№ ЛД-16ИН

Federal State Budgetary Educational Institution of Higher Education

«North-Ossetia State Medical Academy»

of the Ministry of Healthcare of the Russian Federation

APPROVED

Rector of FSBEI HE NOSMA MOH Russia

«17» april 2024 г.

EDUCATIONAL TRAINING PROGRAM OF DISCIPLINE

“Clinical immunology”

the main professional educational program of higher education - specialty program in the specialty 31.05.01 General Medicine, partially implemented in English, approved in April, 17, 2024

Form of education _____Full-time_____

The period of development_____ _____6_____

Department of Internal Medicine № 3

Vladikavkaz, 2024

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

1. Federal State Educational Standard of Higher Education for the specialty 31.05.01 Medical Care, approved by the Ministry of Education and Science of the Russian Federation on February, 09, 2016 №. 95

2. The curriculum of the MPEP HE in the specialty 31.05.01 Medical care
ЛД-16-05-19ИН
ЛД-16-06-20ИН
approved by the Academic Council of the Federal State Budgetary Educational Institution of the Ministry of Higher Education NOSMA of the Ministry of Health of the Russian Federation on April 17, 2024, Protocol №.6

The working program of the discipline was approved at the meeting of the Department of Internal Diseases №. 3 of March 29, 2024, Protocol N 8

The working program of the discipline was approved at the meeting of the central coordinating Educational and Methodological Council of April 2, 2024, Protocol N 4.

The working program of the discipline was approved by the Academic Council Federal State Educational Institution of Higher Education NOSMA of the Ministry of Health of the Russian Federation of April 17, 2024, Protocol № 6.

Developers:

Developers:

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Content of Work Programme.

1. Name of the academic discipline.
2. List of anticipated results after completing the training course (within the framework of a Specialist's degree studies).
3. Defining where the academic discipline belongs in the structure of a Specialist's degree studies.
4. Amount of credit units, academic or astronomic hours forface-to-face teaching classes and for students' independent work.
5. Content of the course structured into modules with the amount of academic or astronomic hours and types of classes scheduled for each module.
6. List of learning materials necessary for students' independent work.
7. evaluation materials for the interim certification of students in the discipline;
8. Reading list of published sources required to complete the course.
9. List of online resources required to complete the course.
10. Methodology guidelines for students.
11. Modern learning techniques used in the training processincluding the list of software programs and electronic databases (if necessary).
12. List of equipment used in the training process.
13. Conducting educational activities using e-learning and distance learning technologies.

1. Name of the discipline " Clinical Immunology»
2. The list of planned results of training in the discipline "Clinical Immunology" and the results of the development of the educational program

No.	Code of Competency	Course Content	Results		
			To know	**To do**	**To use**
1	2	3			
1	EPC 1	**Definition of clinical immunology, objectives. Immune status. Principles of determination of immune status**	General terms used to study various aspects of clinical immunology	Professional literature, Internet resources	Solving typical problems using published works and online resurces
2	PC1	**Definition of clinical immunology, objectives. Immune status. Principles of determination of immune status**	To know methods for determining immune status, the reasons and principles of determining immune status, immunopathogenesis, diagnostic methods	To state the indications for a clinical immunological screening, to interpret the results,	Identifying factors contributing adverse effects on the patient's immune system skills to conduct prophylactic tic events for prevent action these reasons

3	PC5	**Definition of clinical immunology, objectives. Immune status. Principles of determination of immune status**	Immune assessment methods status, indications and accepted scores of his assessment	Justify the need Clinical immunologic al examination patient's interpretation immune assessment results Level 1 Test Status	Skills to collect immunological history, ana- lysis and interpretation of the results tats laboratory displays assessment of the immune system Level 1 Tests
5	PC6	**Definition of clinical immunology, objectives. Immune status. Principles of determination of immune status**	Basic forms of munopathology (immunodeficienc y ficitis, autoimmune, allergic pathologies)	Substantiate the nature immunopatho logical pro cess, clinical manifestation s principles of pathogenetic sky therapy;	Skills of preliminary diagnosis based on the results of laboratory examination of patients;
6	PC1	Immunodeficien cies of genetic origin (primary), classification, main types. Principles of diagnostic procedures and treatment. Secondary (acquired) immunodeficien cies, definition, diagnosing, clinical symptoms, approaches to treatment.	Development mechanisms immune response factors affecting immune functioning systems; basic immuno pathological conditions; immunological disorders with the development of immunopathologi callergy	Evaluate condition immune system and determine pour factors affecting her	Identifying factors contributing adverse effects on the patient’s immune system enta

