# «North-Ossetia State Medical Academy» of the Ministry of Healthcare of the Russian Federation



#### EDUCATIONAL TRAINING PROGRAM OF DISCIPLINE

"Methods of modern express diagnostics"

the main professional educational program of higher education-specialty program in the specialty 31.05.01 General Medicine, approved on 24.05.2023

Form of education	<u>Full-time</u>	
The period of developmen	<u>6</u>	<u>.</u>
Department of	Biological Chemistry	

When developing an educational training program, the discipline is based on:

- 1. Federal State Educational Standard of Higher Education on specialty 31.05.01 General Medicine, approved by the Ministry of Education and Science of the Russian Federation on February 9, 2016 №95
- 2. Academic plan on specialty 31.05.01 General Medicine

ЛД-16-03-18 ИН

ЛД-16-04-19 ИН

ЛД-16-05-20 ИН

3. approved by the Scientific Council of the Federal State Budgetary Educational Institution of Higher Education «North-Ossetia State Medical Academy» of the Ministry of Healthcare of the Russian Federation "24" May 2023, Protocol № 8.

The educational training program of the discipline was approved at a meeting of the department of Biological Chemistry from "18" May 2023, Protocol №. 10

The educational training program of the discipline was approved at a meeting of the central coordinating training and methodological council from "23" May 2023, Protocol №.5

The educational training program of the discipline was approved by the Scientific Council of the State Medical University of the Federal State Budgetary Educational Institution of Higher Education «North-Ossetia State Medical Academy» of the Ministry of Healthcare of the Russian Federation from "24" May 2023, Protocol № 8.

#### **Developers:**

Head of the department
Associate professor of the department
Assistant of the department

A.E. Gurina

Z.A. Khetagurova

\_ A.B. Plieva

### Reviewers:

Bolieva L.Z., head of the department, of Pharmacology with Clinical pharmacology FSBEI HE NOSMA MOH Russia, doctor of medical sciences, professor.

Ovsyannikova A.I., head of the clinical diagnostic laboratory of LLC "Clinical diagnostic laboratory Dzagurov G.K., candidate of medical sciences

#### Content of the work program

1.the name of the discipline;

- 2. a list of the planned learning outcomes in the discipline, correlated with the planned results of mastering the educational program;
- 3. an indication of the place of the 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) 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 for them and types of training;
- 6. a list of educational and methodological support for independent work of students in the discipline;
- 7. assessment materials for intermediate certification of students in the discipline;
- 8. a list of basic and additional educational literature necessary for mastering the discipline;
- 9. a list of resources of the information and telecommunication network "Internet" (hereinafter referred to as the "Internet" network), necessary for mastering the discipline;
- 10. guidelines for students on the development of the discipline;
- 11. a 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 mastering the educational program

	sults	velopment res	De	Topic of the	Content of	Competence	
own	own	be able to	know	lesson (section)	competence (or part of it)	number / index	№ п/п
_			_				
7		6	5	4	3	2	1
ratory pulatio roscopy ing, rifugatio eighing, tion of ions, aration lutions rances, aration, fon and ing of arations oscopic contaction paration mples	1. Skills performi basic laborator manipular ns (microsco, dosing, centrifug n, weight filtration solutions preparation of solution of substance etc.)  2. Preparatifixation a staining of preparatifor microsco examinat, preparation of sample for biochemi	1. To organize a workplace e for morpholo gical (cytologic al), biochemical, immunol ogical, express methods and other studies; 2. Organize the work of nursing staff; 3. To organize the work of the laborator y personnel	1. Legislative, regulatory, instructive and methodological documents defining the activities of laboratories of medical organization s and quality management of clinical laboratory research 2. Clinical informativeness of laboratory research from the standpoint of evidence-based medicine in the most common	Organization of laboratory services. Quality control (QC) of laboratory research.	Ability to use the foundation s of economic and legal knowledge in profession al activities.	GPC -3	1.
	prepa for micro exami , prep of san for	nursing staff; 3. To organize the work of the laborator	laboratory research from the standpoint of evidence- based medicine in				

		 	4 5	1 1
		the	4. Prepare	cal and
		cardiovascul	a	other
	-	ar,	preparatio	studies;
		respiratory,	n for	3. Carrying
		digestive,	microsco	out the
		genitourinar	pic	calibration
		y,	examinati	of
		musculcskel	on,	laboratory
		etal,	samples	measuring
		nervous.	of	instruments;
		immune,	biomateri	4. Work on
		endocrir e	al for	the most
		systems and	biochemi	common
		blood;	cal.	laboratory
i		3. Basic	immunol	measuring
		modern	ogical	instruments,
		preanalytical	and other	analyzers
		and	laborator	and
		analytical	y studies;	equipment
		technologies	5. Prepare	in
		of clinical	solutions	accordance
		laboratory	of	with the
		research.	reagents,	rules of their
		4. principles	dyes for	operation;
		of operation	laborator	5. Execution
		and rules of	y	of
		operation of	•	laboratory
		the main	6. Work	tests by
		types of	on the	non-device
		measuring	most	express
}		instruments.	common	methods;
		analyzers	laborator	6.
		and other	y	Maintaining
		equipment	measurin	accounting
		used in the	g	and
		performance	instrumen	reporting
		of clinical	ts,	documentati
		laboratory	analyzers	on of the
		research;	and	laboratory
		5. Factors	equipmen	(registration
		influencing	t in	of a journal
		the results of	accordanc	for
		laboratory	e with the	recording
			rules of	research

