№ Стом-21ИН

Federal State Budgetary Educational Institution of Higher Education
"NORTH OSSETIAN STATE MEDICAL ACADEMY"
of the Ministry of Health of the Russian Federation

ДОКУМЕНТ ПОДПИСАН ЭЛЕКТРОННОЙ ПОДПИСЬЮ

Сертификат: 2D4EFF8215A48D63793F851FADB089F4
Владелец: Ремизов Олег Валерьевич
Действителен: с 23.05.2023 до 15.08.2024

APPROVE
Rector of the Federal State Educational Institution in SOGMA
Ministry of Health of Russia
_____O.V. Remizov
"24" May 2023

WORKING PROGRAM OF THE DISCIPLINE

«Clinical immunology»

of the main professional educational program of higher education – specialty program in the specialty 31.05.03 Dentistry, partially implemented in English,
approved on 24.05.2023

The form of study is full-time

The period of development of the main professional educational programs of higher education

5 years

Department of Internal Diseases №3

Vladikavkaz, 2023

When developing the work program , the disciplines are based on:

1. The Federal State Educational Standard of higher education for the specialty 31.05.03 Dentistry, approved by the Ministry of Education and Science of the Russian Federation on August 12, 2020 № 984

2. The curriculum of the main professional educational programs of higher education in the specialty 31.05.03 Dentistry
Стом-21-01-21ИН,
Стом-21-02-22ИН,
Стом-21-03-23ИН, approved by the Scientific Council of the Federal State Budgetary Educational Institution of the Ministry of Health of the Russian Federation on May 24, 2023, Protocol No. 8
The working program of the discipline was approved at the meeting of the Department of Internal Diseases No. 3 dated May 15, 2023, Protocol No.10
The working program of the discipline was approved at the meeting of the central coordinating Educational and Methodological Council of May 23, 2023, Protocol No.5
The working program of the discipline was approved by the Academic Council Federal State Budgetary Educational Institution of the Ministry of Health of the Russian Federation dated May 24, 2023, Protocol No.8

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The content of the work program

1. name of the discipline;
2. the list of planned learning outcomes in the discipline, correlated with the planned results of the development of the educational program;
3. indication of the place of discipline in the structure of the educational program;
4. the amount of discipline in credit units indicating the number of academic or astronomical hours allocated for contact work of students with a teacher (by type of training sessions) and for independent work of students;
5. the content of the discipline, structured by topics (sections) with an indication of the number of academic or astronomical hours allocated to them and types of training sessions;
6. the list of educational and methodological support for independent work of students in the discipline;
7. the fund of evaluation funds for the interim certification of students in the discipline;
8. the list of basic and additional educational literature necessary for the development of the discipline;
9. list of resources of the information and telecommunication network "Internet" (hereinafter referred to as the "Internet"), necessary for the development of the discipline;
10. methodological guidelines for students on the development of the discipline;
11. list of information technologies used in the implementation of the educational process in the discipline, including a list of software and information reference systems (if necessary);
12. description of the material and technical base necessary for the implementation of the educational process in the discipline.
13. conducting educational activities using e-learning and distance learning technologies.

