Ministry of Health of the Russian Federation
Governmental budget-funded educational institution of higher professional education
THE FIRST MOSCOW STATE MEDICAL UNIVERSITY NAMED AFTER I.M. SECHENOV

Seen and approved by
Rector _____ P.V. Glybochko

STEERING DOCUMENT OF THE COURSE
Pathology
(*name of the course*)
basic professional curriculum of higher education - residency program
31.00.00. Clinical medicine
code and name of the enlarged group of specialties (training areas)
31.08.54 General medical practice (family medicine)
code and name of study field (specialty)

Discipline credit value: 2 credit units

1. The purpose and objectives of pathology study (hereinafter - the "course").

The purpose of the course acquisition: *(participation in the generation of the respective competencies).*

readiness for abstract thinking, analysis, synthesis (GC-1);

readiness to participate in educational activities according to the curricula of secondary and higher medical education or secondary and higher pharmaceutical education, as well as additional professional programs for persons with secondary vocational or higher education in the manner prescribed by the federal executive authority developing the public policy and ensuring the legal regulation in the health sector (GC-3).

Professional competencies (hereinafter - the PC):

readiness to implement a set of measures aimed at preserving and promoting health and including the formation of healthy lifestyles, preventing the occurrence and (or) distribution of diseases, their early diagnostics, identifying the causes and conditions of their emergence and development, as well as eliminating the harmful effects of environmental factors on human health (PC-1);

readiness to determine patients' pathological conditions, symptoms, syndromes, diseases, and nosological forms in accordance with the International Statistical Classification of Diseases and Health-Related Issues (IDC) (PC-5).

The tasks of the course:

To know: the methodology of the course, its potentialities and tasks;

- the role in integration as to the achievements of various sciences and solution of practical public health issues;
- the types and importance of pathogenic factors, the role of body reactivity in the occurrence, development ,and outcome of various forms of human pathologies;
- the causes, mechanisms, and manifestations of the typical pathological processes, the patterns of their relationship, and importance in cases of various diseases;
- peculiarities of the origin, development, and completion of standard forms of pathology of organs and physiological systems;
- etiology and pathogenesis of certain diseases and syndromes, their manifestations and mechanisms of development, methods of rational diagnostics, effective treatment and prevention;
- adaptive reactions from the standpoint of the sanogenesis concept on the cell tissue, organ, and organism levels, the relationship of adaptive and pathogenic reactions and processes determining the nature and outcome of syndromes and diseases;
- the foundations of evidencebased medicine, modern scientific concepts of clinical pathology, principles of diagnostics, prevention and treatment of diseases;
- theoretical bases for establishing diagnosis, preventive and curative measures in cases of human diseases.

to be capable of: effectively solving a physician's professional problems; using the theoretical principles, concepts, facts and techniques when analyzingdata on etiology, pathogenesis and manifestations of human diseases;

- analyzing the mechanisms and importance of adaptive reactions of the patient's body; assess the information content and appropriateness of the methods of modern diagnostics, effectiveness of prevention and treatment of human diseases; characterizing the key theoretical principles of pathology, including a common etiology, pathogenesis, sanogenesis, disease doctrine etc.

to master skills: to apply the acquired knowledge and skills in therapeutic and preventive work.

2. The place of the course in the structure of the University OPOP VO .

2.1. The course refers to basic part of unit 1 of the Course.

2.2. The study the course, the knowledge and skills generated by previous disciplines/practice are required:

- *morbid anatomy*

(course/practice name)

Knowledge of: structural and functional basis of the typical pathological processes and diseases; structural organization of the cardiovascular, immune and nervous systems of the body.

