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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

Pharmacology

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

1. COURSE GOAL(s)

The goal of the course “**Pharmacology**” is to equip students with the system of knowledge about the principles of drugs classification, their mechanisms of action, pharmacological effects, indications and contraindications for use; the principles of combining drugs, the risk of adverse side effects and their prevention, rules of drugs prescription and drug rational administration.

2. REQUIREMENTS FOR LEARNING OUTCOMES

Mastering the course (module) “Pharmacology” is aimed at the development of the following competences /competences in part: UC-3, GPC-5, GPC-13, PC-6.

Competence code	Competence descriptor	Competence formation indicators (within this course)
UC-3	UC-3. Being able to organize and supervise teamwork developing a team strategy at the same time to achieve the set goal.	UC-3.3. Solving conflicts and contradictions that may arise in the course of business communication taking into account the interests of all the parties involved.
GPC-6	GPC-6. Being able to prescribe non-drug and drug treatment, monitor its efficacy and safety when solving professional tasks	GPC-6.3. Assessing the possible side effects of taking medicinal drugs. GPC-6.4. Providing medical care to a dental patient in emergency or urgent forms. GPC-6.9. Evaluating the efficacy and safety of using medicinal drugs, medical devices and other methods of treatment at a dental appointment.
GPC-13	GPC-13. Being able to understand the operation principles of modern IT and use them to solve the professional tasks	GPC-13.1. Using information technology in professional activity and observing the information security rules. Information and communication media and technology in professional activity. GPC-13.2. Observing the information security rules in professional activity.
PC-6	PC-6. Being able to analyze and present in public medical information based on evidence-based medicine, participate in scientific research, introduce new methods and techniques aimed at protecting public health	PC-6.1. Searching for medical information based on evidence-based medicine, interpreting data from scientific publications and/or preparing a presentation to make medical information, the results of scientific research public. PC-6.2. Developing algorithms for the examination and treatment of adults and children with dental diseases in accordance with the principles of evidence-based medicine, as well as searching and interpreting medical information based on evidence-based medicine. PC-6.3. Conducting public presentation of

		medical information based on evidence-based medicine/ partial participation in scientific research.
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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*
UC – 3. Being able to organize and supervise teamwork developing a team strategy at the same time to achieve the set goal.	-	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)
GPC-6. Being able to prescribe non-drug and drug treatment, monitor its efficacy and safety when solving professional tasks	General Surgery Immunology, Clinical Immunology	Internal illnesses Clinical pharmacology Surgical diseases Health and Safety Neurology Psychiatry and Narcology Pediatrics Operative Dentistry: Cariology and Hard Tissues Diseases Endodontics Gerodontics and Oral Mucosa Diseases Periodontology Oral Surgery Gnathology and Temporo-Mandibular Joint's Functional Diagnostics Prosthodontics (Simple Prosthetics) Prosthodontics of Edentulous Patient Prosthodontics (Complex Prosthetics) Maxillofacial and Orthognathic Surgery Head and Neck Diseases Pediatric Maxillofacial Dentistry Maxillofacial Prosthodontics Pediatric Dentistry Orthodontics and Pediatric Prosthodontics Medical Genetics in Dentistry

		Medical Rehabilitation Clinical Dentistry Implantology and Reconstructive Surgery Modern Endodontics 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)
GPC-13. Being able to understand the operation principles of modern IT and use them to solve the professional tasks	Latin language Medical informatics	Obstetrics Medical Rehabilitation Telemedicine Preparation for and Passing the State Exam State Exam (Computer Testing) State Exam (Interdisciplinary Interview)
PC-6. Being able to analyze and present in public medical information based on evidence-based medicine, participate in scientific research, introduce new methods and techniques aimed at protecting public health	Physics Medical Informatics Human Anatomy - Anatomy of Head and Neck Chemistry of Biogenic Elements	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 course "Pharmacology" is equal to 5 credits (180 academic hours)

Type of academic activities		Total academic hours	Semesters/training modules	
			5	6
Classes (total) ac.h.		123	51	72
Including:				
Lectures (LC)		18	0	18
Lab work (LW)		105	51	54
Seminars (workshops/tutorials) (S)		36	18	18
<i>Self-studies</i>		21	3	18
<i>Evaluation and assessment (exam/passing/failing grade)</i>		18	0	18
Total course workload	academic hours	180	72	108
	credits	5	2	3

* To be filled in regarding the higher education programme correspondence training mode.