2. The list of planned learning outcomes in the discipline and the results of the development of the educational program

№ i/o	Competence number/index	The content of the competence (or part of it)	Topic of the lesson (section)	Indicators of competence achievement	Development results		
					know	be able	to own
1	2	3	4	5	6	7	8
1.	EPC -5	Is able to conduct a patient examination in order to establish a diagnosis when solving professional tasks	Immune status. Principles of assessing the immune status.	AI-1 EPC-5 Possess the algorithm of clinical and laboratory diagnostics to assess the immune status AI-2 EPC-5 Be able to evaluate the results of clinical and laboratory diagnostics to assess the immune status AI--3 EPC-5 Possess an algorithm for assessing a person's immune status according to first-level tests	the structure and functions of the human immune system, the mechanism of development and functioning of the immune system, the main stages of the development of the immune response, methods of immunodiagnostics	interpret the results of the assessment of the immune status according to the tests of the 1st level to justify the need for clinical and immunological examination of the patient.	possess an algorithm for assessing the immune status according to first-level tests, followed by referral to an allergist-immunologist.
2	EPC -5	Is able to conduct a patient examination in order to establish a diagnosis when solving professional tasks	Immunodeficiency of genetic origin (primary), classification, basic forms. Principles of diagnosis and treatment. Secondary (acquired) immunodeficiency, definition, diagnosis, clinical manifestations, treatment approaches.	AI-1 EPC-5 Master the algorithm of clinical and laboratory diagnostics of patients with primary and secondary immunodeficiency AI-2 EPC-5 Be able to evaluate the results of clinical and laboratory work of patients with primary immunodeficiency AI--3 EPC-5 To master	the methodology of collecting an immunological history, indications and principles of assessing the immune status according to the first-level tests of patients with primary and secondary	Collect complaints, immunological history of a patient with primary and secondary immunodeficiency, interpret the results of the immunogram according to level 1 tests.	Skills of analysis and interpretation of the results of laboratory immunogram readings according to level 1 tests, followed by referral to an allergist-immunologist.

				the algorithm of clinical and laboratory assessment of the immune status according to the indicators of the first-level immunogram in patients with primary and secondary immunodeficiency	immunodeficiency		
3	EPC -5	Is able to conduct a patient examination in order to establish a diagnosis when solving professional tasks	Autoimmune disorders Systemic lupus erythematosus (SLE), immunopathogenesis, immunodiagnostics. Rheumatoid arthritis (RA), immunopathology, immunodiagnostics.	AI-1 EPC-5 To master the algorithm of clinical examination of a patient with SLE and RA AI-2 EPC-5 Be able to draw up a plan for laboratory and instrumental diagnostics of a patient with SLE and RA AI--3 EPC-5 To master the algorithm of clinical, laboratory and functional diagnostics of a patient with SLE and RA	To know the mechanisms of development of the immune response, immunological disorders in patients with autoimmune pathology (SLE, RA); the method of collecting an immunological history, the principles of assessing the immune status of patients with SLE, RA	Collect complaints, immunological history of a patient with SLE, RA, interpret the results of the immunogram according to level 1 tests	Skills of collecting complaints, immunological history, interpretation of immunogram results in patients with SLE and RA.
4	EPC -5	Is able to conduct a patient examination in order to establish a diagnosis when solving professional tasks	Immunopathogenesis of autoimmune diseases with damage to the nervous system (malignant myasthenia gravis), endocrine organs (autoimmune thyroiditis).	AI-1 EPC-5 Possess the algorithm of clinical examination of the patient. AI-2 EPC-5 Should be able to make a plan for	To know the mechanisms of development of the immune response, immunological	Collect complaints, immunological history of a patient with myasthenia	Skills of collecting complaints, immunological history, interpretation

				laboratory and instrumental diagnostics. AI--3 EPC-5 To master the algorithm of clinical and laboratory diagnostics of a patient with autoimmune thyroiditis and myasthenia gravis	disorders in patients with autoimmune pathology (myasthenia gravis, autoimmune thyroiditis); the method of collecting an immunological history, the principles of assessing the immune status of patients with autoimmune pathology.	gravis, autoimmune thyroiditis, interpret the results of a laboratory immunological study.	of immunogram results in patients with autoimmune thyroiditis, myasthenia gravis.
5	EPC -5	Is able to conduct a patient examination in order to establish a diagnosis when solving professional tasks	Infections of the immune system. Epstein-Barr viruses, herpes simplex, cytomegalovirus and other pathogens.	AI-1 EPC-5 Possess the algorithm of clinical and laboratory examination of a patient for a patient with herpesvirus infection AI-2 EPC-5 Be able to draw up a plan for a laboratory examination of a patient with a herpesvirus infection AI--3 EPC-5 To master the algorithm of clinical and laboratory diagnostics for a patient with herpesvirus infection	the main forms of the immune response in infections of the immune system (Epstein-Barr viruses, herpes simplex, cytomegalovirus, the method of collecting an immunological history, the principles of assessing the immune status of patients.	Collect complaints, immunological history of the patient, interpret the results of laboratory immunological examination.	Skills of collecting complaints, immunological history, interpretation of immunogram results in patients with an infection of the immune system (Epstein-Barr viruses, herpes simplex, cytomegalovirus)

