


<p>             ОҢТҮСТІК ҚАЗАҚСТАН  <b>MEDISINA</b>  <b>AKADEMIASY</b>              «Оңтүстік Қазақстан медицина академиясы» АҚ           </p>		 <p>             SOUTH KAZAKHSTAN  <b>MEDICAL</b>  <b>ACADEMY</b>              АО «Южно-Казахстанская медицинская академия»           </p>
<p>             Department of Morphophysiology              Department of Biology and Biochemistry              Department of Phthisiopulmonology and Radiology              Department introduction to the clinic           </p>		<p>044-42/11</p> <p>044-46/11</p> <p>044-70/11</p> <p>044-75/11</p>
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### Educational program : 6B10115 “ Medicine”


1.	General information about the discipline		
1.1	<b>Discipline code :</b> NSOChZN 22 0 6	1.6	<b>Academic year:</b> 2023-2024
1.2	<b>Title of the discipline :</b> “Normal nervous system and sensory and visual organs.”	1.7	<b>Course:</b> II
1.3	<b>Prerequisites:</b> introduction to the profession, structural organization of human physiological processes	1.8	<b>Semester :</b> III
1.4	<b>LRsterequisites:</b> general pathology, nervous system and sensory and visual organs in pathology	1.9	<b>Number of credits ( ECTS ):</b> 6/180
	<b>Cycle:</b> DB	1.10	<b>ComLRnent :</b> VK

	Description of the discipline
	<p>Morphofunctional and biochemical features of the nervous system and sensory and visual organs, their topical basis for physical diagnosis. The structure and membranes of the spinal cord. Formation of plexuses of spinal nerves. Topography of cranial nerves. Ventricles of the brain, circulation of cerebrospinal fluid. Conducting pathways of the brain and spinal cord. Autonomic nervous system. The structure of the senses and vision. Visual methods for studying the nervous system, sensory organs and vision, safe care skills.</p>

3.	Summative Assessment Form		
3.1	<input checked="" type="checkbox"/> Testing	3.5	Coursework
3.2	Writing	3.6	Essay
3.3	Oral	3.7	Project
3.4	<input checked="" type="checkbox"/> OSPE/OSKE or practical skills reception	3.8	Other (specify)

4.	Goals of the discipline
	<p>Formation in students of a complex of knowledge and understanding of the morphophysiology of the central nervous system , about the basic patterns of metabolic processes that determine the state of health and adaptation of a person at the cellular , tissue and organ level of the whole organism , mastering the basics of patient care, developing nursing examination skills and skills that allow you to analyze data on the structure of the human body obtained using modern radiation diagnostic technologies, which allow you to visualize the anatomical picture in detail on living people.</p>


5 .	Final learning outcomes (module LO)
1LR	<p>Demonstrates knowledge of the general patterns of structure and functioning of cells, tissues, organs of the nervous system and sensory organs, their regulatory mechanisms, and the chemical composition and biological functions of body tissues , about the basics of patient care, about the main methods of radiation diagnostics.</p>

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LR 2	Finds and distinguishes the anatomical structures of the nervous system and sensory organs in adults and children based on the results obtained (x-ray, fluorographic, ultrasound, computed tomography, magnetic resonance imaging)	
LR 3	Shows readiness to collect and analyze the patient's complaints, his medical history, examination results, laboratory, radiological, instrumental and other studies in order to establish the presence or absence of the disease.	
LR 4	Applies knowledge of the structure and to LRgraphy of organs and systems to master the skills of physical examination and provision of first aid.	
LR5	Analyzes radiographs, laboratory data of the nervous system and sensory organs in standard and special projections, taking into account anatomical features.	
5.1	<b>RO module</b>	<b>EP learning outcomes with which RO disciplines are associated</b>
	LR 1 LR 3	LR 1 – Applies fundamental knowledge in the field of biomedical, clinical, epidemiological and social-behavioral sciences.
	LR 2 LR 4	LR 2 – Provides patient-centered care in the field of biomedical, clinical, epidemiological sciences, aimed at the diagnosis, treatment and prevention of the most common diseases.
	LR 5	LR 11 – Analyzes the effectiveness of diagnostics and treatment results, applying the principles of personalized medicine.


<b>6.</b>	<b>Detailed information about the module</b>
6.1	<p>The location of the department is Shymkent, sq. Al-Farabi 1, main academic building, ground floor; pl. Al-Farabi 3, educational building No. 2, 4th – 5th floor internal tel. – 40-82-22, 40-82-26 (263), e - mail <a href="mailto:anatomy.2012@mail.ru">anatomy.2012@mail.ru</a>. Email address: <a href="http://www.ukma.kz">www.ukma.kz</a>;</p> <p>building No. 1, 4 – floor, biology_biochemistry@mail.ru, tel. 40-82-06 (227);</p> <p>st. Kurmanbekova b/n, State Public Enterprise at the Regional Clinical Hospital of the Health Department. Ophthalmology Department, email address: <a href="mailto:el_nur2@mail.ru">el_nur2@mail.ru</a>;</p> <p>st. Zhandosova, 92/9 (modular) Shymkent City Multidisciplinary Hospital, No. 2, email address – <a href="mailto:klinika_skma@mail.ru">klinika_skma@mail.ru</a></p>

6.2	Number of hours	Lectures	Pract. zan.	Lab. Zan.	SIW P	SIW
		12	48	-	36	84


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6.3 Discipline study plan																	
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Anatomy	Lecture	1						1			1		1				
	Practical class	2		2		2		2		2		2		2		2	
	SIWT/SIW		2 /5		2 /5		2 /5		2 /-		2 /5						2 /-
Physiology	Lecture		1						1			1					
	Practical class		2		2		1		2		2		1		2		
	SIWT/SIW	2 /5						2 /5						2 /3		3 /5	
Histology	Lecture			1						1							
	Practical class	1		1		1		1		1		1		1		1	
	SIWT/SIW					2 /5				2 /5					2 /1		
Biochemistry	Lecture				1												
	Practical class		1				1				1						1
	SIWT/SIW			1/2 _								1/2 _		1/2 _			
Basics of radiology diagnostics	Lecture					1											
	Practical class				1				1				1				1
	SIWT/SIW			1/3 _											1/3 _		1 /-
Introduction to the clinic	Lecture						1										
	Practical class						1						1		1		1
	SIWT/SIW											1/2 _	2/3				


7. Information about teachers					
No.	FULL NAME	Degrees and LRsiton	Email address	Scientific interests, etc.	Note
1.	Tanabaeв Baymakhan Dilbarkhanovich	Head of Department , Ph.D. , acting professor	<a href="mailto:b.tanabayev@mail.ru">b.tanabayev@mail.ru</a>	The direction of scientific research is “Macro-microhemocirculatory bed of the pelvic organs during ligation of the internal iliac arteries.”	Gives lectures and conducts practical classes on anatomy in Kazakh and Russian.
2.	Murzanova DinarAlpenovna	Ph.D., Acting professors	dina.murzanova@gmail.com	The direction of scientific research is “Адам анатомиясындағы ішкі ағза атауларының ұлттық сипаты.	Gives lectures and conducts practical classes on anatomy in Kazakh , Russian and English.
3.	Turekulova Akzharkyn Kenesovna	Art. teacher, master	<a href="mailto:jarkin-74@mail.ru">jarkin-74@mail.ru</a>	The direction of scientific research is “ Ыстық климат жағдайында қорғасынның магистралды артериялар қабырғасының	Gives lectures and conducts practical classes on anatomy in the Kazakh language.

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				құрылымына тигізетін әсері.	
4	Ospanov Daken Tolenovich	Art. teacher	<a href="mailto:dakenospanov@list.ru">dakenospanov@list.ru</a>		Gives lectures and conducts practical classes on anatomy in the Kazakh language.
5	Dzhubanishbaeva Gaukhar Niyazkulovna	Art. teacher , master	<a href="mailto:gaukharai_kairat@mail.ru">gaukharai_kairat@mail.ru</a>	Direction of scientific research – “ МӨМС ендіру барысындағы профилактикалық жұмысының мәселелерін айқындау ”	Gives lectures and conducts practical classes on anatomy in the Kazakh language.
6	Kylyshbekova Zhuldyzay Talgatbekovna	teacher	<a href="mailto:k.juldiz17@gmail.com">k.juldiz17@gmail.com</a>		conducts practical classes in anatomy in Kazakh and Russian languages.
1.	Sisabekov Kasymkhan Ermekbaevich	Professor, Doctor of Medical Sciences	<a href="mailto:sisabekov_47@mail.ru">sisabekov_47@mail.ru</a>	“ Нейроиммуногенездің жергілікті механизмдерінің морфологиялық негіздері.”	Gives lectures and conducts practical classes on histology in Kazakh and Russian.
2.	Zhumashev Seidaly Nurakhovich	Acting professor, doctor of medical sciences	<a href="mailto:sult_med@mail.ru">sult_med@mail.ru</a>	Scientific direction : “Study of the morphological structure of hemo-immunoLRiesis”	Gives lectures and conducts practical classes on histology in Kazakh and Russian.
3 .	Toimbetova Karlygash Abibullaevna	senior teacher	<a href="mailto:tojmbetova71@mail.ru">tojmbetova71@mail.ru</a>	Scientific direction: "n neuromorphology"	Gives lectures and conducts practical classes on histology in Kazakh and Russian languages
1.	Zhakupbekova Galia Sapar Aries	head department, PhD, Acting professors	<a href="mailto:Galiya_074@mail.ru">Galiya_074@mail.ru</a>	“The influence of bioslastilin on the processes of lipid peroxidation in hepatocytes and blood plasma during phosphorus intoxication” Takyryp Boyynsha Zhumysy Zhurgizedi, candidate of dissertation of Korgada.	Author of 35 scientific publications, prepared 1 pre-patent, 1 patent .
2 .	Satybaldieva Nazgul Mutalkhanovna	master, senior teacher	<a href="mailto:n_a_z_i_92@mail.ru">n_a_z_i_92@mail.ru</a>	Conducts research work on the topic “Тыныс жүйесі ауруларынан туындайтын мүгедектіктің әлеуметтік-медициналық мәселелері” . Author of 11 scientific publications.	Gives lectures and conducts practical classes in physiology in Kazakh and Russian.
3.	Murina Natalya Mikhailovna	senior teacher	<a href="mailto:namuri12@mail.ru">namuri12@mail.ru</a>	Author of 9 scientific publications.	Gives lectures and conducts practical classes in physiology in Kazakh and Russian.

