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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

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

**COURSE SYLLABUS**

Immunology, Clinical immunology

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course title

**Recommended by the Didactic Council for the Education Field of:**

31.05.03 Dentistry

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field of studies / speciality code and title

**The course instruction is implemented within the professional education  
programme of higher education:**

Dentistry

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higher education programme profile/specialisation title

**2024-2025**

## 1. COURSE GOAL(s)

The goal of course is to form students' modern knowledge about the structure and functions of the immune system, types of immunity; distinctive characteristics of immune reactions under normal or pathological conditions; methods of clinical, laboratory and instrumental diagnostics, traditional and innovative directions in prevention, treatment of patients with immunopathology.

## 2. REQUIREMENTS FOR LEARNING OUTCOMES

Mastering the course (module) «**Immunology, clinical immunology**» is aimed at the development of the following competences /competences in part:

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

<b>Competence code</b>	<b>Competence descriptor</b>	<b>Competence formation indicators (within this course)</b>
UC-1	Being able to implement critical analysis of problem situations based on systems approach, develop an action strategy.	UC-1.1. Analysing the problem situation as a system identifying its components and links between them.
		UC-1.2. Defining gaps in the information required to deal with a problem situation and designing processes to address them.
		UC-1.3. Assessing in a critical way the reliability of information sources; working with contradictory information from different sources.
		UC-1.4. Developing and giving meaningful reasons for and against a strategy for solving a problem situation in terms of a systematic and interdisciplinary approaches.
		UC-1.5. Using logical and methodological tools for critical assessment of the modern concepts of a philosophical and social nature in the relevant field of study.
GPC-6	Being able to prescribe non-drug and drug treatment, monitor its efficacy and safety when solving professional tasks	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.
		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.
		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.

Competence code	Competence descriptor	Competence formation indicators (within this course)
		<p>GPC-6.5. Organizing the prevention and treatment of complications, side effects, undesirable reactions, including the unforeseen ones, which can arise from diagnostic or medicinal manipulations, use of drugs and (or) medical devices, non-drug treatment at a dental appointment.</p> <p>GPC-6.6. Organizing personalized treatment of a dental patient, including elderly and senile patients, pregnant women, children with somatic pathologies; evaluating the efficacy and safety of treatment.</p> <p>GPC-6.7. Prescribing medicinal drugs, medical devices, taking into account the diagnosis, age and clinical picture, and 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 medical care standards.</p> <p>GPC-6.8. Prescribing non-drug treatment taking into account the diagnosis, age and disease pattern 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-6.9. Evaluating the efficacy and safety of using medicinal drugs, medical devices and other methods of treatment at a dental appointment.</p>
PC-1	Being able to make an examination of a patient in order to determine a diagnosis.	<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>

Competence code	Competence descriptor	Competence formation indicators (within this course)
		<p>PC-1.4. Detecting if patients have risk factors for oncopathology (including various background processes, precancerous conditions) based on laboratory, instrumental and additional examinations in order to make a preliminary/final diagnosis.</p> <p>PC-1.5. Making a preliminary/final diagnosis based on the patient examination; laboratory and instrumental examinations.</p> <p>PC-1.6. Making a final diagnosis based on additional examinations of patients.</p>
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	<p>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.</p> <p>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.</p> <p>PC-6.3. Conducting public presentation of medical information based on evidence-based medicine/ partial participation in scientific research.</p>
PC-7	Being able to conduct organizational and managerial activity.	<p>PC-7.1. Keeping medical documentation.</p> <p>PC-7.2. Organizing management of medical workers holding positions of paramedic and junior medical staff, quality control over implementing/providing medical care, and medical prescriptions.</p> <p>PC-7.3. Making examinations of temporary disability of patients, incapacity for work due to caring for a sick child, determination of medical indications for employment, transfer to easier working conditions, sanatorium treatment.</p> <p>PC-7.4. Analyzing and providing the main medical and statistical indicators (morbidity, disability, mortality, lethality) of the population of the service area in the prescribed manner.</p> <p>PC-7.5. Drawing up a work plan and a report on their work.</p>