the prenandytical and postandlytic all stages; of G. Technology for organizing and conducting internal and external laboratory research.  Tesearch.  Technology for organizing and external quality control of clinical laboratory research.  Tesearch.  Technology for organizing and external quality control of clinical laboratory research.  Tesearch.  Technology for organizing the research research in accordance with the requirements for labor protection sanitary and epidemiol ogical requirements:  Technology the manalytical stage of organize the performa performents for laborator yeresearch in accordance e with the requirements:  Technology the manalytical stage of organize the performance of laborator yeresearch in accordance e with the requirements:  Technology the manalytical stage of organize the performance of laborator yeresearch in accordance e with the requirements:  Technology the manalytical stage of organize the performance of laborator yeresearch in accordance	T	1		41.	41	14
and postanalytical and stages; 6. Technelogy for organizing and external quality control of clinical laboratory research.					Į.	
and postanalytic al stages; 6.					_	
postanalytic al stages; 6. 6. Technology for organizing and research performe internal and external quality control of clinical laboratory research.  I accordance with the requireme nts for labor protection , sanitary and epidemiol ogical requireme nts; 9. To carry out the most common express methods of laborator y				, analytical	7. Carry	forms for
postanalytic al stages; 6. 6. Technology for organizing and research performe internal and external quality control of clinical laboratory research.  I accordance with the requireme nts for labor protection , sanitary and epidemiol ogical requireme nts; 9. To carry out the most common express methods of laborator y						analysis
al stages; 6. Technology for stage of organizing and research performe internal and external quality control of clinical laboratory research.  Solution of clinical laboratory research in accordance e with the requirements for labor protection sanitary and epidemiol ogical requirements:  9. To carry out the most common express methods of laborator y				postanalytic	quality	
6. Technology for stage of the analytical stage of organizing and conducting internal and external quality control of clinical laboratory research.  8. To organize the performa nee of laborator y research in accordance e with the requirements for labor protection, sanitary and epidemiol ogical requirements;  9. To carry out the most common express methods of laborator y						·
Technology for organizing and conducting internal and external quality control of clinical laboratory research.  In accordance with the requirements for labor protection sanitary and epidemiol ogical requirements:  I a common express methods of laborator y						
for organizing and conducting internal and external quality control of clinical laboratory research.    Vertical laboratory research in accordance c with the requirements for labor protection , sanitary and epidemiol ogical requirements; 9. To carry out the most common express methods of laborator y						
organizing and conducting internal and external quality control of clinical laboratory research.    S. To organize					-	
and research performe internal and external 8. To quality organize the control of clinical laboratory research.    vestion   v						
conducting internal and external (steernal and external and external and external and external and external and external and evaluality organize control of the clinical laboratory nesearch. In accordance e with the requireme extension in accordance e with the requireme extension in accordance						
internal and external quality control of clinical laboratory research.    Sample   S						
external quality control of clinical laboratory research.    Sample   Sampl					_	
quality control of clinical laboratory research.  y research in accordanc c with the requireme nts for labor protection , sanitary and epidemiol ogical requireme nts; 9. To carry out the most common express methods of laborator y						
control of clinical laboratory research.  laboratory research.  y research in accordanc e with the requireme nts for labor protection , sanitary and epidemiol ogical requireme nts:  9. To carry out the most common express methods of laborator y						
clinical laboratory nee of laborator yresearch.  laborator yresearch in accordance e with the requirements for labor protection, sanitary and epidemiol ogical requirements;  9. To carry out the most common express methods of laborator yresearch in accordance e with the requirements for labor protection accordance e with the requirements for laborator yresearch in accordance in						
laboratory research.  laboratory research.  nce of laborator y research in accordance e with the requireme nts for labor protection , sanitary and epidemiol ogical requireme nts;  9. To carry out the most common express methods of laborator y				control of	the	
research.  laborator y research in accordanc e with the requireme nts for labor protection , sanitary and epidemiol ogical requireme nts; 9. To carry out the most common express methods of laborator y				clinical	performa	
research.  laborator y research in accordanc e with the requireme nts for labor protection , sanitary and epidemiol ogical requireme nts; 9. To carry out the most common express methods of laborator y				laboratory	nce of	
research in accordanc e with the requireme nts for labor protection , sanitary and epidemiol ogical requireme nts; 9. To carry out the most common express methods of laborator y					laborator	
research in accordanc e with the requireme nts for labor protection , sanitary and epidemiol ogical requireme nts; 9. To carry out the most common express methods of laborator y					V	
in accordanc e with the requireme nts for labor protection , sanitary and epidemiol ogical requireme nts;  9. To carry out the most common express methods of laborator y					-	
accordanc e with the requireme nts for labor protection , sanitary and epidemiol ogical requireme nts; 9. To carry out the most common express methods of laborator y						
e with the requireme nts for labor protection , sanitary and epidemiol ogical requireme nts; 9. To carry out the most common express methods of laborator y						
requireme nts for labor protection , sanitary and epidemiol ogical requireme nts; 9. To carry out the most common express methods of laborator y						
nts for labor protection , sanitary and epidemiol ogical requireme nts; 9. To carry out the most common express methods of laborator y						
labor protection , sanitary and epidemiol ogical requireme nts; 9. To carry out the most common express methods of laborator y						
protection , sanitary and epidemiol ogical requireme nts; 9. To carry out the most common express methods of laborator y						
, sanitary and epidemiol ogical requireme nts; 9. To carry out the most common express methods of laborator y						
and epidemiol ogical requireme nts; 9. To carry out the most common express methods of laborator y					_	
epidemiol ogical requireme nts; 9. To carry out the most common express methods of laborator y						
ogical requireme nts; 9. To carry out the most common express methods of laborator y						
requireme nts; 9. To carry out the most common express methods of laborator y						
nts; 9. To carry out the most common express methods of laborator y						
9. To carry out the most common express methods of laborator y						
carry out the most common express methods of laborator y						
the most common express methods of laborator y					9. To	
common express methods of laborator y					carry out	
express methods of laborator y					the most	
methods of laborator y					common	
methods of laborator y					express	
of laborator y					_	
laborator			Ì			
y y						
		İ				
1000aron,					-	

					10. To issue accountin g and reporting document ation for clinical laborator y research, provided for by the current regulator y document s.	
2.	GPC-6	Readiness to maintain medical records.	Organization of laboratory services. Quality control (QC) of laboratory research.	1.Rules of primary health care as a type of health care in the health care in the health care system; 2. Methods for laboratory examination in the prevention of diseases, clinical examination of patients with chronic diseases, medical rehabilitatio n, monitoring	1. Perform clinical laborator y studies and use methods - express diagnosti cs aimed at identifyin g the risk of developin g diseases; 2. To carry out measures to prevent the spread of	1. The technology for performing the most common types of general clinical, biochemical , coagulologi cal, hematologic al, parasitologi cal, immunologi cal and cytological studies using laboratory