7	PC5	Immunodeficiencies of genetic origin (primary), classification, main types. Principles of diagnostic procedures and treatment. Secondary (acquired) immunodeficiencies, definition, diagnosing, clinical symptoms, approaches to treatment.	Immune assessment methods status, indications and accepted scores of his assessment	Justify the need for clinical immunological examination patient's interpretation immune assessment results Level 1 Test Status	Collection skills immunological history, analysis and interpretation of the results tats laboratory displays assessment of the immune system Level 1 Tests
8	PC6	Immunodeficiencies of genetic origin (primary), classification, main types. Principles of diagnostic procedures and treatment. Secondary (acquired) immunodeficiencies, definition, diagnosing, clinical symptoms, approaches to treatment.	Basic forms of munopathology (immunodeficiency primary and secondary ficitis)	Substantiate the nature immunopathological process, clinical manifestations principles of pathogenetic sky therapy;	Skills of preliminary diagnosis based on the results of laboratory examination of patients; and, if necessary, referral to an additional examination and to specialist doctors
9	PC1	Immunodeficiencies of genetic origin (primary), classification, main types. Principles of diagnostic procedures and treatment. Secondary (acquired) immunodeficien	Development mechanisms immune response factors affecting immune functioning systems; basic immuno pathological conditions; immunological	Evaluate condition immune system and determine pour factors affecting her	Identifying factors contributing adverse effects on the patient’s immune system enta

		cies, definition, diagnosing, clinical symptoms, approaches to treatment.	disorders with the development of immunopathologi cal gee		
10	PC6	Immunodeficien cies of genetic origin (primary), classification, main types. Principles of diagnostic procedures and treatment. Secondary (acquired) immunodeficien cies, definition, diagnosing, clinical symptoms, approaches to treatment.	Basic forms of munopathology (secondary immunodeficienc y ficits)	Substantiate the nature immunopatho logical pro cess, clinical manifestation s principles of pathogenetic sky therapy;	Skills of preliminary diagnosis based on the results of laboratory examination of patients; and, if necessary, referral to an additional examination and to specialist doctors
11	PC1	Autoimmune diseases. General terms. Systemic lupus erythematosus (SLE), immunopathoge nesis ,immunodi agnosis, immunocorrecti on. Rheumatoid arthritis, immunopatholo gy, immunodiagnosi s,immunocorrect ion.	Mechanisms of the development of the immune response in autoimmune disorders (SLE, RA), immunological disorders in the development of autoimmune pathology	To assess the state of the immune system in autoimmune diseases (SLE, RA)	Assess the state of the immune system and identify factors having an adverse effect on the patient's immune system, taking preventive measures to prevent these causes
12	PC5	Autoimmune diseases. General terms. Systemic lupus erythematosus	Methods for assessing immune status, indications and principles for its assessment	Substantiate the need for clinical and immunologic al	Readiness to collect and analyze patient complaints, his medical history,