5. THE COURSE MODULES AND CONTENTS

Table 5.1. The content of the discipline and types of academic activities

e Course module title	Course module contents (topics)	Academic activities types
Module 1 General pharmacology	1.1 Formulations and prescriptions. Introduction to pharmacology.	LC
	1.2 Basic principles of pharmacodynamics	LC, LW
	1.3 Basic principles of pharmacokinetics	LC, LW
Module 2 Drugs affecting afferent and efferent innervation	2.1 Drugs affecting afferent innervation. Local anesthetics	LC, LW
	2.2 Cholinergic agents	LC, LW
	2.3 Adrenergic and sympathomimetic agents	LC, LW
	2.4 Adrenolytic and sympatholytic agents	LC, LW
Module 3 Drugs affecting the cardiovascular system	3.1 Diuretics	LC, LW
	3.2 Hypolipidemic agents	LC, LW
	3.3 Antihypertensive drugs	LC, LW
	3.4 Antianginal drugs	LC, LW
	3.5 Antiarrhythmic drugs	LC, LW
	3.6 Agents used in heart failure	LC, LW

Module 4 Drugs affecting hemostasis and hematopoiesis	4.1 Agents affecting the blood coagulation system	LC, LW
	4.2 Agents affecting the hematopoietic system	LW
Module 5 Drugs affecting the functions of the respiratory system, digestion and metabolic processes	5.1 Agents affecting the respiratory system	LC, LW
	5.2 Agents affecting the digestive system	LC, LW
	5.3 Hormones of the pituitary gland, hypothalamus, pineal gland, thyroid and pancreas, hypoglycemic drugs	LC, LW
	5.4 Hormonal drugs of steroid structure	LC, LW
	5.5 Agents affecting immune processes	LW
	5.6 Antiallergic agents	LW
Module 6 Drugs affecting the central nervous system. Drugs affecting the nociceptive system and the synthesis of pain and inflammation mediators	6.1 Agents for anesthesia. Analgesics. Nonsteroidal anti-inflammatory drugs (NSAIDs)	LC, LW
	6.2 Sedative drugs. Hypnotics. Anxiolytics. Antiepileptic drugs	LC, LW
	6.3 Antipsychotics. Antidepressants. Drugs for the treatment of mania	LC, LW
	6.4 Psychostimulants. Nootropics. Drugs for neurodegenerative diseases.	LW
Module 7 Antibacterial, antiviral and antifungal drugs	7.1 Antibiotics (part I)	LC, LW
	7.2 Non-beta-lactam AB and synthetic antimicrobials (part II)	LC, LW
	7.3 Antiviral, antifungal agents	LC, LW
	7.4 Anti-tuberculosis drugs	LC, LW
	7.5 Antiprotozoal, antisyphilitic, antihelminthic drugs	LC, LW

