**	**3**			

5. COURSE CONTENTS

Table 5.1. Course contents and academic activities types

Course module title	Course module contents (topics)	Academic activities types
Module 1 Introduction to Medical Informatics	**Topic 1.1.** Basic concepts of medical informatics	LW
	Topic 1.2. Medical Informatics Hardware	LW
	Topic 1.2. Software tools for the implementation of information processes	LW
Module 2 Technology for processing medical data using word processors	**Topic 2.1.** Introduction to word processors Microsoft Word, Open Office Writer	LW
	Topic 2.2. Document formatting, special functions.	LW

Course module title	Course module contents (topics)	Academic activities types
	Topic 2.3. Word processor: tables	LW
Module 3 Medical data processing technologies using spreadsheets	**Topic 3.1.** Introduction to spreadsheet processors Microsoft Excel, OpenOffice Calc	LW
	Topic 3.2. Using math functions in Microsoft Excel, Open Office Calc	LW
	Topic 3.3. Medical data visualization in a spreadsheet	LW
Module 4 Technologies for storing and processing medical data using Database Management Systems	**Topic 4.1.** Introduction to data base Microsoft Access and OpenOffice Base	LW
	Topic 4.2. Working in a DBMS with medical data**.**	LW
Module 5 Computer networks in medicine	**Topic 5.1.** Network technologies	LW
	Topic 5.2. Internal electronic resources of RUDN University	LW
Module 6 Medical Information Systems (MIS)	**Topic 6.1.** Introduction to MIS	LW
	Topic 6.2. Information model of the treatment and diagnostic process	LW

* - to be filled in only for <u>**full**</u>-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)
Computer Lab	Computer Lab Classroom can be used for seminars, lab works and consulting. Equipped with a set of specialized furniture, computers with access to electronic information and educational environment (EIEE)	Set of specialized furniture; whiteboard; a set of devices includes portable multimedia projector TOSHIBA X200, laptop ASUS F9E Core 2 DUO T5750, Monoblocks Acer Aspire C24-865, Lenovo V30a-24IML All-In-One 23,8", Acer Z3-615. projection screen, stable wireless Internet connection. Software: Microsoft Windows, MS Office / Office 365, MS Teams, Chrome (latest stable release)

Type of academic activities	Classroom equipment	Specialised educational / laboratory equipment, software, and materials for course study (if necessary)
Self-studies	Classroom for self-study (can be used for seminars and consulting. Equipped with a set of specialized furniture, computers with access to electronic information and educational environment (EIEE)	Set of specialized furniture; whiteboard; a set of devices includes portable multimedia projector Epson EB-965H, TOSHIBA X200, laptop ASUS F9E Core 2 DUO T5750, Monoblocks Acer Aspire C24-865, Lenovo V30a-24IML All-In-One 23,8", Acer Z3-615 laptop, projection screen, stable wireless Internet connection. Software: Microsoft Windows, MS Office / Office 365, MS Teams, Chrome (latest stable release)
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.	Set of specialized furniture; whiteboard; a set of devices includes portable multimedia projector TOSHIBA X200, laptop ASUS F9E Core 2 DUO T5750, Monoblocks Acer Aspire C24-865, Lenovo V30a-24IML All-In-One 23,8", Acer Z3-615. projection screen, stable wireless Internet connection. Software: Microsoft Windows, MS Office / Office 365, MS Teams, Chrome (latest stable release)

7. RESOURCES RECOMMENDED FOR COURSE STUDY

Main readings:
- Protsenko V.D., Lukyanova E.A., Lyapunova T.V., Shimkevich EM. MEDICAL INFORMATICS. Laboratory workshop: Study guide. - M., 2018.
- Medical informatics: textbook / T.V. Zarubina [and others]; under total. ed. T.V. Zarubina, B.A. Kobrinsky. - M .: GEOTAR-Media, 2016 .-- 512 p.
- Lukyanova E.A., Lyapunova T.V., Shimkevich E.M. [and etc.]. Medical Informatics. Laboratory Practice. M .: RUDN. 2020, 32 p.
- Course: Medical Informatics (Dentistry) (http://esystem.pfur.ru/course/view.php?id=9961)

Additional readings:
- Medical informatics: textbook / V. P. Omelchenko, A. A. Demidova. - M .: GEOTAR-Media, 2016 .-- 528 p.
- Information biology: textbook of institutions / M.A. Kamenskaya - M: Academy Publishing Center, 2009.

Internet-(based) sources:

1. EBS of RUDN University and third-party EBS to which students have access on the basis of concluded agreements:

- RUDN University Library System http://lib.rudn.ru/MegaPro/Web

- EBS "University Library Online" http://www.biblioclub.ru

- EBS "Yurayt" http://www.biblio-online.ru

- EBS "Student Consultant" www.studentlibrary.ru

- EBS "Lan" http://e.lanbook.com/

- TUIS: http://esystem.rudn.ru/

2. Database of medical and biological publications:

- - Yandex search engine https://www.yandex.ru/

- Google search engine https://www.google.ru/

- SCOPUS abstract database http://www.elsevierscience.ru/products/scopus/

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

1. The set of lectures on the course "Medical Informatics"
2. The laboratory workshop (if any) on the course" Medical Informatics"
3. The guidelines for writing a course paper / project (if any) on the course" Medical Informatics".
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-13) 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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