### 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*	Subsequent courses/modules*
UC-1	Being able to implement critical analysis of problem situations based on systems approach, develop an action strategy.	Philosophy Psychology, Pedagogy Mathematics Physics Human Anatomy - Anatomy of Head and Neck	Pathophysiology - Pathophysiology of Head and Neck Otorhinolaryngology Obstetrics Gnathology and Temporomandibular Joint's Functional Diagnostics Prosthodontics (Simple Prosthetics) Prosthodontics of Edentulous Patient Prosthodontics (Complex Prosthetics) Pediatric Maxillofacial Dentistry Maxillofacial Prosthodontics Pediatric Dentistry Orthodontics and Pediatric Prosthodontics Medical Genetics in Dentistry Medical Rehabilitation Chemistry of Biogenic Elements Observing and Assisting a Dentist (Operative Dentistry and Endodontics) Observing and Assisting a Dentist (Prosthodontics) Observing and Assisting a Dentist (Pediatric) Preparation for and Passing the State Exam State Exam (Computer Testing) State Exam (Interdisciplinary Interview)
GPC-6	Being able to prescribe non-		Pharmacology Internal Medicine

	<p>drug and drug treatment, monitor its efficacy and safety when solving professional tasks</p>		<p>Clinical Pharmacology  General Surgery  Surgical Diseases  Health and Safety  Dermatovenerology  Neurology  Psychiatry and Narcology  Pediatrics  Operative Dentistry: Cariology and Hard Tissues Diseases  Endodontics  Gerodontics and Oral Mucosa Diseases  Periodontology  Oral Surgery  Gnathology and Temporomandibular 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)</p>
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PC-1	Being able to make an examination of a patient in order to determine a diagnosis.		Health and Safety Otorhinolaryngology Obstetrics Propaedeutics of Dental Diseases Operative Dentistry: Cariology and Hard Tissues Diseases Endodontics Gerodontics and Oral Mucosa Diseases Periodontology Local Anesthesia and Anesthesiology in Dentistry Oral Surgery Gnathology and Temporomandibular 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 Implantology and Reconstructive Surgery Modern Endodontics Aesthetic Restoration Observing and Assisting a Dentist (Oral Surgery) Observing and Assisting a Dentist (Operative Dentistry and Endodontics) Observing and Assisting a Dentist (Prosthodontics) Observing and Assisting a Dentist (Pediatric) Observing and Assisting a Dentist (General Dentistry), Including Research Practice
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			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		Pharmacology Ophthalmology Gnathology and Temporomandibular Joint's Functional Diagnostics Prosthodontics (Simple Prosthetics) Prosthodontics of Edentulous Patient Prosthodontics (Complex Prosthetics) Pediatric Maxillofacial Dentistry Maxillofacial Prosthodontics Medical Genetics in Dentistry 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)
PC-7	Being able to conduct organizational and managerial activity.		Organization of General Care Public Health and Healthcare 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 "**Immunology, clinical immunology**" is 2 credits (72 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			
		4			
Contact academic hours	54	54			
including:					
Lectures (LC)	18	18			
Lab work (LW)	36	36			



Type of academic activities		Total academic hours	Semesters/training modules			
			4			
Seminars (workshops/tutorials) (S)						
<i>Self-studies</i>		12	12			
<i>Evaluation and assessment (exam/passing/failing grade)</i>		6	6			
<b>Course workload</b>	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
<b>Module 1</b> Basic immunology	<b>1.1.</b> Introduction to immunology	LC, LW
	<b>1.2.</b> The structure of immune system	LC, LW
	<b>1.3.</b> Innate immunity	LC, LW
	<b>1.4.</b> Adaptive immunity	LC, LW
<b>Module 2</b> Clinical immunology	<b>2.1.</b> Pathology of the immunity	LC, LW
	<b>2.2.</b> Immunodiagnosis, immunoprophylaxis, immunotherapy	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)
Lecture	A lecture hall for lecture-type classes, equipped with a set of specialised furniture; board (screen) and technical means of multimedia presentations.	
Conference room	Conference room equipped with a set of specialized furniture and digital equipment;	Camera; Communication Station-HP Compaq Pro/Intel Pentium E6300 / 2.8GHZ / DDR3 1300 / HDD320Gb / DVD +/- RWPCI Express x 16/2*Ethernet 10SATA 3/5/1 st Hard Drive; Projector for conference rooms EIKI LC-XB43N; speaker system.
Lab-work	Classroom for lab work, individual	PC (Core i5 9400 unit, BENQ

Type of academic activities	Classroom equipment	Specialised educational / laboratory equipment, software, and materials for course study (if necessary)
	consultations, self-studies equipped with a set of specialized furniture; whiteboard.	GW2480 23.8 monitor, BENQ GW2480 23.8 monitor)
Lab-work	Classroom for seminar classes, consultations, intermediate certification, equipped with a set of specialized furniture and digital equipment	PC (monitor 19" Acer, Intel i7 8700/MV unit (GIGABYTE Z370); HP LaserJet Pro M227fdn laser MFP; PC (system block, monitor, mouse)
Computer class	Computer class for seminar classes, consultations, intermediate certification, equipped with a set of specialized furniture, personal computers (3 un.) and digital equipment	PC (AOC monitor 19", system block i3 7100/MV Asus/4Gb/240Gb SSD); MFP laser HP LaserJet MFP M132nw EN white
Self-studies	Classroom for self-studies of students (can be used for seminars and consultations), equipped with a set of specialized furniture, computers with stable wireless Internet connection.	LCD panel with VBA port; LED TV SUPRA 'STV-LC47660FL00