		(SLE), immunopathogenesis ,immunodiagnosis, immunocorrection. Rheumatoid arthritis, immunopathology, immunodiagnosis,immunocorrection.		examination of the patient, interpret the results of the assessment of the immune status according to tests of the 1st level	results of laboratory immunological studies of level 1 in order to recognize the state or establish the presence or absence of a disease
13	PC6	Autoimmune diseases. General terms. Systemic lupus erythematosus (SLE), immunopathogenesis ,immunodiagnosis, immunocorrection. Rheumatoid arthritis, immunopathology, immunodiagnosis,immunocorrection.	Main forms of autoimmune diseases (SLE, RA, myasthenia gravis, autoimmune thyroiditis),	Substantiate the nature of the immunopathological process, justify the need for clinical and immunological examination	Skills of preliminary diagnosis based on the results of laboratory examination of patients;
14	PC1	Immunopathogenesis of autoimmune diseases of the nervous system (multiple sclerosis, myasthenia gravis and others), of endocrine organs (autoimmune thyroiditis and others).	Mechanisms of the development of the immune response in autoimmune disorders (SLE, RA), immunological disorders in the development of immunopathology	Assess the state of the immune system in autoimmune diseases (SLE, RA, myasthenia gravis, autoimmune thyroiditis)	Identify factors that adversely affect the patient's immune system, take preventive measures to prevent these causes
15	PC5	Immunopathogenesis of autoimmune diseases of the nervous system	Methods for assessing immune status, indications and principles for its assessment	Substantiate the need for clinical and immunological	Readiness to collect and analyze patient complaints, his medical history,

		(multiple sclerosis, myasthenia grav is and others), of endocrine organs (autoimmune thyroiditis and others).		examination of the patient, interpret the results of the assessment of the immune status according to tests of the 1st level	results of laboratory immunological studies of level 1 in order to recognize the state or establish the presence or absence of a disease
16	PC6	Immunopathoge nesis of autoimmune diseases of the nervous system (multiple sclerosis, myasthenia grav is and others), of endocrine organs (autoimmune thyroiditis and others).	Main forms of autoimmune diseases (SLE, RA),	The ability to identify the patient's main symptoms, disease syndromes, nosological forms of the main forms of autoimmune diseases of SLE, RA, myasthenia gravis, autoimmune thyroiditis) in accordance with the International Statistical Classification of Diseases and Health Problems, X revision	Skills of preliminary diagnosis based on the results of laboratory examination of patients;
17	PC1	Infections of the immune system. Human immunodeficien cy virus (HIV). The Epstein–Barr virus, herpes simplex virus, cytomegalovirus and other	Mechanisms of the development of the immune response in infections of the immune system (Epstein-Barr viruses, herpes simplex, cytomegalovirus and other pathogens), immunological	To assess the state of the immune system in case of infections of the immune system (Epstein-Barr viruses, herpes simplex, cytomegalovi	Identify factors that adversely affect the patient’s immune system, take preventive measures to prevent these causes

		pathogenes	disorders in the development of immunopathology	rus and other pathogens)	
18	PC5	Infections of the immune system. Human immunodeficiency virus (HIV). The Epstein–Barr virus, herpes simplex virus, cytomegalovirus and other pathogenes	Methods for assessing immune status, indications and principles for its assessment	Substantiate the need for clinical and immunological examination of the patient, interpret the results of the assessment of the immune status according to tests of the 1st level	Readiness to collect and analyze patient complaints, his medical history, results of laboratory immunological studies of level 1 in order to recognize the state or establish the presence or absence of a disease
19	PC6	Infections of the immune system. Human immunodeficiency virus (HIV). The Epstein–Barr virus, herpes simplex virus, cytomegalovirus and other pathogenes	Main forms of the immune response for infections of the immune system (Epstein-Barr viruses, herpes simplex, cytomegalovirus	Substantiate the nature of the immunopathological process, clinical manifestations, principles of pathogenetic therapy; justify the need for clinical and immunological examination	Skills of preliminary diagnosis based on the results of laboratory examination of patients;
20	PC1	Allergy. Types of allergens. The Gell-Coombs classification of hypersensitivity reactions of the immune system. Allergy diagnosis. Principles of diagnosing allergy.	Development mechanisms immune response factors affecting immune functioning systems; immunological disorders with the development of	Evaluate condition immune system and determine pour factors affecting her	Identifying factors contributing adverse effects on the patient’s immune system enta for allergopathology, prophylaxis tic events for prevent action these reasons

