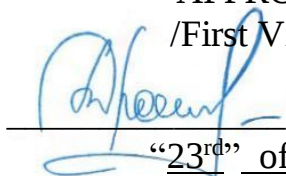


Документ подписан простой электронной подписью
Информация о владельце:
ФИО: Стегний Кирилл Владимирович
Должность: И.о. ректора
Дата подписания: 16.09.2026 09:39:48
Уникальный программный ключ:
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Federal State Budget Educational Institution
of Higher Education
Pacific State Medical University
of the Ministry of Health of the Russian Federation

APPROVED BY

/First Vice-Rector

 / Dvoynikova E.R./
“23rd” of June 2026

DISCIPLINE WORK PROGRAM

B1.C.14 Immunology

(name of discipline)

Specialty

**31.05.01 General Medicine (English-
language program)**

(code, name)

Degree

Specialist's degree

Profile

02 "Healthcare" (in the field of
providing primary health care to the
population in medical organizations:
polyclinics, outpatient clinics,
inpatient/outpatient facilities of the
municipal health care system)

Mode of study

Full-time

Period of mastering the BEP

6 years

(nominal length of study)

Institute/Department

of Human Physiology and
Pathophysiology

Vladivostok, 2026

Program of the discipline **B1.C.14 Immunology** is based on:

1) Federal State Educational Standard of Higher Education for the specialty approved by the Order No. 988 of Ministry of Science and Higher Education of the Russian Federation dated August 12, 2020.

2) Curriculum for the 31.05.01 General Medicine (English-language program), profile 02 "Healthcare" (in the field of providing primary health care to the population in medical organizations: polyclinics, outpatient clinics, inpatient/outpatient facilities of the municipal health care system), approved by the Academic Council of FSBEI HE PSMU of the Ministry of Health of Russia, Report No. 1-7/25-26 dated March 27, 2026.

Work program for the discipline was developed by the writing team of the Department of Human Physiology and Pathophysiology of the FSBEI HE PSMU of the Ministry of Health of Russia, under the guidance of Head of the Department of Human Physiology and Pathophysiology, Doctor of Medical Sciences, Professor Markelova E.V.

Developed by:

Assistant professor	Candidate of Medical Sciences, Associate Professor	Knysh S.V.
_____ (position held)	_____ (academic degree, academic title)	_____ (full name)
Assistant		Zakharov I.N.
_____ (position held)	_____ (academic degree, academic title)	_____ (full name)

1. GENERAL PROVISIONS

1.1. Purpose and Objectives of Mastering B1.C.14 Immunology

The purpose of mastering the discipline is acquiring knowledge about universal principles of development and functioning of the immune system in norm and in pathology; develop an idea of immunodiagnostics, modern biomedical approaches to immune system assessment.

Objectives of mastering the discipline:

1. Acquire basic knowledge on the structure and mechanisms of functioning and regulation of the human immune system, as well as the main sections of general, specialized, and clinical immunology;
2. Develop skills of analyzing effects of adverse ecological factors on the immune system (immune ecology); studying scientific publications and official statistics reports in immunological analysis;
3. Acquire basic knowledge of mechanisms behind immune deficiencies, autoimmune diseases, and other diseases of the immune system, as well as their immunopathogenesis; principles of identifying immune pathology (immunodiagnostics) and immune correction.

2. DISCIPLINE AS PART OF THE BASIC EDUCATIONAL PROGRAM

Discipline **B1.C.14 Immunology** is included in the Compulsory part of the basic educational program for the specialty 31.05.01 General Medicine (English-language program) and is part of the 5 semester's curriculum.

3. PLANNED LEARNING OUTCOMES OF THE DISCIPLINE

3.1. Mastering the discipline **B1.C.14 Immunology** is aimed at the development of students' competencies. The discipline facilitates the development of students' competencies corresponding to the types of professional activity.

Name of competency category (group)	Code and Name of competency of the graduate	Competency Indicators
Universal Competencies		
Systemic and critical thinking	UC-1. Able to carry out critical analysis of professional workplace challenge applying systematic approach and develop an action strategy	AI.UC-1 ₁ - searches for and interprets professional workplace challenges AI.UC-1 ₂ - identifies sources of information to analyze professional workplace challenges critically AI.UC-1 ₃ - develops and explains strategies to resolve professional workplace challenges applying systematic and interdisciplinary approaches
General Professional Competencies		
Etiology and pathogenesis	GPC-5. Able to assess morphofunctional status, physiological states, and pathological processes in the human body when working to achieve objectives of professional activity	AI.GPC-5 ₁ - assesses the morphofunctional state based on the acquired knowledge AI.GPC-5 ₂ - distinguishes between pathological and physiological processes, identifies etiology of changes AI.GPC-5 ₃ - provides diagnostic assessment of the identified changes

3.2. Types of professional activity corresponding to competencies developed over the course of mastering **B1.C.14 Immunology**:

Types of professional activity objectives

1. -Medical

Kinds of professional activity objectives

1. Diagnostics

2. Treatment

3.3. Planned learning outcomes of mastering the discipline are represented by knowledge, skills, abilities and/or experience, characterize the stages of developing competencies and ensure achievement of the planned outcomes of mastering the basic educational program. Learning outcomes of a discipline are correlated with competency indicators.