\* The premises for students' self-studies are subject to **MANDATORY** mention

## 7. RESOURCES RECOMMENDED FOR COURSE STUDY

*Main readings:*

**Hardcover:**

1. Immunology: textbook / R. M. Khaitov. - 4th ed., reprint. and add. - Moscow: GEOTAR-Media, 2021. - 520 p. - ISBN 978-5-9704-6398-7.
2. R.I. Sepiashvili. Physiology of the immune system: monograph. M.: Medicine - Health, 2019. - 338 p.

**Electronic sources:**

1. Immunology [Electronic resource]: textbook / R. M. Khaitov. - 4th ed., reprint. and add. - Moscow: GEOTAR-Media, 2021. - 520 p. - ISBN 978-5-9704-6398-7. <https://www.studentlibrary.ru/book/ISBN9785970463987.html>
2. Immunology. [Electronic resource]: atlas / Khaitov R. M., Garib F. Yu. - Moscow: GETAR-Media, 2020. - 416 p. - ISBN 978-5-9704-5525-8. - <https://www.studentlibrary.ru/book/ISBN9785970455258.html>
3. Immunology [Electronic resource]: textbook / Yarilin A. A. - Moscow: GEOTAR-Media, 2010. - 752 p. - ISBN 978-5-9704-1319-7. - <https://www.studentlibrary.ru/book/ISBN9785970413197.html>

*Additional readings:*

**Hardcover:**

1. R.I. Sepiashvili, I.P. Balmasova M. Physiology of natural killers. Medicine-Health, 2005. - 456 p

**Electronic sources:**

1. Immunology: Structure and functions of the immune system / Khaitov R. M. - Moscow: GEOTAR-Media, 2019. - 328 p. - ISBN 978-5-9704-4962-2. - <https://www.studentlibrary.ru/book/ISBN9785970449622.html>
2. Allergology and clinical immunology / edited by R. M. Khaitov, N. I. Ilyina - Moscow: GEOTAR-Media, 2019. - 336 p. (Series "Clinical Recommendations") - ISBN 978-5-9704-5010-9. <https://www.studentlibrary.ru/book/ISBN9785970450109.html>
3. Basic immunology with the basics of clinical immunology: textbook. manual / A.V. Moskalev, V. B. Sboychakov, A. S. Rudoy. - Moscow: GEOTAR-Media, 2015. - 352 p. - ISBN 978-5-9704-3382-9. <https://www.studentlibrary.ru/book/ISBN9785970433829.html>
4. Microbiology, virology, immunology of the oral cavity: textbook / edited by V. N. Tsarev. - 2nd ed., reprint. and add. - Moscow: GEOTAR-Media, 2021. - 720 p. - ISBN 978-5-9704-6260-7. – <https://www.studentlibrary.ru/book/ISBN9785970462607.html>

***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](http://www.studentlibrary.ru)
  - ELN «Lan» <http://e.lanbook.com/>
  -
2. Databases and search engines:
  - Database elibrary.ru - scientific electronic library. The link: <http://elibrary.ru/defaultx.asp/>
  - Electronic libraries with access for RUDN students. The link: <http://lib.rudn.ru/MegaPro/Web/>
  - Electronic library of the medical university. The link: <http://www.studmedlib.ru/>
  - National Center for Biotechnological Information. The link: <https://www.ncbi.nlm.nih.gov/>
  -

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

1. Lectures Synopsis on the discipline "Immunology, clinical immunology".
2. Methodological guidelines for the implementation and execution of control and independent work on the discipline "Immunology, clinical immunology"

\* - All teaching materials for self-studying of students are placed in accordance with the current procedure on the discipline page in the RUDN LMS TUIS.

**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 (competences in part) 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:**

Professor of the Immunology  
department



E.A. Levkova

position, department

signature

name and surname

Professor of the Immunology  
department



A.D. Donetskova

position, department

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**HEAD OF EDUCATIONAL DEPARTMENT:**

of Immunology



O.G. Elisyutina

name of department

signature

name and surname

**HEAD  
OF HIGHER EDUCATION PROGRAMME:**

First Deputy Director of  
Institute of Medicine for  
Academic Affairs in the field  
of Dentistry

S.N. Razumova

position, department

signature

name and surname