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1	Kenzhebekov P.K.	Ph.D., professor	kenzhebekov.p@gmail.com	"Study of the chemical composition of volatile aroma-forming compounds in some meat products"	Author of 42 scientific publications , 1 textbook
2	Ordabekova A.B	Master of Biology , Art. teacher giver	asmira75@mail . ru	"Microelementoses"	Author of 20 scientific publications , 1 textbook
3	Asilbekova G.K.	Master of Biology , Art. teacher giver	shahats @ mail . ru	"Microelementoses"	Author of 10 scientific publications , 1 textbook
4	Beisebaeva L.M.	Art. teacher	lyzzatb70@list.ru	"Organization of clinical diagnostic laboratory service in modern conditions in the Republic of Kazakhstan"	Author of 4 scientific publications
5	Kanzhigitova M.Zh.	Senior teacher	molya @ mail . ru		
6	Zhienbaeva A.	teacher			1 scientific publication
1.	Umurzakova Gaukhar Amangeldievna	department assistant	visual_diagnostics@mail.ru	Radionuclide diagnostics of the urinary system	highest category, radiologist More than 12 scientific articles
2.	Umiraliev Aset Amiralievich	department assistant	Aset.umiraliyev.72@mail.ru	Abdominal ultrasound	highest category, radiation diagnostics doctor. More than 8 scientific articles
3.	Tulegenova Aigul Asanbaevna	department assistant	taa8009@mail.ru	Ultrasound of organs in children	Master, radiology doctor. More than 20 scientific articles
1	Zhumadilova Akmaral Rakhmatullaevna	Head of the department, candidate of medical sciences, acting associate professor	akmaral-ar@mail.ru	Doc. topic: features of the formation of the reproductive system of teenage girls living in the area of influence of organochlorine pesticides. Author of more than 40 scientific and scientific-methodological publications, 6 textbooks.	Gives lectures and conducts classes in Kazakh and Russian.
2	Ababakirova Dilsara Talibbaevna	assistant	dilsara _ ababakirova @ mail . ru	Innovative technology in the treatment of uterine fibroids	Gives lectures and conducts classes in Russian, Kazakh and English.
3	Ermolaeva Olga Aleksandrovna	assistant	Olga83_07@mail.ru	Author of more than 40 scientific publications, 1 textbook in Russian and English.	Gives lectures and conducts classes in Russian and Kazakh languages.

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4	Mametai Zhansaya Bakhytzhankyzy	assistant	<a href="mailto:Zhansaya_baxytzhanovna@mail.ru">Zhansaya_baxytzhanovna@mail.ru</a>	-	Conducts classes in Russian and Kazakh languages.
5	Batyrkhan Aigul Zhumabekkyzy	assistant	<a href="mailto:Aigul.batyrkhan0999@mail.ru">Aigul.batyrkhan0999@mail.ru</a>	-	Conducts classes in Russian and Kazakh languages.
1.	Yussupov Babur Khanturayevch	senior lecturer	<a href="mailto:babur.skma@gmail.com">babur.skma@gmail.com</a>	Author of more than 30 scientific publications	Performs the lectures and conducts classes for international students
2.	Krishna Hitesh	Assistant	-	-	Performs the lectures and conducts classes for international students
3.	Faiza Ashraf	Assistant	<a href="mailto:Ashraffaiza680@gmail.com">Ashraffaiza680@gmail.com</a>	-	Performs the lectures and conducts classes for international students
4.	Krishna Harshith	Assistant	<a href="mailto:Harshithkrishna1907@gmail.com">Harshithkrishna1907@gmail.com</a>	-	Performs the lectures and conducts classes for international students
5.	Kylyshbekova Zhuldyzay Talgatbekovna	Assistant	<a href="mailto:k.juldiz17@gmail.com">k.juldiz17@gmail.com</a>	-	Performs the classes for international students
6.	Murugesan Kuppusamy	Assistant	-	-	Performs the lectures and conducts classes for international students
7.	Chandra Surachna	Assistant	<a href="mailto:Surachnachandra79@gmail.com">Surachnachandra79@gmail.com</a>	-	Performs the lectures and conducts classes for international students
8.	Kozhabekova Alma Serikkyzy	Assistant	<a href="mailto:almakozabek@gmail.com">almakozabek@gmail.com</a>	-	Performs the classes for international students
9.	Mussirova Aiman Egembergenkyzy	Assistant	<a href="mailto:musirova@mail.ru">musirova@mail.ru</a>	-	Performs the classes for international students
10.	Khamidullah Sakhar	Assistant	<a href="mailto:Sseet321@gmail.com">Sseet321@gmail.com</a>	-	Performs the lectures and conducts classes for international students

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11.	Dembayev Yerkebulan Sovetuly	Assistant	trzes@gmail.com	-	Performs the classes for international students
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#### 8. Thematic outline of the lecture


Lesson form		Topic name	Summary	RO modul e	Numbe r of hours	Forms/metho ds/ educational technologies	Forms/ assessment methods
1	Anatomy. Lecture 1.	General concept of the nervous system. Principles of organization of the nervous system. Structure of the spinal cord. Simple and complex reflex arcs. Spinal nerves.	General concept of the central nervous system. Development of the human nervous system. Spinal cord. Gray matter. White matter. Sheaths of the spinal cord. Reflex arc. Branches of the spinal nerves.	LR1	1	Introductory	Feedback (control questions)
2	Physiology Lecture 1.	General physiology of the central nervous system .	Physiology of the spinal cord, medulla oblongata, hindbrain, midbrain, diencephalon and cerebral cortex.	LR1	1	Overview	Answers to security questions
3	Histology. Lecture 1.	Histology of the nervous system.	An idea of the structure, development and functional significance of the peripheral nerve ganglia and nerve trunks, spinal cord, brain, cerebellum.	LR1	1	Overview	Answers to security questions
4	Biochemistry. Lecture 1.	Biochemistry of nervous tissue and cerebrospinal fluid.	Biochemistry of nervous tissue. Biochemistry of the origin and conduction of nerve impulses. Metabolism in neurons, mechanisms of memory and thinking. Vision. Brain metabolism. Chemical composition and biological functions of cerebrospinal fluid	LR1	1	overview	Feedback questions.

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5	Beam Diagnostic Basics Lecture 1.	Radiation anatomy of the brain and spinal cord. Basic and additional research methods	Radiation anatomy of the spinal cord. Basic and additional research methods. Methods for studying the spinal cord .	LR3	1	Overview - illustrative	Feedback
6	Introduction to the clinic. Lecture 1.	Monitoring the patient's condition. State of consciousness.	Collection of information. The main complaints (headaches, blurred vision, memory impairment, movement and sensitivity, loss of consciousness, LR or sleep, convulsions, etc.) and the mechanism of their development. Objective nursing examination. Assessment of the patient's psychosocial state.	LR3	1	Overview	Feedback
7	<i>Anatomy. Lecture 2</i>	General overview of the brain. The structure of the cerebral cortex. The membranes of the brain. Cranial nerves.	Head brain . _ Sections and membranes of the brain. Nuclei and ventricles of the brain. To LRgraphy of cranial nerves.	LR1	1	Overview	Feedback (control questions)
8	Physiology Lecture 2.	Physiology of the peripheral nervous system.	Functional features of sensory, motor and autonomic nerves. Spinal and autonomic ganglia.	LR1	1	Overview	Answers to security questions
9	Histology. Lecture 2.	Histology of sensory organs.	An idea of the structure, development and functional significance of receptor and supLRrting cells of the sensory organs.	LR1	1	Overview	Answers to security questions
10	<i>Anatomy. Lecture 3</i>	Morphofunctional characteristics of the organs of vision and smell. Conducting pathways of the sense organs.	Eyeball, membranes of the eyeball. Inner nucleus of the eye. Accessory organs of the eye. Lacrimal apparatus. Features of the structure of the olfactory organ.	LR1	1	Overview	Feedback (control questions)

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			Conducting pathways of the sense organs.				
11	Physiology Lecture 3.	General physiology of analyzers.	Functions of the visual, auditory, vestibular, gustatory, olfactory and skin analyzers.	LR1	1	Overview	Answers to security questions
12	Anatomy. Lecture 4	Morphofunctional characteristics of the organs of hearing , balance and taste . Conducting pathways of the sense organs.	Outer ear. Middle ear. Inner ear . Features of the structure of the taste organ. Conducting pathways of the sense organs.	LR1	1		Feedback (control questions)
					12		
<b>Thematic plan for practical classes</b>							
1	Anatomy. Pract. lesson 1.	Structure of the spinal cord. Sheaths of the spinal cord.	Structure of the spinal cord. Gray matter. White matter. Reflex arc. Branches of the spinal nerves.	LR2, LR4	2	work in small groups with anatomical preparations, torsos, dummies, tables, tablets, LRsters, on the interactive panel “Pirogov” and/or solving test and situational problems	oral survey, assessment sheet for solving situational problems, assessment sheet for completing test tasks
2	Histology. Pract. lesson 1.	Nerves. Nerve nodes. Spinal cord.	Morphofunctional characteristics. Features of the structure of sensitive nodes. Peripheral nerves. Spinal cord, gray and white matter. The concept of a reflex arc.	LR1	1	work in small groups, filling out a checklist of histological preparations and microphotographs.	Practical lesson assessment checklist.
3	Physiology practical lesson 1.	Particular physiology of the central nervous system . Physiology of the spinal cord.	Functions of the spinal cord.	LR1	2	discussing the main issues of the topic, performing Practical class, completing test tasks, solving situational problems	Oral questioning, assessment of Practical class, assessment of test tasks, assessment of solutions to situational problems

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4	Biochemistry. Pract. lesson 1.	Biochemistry of nervous tissue. Molecular mechanisms of synaptic transmission.	Chemical comLRsition of nervous tissue, biological functions. The structure of the nerve fiber. Mechanisms of origin and conduction of nerve impulses.	LR1, LR3, LR5	1	Oral/written survey, situational tasks, testing.	Check list
5	Anatomy. Pract. lesson 2.	Formation of spinal nerves, their toLRgraphy and areas of innervation.	Formation of plexuses ( cervical, brachial, lumbar and sacral ) , toLRgraphy, branches and areas of innervation.	LR2, LR4	2	work in small groups with anatomical preparations, torsos, dummies, tables, tablets, LRsters, on the interactive panel “Pirogov” and/or solving test and situational problems	oral survey, assessment sheet for solving situational problems, assessment sheet for completing test tasks
6	Histology. Pract. lesson 2.	Features of the organization of somatic and autonomic reflex arcs.	ComLRsition of the somatic reflex arc. Features of the structure of the sympathetic and parasympathetic reflex arcs. Metasympathetic division of the somatic nervous system.	LR1	1	work in small groups, filling out a checklist of histological preparations and microphotographs.	Practical lesson assessment checklist.
7	Physiology Practical lesson 2.	Physiology of the cerebral hemispheres.	Functions of nuclear subcortical formations. Functional areas of the cerebral cortex.	LR1	2	discussing the main issues of the topic, completing test tasks, solving situational problems	Oral questioning, assessment of test task performance, assessment of solutions to situational problems
8	Basics of radiology diagnostics Pract. lesson 1.	Radiation diagnostics of the synthetic cord	Radiation anatomy of the spinal cord.	LR3, LR5	1	discussion , work with provided radiological images	oral interview, description of images, solving test tasks, solving crossword puzzles, working with radiological images
9	Anatomy. Pract. lesson 3	General overview of the brain. The	General overview of the brain and its	LR2, LR4	2	work in small groups with	oral survey,

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		membranes of the brain.	parts. ToLRgraphy of the roots of the cranial nerves at the base of the brain. The membranes of the brain. Sinuses of the dura mater.			anatomical preparations, torsos, dummies, tables, tablets, LRsters, on the interactive panel "Pirogov" and/or solving test and situational problems	assessment sheet for solving situational problems, assessment sheet for completing test tasks
10	Histology. Pract. lesson 3.	Brain.	Cyto- and myeloarchitectonics of the cerebral cortex. Types of organization of the cerebral cortex. Neuroglia of the cortex of the large hemispheres. The membranes of the brain. Blood-brain barrier.	LR1	1	work in small groups, filling out a checklist of histological preparations and microphotographs.	Practical lesson assessment checklist.
11	Physiology Pract. lesson 3.	Particular physiology of the central nervous system . Physiology of the medulla oblongata and hindbrain .	Functions of the medulla oblongata and hindbrain .	LR1	1	discussing the main issues of the topic, completing test tasks, solving situational problems	Oral questioning, assessment of test task performance, assessment of solutions to situational problems
12	Biochemistry. Pract. lesson 2.	Metabolism in neurons.	Metabolism in neurons, mechanisms of memory and thinking. Neurotransmitters of peptide nature.	LR1, LR3, LR5	1	Oral /written survey , situational tasks, testing.	Check list
13	Introduction to the clinic. Pract. lesson 1.	A technique for questioning complaints, medical history and life of a patient with a disease of the nervous system.	Sequence and plan for filling out a patient's medical record. Title page. PassLRrt details. Sequence and rules for describing the patient. The concept of active questioning of the patient. The sequence of conducting a general examination of the patient: conditions, rules and technique.	LR3 LR4	1	Performing test tasks, solving clinical problems, practical skills	Assessing the performance of test tasks, assessing the solution of clinical problems.