4. SCOPE AND CONTENT OF THE DISCIPLINE

4.1. Scope of the Discipline and Types of Academic Work

Type of Academic Work		Total Hours	Semesters
			5
			hours
1		2	3
Classroom hours (total), including:		66	66
Lectures (L)		22	22
Practical classes (C)		44	44
Independent work of the student (IW), including:		42	42
<i>Preparing for classes (CP)</i>		30	30
<i>Preparing for continuous assessment (CAP)</i>		12	12
<i>Preparation for interim assessment (IAP)</i>			
Interim assessment			
Type of interim assessment	pass/fail test (T)	T	T
	exam (E)		
TOTAL: TOTAL credit value	hrs.	108	108
	credits	3	3

4.2. Contents of the Discipline

4.2.1. Topics of Discipline Lectures and Academic Hours per Semester

No.	Lecture Topic	Hours
1	2	3
Semester No. 5		
1.	Main concepts in immunology. Structure, role of normal and pathological immune system	2
2.	Innate immune response, its mechanisms	2
3.	Cells and humoral factors of innate immunity. Complement system	2
4.	T- and B-lymphocytes. Development, functions, role	2
5.	Antigens: types, identification, presentation	2
6.	Adaptive (acquired) immunity. Interaction between acquired and innate immune response	2
7.	Immunoglobulins and antigen-antibody reactions	2
8.	Immune system of mucosae (mucosal immunity) and local immune defense	2
9.	Incompetent immune defense mechanisms. Immunodeficiencies	2
10.	Hypersensitivity, autoimmune and immune-mediated disorders	2
11.	Immunodiagnostics: principles, methods, application in clinical practice	2
	Hours per semester total	22

4.2.2. Topics of Discipline Practical Classes and Academic Hours per Semester

No.	Practical Class Topic	Hours
1	2	3
Semester No. 5		
1	Main concepts in immunology. Structure, role of normal and pathological immune system	4
2	Innate immune response, its mechanisms	4
3	T- and B-lymphocytes. Development, functions, role	4
4	Cells and humoral factors of innate immunity. Complement system	4
5	Antigens: types, identification, presentation	4
6	Adaptive (acquired) immunity. Interaction between acquired and innate immune response	4
7	Immunoglobulins and antigen-antibody reactions	4
8	Immune system of mucosae (mucosal immunity) and local immune defense	4
9	Incompetent immune defense mechanisms. Immunodeficiencies	4
10	Hypersensitivity, autoimmune and immune-mediated disorders	4
11	Immunodiagnostics: principles, methods, application in clinical practice	4
	Hours per semester total	44

4.2.3. Independent Work of the Student

No.	Name of the Discipline Section	Type of IW	Total Hours
1	3	4	5
Semester No. 5			
1	Introduction to immunology and innate immune response	Working with supplemental reading, preparing flowcharts and a glossary	14
2	Adaptive (acquired) immunity and immune response regulation	Working with supplemental reading, preparing analytical diagrams, and case summaries	14
3	Clinical immunology and immunodiagnostics	Working with supplemental reading, preparing reports, and interpretation of laboratory data	14
	Hours per semester total		42

5. REQUIREMENTS FOR IMPLEMENTATION OF DISCIPLINE

5.1. Discipline Requirements for Educational Materials and Provided Information

Essential reading

No.	Name/Title, Resource Type	Author(s)/Editor	Publisher Imprint, Web Address	Number of Copies (accesses) in the Library and Information Center
1	2	3	4	5
1	Immunology: textbook	R. M. Khaitov	3rd ed. - Moscow: GEOTAR-Media, 2021. - 518 p.	60
2	Allergology and Clinical Immunology	R.M. Khaitov, N.I. Ilina	Moscow: GEOTAR-Media, 2019. - 336 p. Electronic	Unlimited access

			version available in ELS "Student's Consultant"	
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Supplementary reading

No.	Name/Title, Resource Type	Author(s)/Editor	Publisher Imprint, Web Address	Number of Copies (accesses) in the Library and Information Center
1	2	3	4	5
1	Fundamentals of Immunopathology: tutorial guide	V.T. Dolgikh, A.N. Zolotov	Moscow: Urait Publishing House, 2024. - 248 p. URL: https://urait.ru	Unlimited access
2	Janeway's Immunobiology	K. Murphy, C. Weaver; transl. ed. G. A. Ignatieva et al.	Moscow: Logosfera, 2020. - 1184 p. Electronic version available in ELS "BookUp"	Unlimited access