pregnand 3. Fundame ls of the organiza and provision emergen and urge care, including	parasitic information systems; to comply 2. Technology sanitary for norms and rules and rules working research;
Fundame Is of the organiza and provision emergen and urge care, including	enta diseases, systems; to comply 2. Ition with Technology sanitary for norms performing laboratory ent when express working research;
ls of the organiza and provision emergen and urge care, including	to comply 2.  Technology for performing laboratory ent when express working research;
organiza and provision emergen and urge care, including	ation with Technology sanitary for norms performing laboratory ent when express working research;
and provision emergen and urge care, including	sanitary for performing and rules laboratory ent when express working research;
and provision emergen and urge care, including	sanitary for performing and rules laboratory ent when express working research;
emergen and urge care, including	and rules laboratory express working research;
emergen and urge care, including	and rules laboratory express working research;
care, including	when express working research;
including	
	g with 3.
tho	_
, , , , , , , , , , , , , , , , , , ,	biological Technology
organiza	
and	3. organizing
provision	n of Conduct and
laborate	ry sanitary performing
and	and quality
diagnosti	ic education control of
assistanc	ce; al work laboratory
4.	on the research;
Fundame	enta preventio 4. Methods
ls of soci	ial n of for drawing
hygiene a	and   infectious   up a plan for
public	and non- laboratory
health of	the infectious examination
population	on diseases. of patients
of the	and
country, t	the interpreting
tasks of t	the the results
country's	of
health car	re laboratory
in the field	ld tests at the
of health	stages of
protection	n of prevention,
the	diagnosis
populatio	on and
and the	treatment of
prospects	the most

				for the		common
				development		diseases of
				of health		the
				care.		cardiovascul
				curc.		ar,
						respiratory,
						digestive,
						genitourinar
						y,
						musculoskel
						etal,
						nervous,
						immune,
	!					endocrine
						systems,
						blood, as
						well as
						emergency
						states;
						5. The
						technology
						of
						interaction
						with the
						staff of
						clinical
						departments
						on the
						issues of
						laboratory
						examination
						of patients.
3.	GPC-9	The ability	11	1.	1. To	1.Interpretin
		to assess	Hematological examinations	Diagnostic	carry out	g the results
		morphofun	Express	informativen	clinical	of
		ctional,	methods in hematology.	ess of	laborator	laboratory
		physiologi	General	laboratory	y tests	tests; 2.
		cal conditions	clinical	symptoms and	and	Algorithm
		Conditions	research	dIIU		

		and pathologic al processes in the human body for solving profession al problems.	methods Laboratory diagnostics of parasitic diseases. Clinical biochemistry. Methods of modern express diagnostics. Coaguagulolog y. Immunological studies. ELISA research in the CDL. Methods of modern express diagnostics. Molecular genetic research methods Cytological studies Bacteriological research methods	syndromes - the concept of specificity, test sensitivity, predictive value; list of laboratory methods, taking into account the organization al structure of healthcare institutions	express methods aimed at identifyin g the risk of developin g diseases; 2. Interpret the results of the most common laborator y diagnosti c methods	for a detailed clinical diagnosis; 3. Algorithm for making a preliminary diagnosis with subsequent referral to the appropriate specialist doctor.
4.	PC-2	Ability and readiness to conduct preventive medical examinations, clinical examination and dispensary observation.	Hematological research. General clinical research methods. Laboratory diagnosis of parasitic diseases. Clinical biochemistry. Methods of modern express diagnostics. Coaguagulolog y. Immunological studies ELISA studies in CDL. Methods	1.Rules of primary health care as a type of health care in the health care system; 2. Methods for laboratory examination in the prevention of diseases, clinical examination of patients with chronic diseases,	Perform clinical laborator y studies and use methods - express diagnosti cs aimed at identifyin g the risk of developin g	1. The technology for performing the most common types of general clinical, biochemical coagulologi cal, hematologic al, parasitologi

of modern express diagnostics. Molecular genetic research methods Cytological studies Bacteriological research methods	medical rehabilitation, monitoring the course of pregnancy; 3. Fundamentals of the organization	diseases; 2. To carry out measures to prevent the spread of infectious and	cal, immunologi cal and cytological studies using laboratory equipment and
diagnostics.	emergency and urgent care, including the organization and provision of laboratory and diagnostic assistance; 4. Fundamenta ls of social hygiene and public health of the population of the country, the tasks of the country's health care in the field of health protection of the population and the prospects for the	diseases, to comply with sanitary norms and rules when working with biological material; 3. Conduct sanitary and education al work on the prevention of infectious and non-infectious diseases.	systems; 2. Technology for performing laboratory express research; 3. Technology for organizing and performing quality control of laboratory research; 4. Methods for drawing up a plan for laboratory examination of patients and interpreting the results of laboratory

			development	tests at the
			of health	stages of
			care.	prevention,
				diagnosis
	ļ.			and
				treatment of
	:			the most
		:		common
				diseases of
				the
				cardiovascul
				ar,
				respiratory,
				digestive,
				genitourinar
				у,
				musculoskel
				etal,
				nervous,
				immune,
				endocrine
				systems,
				blood, as
				well as
				emergency
				states;
				5. The
				technology
				of
				interaction
				with the
				staff of
				clinical
				departments
				on the
				issues of
				laboratory
				examination
 				of patients.
			1	

	DC 3	T1 1 *1*2		1 D.1 6	1 T-	1 01.111- 6
5.	PC-3	The ability	Hematological	1. Rules of	1. To	1. Skills for
		and	examinations	action upon	organize	performing
		readiness	Express	detection of	a	basic
		to carry	methods in	a patient	workplac	laboratory
		out anti-	hematology. General	with signs of	e for	manipulatio
		epidemic	clinical	especially	morpholo	ns
		measures,	research	dangerous	gical	(microscopy
		the	methods.	infections;	(cytologic	, dosing,
		organizati	Laboratory	organization	al),	centrifugatio
		on of	diagnostics of parasitic	and volume	biochemi	n, weighing,
		protection	diseases.	of first aid	cal,	filtration of
		of the	Clinical	in military	immunol	solutions,
		population	biochemistry.	field	ogical,	preparation
		in the	Methods of modern	conditions,	express	of solutions
		centers of	express	in case of	methods	of
		especially	diagnostics.	mass	and other	substances,
		dangerous	Immunological	casualties of	studies;	etc.)
		infections,	studies ELISA	the	2.	2.
		when the	studies in the CDL.	population	Organize	Preparation,
		radiation	Methods of	and	the work	fixation and
		situation	modern	catastrophes	of	staining of
		worsens,	express	1	nursing	preparations
		natural	diagnostics Coaguagulolog	3.Rules of	staff;	for
		disasters	y.	first aid for	3. To	microscopic
		and other	Molecular	life-	organize	examination
		emergenci	genetic	threatening	the work	, preparation
		es.	research methods	and	of the	of samples
			Cytological	emergency	laborator	for
			studies	conditions;	y	biochemical
			Bacteriological	4.	personnel	9
			research methods	Fundamenta		immunologi
			memous	ls of	4. Prepare	cal and
				radiation	a	other
				safety;	preparatio	studies;
				5.	n for	3. Carrying
				Fundamenta	microsco	out the
				ls of disease	pic	calibration
				prevention	examinati	of
				and health	on,	laboratory
				education;	samples	measuring
				6. Rules of	of	instruments;
				action when	biomateri	4. Work on
				a patient is	al for	the most
				found with	biochemi	common