6	EPC -5	Is able to conduct a patient examination in order to establish a diagnosis when solving professional tasks	Allergy. Types of allergens. Pathogenetic classifications of allergic reactions according to Jell and Coombs. Allergodiagnostics Principles of diagnosis of allergic diseases. Principles of treatment of patients with allergies. Rehabilitation of allergy patients.	AI-1 EPC-5 To master the algorithm of clinical examination of a patient with allergic diseases AI-2 EPC-5 Be able to make a plan for laboratory diagnostics of a patient with allergic diseases. AI--3 EPC-5 Possess the algorithm of allergological examination of patients with allergic diseases	immunological disorders in the development of allergopathology; types of allergens; types of allergic reactions, principles of interpretation of skin tests.	to justify the need for an allergological examination of the patient, to interpret the results of an allergological examination	Collection of an allergological history, interpretation of the results of skin testing with atopic allergens
7	EPC -5	Is able to conduct a patient examination in order to establish a diagnosis when solving professional tasks	Bronchial asthma, classification, etiology and pathogenesis of atopic bronchial asthma	AI-1 EPC-5 To master the algorithm of clinical and allergological examination of a patient with atopic bronchial asthma AI-2 EPC-5 Be able to make a plan for an allergological examination of a patient with atopic bronchial asthma AI--3 EPC-5 To master the algorithm of clinical and allergological examination of a patient with atopic bronchial asthma	mechanisms of development of the immune response in atopic AD, factors provoking the development of AD, principles of diagnosis.	to justify the need for an allergological examination of the patient, to interpret the results of an allergological examination	Skills of collecting an allergological history, interpretation of the results of skin testing with atopic allergens
8	EPC -5	Is able to conduct a patient examination in order to establish a diagnosis when solving	Pollinosis. Allergic rhinitis. Diagnostics.	AI-1 EPC-5 Possess the algorithm of clinical examination of a patient with allergic rhinitis.	the main forms and symptoms of allergic rhinitis in	to substantiate the nature of the immunopatholo	Skills to determine the patient's main symptoms of

		professional tasks		AI-2 EPC-5 Be able to make a plan for laboratory diagnostics of allergic rhinitis. AI--3 EPC-5 To master the algorithm of clinical, laboratory and functional diagnostics of allergic rhinitis	accordance with the International Statistical Classification of Diseases and Health-related Problems, X revision	gical process, to justify the need for clinical and immunological examination;	allergic rhinitis and, if necessary, referral for additional examination and to an allergist
9	EPC -5	Is able to conduct a patient examination in order to establish a diagnosis when solving professional tasks	Atopic dermatitis, clinical forms, diagnosis.	AI-1 EPC-5 Possess the algorithm of clinical examination of a patient with atopic dermatitis. AI-2 EPC-5 Be able to make a plan for laboratory diagnostics of atopic dermatitis. AI--3 EPC-5 Possess the algorithm of clinical, laboratory and functional diagnostics of atopic dermatitis	methods of diagnosis of atopic dermatitis , types and indications for the use of immunotropic therapy	To substantiate the need for clinical and immunological examination of the patient, to carry out immunological diagnostics, to interpret the results of the main diagnostic allergological tests	the ability to determine the patient's main pathological conditions, symptoms of atopic dermatitis
10	EPC -5	Is able to conduct a patient examination in order to establish a diagnosis when solving professional tasks	Food allergy Clinical forms of food allergy. Diagnostics.	AI-1 EPC-5 Possess the algorithm of clinical examination of a patient with food allergies. AI-2 EPC-5 Should be able to make a plan for laboratory and instrumental diagnostics of a patient with food allergies. AI--3 EPC-5 To master the algorithm of clinical, laboratory and functional diagnostics of a patient	methods of diagnosing food allergies	To substantiate the need for clinical and immunological examination of the patient, to carry out immunological diagnostics, to interpret the results of the main diagnostic allergological	the ability to determine the patient's main pathological conditions, symptoms of food allergies