* - 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)
Lab-work	Classroom, equipped with a set of specialized furniture; whiteboard; a set of devices includes portable multimedia projector, laptop, projection screen, stable wireless Internet connection. Software: Microsoft Windows, MS Office /Office 365, MS Teams, Chrome (latest stable release), Skype Classrooms 349, 350, 352	Classroom for lectures and lab works, group and individual consultations, current control and intermediate certification. A set of specialized furniture; technical devices: Optoma HD36 multimedia projector, Lenovo IdealPad330-5ikb laptop, Internet access. Wall projection screen, floorboard information marker magnetic, interactive complex for testing students.
Self-studies	Classroom, equipped with a set of specialized furniture; whiteboard; a set of devices includes portable multimedia projector, laptop, projection screen, stable wireless Internet connection. Software: Microsoft Windows, MS Office /Office 365, MS Teams, Chrome (latest stable release), Skype Classroom 349	Classroom for lectures and lab works, group and individual consultations, current control and intermediate certification. A set of specialized furniture; technical devices: Optoma HD36 multimedia projector, HP250G7 laptop, Internet access. Wall projection screen, floorboard information marker magnetic, interactive complex for testing students.
Learning - and Research Lab	Classroom, equipped with a set of specialized furniture; whiteboard; a set of devices includes portable multimedia projector, laptop, projection screen, stable wireless Internet connection. Software: Microsoft Windows, MS Office /Office 365, MS Teams, Chrome (latest stable release), Skype Lab No 1 on the base of the city hospital 24	Wall projection screen, magnetic floor information marker board, Optoma HD36 multimedia projector, Lenovo 15.6 laptop, centrifuge 5804, analytical scale AF225DPCT, Vortekx shaker, CryoCubeF101h freezer

7. RESOURCES RECOMMENDED FOR COURSE STUDY

Main readings:

1. Katzung's Basic and Clinical Pharmacology / edited by Todd W. Vanderah. - 16th edition. - McGraw Hill, 2024. - 1347 p. : il. - Книга на английском языке. - ISBN 978-265-98057-3 : 9676.04

Additional readings:

1. Tutorial Guide to Pharmacokinetics: учебное пособие / С.К. Зырянов, О.И.

Бутранова, М.Б. Кубаева. – Москва: РУДН, 2022. – 134 с.: ил. ISBN 978-5-209-10837-5

2. Tutorial Guide to Pharmacodynamics [Текст] = Пособие по фармакологии : Учебное пособие / S.K. Zyryanov, O.I. Butranova. - Книга на английском языке. - М. : PFUR, 2019. - 56 с. : ил.

3. Basic and Clinical Pharmacology / B. Katzung, S. Masters. - 11th ed. ; Книга на английском языке. - New York : McGraw-Hill, 2009. - 1218 p. : ил. - (LANGE Basic Science). - ISBN 978-007-127118-9 : 4318.03.

4. Clinical Pharmacology / P.N. Bennett, M.J. Brown. - 10th ed. ; Книга на английском языке. - Edinburgh : Churchill Livingstone, 2008. - 694 p. : ил. - ISBN 978-0-443-10245-5 : 2048.65.

Internet (based) sources

1. Electronic libraries with access for RUDN students:

-Electronic library network of RUDN – ELN RUDN

<http://lib.rudn.ru/MegaPro/Web>

- ELN «University Library online» <http://www.biblioclub.ru>

- ELN Urait <http://www.biblio-online.ru>

- ELN «Student Advisor» www.studentlibrary.ru

- ELN «Lan» <http://e.lanbook.com/>

2. Databases and search engines:

- electronic fund of legal and regulatory and technical documentation

<http://docs.cntd.ru/>

- search system Yandex <https://www.yandex.ru/>

- search system Google <https://www.google.ru/>

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

Learning toolkits for self-studies during the development of the discipline*:

1. A course of lectures on the discipline "Pharmacology".

2. Guidelines for self-study on the discipline "Pharmacology"

3. Online educational course on the Stepik platform: "Pharmacology of Antibacterial Agents" Free access: <https://stepik.org/course/123136/promo>

* - all educational and methodological materials for independent work of students are placed in accordance with the current procedure on the page of the discipline on RUDN LMS TUIS!

8. EVALUATION TOOLKIT AND GRADE SYSTEM FOR ASSESSMENT

Evaluation materials and point-rating system* for assessing the level of competence formation (UC-3, GPC-5, GPC-13, PC-6) based on the results of mastering the discipline "Pharmacology" are presented in the Appendix to this Work Program of the discipline.

* 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:

Assoc. prof. of the
Department of
General and Clinical
Pharmacology

position, department name

Butranova O.I.

signature

initials, last name

HEAD OF THE DEPARTMENT:

**Head of Department of
General and Clinical
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Zyryanov S K.

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HEAD OF THE PROGRAMME:

Deputy Director of MI

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Razumova S.N.

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