		Therapeutic strategies for all ergic diseases. Recovery. Prevention of pathologies of allergic diseases.	allergopatho-gee		
21	PC5	Allergy. Types of allergens. The Gell-Coombs classification of hypersensitivity reactions of the immune system. Allergy diagnosis. Principles of diagnosing allergy. Therapeutic strategies for all ergic diseases. Recovery. Prevention of pathologies of allergic diseases.	Methods for assessing immune status, indications and principles for its assessment	Substantiate the need for a clinical and immunologic al examination of the patient, interpret the results of an assessment of the immune status, the results of allergy tests	Readiness to collect and analyze patient complaints, his medical history, results of laboratory immunological studies of level 1 in order to recognize allergopathology or to establish the presence or absence of a disease
22	PC6	Allergy. Types of allergens. The Gell-Coombs classification of hypersensitivity reactions of the immune system. Allergy diagnosis. Principles of diagnosing allergy. Therapeutic strategies for all ergic diseases. Recovery. Prevention of pathologies of allergic diseases.	Main forms of allergopathology	Substantiate the nature immunopatho logical pro cess, clinical manifestation s principles of pathogenetic sky therapy; justify the need for clinical immunologic al examination vania;	Skills of preliminary diagnosis based on the results of laboratory examination of patients;
23	PC1	Asthma , types, etiology and pathogenesis	Mechanisms of the development of the immune	To assess the state of the immune	Skills to identify factors that have an adverse effect

		(immunopathogenesis) of the main types of asthma. Diagnosing.	response, influencing factors, immunological disorders in the development of bronchial asthma	system and determine the factors affecting it with the development of bronchial asthma	on the patient's immune system, and take preventive measures to prevent these causes
24	PC5	Asthma , types, etiology and pathogenesis (immunopathogenesis) of the main types of asthma. Diagnosing.	Methods for assessing immune status, indications and principles for its assessment	Substantiate the need for clinical and immunological examination of the patient, interpret the results of the assessment of the immune status according to tests of the 1st level, the results of allergological tests	Readiness to collect and analyze patient complaints, his medical history, results of laboratory immunological studies of level 1 in order to recognize the state or establish the presence or absence of a disease
25	PC6	Asthma , types, etiology and pathogenesis (immunopathogenesis) of the main types of asthma. Diagnosing.	Main forms, symptoms of bronchial asthma	Substantiate the nature of the immunopathological process, clinical manifestations, principles of pathogenetic therapy; justify the need for clinical and immunological examination;	Skills in determining the patient's main symptoms of bronchial asthma, in accordance with the International Statistical Classification of Diseases and Health Problems, X revision
26	PC8	Asthma , types, etiology and pathogenesis	Management tactics for patients with asthma	Substantiate the need for clinical and	Algorithm for making a preliminary

		(immunopathogenesis) of the main types of asthma. Diagnosing.		immunological examination;	diagnosis and, if necessary, referral for an additional examination to specialist doctors
27	PC1	Allergic rhinitis. Nosological classification. Diagnosing. Differential diagnosing.	Mechanisms of the development of the immune response, influencing factors, immunological disorders in the development of bronchial asthma	To assess the state of the immune system and determine the factors affecting it with the development of bronchial asthma	Skills to identify factors that have an adverse effect on the patient's immune system, and take preventive measures to prevent these causes
28	PC5	Allergic rhinitis. Nosological classification. Diagnosing. Differential diagnosing.	Methods for assessing immune status, indications and principles for its assessment	Substantiate the need for clinical and immunological examination of the patient, interpret the results of the assessment of the immune status according to tests of the 1st level, the results of allergological tests	Readiness to collect and analyze patient complaints, his medical history, results of laboratory immunological studies of level 1 in order to recognize the state or establish the presence or absence of a disease