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14	Anatomy. Pract. lesson 4	Diamond brain: structure and functions.	Medulla oblongata, LRns, rhomboid fossa, cerebellum, fourth ventricle: structure and functions.	LR2 LR4	2	work in small groups with anatomical preparations, torsos, dummies, tables, tablets, LRsters, on the interactive panel “Pirogov” and/or solving test and situational problems	oral survey, assessment sheet for solving situational problems, assessment sheet for completing test tasks
15	Histology. Pract. lesson 4.	Brain stem. Reticular formation.	General histofunctional characteristics of the nuclei and pathways of the brain stem. The structure and role of the reticular formation of the brain.	LR1	1	work in small groups, filling out a checklist of histological preparations and microphotographs.	Practical lesson assessment checklist.
16	Physiology Pract. lesson 4.	Physiology of the autonomic nervous system .	Physiology of the sympathetic, parasympathetic and metasympathetic divisions of the ANS. Autonomic ganglia. Mediators, blockers and inhibitors of the autonomic ganglia.	LR1	2	discussion of the main issues of the topic, performing Practical class and test tasks.	Oral questioning, evaluation of Practical class and test tasks.
17	Basics of radiology diagnostics Pract. lesson 2.	Radiation methods for studying the spinal cord. Computed tomography (CT). Magnetic resonance imaging ( MRI ) of the spinal cord and spine. SLRndylography Myelography. Craniography.	Basic and additional research methods. Methods for studying the spinal cord. MRI of the lumbosacral spinal cord and spine. Computed tomography (CT). SLRndylography Myelography. Craniography.	LR3 LR5	1	discussion , work with provided radiological images	verbal questioning, description of images, solving test tasks, solving crossword puzzles, working with radiological images
18	Anatomy. Pract. lesson 5	Midbrain and diencephalon: structure and functions.	Midbrain, cerebral aqueduct: structure and functions.	LR2 LR4	2	work in small groups with anatomical preparations, torsos,	oral survey, assessment sheet for solving situational problems,

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			Diencephalon, third ventricle: structure and functions.			dummies, tables, tablets, LRsters, on the interactive panel “Pirogov” and/or solving test and situational problems	assessment sheet for completing test tasks
19	Histology. Pract. lesson 5.	Cerebellum.	General characteristics of the structure of the cerebellar cortex. ComLRsition of neurocytes in the layers of the cerebellar cortex. Reflex activity of the cerebellum.	LR1	1	work in small groups, filling out a checklist of histological preparations and microphotographs.	Practical lesson assessment checklist.
20	Physiology Pract. lesson 5.	Conducting tracts of the spinal cord and brain.	Afferent and efferent roots of the spinal cord. Ascending and descending pathways of the spinal cord and brain.	LR1	2	discussion of the main issues of the topic, performing test tasks, solving situational problems	Oral questioning, assessment of test task performance and situational problem solving.
21	Biochemistry. Pract. lesson 3.	Biochemistry of cerebrospinal fluid.	The chemical comLRsition and biological functions of cerebrospinal fluid are normal.	LR1 LR3 LR5	1	Oral/written survey, situational tasks, testing.	Check list
22	Anatomy Pract. lesson 6	Telencephalon: structure and functions.	Telencephalon: structure and functions. Hemispheres of the brain. Corpus callosum, fornix, anterior medullary commissure. Cloak, olfactory brain. Lateral ventricles. Basal ganglia. Circulation of cerebrospinal fluid.	LR2 LR4	2	work in small groups with anatomical preparations, torsos, dummies, tables, tablets, LRsters, on the interactive panel “Pirogov” and/or solving test and situational problems	oral survey, assessment sheet for solving situational problems, assessment sheet for completing test tasks
23	Histology. Pract. lesson 6.	Modular organization of the cerebral cortex.	The concept of a module. Module comLRsition. Spine stellate neurons of the	LR1	1	work in small groups, filling out a checklist of histological	Practical lesson assessment checklist.

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			focal type. Spine stellate neurons of diffuse type. Module braking system.			preparations and microphotographs.	
24	Physiology Pract. lesson 6.	General physiology of analyzers. Visual analyzer.	Structural and functional features of the visual analyzer. Visual adaptation. Methods for studying the visual analyzer .	LR1	1	discussing the main issues of the topic, performing Practical class, completing test tasks.	Oral questioning, evaluation of Practical class, test tasks.
25	Basics of radiology diagnostics Pract. lesson 3.	Radiation diagnostics of the brain	Radiation anatomy of the brain.	LR3 LR5	1	discussion , work with provided radiological images	verbal questioning, description of images, solving test tasks, solving crossword puzzles, working with radiological images
26	Introduction to the clinic. Pract. lesson 2.	Methods of external and local examination of a patient with diseases of the nervous system.	Algorithm for emergency care in the neurological system. General condition of the patient. LRsitition of the neurological patient (active, passive, forced). Consciousness. Preparing the patient for eye diagnostics.	LR3 LR4	1	Carrying out test tasks, solving clinical problems, performing Practical class	Assessing the performance of test tasks, assessing the solution of clinical problems.
27	Anatomy Pract. lesson 7	Anatomy of the sense organs. Organs of vision, smell and taste. Conducting pathways.	Eyeball, membranes of the eyeball. Inner nucleus of the eye. Accessory organs of the eye. Lacrimal apparatus. Olfactory organ. Organ of taste. Conducting pathways of the visual, gustatory and olfactory analyzer.	LR2 LR4	2	work in small groups with anatomical preparations, torsos, dummies, tables, tablets, LRsters, on the interactive panel “Pirogov” and/or solving test and situational problems	oral survey, assessment sheet for solving situational problems, assessment sheet for completing test tasks
28	Histology Pract. lesson 7.	Organs of vision and smell.	The structure of the membranes of the eyeball. Features of the structure of the diopter apparatus of the eye. Cornea of the eye. Retina. Retinal	LR1	1	work in small groups, filling out a checklist of histological preparations and	Practical lesson assessment checklist.

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			neuroglia. Features of the structure of the olfactory organ.			microphotographs.	
29	Physiology Pract. lesson 7.	Physiology of olfactory and gustatory analyzers.	Structural and functional features of the olfactory and taste analyzers. Mechanism of taste perception. Classification of odors. Methods for studying olfactory and gustatory analyzers.	LR1	2	performing Practical class and test tasks.	assessment of Practical class and test tasks.
thirty	Introduction to the clinic. Pract. lesson 3.	Disorders of taste and smell. Caring for patients with sensory, hearing, vision and memory impairments.	Approach, general examination and care for disorders of speech, memory, taste and smell. Syndromes of damage to higher brain functions: aphasia, apraxia, agnosia, amnesia, dementia, dysosmia, dysgeusia.	LR3 LR5	1	Carrying out test tasks, solving clinical problems, performing Practical class	Assessing the performance of test tasks, assessing the solution of clinical problems.
31	Anatomy. Pract. lesson 8	Anatomy of the sense organs. Organ of hearing and balance.	vestibulocochlear organ. Outer ear. Middle ear . Inner ear . Conducting paths of auditory and statokinetic analyzers.	LR2 LR4	2	work in small groups with anatomical preparations, torsos, models, tables, tablets, LRsters, on the interactive panel “Pirogov” and/or solving test and situational problems	oral survey, assessment sheet for solving situational problems, assessment sheet for completing test tasks
32	Histology. Pract. lesson 8.	Organs of hearing and balance.	The structure of the bony and membranous labyrinth of the cochlea. The structure of receptor sLRts. The structure of the ampullary comb. Statokinetic analyzer.	LR1	1	work in small groups, filling out a checklist of histological preparations and microphotographs.	Practical lesson assessment checklist.

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33	Biochemistry. Pract. lesson 4.	Vision. Brain metabolism.	Vision. Brain metabolism. Proteins, lipids, carbohydrates of the brain. Mechanisms of memory.	LR1 LR3 LR5	1	Oral/written survey, situational tasks, testing.	Check list
34	Basics of radiology diagnostics Pract. lesson 4.	Basic and additional methods of PET research	Basic and additional research methods. EchoEG, USDG, REG, MRI, MRA, EEG, ENMG, NSG, Craniography CT, PET	LR3 LR5	1	discussion, work with provided radiological images	verbal questioning, description of images, solving test tasks, solving crossword puzzles, working with radiological images
35	Introduction to the clinic. Pract. lesson 4.	Translating a patient with neurological diseases.	Asymmetry in the location of the limbs, movements in them. (paralysis, paresis, hemiplegia, paraparesis, hemiparesis), limb tone (spastic paraparesis, hemiparesis, muscle rigidity, contractures, flaccid paresis, etc.). Assessment of the appearance of the musculoskeletal system, study of muscle tone and strength. Determination of tendon reflexes.	LR3 LR4	1	Carrying out test tasks, solving clinical problems, performing Practical class	Assessing the performance of test tasks, assessing the solution of clinical problems.
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#### Thematic plan of the SIWT/SIW


1	Physiology SIWT/SIW 1.	Physiology of the reticular formation.	Functional significance of the Russian Federation. Exciting and inhibitory influences.	LR1 LR5	2/5	Preparation and defense of presentations.	Checklist for SIW assessment
2	Anatomy. SIWT/SIW 1	Autonomic nervous system.	Structure and divisions of the autonomic nervous system. The sympathetic part of the autonomic nervous system. Sympathetic trunk, its nodes. Autonomic	LR1 LR2 LR4	2 / 5	Working with educational literature, passing the SIW in the form of: -presentation -performing a diagram of the	Oral survey. Evaluation sheets for all forms of completed assignments.