Capabilities: to describe the structural and functional changes characteristic of the typical pathological processes

Skills: the use of the ideas about post-mortem techniques in the diagnostics and treatment of diseases

- pathological physiology

(course/practice name)

Knowledge of: peculiarities of interaction of the structural and functional manifestations of life on the level of cardiovascular, immune and nociceptive systems under normal and pathological conditions

Capabilities: tp analyze the clinical significance of the genetic methods of monitoring the functional systems of body

Skills: to use of concepts of the mechanisms of interaction between the major regulatory systems (nervous, endocrine, immune)

3. Requirements for the results as to theacquisition of the course.

The study of the course is aimed at developing the following generic (GC), professional (PC) and specialized professional (SPC) competencies by the students:

No.	Code competencies	Content of the competence (or a part thereof)	As a result of studying the course, students must:			
			Know	Be able to	Possess	Evaluation tools*
	GC-1	readiness for abstract thinking, analysis, synthesis	Dialectical interaction of the processes of adaptation and damage in organs, systems and organism as a whole	Analyze the etiology, mechanisms of development and principles of diagnostics of pathological processes	Skills of differentiating the causes and conditions of typical pathological processes at different structural and functional levels	Computer testing, interviewing on situational problems
	GC-3	readiness to participate in educational activities according to the curricula of the secondary and higher medical education or secondary and higher pharmaceutical education, as well as additional professional programs for the persons with secondary vocational	Dialectical interaction of the processes of adaptation and damage in organs, systems,	Analyze the etiology, mechanisms of development and principles of diagnostics of	Skills of differentiating the causes and conditions of the typical pathological processes at	Computer testing, interviewing on situational problems

		or higher education in the manner prescribed by the federal executive authority developing the public policy and ensuring legal regulation in the health sector (GC-3).	and organism at large	pathological processes	different structural and functional levels	
	PC-1	readiness to implement a set of measures aimed at preservation and promotion of health and including the formation of a healthy lifestyle, prevention of occurrence and (or) distribution of diseases, their early diagnostics, identification of the causes and conditions of their emergence and development, as well as elimination of the harmful effect of environmental factors on health	Medical significance of the structural and functional markers of cardiovascular diseases, immunopathology, pathological pain syndrome	To evaluate the morpho-functional vital signs from the standpoint of "norm-pathology"	Skills of differentiatng organism performance values in the diagnostics of pathological conditions	Computer testing, interview depending on situational problems
	PC-5	readiness to determine the patients' pathological conditions, symptoms, syndromes, diseases, and nosological forms in accordance with the International Statistical Classification of Diseases and Health-Related Issues (IDC)	The potentialities of the methods of preventive, predictive, and personalized medicine in prevention and treatment of cardiovascular diseases, immune diseases, abnormal pain, and psychosomatic disorders	To use the criteria of morphological and functional changes to analyze the peculiarities of the cardiovascular and immune psychosomatic pathology of individual patients	Skills in the diagnostics and correction of violations as to the functional systems of the body	Computer testing, interviewing on situational problems

**types of evaluation tools which can be used in development of competences: colloquium, test, interview by situational tasks, written or computer testing, sample calculations, individual assignments, review, essays*

4. Sections of the course and competences generated duringtheir study:

No.	Competence code	Discipline section name	Section content in didactic units
1	GC-1, GC-3 PC-1 PC-5	Pathophysiological mechanisms of cardiovascular pathology	Change in the energy metabolism of myocardium upon myocardial infarction, diabetes mellitus, heart failure. Pathogenic mechanisms of cell damage upon ischemia/reperfusion. Metabolic remodeling upon heart failure. Change of regulation upon cardiovascular pathology. New components of the renin-angiotensin system, the role of natriuretic peptides.
2	GC-1, GC-3 PC-1 PC-5	Pathophysiological mechanisms of immunopathology. Preventive and predictive medicine	Functional architectonics of the immune system: general principles of selecting potential immune pharmatherapeutic targets during targeting and design of the personalized immunotherapy protocols Introduction to predictive, preventive and personalized medicine. Current protocols of immune genetic diagnostics in clinical practice. Genomics as a part of predictive, preventive and personalized medicine. Proteomics as a part of predictive, preventive and personalized medicine. Post-infectious clinical and immunological syndrome (PICIS), peculiarities of endomicrobiota and post-infectious autoimmune syndrome (PIFAS) Functionality of the antibodies and the role of this phenomenon in the modern bioindustry of diagnostic and therapeutic drugs
3	GC-1, GC-3 PC-1 PC-5	Pathophysiology of pain. Neuroses. Psychosomatic pathology and theory of functional systems.	Peripheral and central mechanisms of nociception. Morphofunctional organization of nociceptive and antinociceptive brain systems. Pathophysiological classification of pain syndromes Neuropathic pain syndromes: mechanisms of development, clinical manifestations, peculiarities of diagnostics and treatment. Classification of analgesics. Narcotic and non-narcotic analgesics. Adjuvant analgesics Backache. Headache. Postoperative pain. Neuroses. Psychosomatic pathology and theory of functional systems.