				with food allergies.		tests	
11	EPC -5	Is able to conduct a patient examination in order to establish a diagnosis when solving professional tasks	Urticaria and Quincke's edema. Classification, allergens. Clinical picture.	AI-1 EPC-5 To know the algorithm of clinical examination of a patient with urticaria and angioedema. AI-2 EPC-5 To be able to make a plan for laboratory and instrumental diagnostics of examination of a patient with urticaria and angioedema. AI--3 EPC-5 Possess the algorithm of clinical, laboratory and functional diagnostics of urticaria and angioedema.	the main forms of immunoallergopathology: urticaria and angioedema	to substantiate the nature of the immunopathological process, clinical manifestations, principles of pathogenetic therapy; to substantiate the need for clinical and immunological examination;	Skills of making a preliminary diagnosis based on the results of a laboratory examination of patients;
12	EPC -5	Is able to conduct a patient examination in order to establish a diagnosis when solving professional tasks	Drug allergy. Anaphylactic shock. Etiology, pathogenesis. Clinical picture. Diagnosis. Treatment and prevention. Emergency measures for systemic anaphylaxis.Serum sickness. Etiology, pathogenesis. Clinical manifestations. Treatment, warning. Other forms of allergic diseases (Lyell syndrome, Stevens-Johnson syndrome).	AI-1 EPC-5 Possess the algorithm of clinical examination of a patient with a drug allergy. AI-2 EPC-5 Should be able to make a plan for laboratory and instrumental diagnostics of a patient with a drug allergy. AI--3 EPC-5 Possess the algorithm of clinical, laboratory and functional diagnostics of drug allergy.	the main forms of immunoallergopathology: urticaria and angioedema	to substantiate the nature of the immunopathological process, clinical manifestations, principles of pathogenetic therapy; to substantiate the need for clinical and immunological examination	Skills of making a preliminary diagnosis based on the results of a laboratory examination of patients;
13	EPC-7	He is able to organize work and make	Drug allergy. Anaphylactic shock. Etiology,	AI-1 EPC-5 Master the algorithm of primary	provoking factors, the clinical	To identify clinical signs of	Emergency care skills for

		professional decisions in urgent conditions.	pathogenesis. Clinical picture. Diagnosis. Treatment and prevention. Emergency measures for systemic anaphylaxis. Serum sickness. Etiology, pathogenesis. Clinical manifestations. Treatment, warning. Other forms of allergic diseases (Lyell syndrome, Stevens-Johnson syndrome).	health care for anaphylactic shock at the prehospital stage	picture of an attack of atopic bronchial asthma	conditions requiring urgent medical care at the prehospital stage	anaphylactic shock
14	EPC-7	Able to organize work and make professional decisions in urgent conditions	Immunotherapy. The main types of immunotherapy, indications and contraindications Immunocorrection. Definition. Types of immunocorrection	AI-1 EPC-5 Master the algorithm of primary health care for anaphylactic shock at the prehospital stage	Types and indications for the use of immunotropic therapy	To justify the need for the use of immunocorrecti ve therapy	Ability to determine the tactics of management of patients with immune-dependent diseases

3. The place of discipline in the structure of the educational program

The discipline "Clinical Immunology" is a discipline of the mandatory part formed by the participants of the educational relations of the Block1 of the Federal State Educational Standard in the specialty "Dentistry"

4. The scope of the discipline

№ i/o	Type of work		Total credits	Total hours	Term 4 hours
1	2		3	4	5
1	**Contact work of students with the teacher (total), including:**		-	46	46
2	Lectures (L)		-	10	10
3	Clinical Practical training (PT)		-	36	36
4	Seminars (C)			-	-
5	Laboratory work (LW)			-	-
6	**Independent work of a student (IWS)**		-	26	26
7	**Type of intermediate certification**	test (H)	+	+	+
		exam (E)			-
8	**TOTAL: Total labor intensity**	hours		**72**	**72**
		credits	**2**		**2**

