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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

_____ / Trankovskaya L.V./
"9" мая 2025

DISCIPLINE WORK PROGRAM

Б1.О.13 Immunology - Immunology in clinical practice

(name of discipline)

Specialty	**31.05.03 Dentistry for international students (in English)** (code, name)
Degree	Specialist's degree
Profile	02 "Healthcare" (in the field of providing health care in patients with dental pathology)
Mode of study	Full-time
Period of mastering the BEP	**5 years** (nominal length of study)
Department	of Laboratory Diagnostics in General and Clinical Practice

Vladivostok, 2025

Program of the discipline **Б1.О.13 Immunology - Immunology in clinical practice** is based on:
1) Federal State Educational Standard of Higher Education for the specialty approved by the Order No. 984 of Ministry of Science and Higher Education of the Russian Federation dated August 12, 2020.

2) Curriculum for the 31.05.03 Dentistry for international students (in English), profile 02 "Healthcare" (in the field of providing health care in patients with dental pathology), approved by the Academic Council of FSBEI HE PSMU of the Ministry of Health of Russia Report No. 8/24-25 dated March 31, 2025.

Work program for the discipline was developed by the writing team of the Department of Laboratory Diagnostics in General and Clinical Practice of the FSBEI HE PSMU of the Ministry of Health of Russia, under the guidance of the head of the department Doctor of Medical Sciences, Professor Prosekova E.V.

Developed by:

Head of the Department of Laboratory Diagnostics in General and Clinical Practice	Doctor of Medical Sciences, Professor	Prosekova E.V.
(position held)	(academic degree, academic title)	(full name)

1. GENERAL PROVISIONS

1.1. Purpose and Objectives of Mastering Б1.О.13 Immunology - Immunology in clinical practice

The purpose of mastering the discipline is learning about modern concepts of structure and function of the human immune system at cellular and molecular levels, adaptive and acquired defence mechanisms, etiology and pathogenesis of immunopathological processes (including immune-related and allergic disorders); as well as modern clinical, laboratory, and instrumental diagnostic methods; traditional and innovative approaches to disease prevention, treatment, and rehabilitation of patients in clinical practice of a dentist.

Objectives of mastering the discipline:

1. Becoming familiar with basics of general, specific, and clinical immunology on structure and mechanisms behind functioning and regulation of the human immune system that are necessary to understand the immune pathology
2. Studying effect of adverse environmental factors on the immune system (ecoimmunology); mastering skills of working with scientific literature and official statistics, principles of making a model of physiological and pathological immune processes on the organismic, cellular, and molecular levels;
3. Learning the basics of mechanisms behind progression and immunopathogenesis of autoimmune and other disorders of the immune system, principles of immune correction, main methods of experimental immunology, methods of assessing the immune status of a person and detecting immune disorders (immunodiagnostics).

2. DISCIPLINE AS PART OF THE BASIC EDUCATIONAL PROGRAM

Discipline Б1.О.13 Immunology - Immunology in clinical practice is included in the mandatory part of the Unit 1 of the basic educational program for the specialty 31.05.03 Dentistry for international students (in English) and is part of the 3rd and 4th semesters' curriculum.

3. PLANNED LEARNING OUTCOMES OF THE DISCIPLINE

3.1. Mastering the discipline **Б1.О.13 Immunology - Immunology in clinical practice** is aimed at the development of students' competencies. The discipline facilitates the development of students' competencies corresponding to the types of professional activity.