5. Distribution of the course credit value.

5.1. Distribution of the course credit value and types of training activities by semesters:

Type of study	Credit value		Credit value by semesters (AH)			
	volume in credit units (CU)	volume in academic hours (AH)	1	2	3	4
Classroom work, including	1.4	48				48
Lectures (L)	0.3	6				6
Practical training (PT)	0.6	24				24
Seminars (S)	0.5	18				18
Intern's independent work (IW)	0.6	24				24
Interim certification						
test/examination (specify the type)		test				test
TOTAL	2	72				72

5.2. Sections of the course, types of study and forms of current monitoring:

No.	Semester No.	Course section name	Academic work types (in AH)					Evaluation tools
			L	PW	S	IW	total	
1.	4	Change of the energy metabolism of myocardium upon myocardial infarction, diabetes mellitus, heart failure.	2			2	4	Computer testing, interviewing on situational problems
2.	4	Pathogenic mechanisms of cell damage upon ischemia/reperfusion. Metabolic remodeling upon heart failure.		3		2	5	Computer testing, interviewing on situational problems
3.	4	Change of regulation upon cardiovascular pathology. New components of the renin-angiotensin system, the role of natriuretic peptides.		3		1	4	Computer testing, interview depending on situational problems
4.	4	Functional architectonics of immune system: general principles of selecting potential immune pharmatherapeutic targets during the targeting and design of the personalized immunotherapy protocols	2	3		1	6	Computer testing, interviewing on situational problems
6.	4	Introduction to predictive, preventive and personalized medicine. Current protocols of immune genetic diagnostics in clinical practice.		3		2	5	Computer testing, interviewing on situational problems
7.	4	Genomics as a part of predictive, preventive and personalized medicine.		3		2	5	Computer testing, interviewing on situational problems
8.	4	Proteomics as part of predictive, preventive and personalized medicine.		3		2	5	
9.	4	Post-infectious clinical and		3		2	5	Computer

		immunological syndrome (PICIS), peculiarities of endomicrobiota and post-infectious autoimmune syndrome (PIFAS)						testing, interviewing on situational problems
10.	4	Functionality of antibodies and the role of this phenomenon in modern bioindustry of diagnostic and therapeutic drugs		3		2	5	Computer testing, interviewing on situational problems
12.	4	Peripheral and central mechanisms of nociception. Morphofunctional organization of nociceptive and antinociceptive brain systems. Pathophysiological classification of pain syndromes Neuropathic pain syndromes: mechanisms of development, clinical manifestations, peculiarities of diagnostics and treatment.			3	1	4	Computer testing, interviewing on situational problems
13.	4	Classification of analgesics. Narcotic and non-narcotic analgesics. Adjuvant analgesics Backache.			3	1	4	Computer testing, interviewing on situational problems
14.	4	Headaches. Postoperative pain.			3	1	4	Computer testing, interviewing on situational problems
15.	4	Neuroses.			3	2	5	Computer testing, interviewing on situational problems
16.	4	Psychosomatic pathology.			3	2	5	
17.	4	Clinical significance of the functional systems theory.	2		3	1	6	Computer testing, interviewing on situational problems
		TOTAL	6	24	18	24	72	