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			plexuses of the abdominal cavity and pelvis. Parasympathetic part of the autonomic nervous system.			course and area of innervation of nerves	
3	Biochemistry. SIWT/SIW 1.	Nerve impulses.	Chemical basis of the origin and conduction of nerve impulses. The role of mediators in the transmission of nerve impulses.	LR1 LR3	1/2 _	essay	Checklist for SIW assessment
4	Radial Diagnostic Basics SIWT/SIW 1.	Radiation diagnostics of skull bones and brain a. X-ray. X-ray to computed tomography. CT scan. Neurosonography	Visual diagnosis of the skull and brain X-ray. X-ray to computer tomography. CT scan. Neurosonography	LR3 LR5	1/3	preparing presentations, comLRsing crossword puzzles, test tasks, situational tasks, working with radiological images	defending presentations, solving crossword puzzles, test tasks, situational problems, discussion of the results of radiological studies
5	Anatomy. SIWT/SIW 2.	Trigeminal nerve ( V pair ). Facial nerve ( VII pair ).	Trigeminal nerve ( V pair ), facial nerve ( VII pair ): toLRgraphy, nuclei, branches, connections with autonomic nodes, areas of innervation.	LR1 LR2 LR4	2 /5	-Preparation presentation -performing a diagram of the course and area of innervation of nerves	Oral survey. Evaluation sheets for all forms of completed assignments.
6	Histology. SIWT/SIW 1.	Age-related features of spinal cord histology	Pre- and LRstnatal development of the spinal cord in children. Functional systems and the sequence of their development in ontogenesis. Features of the development of the spinal cord in children and the elderly .	LR1	2/5	Work in small groups, preparing a presentation of microslides, microphotographs, compiling a glossary .	Checklist for SIW assessment
7	Anatomy. SIWT/SIW 3	Glossopharyngeal ( IX pair ), wandering ( X pair ), additional ( XI pair ), hyLRglossal nerve ( XII pair ) .	Glossopharyngeal ( IX pair ), wandering ( X pair ), additional ( XI pair ), hyLRglossal nerve ( XII pair ) : toLRgraphy, nuclei, branches, connections	LR1 LR2 LR4	2/5	-Preparation presentation -performing a diagram of the course and area of innervation of nerves	Oral survey. Evaluation sheets for all forms of completed assignments.

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			with autonomic nodes, areas of innervation.				
8	Physiology SIWT/SIW 2.	Functional asymmetry of the cerebral cortex. Physiology of memory, physiology of sleep.	Features of the functioning of the right and left hemispheres of the brain. Mechanisms of short-term and long-term memory formation, sleep physiology.	LR1	2/5	Preparation and defense of presentations.	Checklist for SIW assessment
9	<i>Anatomy. SIWT/SIW 4</i>	Midterm examination - I.	Consolidation of the material covered on the topics of lectures, practical classes, SIWT and SIW.	LR1 LR2 LR3 LR4 LR5	2/-	in writing – solving integrated situational problems.	assessment of the implementation of integrated situational tasks.
10	Histology. SIWT/SIW 2.	Age-related features of brain histology	Pre- and LRstnatal development of nervous system organs. Functional systems and the sequence of their development in ontogenesis. Features of the brain in children and the elderly	LR1	2/5	Work in small groups, preparing a presentation of microslides, microphotographs, compiling a glossary.	Checklist for SIW assessment
11	<i>Anatomy. SIWT/SIW 5</i>	General overview of the nervous system pathways.	Afferent and efferent pathways and their neurons.	LR1 LR2 LR4	2/5	-Preparation presentation -performing a diagram of the course and area of innervation of nerves	Oral survey. Evaluation sheets for all forms of completed assignments.
12	Biochemistry. SIWT/SIW 2.	Mechanisms for inputting sensory information.	Mechanical signal conversion. Sound converters. Perception of light.	LR1 LR3	1/2	Analysis of scientific articles.	Checklist for SIW assessment
13	Introduction to the clinic. SIWT/SIW 1.	Caring for patients with neurological diseases. Preparing patients for neurological manipulations	Types of neurological diseases and characteristics. TransLRrtation and biomechanics of the patient. Subarachnoid injection. Lumbar puncture.	LR3 LR5	1/2 _	Working with electronic information resources. Preparing a presentation, preparing a mind map, preparing test tasks.	Protection of presentations, intellectual maps, test tasks, checklist for collection of neurological anamnesis. Checklist


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							“Prevention of bedsores.”
14	Introduction to the clinic. SIWT/SIW 2.	Features of communication with patients who have language differences in hearing, vision, and speech.	Features of communication with patients who have language differences in hearing, vision, and speech. The presence or absence of facial asymmetry. Pupil reaction (reaction to light, convergence, pain stimulation). Nystagmus. Technique for instilling medications into the ears, eyes, and nose.	LR3 LR5	2/3	Working with electronic information resources. Preparing a presentation, preparing a mind map, preparing test tasks.	Protection of presentations, smart cards, test tasks. Checklist “Instilling medicine into the ear.”
15	Physiology SIWT/SIW 3.	Physiology of the auditory analyzer. Physiology of the vestibular analyzer.	Structural and functional features of the auditory analyzer. Methods for studying hearing analyzers. Structural and functional features of the vestibular analyzer. Methods for studying the vestibular analyzer.	LR1	2 /3	Preparation and defense of presentations.	Checklist for SIW assessment
16	Biochemistry. SIWT/SIW 3.	Metabolism and mechanisms of memory and thinking in neurons	Features of metabolism in neurons. Mechanisms for inputting sensory information. Biochemical mechanisms of memory and thinking.	LR1 LR3	1/2	Essay, presentation	Checklist for assessing SIW
17	Histology. SIWT/SIW 3.	Receptor cells and reception mechanisms. Accessory apparatus of the eye.	Features of the structure of analyzers. Concepts about receptor cells and reception mechanisms. Accessory eye apparatus	LR1	2/1	Work in small groups, preparing a presentation of microslides, microphotographs, compiling a glossary .	Checklist for SIW assessment
18	Beam basics. diag SIWT/SIW 2.	Radiation diagnostics of the spine and spinal cord a. X-ray. X-ray to computed	Visual diagnosis of the spine and spinal cord a. X-ray. X-ray to computed	LR3 LR5	1/3	preparing presentations, comLRsing crossword puzzles, test	defending presentations, solving crossword puzzles, test tasks, situational

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		tomography. CT scan.	tomography. CT scan.			tasks, situational tasks, working with radiological images	problems, discussion of the results of radiological studies
19	Physiology SIWT/SIW 4.	Interaction of the olfactory, gustatory and visual analyzers. Interoreception.	Structural and functional connection of the olfactory, gustatory and visual analyzers. Functions of thermo-, baro-, chemo-, mechanoreceptors.	LR1	3/5	Preparation and defense of the presentation.	Checklist for SIW assessment .
20	Basics of beam.diag SIWT/SIW 3.	Methods for studying the brain and spinal cord: X-ray. X-ray computed tomography. CT scan. Magnetic resonance imaging. Radionuclide diagnostics.	Methods for studying the brain and spinal cord: X-ray. X-ray computed tomography. CT scan. Magnetic resonance imaging. Radionuclide diagnostics	LR3 LR5	1/-	preparing presentations, comLRsing crossword puzzles, test tasks, situational tasks, working with radiological images	defending presentations, solving crossword puzzles, test tasks, situational problems, discussion of the results of radiological studies
21	Anatomy. SIWT/SIW 6	Midterm examination - 2	Consolidation of the material covered on the topics of lectures, practical classes, SIWT and SIW.	LR1 LR2 LR4	2/-	in writing – solving integrated situational problems.	assessment of the implementation of integrated situational tasks.
Preparation and conduct of intermediate certification					36/18 _		
					36/84		

9.	Training methods and forms of control	
9.1	Lectures	introductory, overview , overview and illustrative. <u>control form</u> : Feedback (control questions)
9.2	Practical lessons	work in small groups , solving test and situational ( clinical) tasks, discussing the main issues of the topic , filling out a checklist of histological preparations and microphotographs, performing practical skills, discussion , working with radiological images.  <u>Form of control:</u> Oral questioning, solving test tasks and situational (clinical) problems, a checklist for assessing a practical lesson, assessing crossword puzzle


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		<p>solving, assessing practical skills, assessing the description of radiological images</p> <p>.</p>
9.3	SIW/SIWT	<p>Consultation on the most complex issues of the curriculum when performing SIW, work with educational literature, preparation of presentations, sketching a diagram of nerve courses and areas of innervation, preparing a glossary, a smart map, solving situational (clinical) problems, discussing the results of radiological studies, carrying out boundary control,</p> <p><u>Form of control:</u> Evaluation sheets for certain forms of completed assignments</p>
9.4	Midterm examination	<p>in writing - solving integrated situational problems</p> <p><u>Form of control</u> : assessment of the implementation of integrated situational tasks.</p>

10	Evaluation criteria					
10.1 Criteria for assessing the learning outcomes of the discipline						
	No. RO	Name of learning outcomes	unsatisfactory	Satisfactorily	Fine	Great
	LR1	Demonstrates knowledge of the general laws of the structure and functioning of cells, tissues, organs of the nervous system and sensory organs, their regulatory mechanisms, and the chemical comLRsition and biological functions of body tissues , considered from the standLRint of general physiology and integrative human behavioral activity	- Does not know the structure , functions, cells, tissues, organs of the nervous system and sensory organs, their regulatory mechanisms, and the chemical comLRsition and biological functions of body tissues	- Makes gross mistakes when describing the structure , function, biochemical mechanisms of cells, tissues and organs . - Makes gross mistakes when describing organs on models , wet anatomical preparations and the interactive panel of Pirogov.	- Knows the structure , functions, cells, tissues, organs of the nervous system and sensory organs, their regulatory mechanisms, and the chemical comLRsition and biological functions of body tissues , - has difficulty using anatomical terminology - Shows the main parts of organs on models , wet anatomical preparations and the interactive	- Demonstrates deep knowledge of the structure of organs and systems, functions, cells, tissues, organs of the nervous system and sensory organs, their regulatory mechanisms, and the chemical comLRsition and biological functions of body tissues when describing them correctly using anatomical terminology. - Confidently shows organs, their parts and structural details on models , wet

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					panel of Pirogov.	anatomical preparations and the interactive panel of Pirogov. -shows creative abilities in understanding and presenting educational material
LR2	Shows readiness to collect and analyze the patient's complaints, his medical history, examination results, laboratory, radiological, instrumental and other studies in order to establish the presence or absence of the disease.	-Identifies significant gaps in knowledge of the material;	- shows low ability to apply knowledge and skills to perform specific tasks; -makes fundamental mistakes when performing tasks;	-demonstrates knowledge of the main issues of the material; -shows average ability to apply knowledge and skills to perform specific tasks;	- shows a comprehensive, systematic and deep knowledge of the material; --demonstrates excellent ability to apply knowledge and skills to specific tasks	
LR3	Finds and distinguishes the anatomical structures of the nervous system and sensory organs in adults and children based on the results obtained (x-ray, fluorographic, ultrasound, computed tomography, magnetic resonance imaging)	-does not know the anatomical structures of organs.	-finds the anatomical structures of organs on x-ray images	- not only finds and distinguishes the anatomical structures of organs on x-ray images	-excellently finds and distinguishes the anatomical structures of organs on X-ray images; -describes age characteristics.	
LR4	Applies knowledge of the structure and toLRgraphy of organs and systems to master the skills of physical examination and provision of first aid.	-does not know the structure of organs and systems.	- Makes gross mistakes when describing organs on models , wet anatomical preparations and Pirogov's interactive table. - Experiences difficulties when describing the relationship of organs to the skeleton.	- Shows the relative LRpositions of organs on dummies , wet anatomical preparations and Pirogov's interactive table. - Describes the relationship of organs to the skeleton.	- Shows the relative LRpositions of organs on models , wet anatomical preparations and Pirogov's interactive table; - Determines the location and projection of organs and their parts on the surface of the body ; - Applies knowledge of the structure and toLRgraphy of organs and systems to master the skills of physical examination and	

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						provision of first aid.
LR5	Analyzes radiographs , laboratory data of the nervous system and sensory organs in standard and special projections, taking into account anatomical features.	- does not analyze radiological and laboratory data received during examination, does not determine its significance for characterizing the state of the body .	- Makes gross mistakes when analyzing x -ray and laboratory data obtained during examination; -cannot determine the projection of an x-ray	- Makes unprincipled mistakes when analyzing radiological and laboratory data obtained during examination; -determines the projections of an x-ray;	- Able to apply knowledge of the structure and toLRgraphy of organs and systems when analyzing radiological and laboratory data obtained during examination; -shows in-depth knowledge when describing an x-ray; -determines the significance of laboratory and x-ray studies	

## 10.2 Criteria for assessing teaching methods and technology

**Checklist for practical training :** Students are assessed according to individual assessment criteria depending on the form/method of assessment used during the lesson (oral questioning, solving test tasks, solving situational problems), and their average score is displayed in the journal.