		sions of	0.01	lahamatara
		signs of	cal,	laboratory
		especially	immunol	measuring
		dangerous	ogical	instruments,
		infections.	and other	analyzers
			laborator	and
			y studies;	equipment
			5. Prepare	in
			solutions	accordance
			of	with the
			reagents,	rules of their
			dyes for	operation;
			laborator	5. Execution
			У	of
			research;	laboratory
			6. Work	tests by
			on the	non-device
			most	express
			common	methods;
			laborator	6.
			y	Maintaining
			measurin	accounting
			g	and
			instrumen	reporting
			ts,	documentati
			analyzers	on of the
			and	laboratory
			equipmen	(registration
			t in	of a journal
			accordanc	for
			e with the	recording
			rules of	research
			their	results,
			operation;	filling out
			be able to	forms for
			use	analysis
			methods	results, etc.).
			of	
			express	
			diagnosti	
			cs in a	
			laborator	
			y;	
			7. Carry	
			out	

quality control of the analytical stage of the research performe d; 8. To organize the performa nee of laborator y research in accordane e with the requireme nts for labor protection , sanitary and epidemiol ogical requireme nts; 9, Perform the most common laborator y tests and use the methods of modern express diagnosti cs;		 		
control of the analytical stage of the research performe dt: 8. To organize the performa nee of laborator y research in accordance e with the requireme nts for labor protection , sanitary and epidemiol ogical requirements; 9. Perform the most common laborator y tests and use the methods of modern express diagnosti			quality	
the analytical stage of the research performe d: 8. To organize the performa nce of laborator y research in accordanc e with the requireme nts for labor protection , sanitary and epidemiol ogical requireme nts; 9, Perform the most common laborator y tests and use the methods of modern express diagnosti				
analytical stage of the research performe d:  8. To organize the performa nce of laborator y research in accordance e with the requireme nts for labor protection , sanitary and epidemiol ogical requireme nts;  9. Perform the most common laborator y tests and use the methods of modern express diagnosti				
stage of the research performe d: 8. To organize the performa nce of laborator y research in accordanc e with the requireme nts for labor protection , sanitary and epidemiol ogical requireme nts; 9. Perform the most common laborator y tests and use the methods of modern express diagnosti				
the research performe d: 8. To organize the performa nee of laborator y research in accordanc e with the requireme nts for labor protection , sanitary and epidemiol ogical requireme nts; 9. Perform the most common laborator y tests and use the methods of modern express diagnosti				,
research performe d; 8. To organize the performa nce of laborator y research in accordanc e with the requireme nts for labor protection , sanitary and epidemiol ogical requireme nts; 9. Perform the most common laborator y tests and use the methods of modern express diagnosti			stage of	
research performe d; 8. To organize the performa nee of laborator y research in accordanc e with the requireme nts for labor protection , sanitary and epidemiol ogical requireme nts; 9. Perform the most common laborator y tests and use the methods of modern express diagnosti			the	
performe d: 8. To organize the performa nee of laborator y research in accordanc e with the requireme nts for labor protection , sanitary and epidemiol ogical requireme nts; 9. Perform the most common laborator y tests and use the methods of modern express diagnosti				
d; 8. To organize the performa nce of laborator y research in accordanc e with the requireme nts for labor protection , sanitary and epidemiol ogical requireme nts; 9. Perform the most common laborator y tests and use the methods of modern express diagnosti				
8. To organize the performa nee of laborator y research in accordanc e with the requireme nts for labor protection , sanitary and epidemiol ogical requireme nts; 9, Perform the most common laborator y tests and use the methods of modern express diagnosti				
organize the performa nce of laborator y research in accordanc e with the requireme nts for labor protection , sanitary and epidemiol ogical requireme nts; 9. Perform the most common laborator y tests and use the methods of modern express diagnosti				
the performa nee of laborator y research in accordanc e with the requireme nts for labor protection , sanitary and epidemiol ogical requireme nts; 9. Perform the most common laborator y tests and use the methods of modern express diagnosti				
the performa nee of laborator y research in accordanc e with the requireme nts for labor protection , sanitary and epidemiol ogical requireme nts; 9. Perform the most common laborator y tests and use the methods of modern express diagnosti			organize	
performa nce of laborator y research in accordanc e with the requireme nts for labor protection , sanitary and epidemiol ogical requireme nts; 9. Perform the most common laborator y tests and use the methods of modern express diagnosti				
nce of laborator y research in accordanc e with the requireme nts for labor protection , sanitary and epidemiol ogical requireme nts; 9. Perform the most common laborator y tests and use the methods of modern express diagnosti			l .	
laborator y research in accordanc e with the requireme nts for labor protection , sanitary and epidemiol ogical requireme nts; 9, Perform the most common laborator y tests and use the methods of modern express diagnosti				
y research in accordanc e with the requireme nts for labor protection , sanitary and epidemiol ogical requireme nts; 9. Perform the most common laborator y tests and use the methods of modern express diagnosti				
research in accordanc e with the requireme nts for labor protection , sanitary and epidemiol ogical requireme nts; 9. Perform the most common laborator y tests and use the methods of modern express diagnosti			laborator	
research in accordanc e with the requireme nts for labor protection , sanitary and epidemiol ogical requireme nts; 9. Perform the most common laborator y tests and use the methods of modern express diagnosti			у	
in accordanc e with the requireme nts for labor protection , sanitary and epidemiol ogical requireme nts; 9. Perform the most common laborator y tests and use the methods of modern express diagnosti				
accordanc e with the requireme nts for labor protection , sanitary and epidemiol ogical requireme nts; 9. Perform the most common laborator y tests and use the methods of modern express diagnosti				
e with the requireme nts for labor protection , sanitary and epidemiol ogical requireme nts; 9. Perform the most common laborator y tests and use the methods of modern express diagnosti				
requireme nts for labor protection , sanitary and epidemiol ogical requireme nts; 9. Perform the most common laborator y tests and use the methods of modern express diagnosti				
nts for labor protection , sanitary and epidemiol ogical requireme nts; 9. Perform the most common laborator y tests and use the methods of modern express diagnosti				
labor protection , sanitary and epidemiol ogical requireme nts; 9. Perform the most common laborator y tests and use the methods of modern express diagnosti				
protection , sanitary and epidemiol ogical requireme nts; 9. Perform the most common laborator y tests and use the methods of modern express diagnosti			nts for	
protection , sanitary and epidemiol ogical requireme nts; 9. Perform the most common laborator y tests and use the methods of modern express diagnosti			labor	
, sanitary and epidemiol ogical requireme nts; 9. Perform the most common laborator y tests and use the methods of modern express diagnosti				
and epidemiol ogical requireme nts; 9. Perform the most common laborator y tests and use the methods of modern express diagnosti				
epidemiol ogical requireme nts; 9. Perform the most common laborator y tests and use the methods of modern express diagnosti				
ogical requireme nts; 9. Perform the most common laborator y tests and use the methods of modern express diagnosti				:
requireme nts; 9. Perform the most common laborator y tests and use the methods of modern express diagnosti				
nts; 9. Perform the most common laborator y tests and use the methods of modern express diagnosti			ogical	
nts; 9. Perform the most common laborator y tests and use the methods of modern express diagnosti			requireme	
9. Perform the most common laborator y tests and use the methods of modern express diagnosti			1	
Perform the most common laborator y tests and use the methods of modern express diagnosti				
the most common laborator y tests and use the methods of modern express diagnosti				
common laborator y tests and use the methods of modern express diagnosti				
laborator y tests and use the methods of modern express diagnosti				
y tests and use the methods of modern express diagnosti				
and use the methods of modern express diagnosti			laborator	
and use the methods of modern express diagnosti			y tests	
the methods of modern express diagnosti				
methods of modern express diagnosti				
of modern express diagnosti				
modern express diagnosti				
express diagnosti				
diagnosti				
diagnosti			express	
	 		 ***	