5.3. Lectures distribution by semesters:

No.	Lectures topics	Volume in AH	Semester
1.	Change in energy metabolism of myocardium upon myocardial infarction, diabetes mellitus, heart failure.	2	
2.	Functional architectonics of immune system: general principles of selecting potential immune pharmatherapeutic targets during the targeting and design of personalized immunotherapy protocols	2	
3.	Clinical significance of the functional systems theory.	2	
	TOTAL (total - 6 AH)		

5.4. Distribution of practical studies by semesters:

No.	Practical studies topics	Volume in AH	Semester
1.	Pathogenic mechanisms of cell damage in case of ischemia/reperfusion. Metabolic remodeling in case of a heart failure.	3	
2.	Change in regulation in case of cardiovascular pathology. New components of the renin-angiotensin system, the role of natriuretic peptides.	3	
3.	Functional architectonics of immune system: general principles of selecting potential immune pharmatherapeutic targets during the targeting and design of personalized immunotherapy protocols	3	
4.	Introduction to predictive, preventive and personalized medicine. Current protocols of immune genetic diagnostics in clinical practice.	3	
5.	Genomics as part of predictive, preventive and personalized medicine.	3	
6.	Proteomics as part of predictive, preventive and personalized medicine.	3	
7.	Post-infectious clinical and immunological syndrome (PICIS), peculiarities of endomicrobiota and post-infectious autoimmune syndrome (PIFAS)	3	
8.	Functionality of antibodies and the role of this phenomenon in modern bioindustry of diagnostic and therapeutic drugs	3	
	TOTAL (total - 24 AH)		

5.5. Distribution of seminar topics by semesters:

No.	Seminar topics	Volume in AH	Semester
1.	Peripheral and central mechanisms of nociception. Morphofunctional organization of nociceptive and antinociceptive brain systems. Pathophysiological classification of pain syndromes Neuropathic pain syndromes: mechanisms of development, clinical manifestations, peculiarities of diagnostics and treatment.	3	
2.	Classification of analgesics. Narcotic and non-narcotic analgesics. Adjuvant analgesics Backache.	3	
3.	Headaches. Postoperative pain.	3	
4.	Neuroses.	3	
5.	Psychosomatic pathology.	3	
6.	Clinical significance of the functional systems theory.	3	
	TOTAL (total - 18 AH)		

5.6. Distribution of the intern's independent work (IW) by types and semesters:

No.	IW* type	Volume in AH	Semester
1.	Working with literature and other sources of information on the section under study.	12	

2.	Preparing for the participation in interactive classes	12	
	TOTAL (total - 24 AH)		

** types of independent work: Working with literature and other sources of information on the section under study, including in interactive form, performance of tasks stipulated by the work program (group and (or) individual) in the form of writing case histories, reviews, essays, preparation of reports, presentations; preparation for the participation in interactive classes (role and business games, trainings, game design, computer simulation, discussion), working with electronic educational resources placed on the educational portal of the University, preparation of term papers, etc.*

6. Evaluation tools to monitor the performance and results of the course mastering.

Examples of evaluation tools:

1. THE NUMBER OF B-LYMPHOCYTES SHALL BE DETERMINED BY
1) blast transformation
2) according to Mancini
3) using the monoclonal antibodies
4) rosette generation
5) flow cytofluometry

Answer: 3, 4, 5

2. IMMUNOCYTOCHEMISTRY ALLOWS TO EVALUATE
1) antigen localization in cells
2) antigen localization in tissues
3) ionic composition of cells
4) phase of the cell cycle