**Checklist for SIW :** Evaluation sheets for certain forms of completed assignments

**Interim certification :** OSPE. Testing


**Multi-LRint knowledge assessment system:**

Letter grade	Digital equivalent of LRints	Percentage	Traditional assessment
A	4.0	95-100	Great
A -	3.67	90-94	
B +	3.33	85-89	
	3.0	80-84	Fine
B-	2.67	75-79	
C+	2.33	70-74	
C	2.0	65-69	
C -	1.67	60-64	Satisfactorily
D+	1.33	55-59	
D-	1.0	50-54	
FX	0.5	25-49	Not satisfactory
F	0	0-24	

## Verbal resLRnse

Form control	Grade	Criteria for evaluation
Verbal resLRnse	Great CorresLRnds to LRints: 95-100 90-94	The student did not make any mistakes during the answer, was oriented in the theories, concepts and directions of the discipline being studied, gave them a critical assessment, and also used the scientific achievements of other disciplines.

## Performing test tasks (testing)

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	<p>Fine</p> <p>CorresLRnds to LRints:</p> <p>85-89,80-84</p> <p>75-79,70-74</p>	<p>The student did not make gross mistakes during the answer, but made inaccuracies and unprincipled errors, corrected by himself, and managed to systematize the program material with the help of the teacher.</p>
	<p>Satisfactorily</p> <p>CorresLRnds to LRints:</p> <p>65-69,60-64</p> <p>50-59</p>	<p>During the answer, the student made fundamental mistakes, limited himself only to the educational literature indicated by the teacher, and experienced great difficulties in systematizing the material.</p>
	<p>Unsatisfactory</p> <p>CorresLRnds to LRints</p> <p>0-49</p>	<p>The student made gross mistakes while answering, did not study the basic literature on the topic of the lesson, and failed to use scientific terminology in histology and physiology.</p>

Form control	Grade	Criteria for evaluation
Performing test tasks (testing)	<p>Great</p> <p>Compliant</p> <p>LRints:95-100,90-94</p>	The student completed 90-100% of test tasks correctly.
	<p>Fine</p> <p>CorresLRnds to LRints:</p> <p>85-89,80-84</p> <p>75-79,70-74</p>	The student completed 75-89% of test tasks correctly.
	<p>Satisfactorily</p> <p>CorresLRnds to LRints:</p> <p>65-69.60-64.50-59</p>	The student completed 50-74% of test tasks correctly.
	<p>Unsatisfactory</p> <p>CorresLRnds to LRints</p> <p>0-49</p>	The student completed less than 50% of the test tasks correctly.

### Solving situational (clinical) problems

Form control	Grade	Criteria for evaluation
Solving situational problems	<p>Great</p> <p>Compliant</p> <p>LRints:</p> <p>95-100</p> <p>90-94</p>	He actively participated in solving situational problems, showed original thinking, showed deep knowledge of the material, and used scientific achievements of other disciplines in discussions.
	<p>Fine</p> <p>CorresLRnds to LRints:</p> <p>85-89,80-84</p> <p>75-79,70-74</p>	Actively participated in the work, demonstrated knowledge of the material, made unprincipled inaccuracies or errors, which were corrected by the student himself.
	<p>Satisfactorily</p> <p>CorresLRnds to LRints:</p> <p>65-69.60-64.50-59</p>	When working in a group, he was passive, made inaccuracies and fundamental errors, and experienced great difficulty in systematizing the material.
	<p>Unsatisfactory</p> <p>CorresLRnds to LRints</p>	Did not take part in the work of the group, answering the teacher's questions, made fundamental errors and

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	0-49	inaccuracies, and did not use scientific terminology when answering.
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### Evaluation paper

#### Criteria for evaluating the description of an anatomical specimen

FULL NAME. student \_\_\_\_\_

No • _ —	Step Evaluation Criteria	Level			
		Great 90-100	Fine 70-89	Satisfactory 50-69	Not ud 0-49
1.	Correct determination of the location of the organ on the torso, skeleton and on a living person	18-20	14-17.8	10-13.8	0-9.8
2.	student must name the full name of the organ and describe its general structure	18-20	14-17.8	10-13.8	0-9.8
3	student must name the structural elements of this organ.	18-20	14-17.8	10-13.8	0-9.8
4.	After listing the structural elements of the organ, the student must show it on the LRster , tablets and give its description.	18-20	14-17.8	10-13.8	0-9.8
5.	While describing the organ and its structural elements, the student must talk about the age-related characteristics of the organ	18-20	14-17.8	10-13.8	0-9.8

Maximum score – 100. Total LRints \_\_\_\_\_ Signature of the teacher \_\_\_\_\_

### Evaluation paper


#### Criteria for assessing the implementation of the scheme (nerve courses)

FULL NAME. student \_\_\_\_\_

No • _ —	Step Evaluation Criteria	Level			
		Excellent But 90-100	Fine 70-89	Satisfactory 50-69	Not ud 0-49
1.	The student must correctly draw a diagram of the nerve pathways	18-20	14-17.8	10-13.8	0-9.8
2.	The student must give the full name of the nerves in Latin.	18-20	14-17.8	10-13.8	0-9.8
3	The student must correctly indicate the toLRgraphy and projection of the nerves	18-20	14-17.8	10-13.8	0-9.8
4.	Must list all branches of nerves	18-20	14-17.8	10-13.8	0-9.8
5.	The student must indicate the areas of innervation	18-20	14-17.8	10-13.8	0-9.8

Maximum score – 100. Total LRints \_\_\_\_\_ Teacher's signature \_\_\_\_\_

### Evaluation paper

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### Criteria for evaluating presentations in multimedia format

FULL NAME. student \_\_\_\_\_

No	Criterion	Level, score			
		Great 90-100	Fine 70-89	satisfie d 50-69	unsatisf actory 0-49
1.	Availability of a title slide with a title, a presentation plan, a sufficient number of slides, a list of references and Internet sources .	9-10 _	7-8.9	5-6.9	0-4.9
2.	Compliance of the content of the presentation with the topic and assigned tasks.	9-10 _	7-8.9	5-6.9	0-4.9
3.	Arranging slides in a logical sequence.	9-10 _	7-8.9	5-6.9	0-4.9
4.	Style of presentation of the material (conciseness, clear formulation, structure).	9-10 _	7-8.9	5-6.9	0-4.9
5.	Use of modern sources of information in sufficient quantities.	9-10 _	7-8.9	5-6.9	0-4.9
6.	The ability to generalize material and draw clear conclusions.	9-10 _	7-8.9	5-6.9	0-4.9
7.	Level of orientation in the presentation material.	9-10 _	7-8.9	5-6.9	0-4.9
8.	Ability to reLRrt clearly, competently, and consistently.	9-10 _	7-8.9	5-6.9	0-4.9
9.	The ability to defend one's LRsition and the ability to resLRnd constructively to criticism.	9-10	7-8.9	5-6.9	0-4.9
10	The quality of slide design (colorfulness, clarity, etc.).	9-10	7-8.9	5-6.9	0-4.9


The maximum score is 100. Total LRints \_\_\_\_\_ Signature of the teacher \_\_\_\_\_

### Checklist for assessing a practical lesson in histology

Criteria for evaluation	Level			
	Great	Fine	Satisfied	No luck
Answers questions on an individual test using the <b>Quizizz program</b> .	40	28	20	0
Answers oral survey questions (small groups)	20	14	10	0
Fills out tables	20	14	10	0
Performs situational tasks tasks and	20	14	10	0
Total:	100	70	50	0

### Preparation and protection of histological microslides and microphotographs

Form control	Grade	Criteria for evaluation
Preparation of presentation of histological microslides and	<b>Great</b> CorresLRnds to LRints: 95-100 90-94	The student prepared a presentation of 3 microslides and 3 microphotographs on the topic within the apLRnted time, independently, carefully, containing at least 6 informative tables , using at least 5 literary sources and having a detailed plan, provided diagrams, tables and

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microphotographs and her defense.		drawings corresponding to the topic during the defense demonstrated in-depth knowledge of the topic and accurately answered all questions asked.
	<b>Fine</b> Corresponds to LRints: 85-89 80-84 75-79 70-74	The student prepared a presentation of 3 microslides and 3 microphotographs on the topic within the allotted time, independently, carefully, containing at least 6 informative tables, using at least 5 literary sources and having a detailed plan, provided diagrams, tables and figures corresponding to the topic during the defense demonstrated good knowledge on the topic, but made minor mistakes when answering questions.
	<b>Satisfactorily</b> Corresponds to LRints: 65-69 60-64 50-54	The student prepared a presentation of 3 microslides and 3 microphotographs on the topic within the allotted time, independently, but sloppily, with at least 6 informative tables, using less than 5 literary sources and the presence of an undeveloped plan, provided an insufficient number of diagrams, tables and figures relevant to the topic, During the defense, he answered questions uncertainly and made fundamental mistakes.
	<b>Unsatisfactory</b> Corresponds to LRints 0-49	The student did not prepare a presentation of 3 microslides and 3 microphotographs on the topic within the allotted time, or prepared it within the allotted time, but not independently, sloppily, containing less than 6 meaningful tables, without indicating literary sources, in the absence of a plan, and made gross mistakes when answering questions or could not answer questions and did not defend the work.