					10. To issue accounting and reporting document ation for clinical laborator y research, provided for by the current regulator y document s.	
6.	PC-5	Willingnes s to collect and analyze patient complaints , data from his anamnesis, examinatio n results, laboratory, instrument al, pathologic al and anatomical and other studies in order to recognize a condition or establish the	Hematological examinations Express methods in hematology. General clinical research methods. Laboratory diagnostics of parasitic diseases. Clinical biochemistry. Methods of modern express diagnostics. Immunological studies. ELISA research in the CDL. Methods of modern express diagnostics. Coaguagulolog y. Molecular genetic	1. Diagnostic informativen ess of laboratory symptoms and syndromes—the concept of specificity, test sensitivity, predictive value; list of laboratory methods, taking into account the organization al structure of healthcare institutions	1. To carry out clinical laborator y tests and express methods aimed at identifyin g the risk of developin g diseases; 2. Interpret the results of the most common laborator	1.Interpretin g the results of laboratory tests; 2. Algorithm for a detailed clinical diagnosis; 3. Algorithm for making a preliminary diagnosis with subsequent referral to the appropriate specialist doctor.

		presence or absence of a disease.	research methods Cytological studies Bacteriological research methods  1. Diagnostic informativenes s of laboratory symptoms and syndromes - the concept of specificity, test sensitivity, predictive value; list of laboratory methods, taking into account the organizational structure of healthcare institutions		y diagnosti c methods	
7.	PC-17	Ability to apply the basic principles of organizati on and manageme nt in the field of public health protection, in medical organizati ons and their	Organization of laboratory services.  Quality control (QC) of laboratory research.	1. Legislative, regulatory, instructive and methodological documents defining the activities of laboratories of medical organization s and quality management of clinical laboratory	1. To organize a workplace for morphological (cytological), biochemical, immunological, express methods and other studies;	1. Skills for performing basic laboratory manipulations (microscopy, dosing, centrifugation, weighing, filtration of solutions, preparation of solutions of substances, etc.)

structural	research	2.	2.
units.		Organize	Preparation,
umis.	informativen	the work	fixation and
	ess of	of	staining of
	laboratory	nursing	preparations
	research	staff;	for
	from the	3. To	
	standpoint	organize	microscopic examination
	of evidence-	the work	
	based	of the	, preparation
	medicine in	laborator	of samples
			for
	the most	y	biochemical
	commort	personnel	7
	diseases of	) A Duanana	immunologi
	the	4. Prepare	cal and
	cardiovascul	a	other
	ar,	preparatio	studies;
	respiratory,	n for	3. Carrying
	digestive,	microsco	out the
	genitour nar	pic	calibration
	у,	examinati	of
	musculoskel	on,	laboratory
	etal,	samples	measuring
	nervous,	of	instruments;
	immune,	biomateri	4. Work on
	endocrine	al for	the most
	systems and	biochemi	common
	blood;	cal,	laboratory
	3. Basic	immunol	measuring
	modern	ogical	instruments,
	preanalytical	and other	analyzers
	and	laborator	and
	analytical	y studies;	equipment
	technologies	5. Prepare	in
	of clinical	solutions	accordance
	laboratory	of	with the
	research.	reagents,	rules of their
	4. principles	dyes for	operation;
	of operation	laborator	5. Execution
	and rules of	У	of
	operation of	research;	laboratory
	the main	6. Work	tests by
	types of	on the	non-device
	measuring	most	express
	1	1	

analyzers and other equipment used in the performance of clinical laboratory research; 5. Factors influencing the results of laboratory research at research and poperation, analytical and postanalytic al stages; control of 6. Technology for organizing and research conducting internal and external quality control of the clinical performa
--

					epidemiol ogical requireme nts; 9. To carry out the most common express methods of laborator y research; 10. To issue accountin g and reporting document ation for clinical laborator y research, provided for by the current regulator y document s.	
8.	PC-22	Willingnes s to participate in the implement ation of new methods and techniques	Hematological examinations Express methods in hematology. General clinical research methods. Laboratory diagnostics of parasitic	1.Rules of safety precautions and work in a clinical diagnostic laboratory, with reagents,	1. Work on the most common laborator y measurin g instrumen	1. The technology for performing the most common types of general clinical.

aimed at protecting the health of citizens.	diseases. Clinical biochemistry. Methods of modern express diagnostics. Immunological studies. ELISA research in the CDL. Methods of modern express diagnostics. Coaguagulolog y. Molecular genetic research methods Cytological studies Bacteriological research methods.	devices.	ts, analyzers and equipmen t in accordance with the rules of their operation, as well as be able to use the methods of modern express diagnostics.	biochemical coagulologi cal, hematologic al, parasitologi cal, immunologi cal and cytological studies using laboratory equipment and information systems and methods of modern express diagnostics; 2. Technology for performing laboratory express
				Technology for performing laboratory
				research; 3. Technology for organizing
				and performing quality control of laboratory research;

	T			4.Methods
				drawing up
				a plan for
				laboratory
				examination
				of patients
				and
				interpreting
				the results
				of
				laboratory
				tests at the
				stages of
				prevention,
				diagnosis
				and
				treatment of
				the most
				common
				diseases of
				the
				cardiovascul
				ar,
				respiratory,
				digestive,
	a c			genitourinar
				y,
		;	1	musculoskel
	ı			etal,
				nervous,
				immune,
				endocrine
				i i
				systems,
				blood, as
				well as in
				emergency
				conditions

3. Place of discipline in the structure of the educational program The discipline "Methods of modern express diagnostics" is a discipline of the part, formed by the participants of educational relations of the Block \_1\_ of the Federal State Educational Standard of Higher Education in the specialty \_31.05.01 "General Medicine".