Answer: 1

3. CD-MARKER CHARACTERISTIC OF TOTAL NUMBER OF T-LYMPHOCYTES
1) CD3+
2) CD4+
2) CD8+
3) CD16+
4) *CD20+*

Answer: 1

4. PATTERN RECOGNITION RECEPTORS INCLUDE
1) T-cell receptors
2) B-cell receptors
3) insulin receptors
4) TLR (Toll-like receptors)

Answer: 4

5. CHARACTERISTICS OF $\gamma\delta$-T-LYMPHOCYTES
1) processing OF antigen and its interaction with major histocompatibility complex ARE NOT compulsory
2) they are contained mainly in the epithelium of the digestive tract and skin
3) they are contained mainly in the spleen
4) they are $CD4^+$ or $CD8^+$

Answer: 1, 2

6. WHAT IS MEANT BY PERIPHERAL (A) AND CENTRAL (B) SENSITIZATION

1) Peripheral sensitization is the increase in the excitability of nociceptors as a result algogenes' impact when thetissue is injured
2) Peripheral sensitization means the formation of antibodies specific to the damaged tissue
3) Peripheral sensitization means the increased body sensitivity to the effect of antigens
4) Central sensitization means the increased excitability of nociceptive neurons of the posterior horn of the spinal cord as a result of the repeated or prolonged action of the nociceptive impulses
5) Central sensitization means the increase in emotional reactivity in patients with pain syndrome

Answer: A-1; B-4

7. BASIC CAUSE FOR NEUROPATHIC PAIN SYNDROMES
1) Damage to joints
2) Damage to myelinated nerve fibers
3) Damage to the peripheral and/or central structures of nociceptive system
4) Damage to the auditory analyzer afferents

Answer: 3

8. CENTRAL PAIN MEANS
1) pain upon the upper spine injury
2) the synonym of headache
3) pain syndromes resulting from the damage of nociceptive structures of the brain and spinal cord

Answer: 3

9. EXPLAIN THE SIGNIFICANCE OF THE THEORY OF FUNCTIONAL SYSTEMS FOR CLINICAL MEDICINE

1. The concept of biofeedback (feedback afferentation) was used for the first time
2. The issue of universal mechanism for the formation of functional systems (system-forming factor) in health and disease was for the first time raised.
3. Promoted the formation of neuropsychology as a separate science (works of I.R.Luria's school)
4. Justified the continued primacy of structural damage and deliberate secondary nature of functional disorders
5. Facilitated the comprehensive study of mental and somatic disorders (overcoming of the Cartesian dualism)
6. Disproved the holistic interpretation of the system approach in medicine

Answer: 1, 2, 3, 5

10. THE CHARACTERISTIC SIGNS OF NEUROSIS
1. This pathology is typical only for the elderly
2. It is a risk factor related to psychosomatic disease
3. General reversibility of behavioral disorders
4. Stressful factor is the basis for the disease
5. Possibly, there may be brief periods of delirium and hallucinations
6. Maintaining critical attitude towards one's own condition and actions
7. Partiality of mental disorders (usually in the context of psycho-traumatic situation)

Answer: 2, 3, 4, 6, 7

Task 1

Patient F., 36 years old, in order to identify the allergic intolerance to latex, was applied a piece of latex glove on the inside of forearm's skin surface, covered it it with celluloid and fixed with a bandage.
Questions:
1. What changes appear on the skin, if latex is an allergen for this person?
2. What type of allergic reaction will occur during a skin test?
3. With regard to what latex allergenswith high or low molecular weight does the suggested type of allergic reaction occur?
4. Describe the mechanism of inflammation in the skin in case of positive test to latex.
5. If the inflammatory infiltrate in the skin evolved on day 2 or 3 hours after the test, what type of allergy is developed - GNT, or GZT?

Task 2

"Chronic granulomatous disease was diagnosed with patient K., 24 years old. This disease is characterized by the formation of immune complexes, which are phagocytized, but not cleaved.
Questions:
1. In what link of the body's resistance has the defect originated?
2. Is there any violation of humoral immunity in case of this pathology?
3. Is there any violation of cellular immunity in case of this pathology?
4. What properties must phagocytes possess to split immune complexes?
5. What typical forms of violations of the phagocyte function do you know?