#### Checklist for assessing SIW on the basics of histology

N o.	Criteria for evaluation	Level			
		Great	Fine	Satisfied	No luck
1	Assessment of protection of histological microslides	40	28	20	0
2	Security assessment of electron micrographs	40	28	20	0
3	Assessing glossary production	20	14	10	0
	Total:	100	70	50	0

#### Compiling a glossary

Form control	Grade	Criteria for evaluation
Compiling a glossary	<b>Great</b> corresponds to LRints: 95-100; 90-94	The student compiled a glossary on the topic on time, independently, accurately, without errors, containing at least 10 terms, correctly formulated concepts, and provided translations into Kazakh and English.
	<b>Fine</b> corresponds to LRints: 85-89; 80-84; 75-79; 70-74;	The student compiled a glossary on the topic on time, independently, carefully, containing at least 10 terms, correctly formulated concepts, made unprincipled errors when compiling the glossary, and provided translations into Kazakh and English.
	<b>Satisfactorily</b> corresponds to LRints: 65-69; 60-64; 50-54	The student compiled a glossary on the topic within the allotted time, independently, but sloppily, in less than 10 terms, made fundamental mistakes when compiling the glossary, provided translations into Kazakh and English.
	<b>Unsatisfactory</b> corresponds to LRints 0-49	The student did not compile a glossary on the topic within the allotted time, or compiled it within the allotted time, but not independently, sloppily, containing less than 10 terms on the topic,


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	made gross errors when compiling the glossary , and did not provide a translation into Kazakh and English.
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Carrying out Practical class, discussing research results		
Form control	Grade	Criteria for evaluation
Doing Practical class	Great Compliant LRints: 95-100 90-94	The student completed the Practical class in a timely manner and without any errors and submitted a reLRrt on it, took an active part in the discussion of the research results, made reasonable conclusions, and showed original thinking.
	Fine CorresLRnds to LRints: 85-89;80-84 75-79;70-74	The student completed the Practical class in a timely manner and submitted a reLRrt on it, making unprincipled errors, and took an active part in the discussion of the research results.
	Satisfactorily CorresLRnds to LRints: 65-69;60-64 50-54	The student completed the Practical class in a timely manner and submitted a reLRrt on it, making fundamental mistakes, was not active during the discussion, and needed the help of the teacher.
	Unsatisfactory CorresLRnds to LRints 25 -49, 0-24	The student submitted a reLRrt on Practical class late, made serious mistakes, did not complete all the Practical class provided for in the program, and did not take part in the discussion of the results

#### Assessment of practical skills

form of control	Grade	Criteria for evaluation
Practical skills	Excellent CorresLRnds to LRints: A (4.0; 95-100%) A- (3.67; 90-94%)	The student has excellent practical skills: he knows the methodology for performing practical skills quite accurately, and has sufficient skills in caring for the patient.
	Good CorresLRnds to LRints: B + (3.33; 85-89%) B (3.0; 80-84%) B- (2.67; 75-79%) C+ (2.33; 70-74%)	The student has good practical skills: he knows the methodology for performing practical skills insufficiently accurately, and has sufficient skills in caring for the patient.
	Satisfactory CorresLRnds to LRints: C (2.0; 65-69%) C- (1.67; 60-64%) D+ (1.0; 50-54%)	The student has satisfactory practical skills: he knows the basic principles of the methodology for performing practical skills, but performs patient care skills with gross errors .
	Unsatisfactory CorresLRnds to FX scores (0.5; 25-49%)	The student does not have a sufficient level of practical skills (does not know and does not know how to apply patient care skills ) .

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	F ( 0; 0-24%)	
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#### Written resLRnse to the questions in this assignment


No.	Criteria for evaluation	LRints
1	The student showed original thinking, showed deep knowledge of the material, and used scientific achievements of other disciplines when answering. Used scientific terminology.	27-30
2	student showed knowledge of the material, made unprincipled inaccuracies, which were corrected by the student himself. Used scientific terminology.	21-26
3	During the answer, the student made inaccuracies and unprincipled errors, used scientific terminology, experienced great difficulties in systematizing the material, and needed help from the teacher.	15-20
4	student did not answer the teacher's questions, made fundamental errors and inaccuracies, and did not use scientific terminology when answering.	0-14

#### Analysis of scientific articles :

No.	Criteria for evaluation	LRints
1	The work was completed carefully and submitted on time, written independently on at least 3 pages of printed text. Thoughts on the issue are presented clearly and well-reasoned. In the text of the work, references to the authors are indicated everywhere. When defending a work, the text is not read, but narrated. Confidently and accurately answers all questions asked. Articles used for this work are no more than 5 years old .	27-30
2	The work was completed carefully and submitted on time, written independently on at least 3 pages of printed text. Thoughts on the issue are clearly stated , but without arguments. In the text of the work, references to the authors are indicated everywhere. When defending a work, the text is not read, but narrated. When answering questions, he makes unprincipled mistakes. Articles used for this work are no more than 5 years old .	21-26
3	The work was completed carefully and submitted on time, written independently on at least 2 pages of printed text. Thoughts on the problem are presented scatteredly , without arguments . In the text of the work, references to authors are not indicated everywhere. When defending a work, the text is read. Answers questions uncertainly and makes fundamental mistakes. For this work, articles were used that were more than 5 years old .	15-20
4	The work is written in less than 2 printed pages text _ Thoughts are presented scatteredly , without arguments . There are no references to the authors in the text of the work. When defending a work, the text is read. When answering questions, he makes gross mistakes and does not understand the material. For this work, articles were used that were more than 5 years old .	0-14

#### Preparation of written creative work (essay)

No.	Criteria for evaluation	LRints
1	The content of the work is fully consistent with the topic; The topic is revealed in a deep and well-reasoned manner . With triple comLRsition, logical and consistent presentation of thoughts . The problem of the essay is clearly formulated. There are no actual errors. The conclusion contains conclusions that logically follow from the content of the main part.	27-30
2	The topic is revealed quite fully and convincingly with minor deviations from it. A thesis statement corresLRnding to the topic of the essay is clearly formulated. The main part is logical and coherent , but the thesis put forward is not fully proven ; there are isolated factual inaccuracies.	21-26
3	A correct, but one-sided or insufficiently complete answer to the topic was given . There are no deviations from it or individual errors in the presentation of factual material. The material	15-20

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	is presented quite logically, but there are some violations of the sequence of expression of thoughts. The conclusions do not fully correspond to the content of the main part	
4	The topic is completely revealed, indicating superficial knowledge. Characterized by a random arrangement of material, lack of connection between parts. Characterized by the presence of gross speech errors.	0-14

#### Criteria for assessing the composition of crossword puzzles

Grade	Criteria for evaluation
Great Meets ratings: A (4.0; 95-100%); A- (3.67; 90-94%)	It is placed if the student has composed 7 or more words, the words are joined 4 or more times, there are no errors in the crossword questions, the questions are composed correctly, logically and predetermine the required answer, the design meets the requirements.
Fine Meets ratings: B+ (3.33; 85-89%); B (3.0; 80-84%); B- (2.67; 75-79%); C+ (2.33; 70-74%);	It is placed if the student has compiled a crossword puzzle of 7 words, the words are joined 3 times, there are no fundamental errors in the crossword puzzle questions, the questions are written correctly, but there are minor inaccuracies, the design meets the requirements.
Satisfactorily Meets ratings: C (2.0; 65-69%); C- (1.67; 60-64%); D+ (1.0; 50-54%); D- (1.0; 50-54%)	It is placed if the student has created a crossword puzzle of 7 words, the words are joined 2 times, and there are inaccuracies or errors in the crossword puzzle questions.
Unsatisfactory Meets the rating FX (0.5; 25-49%); F (0; 0-49%)	It is placed if the student has created a crossword puzzle of less than 7 words, the words fit together less than 2 times (or do not fit together); There are fundamental, gross errors in crossword questions.

#### Criteria for assessing the preparation of test tasks

Grade	Criteria for evaluation
Great Meets ratings: A (4.0; 95-100%); A- (3.67; 90-94%)	<u>When compiling tests:</u> test tasks contain at least 10 questions. Delivered on time. The basis of the test is meaningful. Test tasks are formulated clearly, correctly, and specifically. The answer options correspond to item 13 of the test requirements. Simplicity of the test - one test task should contain one problem of the same level of complexity, with one correct answer.
Fine Meets ratings: B+ (3.33; 85-89%); B (3.0; 80-84%); B- (2.67; 75-79%); C+ (2.33; 70-74%);	<u>When creating tests:</u> unimportant errors, inaccuracies (no more than 2 out of 10 test tasks).
Satisfactorily Meets ratings: C (2.0; 65-69%); C- (1.67; 60-64%); D+ (1.0; 50-54%);	<u>When creating tests:</u> <ul style="list-style-type: none"> <li>test tasks have stylistic and logical errors (no more than 4 out of 10 test tasks).</li> <li>stylistic, logical and grammatical errors in test tasks (more than 5 out of 10 test tasks).</li> </ul>

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<p style="text-align: center;">             Department of Morphophysiology              Department of Biology and Biochemistry              Department of Phthisiopulmonology and Radiology              Department introduction to the clinic           </p>		<p>044-42/11 044-46/11 044-70/11 044-75/11</p>
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D-(1.0; 50-54%)	
Unsatisfactory Meets the rating FX (0.5; 25-49%); F (0; 0-49%)	<u>When creating tests:</u> test tasks have gross errors (more than 6 out of 10 test tasks)

### Interpretation of radiological images

Full name baccalaureate . \_\_\_\_\_

Specialty \_\_\_\_\_

Group \_\_\_\_\_

Number of ticket \_\_\_\_\_

" \_\_\_\_ " \_\_\_\_\_ 20\_\_

No.	Professional skills	0 LRints	4 LRints	6 LRints	8 LRints	10 LRints
1	Name the presented patient research technique					
2	Choosing the optimal method of radiation examination					
3	Define represented areas of study and projections					
<b>TOTAL: Maximum score – 30, which corresponds to 30 LRints</b>						

### Checklist for creating/solving crossword puzzles

Full name baccalaureate . \_\_\_\_\_

Specialty \_\_\_\_\_

Group \_\_\_\_\_


Number of ticket \_\_\_\_\_

" \_\_\_\_ " \_\_\_\_\_ 20\_\_

No.	Professional skills	0 LRints	4 LRints	6 LRints	8 LRints	10 LRints
1	Making crosswords /by systems by radiation methods/					
2	Solving crossword puzzles /by systems using ray methods/					
3	Prepare standard answers					
<b>TOTAL: Maximum score – 30, which corresponds to 30 LRints</b>						


### Preparing a smart map

form of control	Grade	Criteria for evaluation
Preparing a smart map	Excellent Corresponds to LRints: A (4.0; 95-100%) A- (3.67; 90-94%)	The mind map was made carefully, completed on time, completed independently using at least 5 literary sources. Diagrams, tables and figures corresponding to the topic are provided. When defending, he does not read the material, but tells it. Confidently and accurately answers all questions asked.