### 4. Scope of the discipline

NG - /-			Total	Total	Semester
№п/п	Type	Total credits	hours	10	
	Type	of work	credits	Hours	Number of hours
1		2	3	4	5
1.	Contact work of teacher (total), in	students with the cluding:	72	72	72
2.	Lectures (L)		14	14	14
3.	Clinical Practices	58	58	58	
4.	Seminars (S)				
5.	Laboratory work (	LW)			
6.	Student independ	lent work (SIW)	36	36	36
7.	Intermediate	offset(O)	3		
	type appraisals	exam (E)			
8.	TOTAL:	hours		108	108
	General labor intensity	ЗЕТ		3	3

### 5. Content of the discipline

№/п	№ semester		T	a	of eductivity  n hou		nal	Forms of monitoring of
			L	LW	S	SIW	Total	progress
1	2	3	4	5	6	7	8	9

1	12	Organization of laboratory services. Quality control (QC) of laboratory research.	2	77	4	13	Solving situational tasks; test control with elements of visual identification, written survey, interview on situational tasks, module
2	12	Hematological examinations. Express methods in hematology.	2	5	2	9	Solving situational tasks; test control with elements of visual identification, written survey, interview on situational tasks, module
3.	12	General clinical research methods. Laboratory diagnostics of parasitic diseases.	2	20	10	32	Solving situational tasks; test control with elements of visual identification, written survey, interview on situational tasks, module
4.	12	Clinical biochemistry. Methods of modern express diagnostics.	2	10	8	20	Solving situational tasks; test control with elements of visual identification, written survey, interview on situational tasks

5.	12	Coagulology Methods of modern express diagnostics.	2	3	2	7	Solving situational tasks; test control with elements of visual identification, written survey, interview on situational tasks
6.	12	Immunological studies. ELISA research in the CDL. Methods of modern express diagnostics.	2	5	4	11	Solving situational tasks; test control with elements of visual identification, written survey, interview on situational tasks
7.	12	Molecular genetic research methods. Cytological studies. Bacteriological research	2	8	6	16	Solving situational tasks; test control with elements of visual identification, written survey, interview on situational tasks
		TOTAL:	14	58	36	108	

# 6.The list of educational and methodological support for independent work of students in the discipline

№/п	No	Наименование учебно-методической разработки	
	семестра		
1.	12		
		1. Клиническая лабораторная диагностика.	
		Национальное руководство. В.В. Долгов, В.В. Меньшиков.	
		Том І. Москва. 2013	
		2. Гематологические анализаторы. Интерпретация анализа крови.	
		Методические рекомендации. С. А. Луговская, М.Е. Почтарь, В.В.	

		Долгов. Москва. 2008 3. Клиническое руководство Тица по лабораторным тестам. Алан Г.Б.Ву, DABCC, FACB. Москва. 2013
2.	12	1. Клиническая лабораторная диагностика.  Национальное руководство. В.В. Долгов. В.В. Меньшиков.  Том I, II. Москва. 2013  2. Гематологические анализаторы. Интерпретация анализа крови.  Методические рекомендации. С. А. Луговская, М.Е. Почтарь. В.В.  Долгов. Москва. 2008.  3. Лабораторная гематология.  3. Клиническое руководство Тица по лабораторным тестам. Алан Г.Б.Ву, DABCC, FACB. Москва. 2013
3.	12	1. Клиническая лабораторная диагностика.  Национальное руководство. В.В. Долгов, В.В. Меньшиков.  Том I, II. Москва. 2013  2. Спинномозговая жидкость, лабораторные методы исследования и их клинико-диагностическое значение. Учебное пособие. С.Г. Марданлы, Ю.В. Первушин. В.Н. Иванова. г. Электрогорск, 2012.  3. Клиническое руководство Тица по лабораторным тестам. Алан Г.Б.Ву, DABCC, FACB. Москва. 2013.
4.	12	<ol> <li>Пособие по биохимическим исследованиям в клиникодиагностических лабораториях Ю.В. Первушин, С.Ш. Рогова. Ставрополь, 2008.</li> <li>Клиническая лабораторная диагностика.</li> <li>Национальное руководство. В.В. Долгов, В.В. Меньшиков.</li> <li>Том І. Москва. 2013</li> <li>Клиническое руководство Тица по лабораторным тестам. Алан Г.Б.Ву, DABCC, FACB. Москва. 2013</li> </ol>
5.	12	1.Лабораторная диагностика нарушений системы гемостаза. Учебное пособие. И.А. Волкова. Москва. 2013

		<ol> <li>Лабораторная диагностика неотложных состояний. А.А. Кишкун. Москва. 2012.</li> <li>Клиническая лабораторная диагностика. Национальное руководство. В.В. Долгов, В.В. Меньшиков. Том І. Москва. 2013.</li> <li>Клиническое руководство Тица по лабораторным тестам. Алан Г.Б.Ву, DABCC, FACB. Москва. 2013.</li> </ol>
6.	12	1. Клиническая лабораторная диагностика. Национальное руководство. В.В. Долгов, В.В. Меньшиков. Том І, ІІ. Москва. 2013. 2. Клиническое руководство Тица по лабораторным тестам. Алан Г.Б.Ву, DABCC, FACB. Москва. 2013. 3. Иммунологические исследования и методы диагностики инфекционных заболеваний в клинической практике. А.А. Кишкун. Москва, 2009.
7.	12	1. Клиническая лабораторная диагностика. Национальное руководство. В.В. Долгов, В.В. Меньшиков. Том I, II. Москва. 2013. 2. Клиническое руководство Тица по лабораторным тестам. Алан Г.Б.Ву, DABCC, FACB. Москва. 2013. 3. ПЦР в реальном времени. Д.В. Ребрикова. Москва, 2015.