29	PC6	Allergic rhinitis. Nosological clas sification. Diagnosing. Differential diagnosing.	Main forms, symptoms of allergic rhinitis in accordance with the International Statistical Classification of Diseases and Health Problems, X revision	Substantiate the nature of the immunopatho logical process, clinical manifestation s, principles of pathogenetic therapy; justify the need for clinical and immunologic al examination;	Skills to determine the patient's main symptoms of allergic rhinitis and, if necessary, referral to an additional examination and to specialist doctors
30	PC1	Atopic dermatitis, clinical stages, differential diagnosing. Food allergies. Clinical stages of food allergies. Diagnosing.	Mechanisms of the development of the immune response, influencing factors, immunological disorders in atopic dermatitis, food allergies	To assess the state of the immune system and determine the factors that affect it with atopic dermatitis and food allergies	Skills to identify factors that have an adverse effect on the patient’s immune system, and take preventive measures to prevent these causes
31	PC5	Atopic dermatitis, clinical stages, differential diagnosing. Food allergies. Clinical stages of food allergies. Diagnosing.	methods for assessing immune status, indications and principles for its assessment	substantiate the need for clinical and immunologic al examination of the patient, interpret the results of the assessment of the immune status according to tests of the 1st level	readiness to collect and analyze patient complaints, his medical history, results of laboratory immunological studies of level 1 in order to recognize the state or establish the presence or absence of a disease
33	PC6	Atopic dermatitis, clinical stages,	Diagnostic methods for atopic dermatitis	To justify the need for clinical and	The ability to determine the patient's main

		differential diagnosing. Food allergies. Clinical stages of food allergies. Diagnosing.	and food allergies, types and indications for the use of immunotropic therapy	immunologic al examination of the patient, to carry out immunologic al diagnostics, to interpret the results of their main diagnostic allergological tests	pathological conditions, symptoms, in accordance with the International Statistical Classification of Diseases and Health Problems, X revision for atopic dermatitis and food allergies
34	PC8	Atopic dermatitis, clinical stages, differential diagnosing. Food allergies. Clinical stages of food allergies. Diagnosing.	Management tactics for patients with atopic dermatitis and food allergies	Justify the need for clinical and immunologic al examination;	Definitions of management tactics for patients with atopic dermatitis and food allergies
35	PC1	Hives and angioedema . Types, allergens. Typical disease patterns. Differential diagnosing with hereditary angioedema	mechanisms of the development of the immune response, influencing factors, immunological disorders in hives and angioedema Quincke	to assess the state of the immune system and determine the factors that affect it with urticaria and angioedema Quincke	Skills to identify factors that have an adverse effect on the patient's immune system, preventive measures to prevent the effects of these causes in case of hives and angioedema Quincke
36	PC5	Hives and angioedema . Types, allergens. Typical disease patterns. Differential diagnosing with hereditary	Methods for assessing the immune, allergological status, indications and principles for its assessment	substantiate the need for a clinical and immunologic al examination of the patient, interpret the results of the assessment of the immune	Collecting immunological and allergic biological history, ana- lysis and interpretation of the results tats laboratory displays assessment of the

		angioedema		status according to the tests of the 1st level, the results of the main allergological diagnostic tests	immune system test level 1 test results, results of major diagnostic allergology tests
37	PC6	Hives and angioedema . Types, allergens. Typical disease patterns. Differential diagnosing with hereditary angioedema	Basic forms of Munoallergopathology: urticaria and angioedema	substantiate the nature immunopathological pro cess, clinical manifestations principles of pathogenetic sky therapy; justify the need for clinical immunological examination vania;	Skills of preliminary diagnosis based on the results of laboratory examination of patients;
39	PC8	Hives and angioedema . Types, allergens. Typical disease patterns. Differential diagnosing with hereditary angioedema	Management tactics for patients with hives and angioedema Quincke	justify	Definitions of management tactics for patients with hives and angioedema Quincke
40	PC1	Drug allergy .Anaphylaxis . Etiology, pathogenesis. Typical patterns. Diagnosing. Prevention and treatment. First	mechanisms of the development of the immune response, with the development of drug allergies (anaphylactic shock, serum	assess the state of the immune system and determine the factors affecting the occurrence	identifying factors contributing adverse effects on the patient's immune system enta, carrying out preventive