Competency Code	**Competency Description**	**Competency Indicators**
General Professional Competencies		
Basis of fundamental and natural science knowledge	GPC-9. Is able to assess morphofunctional status, physiological states, and pathological processes in the human body when working to achieve objectives of professional activity	CI.GPC-9_1- assesses the morphofunctional state of organs CI.GPC-9_2- distinguishes between pathological and physiological processes, identifies etiology of changes CI.GPC-9_3- provides diagnostic assessment of the identified changes

3.2. Types of professional activity corresponding to competencies developed over the course of mastering Б1.О.13 Immunology - Immunology in clinical practice:

Types of professional activity objectives

1. *Medical*

Kinds of professional activity objectives

1. *Examination of the patient in order to make a diagnosis*
2. *Prescribing pharmacological and non-pharmacological treatment and monitoring its*

efficiency and safety

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**	
			3	**4**
			hours	**hours**
1		2	3	4
Classroom hours (total), including:		**72**	**46**	**26**
Lectures (L)		16	10	6
Practical classes (C)		56	36	20
Independent work of the student (IW), including:		**36**	**26**	**10**
Electronic educational resource (EER)				
Preparing slides presentation		20	16	4
Preparing for classes (CP)		6	4	2
Preparing for continuous assessment (CAP)		6	4	2
Preparation for interim assessment (IAP)		4	2	2
Interim assessment				
Type of interim assessment	pass/fail test (T)	T		T
	exam (E)			
TOTAL: TOTAL credit value	hrs.	**108**	**72**	**36**
	credits	**3**	**2**	**1**

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. 3	
1.	Introduction to general immunology. Structure and function of immune system	2
2.	Innate immune response	2
3.	Adaptive (acquired) immunity	2
4.	Cell cooperation in immune response	2
5.	Introduction to clinical immunology. Methods of immunological diagnostics	2
	Hours per semester total	**10**
	Semester No. 4	
1.	Immunopathology and immune disorders	2
2.	Allergy and allergic reactions in clinical practice of a dentist	2
3.	Basics of immunotherapy in dentistry	2
	Hours per semester total	**6**

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

No.	Practical Class Topic	Hours
1	2	3
	Semester No. 3	
1	Introduction to immunology and aspects of immune response indifferent periods of a person's life	4
2	Cellular basis of immune system	4
3	Humoral factors of innate and acquired immunity	4
4	Hormones, cytokines, and mediators of the immune system as factors regulating immune response	4
5	Immunologic defense mechanisms of the oral cavity	4
6	Genetic regulation of immune response	2
7	Autoimmune diseases	2
8	Transplant immunology	2
9	Antitumor immunity	2
10	Interim knowledge control on Module 1 "General immunology"	4
11	Introduction to clinical immunology	2
12	Immune disorders; HIV infection and its features	2
	Hours per semester total	**36**
	Semester No. 4	
1	Primary and secondary immunodeficiency: aspects, causes, mechanisms, clinical manifestations, and diagnostics	4
2	Allergy and allergic reactions in clinical practice of a dentist	4
3	Drug allergy and its manifestations, including anaphylaxis, in clinical practice of a dentist	4
4	Basics of immunotherapy in dentistry	4
5	Interim knowledge control on Module 2 "Clinical immunology"	4
	Hours per semester total	**20**

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. 3		
1	Immune surveillance. Immune system in regulation of homeostasis and in interaction with other systems of the body	Preparing slides presentation for a report	2
2	Mucosae and skin, their role in the immune system. The concept of "mucosal immunity"	Preparing slides presentation for a report	2
3	Phylogeny of the thymus gland and T-lymphocytes. Age-related changes of T-lymphocyte subpopulations	Preparing for classes	2
4	Impact of age and biological sex on the immune response to infections	Preparing slides presentation for a report	2
5	Cytokines and tissue regeneration, their role in healing wounds of the skin and mucosae. Cytokine therapy: its scope of application, pros and cons	Preparing for continuous assessment	2
6	Interferons in antiviral and antitumor immunity	Preparing slides presentation for a report	2