### 7. Assessment materials for intermediate certification of students in the discipline

№/ П	List of competenci es	№ semest er	Indicator (s) evaluating	Evaluation criterion (s)	Grading scale	Name FES
1	2	3	4	5	6	7
1.	GPC-3 GPC-6 GPC-9 PC-2 PC-3 PC-5 PC-17	12	see the standard for assessing the quality of education, approved. By order of the Federal State	see the standard for assessing the quality of education, approved. By order of the Federal State Budgetary Educational	see the standard for assessing the quality of education, approved. By order	Test control. Situational task interview. Tickets for offset

Higher Education of the SOGMA of the	Health of Russia from 10.07.2018 №	Federal State Budgetary Education al Institution of Higher Education of the
Health of		Education
		8 No. 264 / o

## 8. Перечень основной и дополнительной учебной литературы, необходимой для освоения дисциплины

п/	Наименован	Автор	Год,	Кол-во экз	вемпляров
№	ие	(ы)	место издания	в биб-лиотеке	на кафедре
1	2	3	4	5	6
			Основная л	итература	
6.	Руководство по по пабораторным методам диагностики	ред. А.А. Кишкун	М.: ГЭОТАР- Медиа, 2007	12	
7.	Клиническая	ред. В. А.	M.:	106	
	биохимия: учеб. пособие	Ткачук	ГЭОТАР- Медиа,	«Консультант студен	та»
			2006	http://www.stud ISBN9785970	
8.	Клиническая	Кишкун	M.:	10	
	лабораторная	A. A.	ГЭОТАР-	2	

	диагностика: учеб. пособие	Ti o	Медиа. 2013 2015	«Консультант студента»  http://www.studmedlib.ru/book/ ISBN9785970435182.html
1.	Клиническая лабораторная диагностика: справочник для врачей	Медведев В. В. Волчек Ю. 3.	олнительна СПб.: Гиппократ , 1997	я литература 1
1.	Справочник по клинико- биохимическо й лабораторной диагностике в 2 т.	Камышн иков В. С.	Минск: Беларусь. 2000	T.1-2 T.2-2
2.	Терапевтичес кий справочник Вашингтонск ого университета	ред. Ч. Кэри	М.: Практика, 2000	2
3.	Клинико- лабораторная диагностика инфекционны х болезней: Рук-во для врачей	ред. Ю. В. Лобзин	СПб. : Фолиант, 2001	21
4.	Биохимическ ие методы исследования в клинико- диагностичес ких лабораториях: учеб. пособие	О.А. Тимин и др.	Томск: STT, 2002	1
6.	Лабораторно- клиническая диагностика	Бондарь Т. П. Козинец	М.: МИА, 2003	3

	сахарного диабета и его осложнений	Г. И.			
7.	Погорелов, В. М. Лабораторно-клиническая диагностика анемий	Погорело в В. М. Козинец Г. И. Ковалева Л. Г.	М.: МИА, 2004	1	
8.	Таранов, А. Г.  Лабораторная диагностика в акушерстве и гинекологии: Справочник	Таранов А. Г.	М.: ЭликсКом , 2004	1	
9.	Российский терапевтическ ий справочник (с приложениям и на компакт-диске)	ред. А. Г. Чучалин	М.: ГЭОТАР- Медиа. 2005	5	
10.	Внутренние болезни. Лабораторная и инструментал ьная диагностика: учеб. пособие	Ройтберг Г. Е. Струтын ский А. В.	М.: МЕДпрес с-информ, 2011	2	
11.	Клиническая микробиологи я: руководство для специалистов клинической лабораторной	Донецкая Э. ГА.	М.: ГЭОТАР- Медиа, 2011	1	

	диагностики				
12.	Клиническая лабораторная диагностика: национальное руководство: в 2 т. Т.1	ред. В. В. Долгов	М.: ГЭОТАР- Медиа. 2012	1	
13.	Медицинская лабораторная диагностика: программы и алгоритмы: руководство для врачей	ред. А. И. Карпище нко	М.: ГЭОТАР- Медиа, 2014	1	
14.	Методы клинических лабораторных исследований	ред. В. С. Камышн иков	М.: МЕДпрес с-информ, 2015 2016	1 2	
15.	Биохимическ ий диагноз (физиологиче ская роль и диагностичес кое значение биохимическ их компонентов	Бородин Е. А. Бородина Г. П.	Благовеще нск, 2010	1	
	крови и мочи)				

16	Клинический анализ лабораторных исследований в практике военного врача	Капитане нко А. М. Дочкин И. И.	М.: Воениздат , 1985	1
17.	Лабораторные методы исследования в клинике : справочник	ред. В. В. Меньшик ов	М.: Медицина , 1987	10
18.	Руководство к практическим занятиям по клинической лабораторной диагностике	ред. М.А. Базарнов а	Киев: Выща шк., 1988	18
19.	Руководство к практическим занятиям по методам клинических лабораторных исследований : Учеб. Пособие	Ронин В. С. Старобин ец Г. М.	М.: Медицина , 1989	3
20.	Гематологиче ский атлас	Абрамов М. Г.	М.: Медицина , 1979, 1985	15
21.	Пособие по клинической биохимии для системы	Никулин Б. А.	М.: ГЭОТАР- Медиа, 2007	7  «Консультант студента»  http://www.studmedlib.ru/book/

послевузовск ого профессиона льного	978970403587.html
образования: учеб. пособие	СОГЛАСОБАН

### 9. The list of resources of the information and telecommunications network "Internet" necessary for mastering the discipline

#### Hematology

http://dic.academic.ru/

#### **Biochemistry**

http://biokhimija.ru/klinicheskajabiohimija.html

http://bono-esse.ru/blizzard/Lab/KAK/analizator\_metod\_recomend\_2.html

http://www.proflit.ru/journals/172/

#### *Immunology*

http://6years.net/index.php?do=static&page=immunologi a allergologija

http://medstudents.ru/category/immunology/immtextbooks/

http://an.yandex.ru/count/

www.ncbi.nlm.nih.gov.

www.qiagtn.com.

http://www.bestpravo.ru/sssr/eh-postanovlenija/z1r.htm

http://medlib.tomsk.ru/node/

#### Quality control in KDL

www.fsvok.ru

#### 10. Methodical instructions for students on mastering the discipline

Training in the discipline "Clinical laboratory diagnostics' consists of contact work (72 hours), including a lecture course (14 hours) and practical classes (58 hours) and independent work (36 hours). The main study time is devoted to the practical part of the study of this discipline.

The practical activity of a doctor of any specialty is associated with the need for information about the state of the vital processes of individual organs and tissues, as well as the patient's body as a whole. The subject of laboratory medicine is the receipt and provision for clinical use of information about the composition (chemical and cellular) of biomaterials and changes that are evidence-based causal relationships with certain pathological processes and conditions in the human body.