5. Content of the discipline

№ i/o	№ semester	Name of the topic (section) of the discipline	Types of educational activities (in hours)					Forms of ongoing monitoring of academic performance
			L	LW	PT	IWS	total	
1	2	3	4	5	6	7	8	9
1	4	Definition of clinical immunology, tasks. Methods of studying the immune status and principles of its assessment.	2		2	4	8	Testing, survey, situational tasks
2	4	Immunodeficiency of genetic origin (primary), classification, basic forms. Principles of diagnosis and treatment.	2		2	4	8	Testing, survey, situational tasks

3		Secondary (acquired) immunodeficiency, definition, characteristics, pathogenetic mechanisms of development, diagnosis, clinical manifestations, treatment approaches			2	2	4	Testing, survey, situational tasks
4	4	Autoimmune disorders Basic concepts, immunopathogenesis of the main forms, immunodiagnostics, main clinical manifestations, immunocorrection.			2	2	4	Testing, survey, situational tasks
5	4	Rheumatoid arthritis, clinic, diagnosis			2	2	4	Testing, survey, situational tasks
6	4	Infections of the immune system Basic concepts. Viruses that are pathways to the immune system. Human immunodeficiency virus (HIV). Epstein-Barr viruses, herpes simplex, cytomegalovirus and other pathogens.			2	4	6	Testing, survey, situational tasks
7	4	Allergology. Pathogenetic classifications by A.D. Ado and by Jell and Coombs. Allergodiagnostics	2		2		4	Testing, survey
8		Principles of diagnosis of allergic diseases. Allergic history. Skin tests, their types, indications for conducting. Provocative tests, types, methods of staging. Laboratory methods			2	4	6	Testing, survey, situational tasks
9	4	Allergy of anaphylactic type. Anaphylactic shock. Etiology, pathogenesis. Clinical picture. Diagnosis. Treatment and prevention. Emergency measures for systemic anaphylaxis.			2		2	Interview. Testing Situational tasks.
10	4	Allergy of the atopic type. Pollinosis. The main nosological forms. Diagnostics. Differential diagnosis.	2		2		4	Interview. Testing Situational tasks.
11	4	Cytotoxic type allergy. Allergy of the immunocomplex type. Serum sickness. The phenomenon of Artyus.			2		2	Interview. Testing Situational tasks.

12	4	Urticaria and Quincke's edema. Classification, allergens. Clinical picture. Differential diagnosis with hereditary angioedema.			2	4	6	Interview. Testing Situational tasks.
13	4	Allergy caused by medications. Etiology and pathogenesis. Clinical manifestations, diagnostics. Food and insect allergies.	2		2		4	Interview. Testing Situational tasks.
14	4	Food and insect allergy Etiology and pathogenesis. Clinical manifestations, diagnostics.			2		2	Interview. Testing Situational tasks.
15	4	Intolerance to products made of acrylates, latex and gypsum. Intolerance to metal dentures: etiology, pathogenesis, principles of prevention and treatment. Amalgams, their characteristics, effect on oral tissues and the body.			2		2	Interview. Testing Situational tasks.
16	4	Emergency care in allergology			2		2	Interview. Testing Situational tasks.
17	4	Immunotherapy. The main types of immunotherapy, indications and contraindications. Immunosuppression.			2		2	Testing, interview
18	4	Immunocorrection. Definition. Types of immunocorrection Immunomodulators, definition. The main groups of immunomodulators (endogenous, bacterial nature, synthetic agents and others), mechanisms of action. Indications for use.			2		2	Testing, survey, situational tasks
ИТОГО:			**10**	**-**	**36**	**26**	**72**	

6. List of educational and methodological support for independent work of students in the discipline

№ i/o	**№ semester**	**Name of the educational and methodological development**
1	**4**	«Первичные иммунодефициты.»Учебно - методическая разработка для самостоятельной подготовки студентов к практическому занятию. Владикавказ, 2015. – ЦМК терапевтических дисциплин.
2		«Аутоиммунные заболевания.»Учебно - методическая разработка для самостоятельной подготовки студентов к практическому занятию. Владикавказ, 2014. – ЦМК терапевтических дисциплин.
3		«Принципы диагностики и лечения аллергических заболеваний». Учебно-методическая разработка для самостоятельной подготовки студентов к практическому занятию. Владикавказ, 2015. – ЦМК терапевтических дисциплин.