Online resources

1. Electronic library system "Student Consultant" <http://studmedlib.ru/>
2. Electronic library system "University Library Online" <http://www.biblioclub.ru/>
3. Electronic library system "Urait" <https://urait.ru/>
4. Electronic library system "BookUp" <https://www.books-up.ru/>
5. Resources owned by the Library and Information Center of FSBEI HE PSMU of the Ministry of Health of Russia <https://tgmu.ru/university/bibliotechno-informacionnyj-centr/resursy-bic/sobstvennye/>

Online resources and respective user guides are available on the Library and Information Center website [Library and Information Center — PSMU \(tgmu.ru\)](http://tgmu.ru)



5.2. Discipline Requirements for Facilities and Resources

Information on the facility and resource availability and requirements of the discipline is available on the [Facility and resource availability and requirements. FSBEI HE PSMU of the Ministry of Health of Russia \(tgmu.ru\)](http://tgmu.ru) page of the official website of the university.



5.3. List of Information Technologies, Information and Reference Systems, Licensed and Free Software (Including Domestically-developed Software):

1. PolycomTelepresence M100 Desktop Conferencing Application (Videoconference system)
2. SunRav Software tTester
3. 7-PDF Split & Merge
4. ABBYYFineReader
5. Kaspersky Endpoint Security
6. INDIGO online testing system
7. Microsoft Windows 7
8. Microsoft Office Pro Plus 2013

9. 1C:University
10. GARANT system
11. MOODLE (Modular Object-Oriented Dynamic Learning Environment)

6. ASPECTS OF THE IMPLEMENTATION OF THE DISCIPLINE FOR STUDENTS WITH DISABILITIES AND SPECIAL NEEDS

6.1. Availability of Accessible Environment

For students with disabilities and special needs, if a written application is submitted, lectures and practical classes are carried out taking into account health limitations, individual capabilities and medical status (hereinafter referred to as individual characteristics) of the student. Compliance with the following general requirements is ensured: teaching aids for collective and individual use are provided, required technical assistance is provided by an assistant; buildings and premises where lectures and practical classes are taking place meet accessibility requirements, other arrangements lack of which makes it impossible or difficult to master the discipline are made.

6.2. Ensuring Compliance with General Requirements

When lectures and practical classes are carried out at the written application of the student, the following general requirements are met: lectures and practical classes for students with disabilities and special needs take place at the same location as for students who do not have disabilities, if this does not cause difficulties for students; an assistant (assistants), who provide(s) students with the necessary technical assistance taking into account individual characteristics of the student, is (are) provided; necessary teaching aids are provided, taking into account individual characteristics of the student.

6.3. Availability of the Internal Policies and Procedures of FSBEI HE PSMU of the Ministry of Health of Russia to Students with Disabilities in a Format Accessible to Them.

All internal policies and procedures of FSBEI HE PSMU of the Ministry of Health of Russia concerning the discipline are made available to students with disabilities in a format accessible to them.

6.4. Increase in the Time Limit of Interim Assessment for Students with Disabilities and Special Needs in Relation to the Established duration

Format of the interim assessment of academic performance within the scope of the discipline conducted for students with disabilities and special needs is selected taking into account individual characteristics of the students (orally, by writing on paper, by typing on a computer, as a test, etc.). The duration of the interim assessment in relation to the established duration is increased at the written application of the student with disabilities. Time limit for the student's preparation for the test is increased by at least 0.5 hours.

7. STAFFING REQUIREMENTS OF THE DISCIPLINE

Academic teaching personnel that ensure the implementation of the discipline education process meet the requirements of the Federal State Educational Standard of Higher Education for the 31.05.01 General Medicine specialty; list of the aforementioned personnel is available on the website of the educational organization.



8. TUTORIAL WORK

Type of tutorial work	Forms and approaches to tutorial work
Assistance in personal growth	Overt Problem-centric debates, workshops, Olympiads, professional events (volunteers, organizers, administrators) Participation in subject and interdisciplinary Olympiads, practical skills competitions, applied science conferences and symposia Talks and problem-centric debates on topics of ethics and deontology in interactions with different categories of participants of professional activity
	Covert – creating atmosphere and infrastructure. Developing a culture of healthy lifestyle and cultivating skills aimed at preserving and improving health. Motivating students to participate in professional, research, administrative, and other kinds of professional activity. Creating atmosphere of kindness and respect with a high level of communication during implementation of the discipline.
Civic position and values	Overt Conducting events that facilitate development of civil culture (roundtable discussions, discussions/debates, and talks).
	Covert – focusing on civic values-oriented position and legal awareness Development of mindful civic position during professional activity Cultivating socially-relevant characteristics and personal experience of community work.
Social values	Overt Highlighting aspects of organization of healthy lifestyle based on health-preserving technologies. Highlighting ecology-related questions, environmental issues as a factor affecting population health and select population risks.
	Covert Development of environmental awareness and sustainable ecological behavior.