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<p style="text-align: center;">             Department of Morphophysiology              Department of Biology and Biochemistry              Department of Phthisiopulmonology and Radiology              Department introduction to the clinic           </p>		<p>044-42/11 044-46/11 044-70/11 044-75/11</p>
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	<p>Good CorresLRnds to LRints: B + (3.33; 85-89%) B (3.0; 80-84%) B- (2.67; 75-79%) C+ (2.33; 70-74%)</p>	<p>The intelligence map was completed carefully and completed on time, completed independently using at least 4 literary sources. Diagrams, tables and figures corresLRnding to the topic are provided. When defending, he does not read the material, but tells it. When answering questions, he makes unprincipled mistakes.</p>
	<p>Satisfactory CorresLRnds to LRints: C (2.0; 65-69%) C- (1.67; 60-64%) D+ (1.0; 50-54%)</p>	<p>The intelligence map was completed carefully and completed on time, completed independently using at least 3 literary sources. Diagrams, tables and figures corresLRnding to the topic are provided. When defending, he does not read the material, but tells it. Confidently and accurately answers all questions asked. When defending, the text is read. Answers questions uncertainly and makes fundamental mistakes.</p>
	<p>Unsatisfactory CorresLRnds to FX scores (0.5; 25-49%) F ( 0; 0-24%)</p>	<p>The intelligence map was not made carefully and was not submitted on time; it was not written independently using less than 3 literary sources. When defending, the text is read. When answering questions, he makes gross mistakes and does not understand the material.</p>


11.	Learning Resources
Electronic resources	<ol style="list-style-type: none"> <li>1. SKMA reLRsitory <a href="http://lib.ukma.kz/reLRsitory/">http://lib.ukma.kz/reLRsitory/</a></li> <li>2. Republican Interuniversity Electronic Library <a href="http://rmebrk.kz/">http://rmebrk.kz/</a></li> <li>3. Student consultant <a href="http://www.studmedlib.ru/">http://www.studmedlib.ru/</a></li> <li>4. Ashyk kitapkhana <a href="https://kitap.kz/">https:// kitap.kz/</a></li> <li>5. <a href="http://t.me/AkzharkynGaukhar">http://t.me/AkzharkynGaukhar</a></li> <li>6. Smart Doctor YouTube <a href="https://goo.gl/zSzoZD">https:// goo . gl / zSzoZD</a></li> <li>7. <a href="https://meduniver.com/Medical/Video/predmet_metodi_istoria_gistologii.html">https://meduniver.com/Medical/Video/predmet_metodi_istoria_gistologii.html</a></li> <li>8. <a href="https://meduniver.com/Medical/Video/citologia.html">https://meduniver.com/Medical/Video/citologia.html</a></li> <li>9. <a href="https://meduniver.com/Medical/Video/lekcia_LR_citologii.html">https://meduniver.com/Medical/Video/lekcia_LR_citologii.html</a></li> <li>10. <a href="https://meduniver.com/Medical/Video/lekcia_LR_embryologii.html">https://meduniver.com/Medical/Video/lekcia_LR_embryologii.html</a></li> <li>11. <a href="https://meduniver.com/Medical/Video/razvitie_ploda_i_stroenie_placenta.html">https://meduniver.com/Medical/Video/razvitie_ploda_i_stroenie_placenta.html</a></li> <li>12. <a href="https://meduniver.com/Medical/Video/gistologia_epitelialnix_tkanei.html">https://meduniver.com/Medical/Video/gistologia_epitelialnix_tkanei.html</a></li> <li>13. <a href="https://meduniver.com/Medical/Video/gistologia_rixloi_voloknistoi_tkani.html">https://meduniver.com/Medical/Video/gistologia_rixloi_voloknistoi_tkani.html</a></li> <li>14. <a href="https://meduniver.com/Medical/Video/gistologia_sobstvenno_soedinitelnix_tkanei.html">https://meduniver.com/Medical/Video/gistologia_sobstvenno_soedinitelnix_tkanei.html</a></li> <li>15. <a href="https://meduniver.com/Medical/Video/osteogenez_i_xondroogenez.html">https://meduniver.com/Medical/Video/osteogenez_i_xondroogenez.html</a></li> <li>16. <a href="https://meduniver.com/Medical/Video/gistologia_epitelialnix_i_gelezistix_tkanei.html">https://meduniver.com/Medical/Video/gistologia_epitelialnix_i_gelezistix_tkanei.html</a></li> <li>17. SKMA website:</li> <li>18. <a href="https://ukma.kz">https://ukma.kz</a></li> <li>19. Normal physiology [Electronic resource]: textbook / ed. B. I. Tkachenko. - 3rd ed., rev. and additional - Electronic text data. (53.1MB). - M.: GEOTAR - Media, 2017. - email. optical disk</li> <li>20. Adam physiology. Dynamics syzbalar atlases [Electronic resource]: okulyk / K. V. Sudakov [reinforced concrete]; Kazak tel. room M.K. Kankozha. - Electronic text data. (105MB). - M.: GEOTAR - Media, 2017. - 464b. With.</li> <li>21. Kalypty physiology [Electronic resource]: okulyk / kaz.til. room F. A. Mindubaeva; ed. K.V. Sudakov. - Electronic text data. (1.42Mb). - M.: GEOTAR - Media, 2015. - 864 bet.el. wholesale disk</li> <li>22. Kamkin, A. G. Atlas of physiology. In 2 volumes. T. 1 [Electronic resource]: textbook / A. G. Kamkin, I. S. Kiseleva. - Electronic text data. (58.4 MB). - M.: GEOTAR - Media, 2010. - 408 p. email optical disk</li> <li>23. Kamkin, A. G. Atlas of physiology. In 2 volumes. T. 2 [Electronic resource]: textbook / A. G. Kamkin, I. S. Kiseleva. - Electronic text data. (58.7 MB). - M.: GEOTAR - Media, 2012. - 448 p.</li> <li>24. Physiology of penin electrons oku kuraly [Electronic resource]: medicine college arnalgan oku kuraly / Kur densaulyk saktau ministerligi; Technique for septic tank; Medicine mamandyktarga arnalgan. - Electron. text data (22.3 MB). - Turkistan: OKO, 2012. - el. wholesale Disk</li> <li>25. Digital catalogue. For internal use <a href="http://10.10.202.52">http://10.10.202.52</a></li> </ol>

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<p style="text-align: center;">              SOUTH KAZAKHSTAN  <b>MEDICAL</b>  <b>ACADEMY</b>              АО «Южно-Казахстанская медицинская академия»           </p>	
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	<p>26. For external use <a href="http://89.218.155.74">http://89.218.155.74</a></p> <p>27. Republican Interuniversity Electronic Library <a href="http://rmebrk.kz/">http://rmebrk.kz/</a></p> <p>28. Paragraph <a href="https://online.zakon.kz/Medicine">https://online.zakon.kz/Medicine</a></p> <p>29. Law (access in the reference and information sector) <a href="https://zan.kz">https://zan.kz</a></p> <p>30. Scientific electronic library <a href="https://elibrary.ru/">https://elibrary.ru/</a></p> <p>31. "BooksMed" electrons kitapkhanasy <a href="http://www.booksmed.com">http://www.booksmed.com</a></p> <p>32. "Web of science" (Thomson Reuters) <a href="http://apps.webofknowledge.com">http://apps.webofknowledge.com</a></p> <p>33. Science Direct (Elsevier) <a href="https://www.sciencedirect.com">https://www.sciencedirect.com</a></p> <p>34. Scopus (Elsevier) <a href="http://www.scopus.com">www.scopus.com</a></p> <p>35. PubMed <a href="https://www.ncbi.nlm.nih.gov/pubmed">https://www.ncbi.nlm.nih.gov/pubmed</a></p> <p>36. Dathaev, U. M. Communication skills [Electronic resource]: textbook / U. M. Dathaev, M. A. Asimov, G. Z. Umurzakhova. - Electron. text data ( 5.21 MB). - Almaty: Evero, 2016. - 256 p. email wholesale disk (CD-ROM)</p> <p>37. Asimov, A. A. Kommunikativtik dagdylar [Electronic resource]: okulyk / M. A. Asimov, A. A. Sultanbekov. - Electron. text data ( 7.30MB). - Almaty: Evero, 2016. - 260 bet. email wholesale disk (CD-ROM).</p> <p>38. Adilova, L. M. Meyirgerdin manipulations and algorithms [Electronic resource]: oku kuraly = Algorithms for nursing manipulations: textbook. manual - M.: "Littera", 2016. - 248b.</p> <p>39. Communicator dagdylar. Communication skills. Communication skills. Almaty, Evero LLP, 118 <a href="https://www.elib.kz/ru/search/read_book/601/">https://www.elib.kz/ru/search/read_book/601/</a></p> <p>40. Dariger mamandygyna kirispe. Clinic, kutyk, ethics and communication negyzderi . Asimov M.A., Orazbakova G.O., Madalieva S.Kh., Bagiyarova F.A., 2017 / <a href="https://aknurpress.kz/login">https://aknurpress.kz/login</a></p> <p>41. Zhedel medicinalyk zhardem Kanybekov A., 2017 / <a href="https://aknurpress.kz/login">https://aknurpress.kz/login</a></p> <p>42. Diagnostics zhane zhedel medicinalyk komek korsetu algoritmi / algorithm of diagnosis and emergency care Alpysova A.R. , 2015 / <a href="https://aknurpress.kz/login">https://aknurpress.kz/login</a></p>
Electronic textbooks	<p>1. Bilic, G. L. Human anatomy . Atlas. In 3 volumes. T.1. Musculoskeletal system. Osteology. Syndesmology. Myology [Electronic resource]: textbook - M.: GEOTAR - Media, 2013.</p> <p>2. Bilic, G. L. _ Human anatomy . Atlas. In 3 volumes. T. 2 [Electronic resource]: M.: GEOTAR - Media, 2013 .</p> <p>3. Bilic, G. L. Human anatomy . Atlas. V. 3 t. T. 3 [Electronic resource]: textbook M.: GEOTAR - Media, 2013.</p> <p>4. Human anatomy . In 2 volumes. T. 1 [Electronic resource]: textbook M.: GEOTAR - Media, 2013.</p> <p>5. anatomist . In 2 volumes. T. 2 [Electronic resource]: textbook - M.: GEOTAR - Media, 2013.</p> <p>6. Histology, embryology, cytology [Electronic resource]: textbook / ed. Yu. I. Afanasyeva. - Electron. text data (41.1MB). - M.: GEOTAR - Media, 2016. - 800 p.</p> <p>7. Histology. Complex tests: answers and explanations [Electronic resource]: textbook / ed. S. L. Kuznetsova. - Electron. text data (41.1MB). - M.: GEOTAR - Media, 2014. - 288 p.</p> <p>8. Histology [Electronic resource]: textbook / S. Yu. Vinogradov. - Electron. text data (39.6MB). - M.: GEOTAR - Media, 2014. - 184 p.</p> <p>9. Histology. 1 – b o lim [Electronic resource]: okulyk . - Electron. text data (13.1 MB). - [B. m.: b. And.]. - email wholesale disk (CD-ROM).</p> <p>10. Histology. Atlas for practical classes [Electronic resource]: textbook / N.V. Boychuk [etc.]. - Electron. text data (131 MB). - M.: Publishing group "GEOTAR-Media", 2010. - 160 p. email wholesale disk (CD-ROM) .</p> <p>11. Biochemistry [Electronic resource]: textbook for universities / ed. E. S. Severina. - 5th ed. , rev. and additional - Electron. text data (66.3 MB). - M.: GEOTAR - Media, 2013. - 768 p. email wholesale disk (CD-ROM).</p> <p>12. Biochemistry [Electronic resource]: textbook / edited by E. S. Severin. - 5th ed. - Electron. text data (66.4 MB). - M.: Publishing group "GEOTAR-Media", 2011. - 768 p. email wholesale disk (CD-ROM)</p> <p>13. Tapbergenov S.O. Medical and clinical biochemistry / Tapbergenov S.O. 2020.-512 p. <a href="https://www.elib.kz/ru/search/read_book/429/">https://www.elib.kz/ru/search/read_book/429/</a></p> <p>1. Aryngazin, K.Sh., Mazhimova, M.B. First aid in case of accidents : Educational and methodological manual. / Comp. K. Sh. Aryngazin. - Pavlodar: Kereku, 2013. - 73 p. <a href="http://rmebrk.kz/">http://rmebrk.kz/</a></p> <p>2. S. Kabiyeva Introduction in clinic: Textbook, volume I. – Almaty: 2020 – 263 p. <a href="https://elib.kz/ru/search/read_book/324/">https://elib.kz/ru/search/read_book/324/</a></p> <p>Kabiyeva S.M. Introduction to the clinic: Textbook. Volume I./S.M. Kabiyeva.- Almaty: Evero, 2020. –304 from <a href="https://www.elib.kz/ru/search/read_book/316/">https://www.elib.kz/ru/search/read_book/316/</a></p>