Task 3

Patient F., 55 years old, administered tetracycline for 10 days on a physician's prescription. At the end of administering the cycle of antibiotics, he developed headaches, fatigue, weakness, drowsiness. Complete blood count showed the decrease in the number of red blood cells and hemoglobin. The addition of tetracycline to the whole blood led to the haemolysis of red blood cells.
Questions:
1. Due to what immune response did the patient develop anemia? Describe its pattern.
2. What type of antibodies mediates this pathology?
3. What is the role of complement system in the development of hemolysis?
4. What type of cell death is described as hemolysis? Apoptosis or necrosis?
5. Explain the pathogenesis of developing clinical signs of the developed pathology.

Task 4

A 34-years-old patient complaints of low working capacity headaches, irritability, poor sleep, sweating and occasional palpitations. He has doubts all the time as to the decisions made by him at work, he became very violent in communication, and that's why he feels even worse. Night sleep is superficial, interrupted by his thoughts on the service discrepancy, in the morning the patient literally "forces" himself to go to work. The symptoms have been progressing for one year after his promotion to a managerial position. Previously, he considered himself apparently healthy. He is single, and he has no children.

The general condition is satisfactory. Breath in the lungs is vesicular. Blood pressure - 110/78 mm Hg, pulse 78 bpm, rhythmic. The abdomen is soft, painless, the liver is not enlarged, physiological functions are normal. Complete blood count and urinalysis are normal. Neurological symptoms are unremarkable.

Mental status: thinking and memory are normal, he is critical towards his own condition and actions. Looks tired, focused on the suggested professional non-compliance, speaks reluctantly about his emotions.
Questions and tasks

1. What form of pathology is more probable within the patient? What additional types of research may be expedient?

2. Describe the possible pathogenic, protective and adaptive meaning of this form of pathology.

3. List the psychological defense mechanisms normally used for this form ofdisease. Specify the most typical dynamics of their reproduction.

4. Formulate the principles of therapy and prevention.

5. Describe the importance of systematic approach to the study of disorders of brain information mechanisms based on the functional systems theory of P.K. Anokhin and other theories

Task 5

A 42-years-old patient complaints of the attacks of severe ("exhausting", "unbearable") pain in the lumbosacral area lasting from a few tens of minutes to several hours. Seizures occur 2-5 times a month for the past 7 years and have become a kind of leitmotif of life, and, inter alia, were the reason for dismissal from work. Non-narcotic analgesics and physiotherapy treatments are ineffective. Repeated examinations by neurologists and other experts have not revealed any physical disorder, including damage to the nerve centers and pathways. Usually pain is correlated with family scandals initiated by insufficiently sensitive, according to the patient, the attitude of the family towards her serious condition. In recent years, the malaise and sleep disorders have been further progressing. She is married and has a 15-year-old child.

Upon admission: the general condition is satisfactory, the constitution is correct. Vesicular breathing, blood pressure - 120/85 mm Hg, pulse 70 bpm, rhythmic. Internal organs are unremarkable. Complete blood count and urinalysis are normal.

Neurological status: unremarkable, the pain in the lumbosacral area is absent during examination, there is a mild hand tremor.

Mental status: There are moderate depressive symptoms. Tense, irritable, pretentious during the conversation, talks emphatically loudly, insistently asking to pay special attention to her. Memory and thinking are normal, no psychotic symptom.

During her stay in the hospital, there was no pain; the patient repeatedly complained to others on the lack of attention to her by relatives (who visited her regularly) and medical personnel.

Questions and assignments

1. What somatoform disorder has the patient? Justify your answer.

2. What conditions usually contribute to development of this type of somatoform disorder?

3. Explain the most likely mechanism of the origin of pain syndrome.

4. Formulate the principles of treatment of this pain syndrome.

5. Describe the importance of a systematic approach to the study of psychogenic pain and psychosomatic diseases as a whole

7. Educational-methodical and informational support of the discipline (printed, electronic publications, the Internet and other network resources).