4		«Крапивница и отек Квинке»Учебно - методическая разработка для самостоятельной подготовки студентов к практическому занятию. Владикавказ, 2015. – ЦМК терапевтических дисциплин.
5		«Лекарственная аллергия»Учебно- методическая разработка для самостоятельной подготовки студентов к практическому занятию. Владикавказ, 2019. – ЦМК терапевтических дисциплин.
6		«Бронхиальная астма». Учебно - методическая разработка для самостоятельной подготовки студентов к практическому занятию. Владикавказ, 2018. – ЦМК терапевтических дисциплин.
7		«Пищевая аллергия Атопический дерматит». Учебно - методическая разработка для самостоятельной подготовки студентов к практическому занятию. Владикавказ, 2016. – ЦМК терапевтических дисциплин.
8		«Поллиноз». Учебно - методическая разработка для самостоятельной подготовки студентов к практическому занятию. Владикавказ, 2016. – ЦМК терапевтических дисциплин.
9		«Неотложные состояния в аллергологии». Учебно - методическая разработка для самостоятельной подготовки студентов к практическому занятию. Владикавказ, 2016. – ЦМК терапевтических дисциплин.
10		«Проявления иммунопатологии в полости рта.Учебно - методическая разработка для самостоятельной подготовки студентов к практическому занятию. Владикавказ, 2015. – ЦМК терапевтических дисциплин.
11		Тестовые задания для контроля на практических занятиях и итоговом занятии Ситуационные задачи Лекции по клинической иммунологии

7. The Fund of evaluation funds for the interim certification of students in the discipline

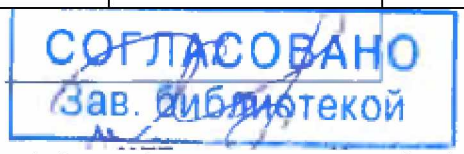
№ i/o	List of competencies	№ semester	Evaluation indicator(s)	Evaluation criterion(s)	Rating scale	Name of the evaluation fund
1	**2**	**3**	**4**	**5**	**6**	7
1	EPC - 5 EPC -7	**4**	see the evaluation standard quality of education approved by the Order of the FSBEI of HE Ministry of Health Russia from 10.07.2018 No.264/o	see the evaluation standard quality of education approved by the Order of the FSBEI of HE Ministry of Health Russia from 10.07.2018 No.264/o	see the evaluation standard quality of education approved by the Order of the FSBEI of HE Ministry of Health Russia from 10.07.2018 No.264/o	Test tasks; survey; situational tasks;

8. The list of basic and additional educational literature necessary for the development of the discipline

№ i/o	Name	Author(s)	Year, place of publication	Number of instances	
				in the library	at the department
1	2	3	4	5	6
Basic literature					
1.	Иммунология: учебник	Хаитов Р. М.	М. : ГЭОТАР-Медиа, 2006, 2015	102 31	
				«Консультант студента» http://www.studmedlib.ru/book/ISBN9785970433454.html	
2.	Медицинская микробиология, вирусология и иммунология: учебник	ред. В.В. Зверев	М.: ГЭОТАР-Медиа, 2011, 2016	Т.1 – 240 Т.2 – 236	
				«Консультант студента» http://www.studmedlib.ru/book/ISBN9785970436417.html	
				«Консультант студента» http://www.studmedlib.ru/book/ISBN9785970436424.html	
3.	Медицинская микробиология, вирусология, иммунология: учебник	ред. А.А. Воробьев	М.: МИА, 2004, 2006, 2008	15 1 5	
Additional literature					
1.	Аллергология и иммунология: национальное руководство	ред. Р.М. Хаитов	М.: ГЭОТАР-Медиа, 2009	10	
2.	Основы иммунологии	Ройт А.	М.: Мир, 1991	5	
3.	Иммунология : учебник	Ярилин А. А.	М.: ГЭОТАР-Медиа, 2010	1	
				«Консультант студента» http://www.studmedlib.ru/book/ISBN9785970413197.html	
4.	Клиническая иммунология и аллергология	ред Г. Лолор	М.: Практика, 2000	4	
5.	Клиническая иммунология и аллергология с основами общей иммунологии:	Ковальчук Л.В., Ганковская Л.В., МешковаР.Я.	М.: ГЭОТАР - Медиа, 2011, 2012	20	
				«Консультант студента» http://www.studmedlib.ru/book/ISBN9785970422410.htm	