		aid for a severe allergic reaction. Serum sickness. Etiology, pathogenesis. Typical patterns. Prevention and treatment. Other allergies (toxic epidermal necrolysis, allergic alveolitis and others).	sickness, Stevens-Johnson syndrome and Lyell syndrome)	and development, as well as aimed at eliminating the harmful effects on human health	tic events for prevent action these reasons
41	PC5	Drug allergy .Anaphyl axis . Etiology, pathogenesis. Typical patterns. Diagnosing. Prevention and treatment. First aid for a severe allergic reaction. Serum sickness. Etiology, pathogenesis. Typical patterns. Prevention and treatment. Other allergies (toxic epidermal necrolysis, allergic alveolitis and others).	Methods for assessing the immune status, indications and principles for assessing the immune status of patients with drug allergy	substantiate the need for clinical, immunologic al, allergological examination of the patient, interpret the results of the main diagnostic allergological tests	To have skills in collecting an immunological and allergological history, analyzing the results of laboratory tests in order to recognize a pathological condition or to establish the presence or absence of a disease
42	PC6	Drug allergy .Anaphyl axis . Etiology, pathogenesis. Typical patterns. Diagnosing. Prevention and treatment. First aid for a severe allergic reaction. Serum sickness. Etiology,	Diagnostic methods, types and indications for the use of therapy for anaphylactic shock, drug allergy	To justify the need for a clinical and immunologic al examination of the patient, to interpret the results of their diagnostic allergological	The ability to determine the main drug allergies in the patient in accordance with the International Statistical Classification of Diseases and Health Problems, X revision for

		pathogenesis. Typical patterns. Prevention and treatment. Other allergies (toxic epidermal necrolysis, allergic alveolitis and others).		tests and drug allergy	drug allergies, anaphylactic shock
43	PC8	Drug allergy .Anaphyl axis . Etiology, pathogenesis. Typical patterns. Diagnosing. Prevention and treatment. First aid for a severe allergic reaction. Serum sickness. Etiology, pathogenesis. Typical patterns. Prevention and treatment. Other allergies (toxic epidermal necrolysis, allergic alveolitis and others).	Management tactics for patients with drug allergies	To substantiate the management tactics of patients with drug allergies	Definitions of management tactics for patients with drug allergies
44	PC1	Immunotherapy . Main types of immunotherapy, indications and contraindications.	Set of measures directed at maintaining good health and following healthy lifestyle habits	To determine the factors affecting immune system	To have the skills for for finding the factors affecting immune system
45	PC8	Immunotherapy . Main types of immunotherapy, indications and contraindications.	To know the types of immunotropic therapy and indications for it use	To state the indications for immunocorrecting therapy	To use the basic treatment tools for emergency medical care for patients with immune disorders

3.Defining where the academic discipline belongs in the structure of a Specialist's degree studies.

The academic discipline Immunology – clinical immunology is a part of the professional cycle of sciences outlined to the base of block 1 in the Federal State Education Standard Higher Education , specialty General Medicine.

4. Amount of credit units, academic or astronomic hours for face-to-face teaching classes and for students' independent work.

No.	**Type of work**		**Total credits**	**Total hours**	**Semester**
					6
					hours
1	2		3	4	5
1	**Face-to-face work with a tutor (total), including**			**46**	**46**
2	Lectures (L)			14	14
3	Clinical work (CW)			32	32
4	Seminars (S)			-	-
5	Laboratory work (LW)			-	-
6	**Independent work (IW)**			**26**	**26**
7	**Type of preliminary performance assessment**	**Credit (C)**	-	-	-
		Grade (G)			-
8	**Total**	**hours**		**72**	**72**
		credits	**2**	**2**	**2**

5. Content of the course

1	Sem ester	Topic	Type of work (hours)					Type of current performance assessment
			L	LW	CW	IW	Total	
1	2	3	4	5	6	7	8	9
1	6	Definition of clinical immunology, objectives. Immunestatus.Methods of diagnosing in clinical immunology	2		2	2	6	I, SP
2		Immunodeficiencies of genetic origin (primary), classification, main types. Principlesofdiagnosticprocedu resandtreatment	2		2		4	I, T, SP
3		Secondary (acquired) immunodeficiencies, definition, diagnosing, clinical symptoms, approaches to treatment.			2	2	4	I, T, SP
4		Autoimmune diseases. General terms. Systemic lupus erythematosus (SLE), immunopathogenesis ,immun odiagnosis, immunocorrection.			2	2	4	I, T, SP
5		Rheumatoid arthritis, immunopathology, immunodiagnosis, immunocorrection			2		2	