7.1. References:

Articles:

1. Yahagi K, Kolodgie FD, Lutter C et al. Pathology of Human Coronary and Carotid Artery Atherosclerosis and Vascular Calcification in Diabetes Mellitus. Arterioscler Thromb Vasc Biol. 2016 Dec 1. pii: ATVBAHA.116.306256.

2. Bahramali G, Goliaei B, Minuchehr Z, Marashi SA. A network biology approach to understanding the importance of chameleon proteins in human physiology and pathology. Amino Acids. 2016 Nov 24. [Epub ahead of print]

Manuals:

1. Carie Braun, Cindy Anderson. Applied Pathophysiology: A Conceptual Approach to the Mechanisms of Disease Third Edition. 2016 - 572 pp.
2. Vinay Kumar MBBS MD FRCPath, Abul K. Abbas MBBS , Jon C. Aster MD PhD. Robbins & Cotran Pathologic Basis of Disease, 9e (Robbins Pathology) 9th Edition. 2014 - 1552 pp
3. Edward C. Klatt MD, иVinay Kumar MBBS MD FRCPath. Robbins and Cotran Review of Pathology, 4e (Robbins Pathology) 4th Edition. - 2014.
4. Wall P., Melzack R. Textbook of Pain. 5th Edition S. B. McMahon, M. Koltzenburg (Eds). Elsevier Churchill Livingstone. - 2005.- 1239 p.

8. Logistic support of the discipline

No.	Address of theclassrooms*, facilities for practical classes, physical fitness and sports facilities	Room No.	Room area (m^2)	Name of equipped classrooms, facilities for practical classes, physical fitness and sports facilities with a list of basic equipment*
1	*3*	*4*	*5*	*6*
1	8 Trubetskaya Str., Moscow	the Classroom of Department of Pathology No. 1	35.6	1. tables 2. chairs 3. slide sets 4. projectors 5. blackboards
2.	8 Trubetskaya St.r, Moscow	the Classroom of Department of Pathology No. 3	39	1. tables 2. chairs 3. slide sets 4. projectors 5. blackboards
3.	8 Trubetskaya Str., Moscow	the Classroom of Department of Pathology No. 5	39	1. tables 2. chairs 3. slide sets 4. projectors 5. blackboards
4.	8 Trubetskaya St.r, Moscow	the Classroom of Department of Pathology No. 6	39	1. tables 2. chairs 3. slide sets 4. projectors 5. blackboards
5.	8 Trubetskaya Str., Moscow	the Classroom of Department of	35	1. 9 computers 2. Tables

		Pathology, computer lab		3. chairs

**specially equipped rooms (auditoriums, classrooms, laboratories, etc.) for lectures, seminars, practical and clinical practical training during the study of the courses, including:*

dissecting room, anatomical museum, corps storage;

auditoriums equipped with simulation machinery;

offices for work with patients receiving medical care.

**laboratory, tool equipment (specify which), multimedia system (laptop, projector, screen), TV, video camera slide-scope, VCR, PC, video and DVD players, monitors, sets of slides, tables/multimedia visual materials on various sections of the discipline, video clips, blackboards etc.*

9. Educational technology in interactive form used in the process of teaching the course*:

1. Role and business games.
2. Round-table (discussion of various issues of pathology).
3. Problem lectures.

30% interactive activities from the scope of classroom work.

9.2. Electronic educational resources used in the course of teaching the discipline:

No.	Name and brief description of electronic educational and information resources (electronic publications and information databases)	Number of copies, access points
1	*3*	*4*
1	*An integrated educational portal of GBOU VPO the First Moscow Governmental Medical University named after I.M. Sechenov of the Ministry of Health of Russia*	9