	учебник			1	
6.	Аллергология: клинические рекомендации	ред. Р.М. Хаитов	М.: ГЭОТАР - Медиа, 2006	10	
7.	Иммунология. Атлас: учеб.пособие	Хаитов Р.М., Ярилин А.А., Пинегин Б.В.	М.: ГЭОТАР - Медиа, 2011	«Консультант студента» http://www.studmedlib.ru/book/ISBN9785970418581.html	
8.	Наглядная иммунология	Плейфэр Д.	М.: ГЭОТАР-Медиа, 2000	49	
9.	Медицинская микробиология, вирусология, иммунология : учебник	Борисов Л. Б.	М. : МИА, 2005	3	
10.	Клиническая иммунология : учебник	Земсков А. М., Земсков В. М., Караулов А. В.	М. : ГЭОТАР-Медиа, 2006, 2008	40	
				«Консультант студента» http://www.studmedlib.ru/book/ISBN9785970407752.html	
11.	Иммунология. Норма и патология: учебник	Хаитов Р.М., Игнатьева Г.А., Сидорович И.Г.	М.: Медицина, 2010	1	
12.	Медицинская микробиология, иммунология и вирусология: учебник	Коротяев А. И., Бабичев С. А.	СПб. : СпецЛит, 2008.	1	
13.	Основы клинической иммунологии: учеб.пособие	Е. Чепель и др.	М. : ГЭОТАР-Медиа, 2008	7	
14.	Практикум лабораторных работ с иллюстрированными ситуационными заданиями по микробиологии, иммунологии и вирусологии : учеб.пособие	ред. А. А. Воробьев	М. : МИА, 2008	1	
15.	Руководство по клинической иммунологии. Диагностика заболеваний иммунной системы: руководство для врачей	Хаитов Р. М., Пинегин Б. В., Ярилин А. А.	М. : ГЭОТАР-Медиа, 2009	1	
				«Консультант студента» http://www.studmedlib.ru/book/ISBN9785970409176.html	
16.	Иммунология: практикум	ред. Л.В.	М. :	1	

	: учеб.пособие	Ковальчук	ГЭОТАР-Медиа, 2010, 2015	«Консультант студента» http://www.studmedlib.ru/book/ISBN9785970435069.html
17.	Микробиология, вирусология и иммунология : руководство к лабораторным занятиям: учеб. пособие	ред. В. Б. Сбойчаков	М. : ГЭОТАР-Медиа, 2012, 2015	56 «Консультант студента» http://www.studmedlib.ru/book/ISBN9785970435755.html



9. The list of resources of the information and telecommunication network "Internet", necessary for the development of the discipline

1.http://immunology.org/
2. http://pathmicro.med.sc.edu/book/immunol-sta.htm
3. http://humbio.ru/humbio/immunology
4. www.pulmonology.ru
5. www.allergology.ru
6. www.raaci.ru

10.Methodological guidelines for students on the development of the discipline

The training consists of contact work (lectures, clinical practical classes) – 46 hours, independent work (26 hours), a total of 72 hours, which is 2 credit units.

During their implementation, modern information technologies and technical training tools are used.

Practical classes are held in the study rooms of the department, medical offices. In the presence of thematic patients, their clinical analysis is carried out.