7	Secretory IgA in the maxillofacial area	Preparing classes	2
8	Major histocompatibility complex in organ transplantation, identity verification, forensic medicine and veterinary science, anthropology	Preparing slides presentation for a report	2
9	Overcoming graft (transplant) and host incompatibility	Preparing slides presentation for a report	2
10	Autoimmune diseases of the oral cavity and their effect on the teeth	Preparing slides presentation for a report	2
11	Link between periodontitis and autoimmune inflammation	Preparing for interim assessment	2
12	Manifestation of HIV infection in the oral cavity and maxillofacial area	Preparing for continuous assessment	2
13	Immunodeficiency and the oral cavity: causes, symptoms, diagnosis, and treatment	Preparing slides presentation for a report	2
	Hours per semester total		**26**
	Semester No 4		
1	Allergic disorders of the oral cavity in the clinical practice of a dentist	Preparing slides presentation for a report	2
2	Clinical manifestations of drug-induced pseudoallergic reaction	Preparing for classes	1
3	Specific diagnostic methods for detecting drug allergy in vivo. Indications. Assessment of the results	Preparing slides presentation for a report	2
4	Differential diagnosis of anaphylaxis and anaphylactoid reactions	Preparing for continuous assessment	2
5	Principles of immune correction in dentistry	Preparing for classes	1
6	Algorithm of emergency medical aid for patients with anaphylaxis in clinical practice of a dentist	Preparing for interim assessment	2
	Hours per semester total		**10**

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 (in English)	R. M. Khaitov. - Upd. 2nd ed.	M. : GEOTAR-Media, 2019. - 263 p.	1
2	Immunology : textbook	Khaitov R.M.	Moscow : GEOTAR-Media, 2008. - 256 p. ЭБС «Консультант студента»	Unlimited access
3	Аллергология и клиническая иммунология [Электронный ресурс]	Р.М. Хаитов, Н.И. Ильина	М. : ГЭОТАР-Медиа, 2019. - 336 с. URL: http://www.studentlibrary.ru/	Unlimited access

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	Иммунология : учебное пособие для вузов.	С. Я. Дьячкова,	3-е изд., стер. — Санкт-Петербург : Лань, 2022. — 168 с.— URL: https://e.lanbook.com/	Unlimited access
2	Иммунология и клиническая иммунология : учеб. пособие [Электронный ресурс]	Р. И. Сепиашвили, Е. А. Левкова, Т. А. Славянская, Р. А. Ханферьян.	М. : ГЭОТАР-Медиа, 2023. - 160 с. URL: http://www.studentlibrary.ru	Unlimited access
3	Иммунотерапия [Электронный ресурс]	под ред. Р. М. Хаитова, Р. И. Атауллаханова, А. Е. Шульженко	М. : ГЭОТАР-Медиа, 2020. - 768 с.: http://www.studentlibrary.ru/	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)

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)" 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 **31.05.03 Dentistry for international students (in English)** 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	Assessment criteria
Assistance in personal growth	Overt Б1.О.13 Immunology - Immunology in clinical practice Talks and problem-centric debates aimed at promotion of healthy lifestyle. Participation in interdepartmental conferences aimed at formation of healthy lifestyle and development of skills necessary to preserve and improve health.	Portfolio
	Covert – creating atmosphere and infrastructure. Б1.О.13 Immunology - Immunology in clinical practice Developing a culture of healthy lifestyle, the ability to preserve and improve health. Creating atmosphere of kindness and respect with a high level of communication during implementation of the discipline.	
Civic position and values	Overt Б1.О.13 Immunology - Immunology in clinical practice Conducting events that facilitate development of civil culture (roundtable discussions, discussions/debates, and talks). Short discussions on current significant events in case the latter occur.	Portfolio
	Covert Б1.О.13 Immunology - Immunology in clinical practice Focusing on civic values-oriented position and legal awareness. Cultivating mindful social position during professional activity.	
Social values	Overt Б1.О.13 Immunology - Immunology in clinical practice 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. Arranging events aimed at developing ethical norms and norms of conduct in sports community.	Portfolio
	Covert Б1.О.13 Immunology - Immunology in clinical practice Identification in social structure during period of education and in professional activity.	