6		Immunopathogenesis of autoimmune diseases of the nervous system (multiple sclerosis, myasthenia gravis and others), of endocrine organs (autoimmune thyroiditis and others)				2	2	I, T, SP
7		Infections of the immune system. Human immunodeficiency virus (HIV). The Epstein–Barr virus, herpes simplex virus, cytomegalovirus and other pathogenes			2	2	4	I, T, SP
8		Allergy. The Ado andGell-Coombs classification of hypersensitivity reactions of the immune system.			2	2	4	I, T, SP
9		Allergy diagnosis. Principles of diagnosing allergy	2		2		4	I, T, SP
10		Asthma , types, etiology and pathogenesis (immunopathogenesis) of the main types of asthma. Diagnosing			2	2	4	I, T, SP, ST
11		Allergic rhinitis. Diagnosing. Differential diagnosing.	2		2		4	I, T, SP,ST
12		Atopic dermatitis, clinical stages, differential diagnosing. Diagnosing.			2	2	4	I, T, SP,ST
13		Hives and angioedema . Types, allergens. Typical disease patterns. Differential diagnosing with hereditary angioedema	2		2	2	6	I, T, SP,ST

14		Drug allergy. Anaphylaxis . Etiology, pathogenesis. Typical patterns. Diagnosing. Prevention and treatment. First aid for a severe allergic reaction	2		2		4	I, T,УЗ,ST
15		Serum sickness. Etiology, pathogenesis. Typical patterns. Prevention and treatment. Other allergies (toxic epidermal necrolysis, allergic alveolitis and others).				2	2	I, T, SP,ST
16		Therapeutic strategies for allergic diseases . Recovery. Prevention of pathologies of allergic diseases.			2	2	4	I, T, SP,ST
17		Immunotherapy . Main types of immunotherapy, indications and contraindications.	2		2	2	6	I, T, SP
18		Immunocorrection. Definition. Types of immunocorrection Immunomodulators, definition. Main types of immunomodulators (endogen e, bacterial, synthetic and others), modes of action. Indication for use.			2	2	4	I, T, SP
TOTAL:			**14**	**-**	**32**	**26**	**72**	
Note: I – Interviews, T – Tests, ST – Situational Tasks, SP – Standard Problems								

6. List of learning materials necessary for students' independent work.

No.	Semester	Name of publication (textbook)
1 2 3 4 5 6 7 8 9	5	«Первичные иммунодефициты.»Учебно - методическая разработка для самостоятельной подготовки студентов к практическому занятию. Владикавказ, 2022. – ЦМК терапевтических дисциплин. «Принципы диагностики и лечения аллергических заболеваний». Учебно-методическая разработка для самостоятельной подготовки студентов к практическому занятию. Владикавказ, 2022. – ЦМК терапевтических дисциплин. «Крапивница и отек Квинке». Учебно - методическая разработка для самостоятельной подготовки студентов к практическому занятию. Владикавказ, 2020. – ЦМК терапевтических дисциплин. «Лекарственная аллергия»Учебно- методическая разработка для самостоятельной подготовки студентов к практическому занятию. Владикавказ, 2022. – ЦМК терапевтических дисциплин. «Бронхиальная астма». Учебно - методическая разработка для самостоятельной подготовки студентов к практическому занятию. Владикавказ, 2022. – ЦМК терапевтических дисциплин. «Пищевая аллергия Атопический дерматит». Учебно - методическая разработка для самостоятельной подготовки студентов к практическому занятию. Владикавказ, 2022. – ЦМК терапевтических дисциплин. «Неотложные состояния в аллергологии». Учебно - методическая разработка для самостоятельной подготовки студентов к практическому занятию. Владикавказ, 2022. – ЦМК терапевтических дисциплин. Tests Summaries of lectures on clinical immunology and allergology

7. Outline of standards of preliminary assessment of students' performance

No.	Code of Competency	Semester	Assessment index	Assessment criteria	Assessment scale	Name of evaluation materials
1	**2**	**3**	**4**	**5**	**6**	**7**
1	EPC1 PC1 PC5 PC6 PC8	**6**	See The Standard for Training Quality Assessment approved by the Order of State-Funded	See The Standard for Training Quality Assessment approved by the Order of State-	See The Standard for Training Quality Assessment approved by the	Tests, oral quizzes, situational tasks, business games.