The number of students in the study group is 9-11 people. Classes are provided with the necessary visual tabular material, test tasks, situational tasks, game medical documentation. There are blocks of information for each section of the program.

During the training, students not only solve the tasks assigned to them to acquire knowledge and acquire the necessary practical skills and abilities, but also develop abilities, personal qualities that determine the professional behavior of a specialist. The main method of teaching is the student's independent work under the guidance of a teacher during the patient's admission to the polyclinic.

In accordance with the requirements of the Federal State Educational Standard HE3+, active and interactive forms of classes are used in the educational process (problem lectures, talk lectures, business games) The proportion of classes conducted in interactive forms is at least 15% of classroom classes.

Independent work of students provides for their study of a number of issues of clinical immunology in extracurricular time, preparation for the current control of students, the performance of individual educational tasks.

Work with educational literature is considered as a type of educational work and is performed within the hours allotted for its study (in the section of the independent work of students). Each student is provided with access to the library collections of the Academy and the fund of methodological developments of the department. Methodological recommendations for independent training of students and methodological guidelines for teachers have been developed for each section of the

discipline.

Independent work with literature forms the ability to analyze medical and social problems, the ability to use natural science, biomedical and clinical information in practice in various types of professional and social activities.

The initial level of students' knowledge is determined by testing

The current control (control of the study of the modular unit) is carried out in the form of a set of the following measures:

-an oral interview on the current material

-solving situational problems

-test control

-evaluation of additional research data

-evaluation of the solution of deontological tasks related to the collection of information about a particular patient and the assessment of the revealed subjective and objective data about his health.

The control at the modular lesson is carried out in several stages:

- □ test control
- □ solving a situational problem
- □ oral answer to the teacher's questions

Independent work of students is carried out with the help of graphic schemes on the studied topics, solving situational problems.

At the end of the cycle, it is planned to conduct a test session in the form of a test control and an oral survey

11. List of information technologies used in the implementation of the educational process in the discipline

The educational technologies used in the study of this discipline account for about 15% of interactive classes from the volume of classroom classes. Types of educational technologies:
Simulation:
A) non-game simulation technologies: contextual learning
B) game simulation technologies: role-playing business games
Non-imitation technologies: problem lecture, lecture-conversation
Contextual learning is carried out throughout the entire period of teaching the discipline, especially during the independent work of students under the supervision of the teacher – knowledge, skills, skills are given not as a subject for memorization, but as a means of solving professional problems.

12. Description of the material and technical base necessary for the implementation of the educational process in the discipline

Clinical bases of the Department of Internal Diseases No. 3 are:

Clinical Hospital NOSMA– 2 study rooms

State Budgetary Health Care Institution Polyclinic No. 1 – assistant and 3 study rooms

№ i/o	Name of the equipment	Quantity	Technical condition
1	2	3	4
Special equipment			
1.	Toshiba Projector (multimedia)	1	satisfactory
2.	Computer	6	satisfactory

3.	A laptop	1	satisfactory
4.	Copying equipment	3	satisfactory
5.	Overhead	1	satisfactory
Phantoms			
6.	-	-	-
Dummies			
7.	-	-	-
8.	-	-	-

13. Conducting educational activities using e-learning and distance learning technologies

In the conditions of the introduction of restrictive measures (quarantine) associated with an unfavorable epidemiological situation, the threat of the spread of a new coronavirus infection and other force majeure events that do not allow for face-to-face training, it is possible to study this discipline or part of it using e-learning and distance learning technologies.

The teaching of the discipline in the situations described above will be carried out through the development of an electronic course with access to video lectures and interactive course materials: presentations, articles, additional materials, tests and various tasks. When conducting training sessions, current performance monitoring, as well as intermediate certification of students, the platforms of the electronic information and educational environment of the academy and/ or other e-learning systems recommended for use at the academy, such as Moodle, Zoom, Webinar, etc. can be used.

Lectures can be presented in the form of audio, video files, "live lectures", etc.

Seminars and practical classes can be held on-line in both synchronous and asynchronous mode. Seminars can be held in the form of web conferences.