To study the discipline "Clinical laboratory diagnostics" you need knowledge, skills and abilities formed by previous disciplines, such as biology, chemistry, biological chemistry, normal physiology, histology, microbiology, virology, immunology.

Practical classes are conducted on the basis of the clinical diagnostic laboratory of the SOGMA Clinical Hospital, which contributes to a better understanding of all stages of the laboratory's work: preanalytical - including the collection of biological material; for the analytical one - a demonstration of the actually working automated analyzers, which makes it possible to visually evaluate the obtained laboratory tests and understand the quality control issues carried out by the laboratory; postanalytic - the interpretation of research results and the formation, ultimately, of clinical laboratory thinking.

The ability to conduct practical classes in an existing laboratory, the use of visual aids, solving situational problems, independent work with laboratory research ultimately strengthens the theoretical course in mastering the discipline. In accordance with the requirements of the Federal State Educational Standard of Higher Education, active and interactive forms of conducting classes are widely used in the educational process (situational tasks, independent extracurricular work, developing learning in the form of role-playing games, informatization training, individual work with laboratory research and the interpretation of research results). The proportion of classes conducted in interactive forms is at least 5% of classroom lessons.

### 11. The list of information technologies used in the implementation of the educational process in the discipline

Educational technologies used in the study of this discipline least 5% interactive lessons on the volume of classroom lessons. Examples interactive and methods forms of conducting classes:

- imitation technologies: role-playing games ("Methods of express diagnostics in a clinical laboratory. The work of a KDL doctor when performing express studies"), training ("Interpretation of the results of a biochemical analysis study in case of lipid metabolism disorders");
- non-imitation technologies: lecture (problematic "Differential diagnosis of iron deficiency anemia and anemia of chronic diseases"), discussion ("The role and functions of cells of the phagocytic system").

The use of a clinical diagnostic laboratory, laboratory and instrumental equipment, classrooms for the work of students.

## The list of material and technical means of the classroom for lecturing on biochemistry. Requirements for the equipment of workplaces

No	Наименование	Количество
1.	Мультимедийная установка	1
2.	Экран	1
3	Указка лазерная	1
4.	Звукоусиливающая аппаратура (колонки)	1

## The list of material and technical means of the classroom (per academic group) for practical training.

N₂	Наименование	Количество
	Технические средства обучения	
1.	Тематические комплект иллюстраций по разделам учебной дисциплины	1
2.	Комплекты слайдов, таблиц.	1
	Лабораторное оборудование	
1.	Холодильник	1

2.	Центрифуга	5
3.	Водяная баня	5
4.	Фотоэлектроколориметр	2
5.	Шкаф сушильный	1
6.	Штативы для пробирок	20)
7.	Спектрофотометр PV 1251C	1
	D	1
8.	Весы торсионные	1
9.	Микроскоп биологический	1
	Лабораторная посуда	
1.	Пробирки	300
2.	Пробирки центрифужные с делением	100
۷.	Проопрки центрифужные с делением	100
3.	Колбы 250 мл	15
4.	Колбы 500 мл	15
5.	H	100
5.	Пипетки	100
6.	Ступки	20
7.	Спиртовки	20
8.	Чашки Петри	320
9.	Склянки с притертыми пробками (125-1000 мл)	80
10	Склянки 30 мл	100
10	GIOMINET DO 1901	100

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

N <sub>2</sub> п/п	Equipment identification	Quantity	Technical condition	
1	2	3	4	
Special equipment				
1.	Automatic biochemical analyzer CA-400 Furuno	1	Meet the	

			requirements of regulatory and technical
2.	Semi-automatic biochemistry analyzer «Clima» MC-15	1.	documentation.  Meet the requirements of regulatory and technical documentation.
1.	Automatic system «Alisei»	1	Meet the requirements of regulatory and technical documentation.
2.	Hematology analyzer «Medonic»	2	Meet the requirements of regulatory and technical documentation.
3.	Binocular microscope "Mictron"		Meet the requirements of regulatory and technical documentation.
4.	Medical four-channel blood clotting analyzer "KoaTest-4"	1	Meet the requirements of regulatory and technical documentation.
5.	DIRUI H-100 urine analyzer	1	Meet the requirements of regulatory and technical documentation.
6.	Urine test strip analyzer «UroMeter»	1	Meet the requirements of regulatory and technical documentation.
7.	Analyzer of gases and electrolytes GEM Premier 3000	1	Meet the requirements of regulatory and technical documentation.
8.	Biochemistry test strip analyzer Nano Checker	1	Meet the requirements of

			as acceptance and
			regulatory and
			technical
			documentation.
9.	Stopwatch	Ĵ.	Meet the
			requirements of
			regulatory and
			technical
			documentation.
10.	Dispenser automatic portable medical "Lenpipet",	5	Meet the
			requirements of
			regulatory and
			technical
			documentation.
	Auxiliary equipm	ent	
11.	Sterilizer	1	Meet the
		_	requirements of
			regulatory and
			technical
			documentation.
12.	Drying cabinet	1	Meet the
			requirements of
			regulatory and
			technical
10			documentation.
13.	Centrifuge "Liston"	2	Meet the
			requirements of
			regulatory and technical
			documentation.
14.	Conductometric shape counter	1	Meet the
17.	Conductometric snape counter	1	requirements of
			regulatory and
			technical
			documentation.
15.	Goryaeva camera	4	Meet the
		•	requirements of
			regulatory and
			technical
			documentation.
16.	Fuchs-Rosenthal camera	1	Meet the
		*	requirements of
			regulatory and
			technical
			documentation.
17.	Minshaker	1	Meet the
			requirements of
			regulatory and
			technical
			documentation.
			_

18.	Distiller	.1	Meet the requirements of regulatory and technical documentation.
19.	Refrigerators	۷.	Meet the requirements of regulatory and technical documentation.
20.	Thermostat	1	Meet the requirements of regulatory and technical documentation.
21.	Office equipment	<u> </u>	Meet the
21.	Computer	4.	requirements of regulatory and technical documentation.

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

Conducting educational activities using e-learning and distance learning technologies In the context 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 full-time training, it is possible to study this discipline or part of it using e-learning and distance educational 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, monitoring progress, as well as intermediate certification of students, platforms of the electronic information and educational environment of the academy and / or other e-learning systems recommended for use in the academy, such as Moodle, Zoom. Webinar. be etc.. 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 modes. Seminars can be held in the form of web conferences.