			Educational Institution of Higher Professional Education “North Ossetian State Medical Academy”of the Ministry of Health of the Russian Federation № 264/o on 10.07.2018	Funded Educational Institution of Higher Professional Education “North Ossetian State Medical Academy”of the Ministry of Health of the Russian Federation № 264/o on 10.07.2018	Order of State-Funded Educational Institution of Higher Professional Education “North Ossetian State Medical Academy”of the Ministry of Health of the Russian Federation № 264/o on 10.07.2018	

8. Reading list of published sources required to complete the course

No.	Name	Authors	Year, place of publication	Number of issues	
				In the library	On campus
1	2	3	4	5	6
Main Published Sources					
	Иммунология: учебник	Хаитов Р. М.	М. : ГЭОТАР-Медиа, 2021	102	31
				«Консультант студента» http://www.studmedlib.ru/book/ISBN9785970433454.html	
	Other Published Sources				
	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	
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9. List of online resources required to complete the course.

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. Methodology guidelines for students.

Training process consists of face-to-face work with tutors (lectures, clinical work) – 46 hours, independent work – 26 hours, total – 72 hours, which amounts to 2 credits.
The work involves using modern information technologies and technical tools.

Practical clinical work is carried performed in study rooms on campus and in the hospitals. Patients with relevant issues may be examinedin the presence of students.
Groups consist of 9-11 students each. Teaching in classes is conducted using print materials, sample medical papers, tests and situation tasks. Each topic of the course is accompanied by an established information pool.
The students gain professional skills and knowledge and also work at the personal qualities necessary in the profession.
According to the requirements of the Federal State Education Standard Higher Education the training process involves active and interactive learning (conversations, case studies, role play). Interactive learning amounts to no less than 15 per cent of total time in class.
Students' independent work implies out of class studying of a number of clinical immunology issues, preparing for performance assessment, accomplishing individual tasks.

Reading of professional publications is one of the forms of studying and should be performed according to the recommendations. Each student is provided with access to the library and department's methodology materials. There are methodology recommendations on each topic covered in the course for students and teachers.
Independent work with published sources helps form the ability to analyze medical and social issues, to use theoretical data and clinical evidence in various fields of professional and social activity.
Students' initial level is assessed by tests.
Current performance assessment is performed using:
– Interviews and oral quizzes
– Situational tasks
– Tests
– Assignments involving critical analysis of clinical studies
– Solving problems regarding patients' examination
At a typical class students will:
– taking a test
– try to solve a situational task
– give answers to the teacher's oral quiz questions

Students' independent work involves solving problems and situational tasks on the studied subjects.
At the end of the course there is a final test and oral quiz.

11. Modern learning techniques used in the training process.
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– talk of

discipline, especially during the SRS under the supervision of a teacher - knowledge, skills, skills are given not as a subject for memorization, but as a means of solving professional problems.

12. List of equipment used in the training process.
The clinical bases of the Department of Internal Medicine No. 3 are:

State Healthcare Institution "Republican Clinical Hospital" – head of department's office and one study room

Clinical Hospital of North Ossetian State Medical Academy – 2 study rooms
State Healthcare Institution "Medical clinic No. 1" – laboratory and 3 study rooms

No.	Item of Equipment	Amount	Technical condition
1	2	3	4

Special Equipment			
1.	Toshiba Multimedia Projector	1	Satisfactory
2.	Computer	6	Satisfactory
3.	Laptop	1	Satisfactory
4.	Copier	3	Satisfactory
5.	Overhead	1	Satisfactory
Phantoms			
6.	-	-	-
Models			
7.	-	-	-
8.	-	-	-

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

In conditions of 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 conducting training sessions in person, it is possible to study this discipline or part of it using e-learning and distance education technologies.

Teaching the discipline in the above situations 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 monitoring of academic performance, as well as intermediate certification of students, the Academy's electronic information and educational environment platforms and/or other e-learning systems recommended for use in 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.

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