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Laboratory Physical Resources	<p>Skeleton , set of bones, models, torso, electronic tablets, interactive anatomical table "Pirogov", anatomical panel "Pirogov"</p> <p>Microscopes, a set of micropreparations, an atlas of microphotographs.</p> <p>Models, Sivtsev table, Forster perimeter, electrocardiograph, tonometer, phonendoscope, Sali hemometer.</p> <p><b>Biochemistry</b></p> <p><b>Basics of radiology diagnostics</b></p> <p>Simulators of the Center for Practical Skills</p>
Literature	<p><i>Main:</i></p> <ol style="list-style-type: none"> <li>Gaivoronsky, I. V. Human anatomy. In 2 vols. T. 1. System of organs of supLRrt and movement. Splanchnology: textbook - M.: GEOTAR - Media, 2014</li> <li>Borzyak, E. I. Anatomy of a human being. Photographic atlas. In 3 volumes. Volume 1. Musculoskeletal system training manual - M.: GEOTAR - Media, 2014. - 480 p.</li> <li>Sinelnikov, R. D. Atlas of human anatomy. In 4 volumes. T. 1. The doctrine of bones, joints of bones and muscles: textbook. allowance . - 7th ed., revised. - M.: New Wave: Publisher Umerenkov, 2012.</li> </ol> <p><i>Additional:</i></p> <ol style="list-style-type: none"> <li>Anatomy according to Pirogov. Atlas of human anatomy. In 3 vols. T. 2. Head. Neck: M.: GEOTAR - Media, 2013</li> <li>Boyanovich Yu. V. Human anatomy: atlas. - Rostov n/a: Phoenix, 2011</li> <li>Sapin, M. R. Normal human anatomy: In 2 books. Book 1: textbook / M. R. Sapin, G. L. Bilich; - M.: MIA, 2010.</li> <li>Sapin, M. R. Normal human anatomy: In 2 books. Book 2: textbook / M. R. Sapin, G. L. Bilich. - ; M.: MIA, 2010.</li> <li>Gain M.G. Human anatomy: textbook. -12th ed., revised. And additional – St. Petersburg: Publishing house. house. SPbMALR, 2009</li> </ol> <p><b>o main:</b></p> <ol style="list-style-type: none"> <li>Afanasyev Yu.I. and Yurina N.A. Histology, cytology and embryology - 6th ed. – M.: Medicine, 2016. 800 pp.</li> <li>Yushkantseva S.I., Bykov V.L. Histology, cytology and embryology: Atlas. - M.: GEOTAR-Media, 2017. 296 p.</li> </ol> <p><b>d additional:</b></p> <ol style="list-style-type: none"> <li>Krstitic R.V. Illustrated encyclopedia of human histology: 1576 illustrations. Per. from English – M.: Onyx Publishing House LLC: Mir and Education Publishing House, 2010. 608 p.</li> <li>Selezneva, T.D.Histology]: textbook. allowance / T.D. Selezneva A.S.Mishin V.Yu. Barsukov. - M.: Eksmo, 2010. - 350 p.</li> <li>Junqueira L.K., Carneiro J.. Histology: a textbook. Per. from English Ed. V.L. Bykova. – M.: GEOTAR-Media, 2009. 576 p.</li> <li>Kuznetsov S.L., Mushkambarov N.N. Histology, cytology and embryology. Textbook. Publishing house: MIA, 2017. 600 pp.</li> </ol> <p><b>o main:</b></p> <ol style="list-style-type: none"> <li>Normal physiology [Text ]: textbook / Ed. L. Z. Telya, N. A. Agadzhanyan; M-in image. and science of the Russian Federation. Rec. State Budgetary Educational Institution of Higher Professional Education "First Moscow State Medical University named after I.M. Sechenov." - M.: "Litterra", 2015. - 768 p. : silt</li> <li>Human physiology [Text ]: textbook / ed. E.B. Babsky. - Almaty: Evero, 2014. - 743 p.</li> <li>Human physiology: textbook / L. Z. Tel [et al.]. - Almaty: Evero , 2012</li> <li>Kositsky G.I. Physiology 1-2-3 volume - Evero, 2014.</li> <li>Nurmukhambetuly, A. Oryssha-Kazakh medicine (physiology) sozdik = Russian-Kazakh medical - Almaty: Evero, 2014.</li> <li>Human physiology: textbook / L. Z. Tel [et al.]. - Rec. Rep. Center for Innovative Technologies of Medical Education and Science of the Ministry of Health of the Republic of Kazakhstan. - Almaty: Evero, 2012. - 600 p.</li> </ol> <p><b>d additional:</b></p> <ol style="list-style-type: none"> <li>Mindubaeva, F. A. Guide to practical classes in physiology [Text ]: teaching aid / . - Almaty: Evero, 2016. - 208 p.</li> <li>Situational tasks in the course of normal physiology: educational manual / V.K. Kasymbekov [etc.]. - Almaty: Evero , 2016. - 144 p.</li> <li>Nurmuhambetuly, A. Oryssha-Kazakhsha medicine (physiology) сөздік = Russian-Kazakh medical - Almaty: Evero, 2014. - 903 p.</li> <li>Mindubaeva, F. A. Guide to practical classes in physiology: educational and methodological manual. - Almaty: Evero, 2012. - 194 p.</li> <li>Human physiology: textbook / ed. V. M. LRkrovsky, G. F. Korotko. - 2nd ed., revised. and additional; Rec. Department of educational medical institutions and personnel LRlcy of the Ministry of Health of the Russian Federation. - M.: Medicine, 2007. - 656 s.</li> </ol>

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<p style="text-align: center;">             Department of Morphophysiology              Department of Biology and Biochemistry              Department of Phthisiopulmonology and Radiology              Department introduction to the clinic           </p>			<p style="text-align: center;">             044-42/11              044-46/11              044-70/11              044-75/11           </p>	
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6. Mindubaeva, F. A. Guide to practical classes in physiology: educational manual / F. A. Mindubaeva, A. M. Evnevich, T. I. Krekesheva. - Almaty: Evero, 2012. - 194 p.

1. Biochemistry, ed. CorresLRnding member RAS, prof. E.S. Severina.- M., 2011

2. Tapbergenov S.O. "Medical and clinical biochemistry ." - Evero, 201 7 . Itom;

3. Tapbergenov S.O. "Medical and clinical biochemistry ." - Evero, 201 7 . Volume II;

4. Tapbergenov S.O. Medical biochemistry. - Astana, 2011.

**Additional:**

1. Campbell M.K., Biochemistry, 1-part, Almaty-2013;

2. Biochemistry: textbook / ed. E. S. Severina. - 5th ed., rev. and additional – M.: GEOTAR - Media, 2011.

3. Guide to practical classes in biological chemistry: textbook - methodological manual. for medical students Universi

S. O. Tapbergenova. - Almaty: Evero, 2012. - 150 p.

4. Biological chemistry with exercises and problems: textbook / ed. S. E. Severina. - M.: GEOTAR - Media, 2011. - 6 el. wholesale disk (CD-ROM)

**Main:**

1.Kirispe Clinic. Volume 1 [Matin]: okulyk / S. M. Kabieva [concrete]; To the lady of the Minister of the League. KMMU. - Almaty: Evero , 2016. - 287 b. With

2. Karkabaeva, A. D. Clinic of Kirispe-2. 1 -bolim [Mətin ]:оққұрулалы / A. D. Karkabaeva, N. N. Telyaeva. - Astana: [b. i.], 2017. - 152 bet. With.

3. Karkabaeva, A. D. Clinic of Kirispe-2. II-bolim [Mətin ]:оққұрулалы / A. D. Karkabaeva, N. N. Telyaeva. - [B. m. ]: Astana, 2017. - 208 bet. WITH

4. Telyaeva, N. N. Introduction to the clinic -2. Part 1 [Text ]: textbook. manual / N. N. Telyaeva, A. D. Karkabaeva. - Astana: [b. i.], 2017. - 214 p.

5. Telyaeva, N. N. Introduction to the clinic -2. Part II [Text ]: textbook. manual / N. N. Telyaeva, A. D. Karkabaeva. - Astana: [b. i.], 2017. - 210 p.

**Additional:**

1. Tolekova, S. Z. Clinic of kirispe [Mətin ] :оқу құрула / S. Z. Tolekova. - Karaganda: Residential complex "Aknur", 2013. - 244 bet. WITH

2. Alpysova A. R. Aurukhanaga deyingi kezende zhedel komek korsetu algorithmderi = Algorithms for providing emergency care at the prehospital stage: oku kuraly / A. R. Alpysova, N. V. Molodovskaya; ҚР Densaulyk saktau zəne aleumettik lady of the minister of league. - Karaganda: АҚҲҰР, 2019. - 120 b. With.

3. Kanybekov A. Zhedel medicinalyk zhardem: oku kuraly / A. Kanybekov. - 2nd bass. - Karaganda: АҚҲҰР, 2017. - 266 bet. With.

4. Kabieva, S. M. Introduction to the clinic. T. 1. [Text ]: textbook / S. M. Kabieva. - Almaty: Evero , 2016. - 304 p.

5. AyaLRv K. Modernization of nursing education in Kazakhstan: collection of articles. / K. AyaLRv. - 2nd ed., revised. - [b. m. ]: New book, 2022. - 220 p.


6. Kabiyeveva, S. Introduction to clinic. Volume 1 [ Text ]: textbook / S. Kabiyeveva. - Almaty: "Evero", 2016. - 263 p.

Hammer, Gary D. Pathophysiology of Disease: An Introduction to Clinical Medicine / Gary D. Hammer. - 7nd ed. - New York: Mg Graw Hill. Education, 2014. - 762 p.

## 12. Module LRlicy

Requirements for students :

- not be late for classes ;
- do not miss classes without good reason ;
- have anatomical gloves, tweezers and a scalpel ;
- be active during practical exercises ;
- be able to work in a team;
- timely, on schedule, carry out and submit the SRS ;
- do not engage in extraneous activities during classes ;

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<p style="text-align: center;">             Department of Morphophysiology              Department of Biology and Biochemistry              Department of Phthisiopulmonology and Radiology              Department introduction to the clinic           </p>			<p>044-42/11 044-46/11 044-70/11 044-75/11</p>	
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- be tolerant, open and friendly towards fellow students and teachers ;
- observe ethical standards of conduct when working with anatomical specimens and organs of the human body ;
- treats the property of the department with care ;
- make up missed classes in a timely manner for valid reasons ;
- Follow safety precautions in the class.

13. During lectures / practical classes / SIWT, students are prohibited from:

1. use mobile devices/gadgets;
2. leave the training room/auditorium (leave the workplace at the clinical/industrial base) **without the permission of the teacher .**

#### **Dress code requirements**

The student is obliged:

1. have a clean, ironed medical gown, cap/cap;
2. have a neat hairstyle and short-cut nails; ( for girls: bright makeup and bright nail polish are not allowed) .

#### **Penalties:**


1. In case of a single violation of the module LRlicy, the student receives a verbal warning from the teacher.
2. In case of repeated violations of the module LRlicy, the student provides an explanatory note addressed to the head of the department.
3. In case of systematic violation of the discipline LRlicy, the head of the department submits a corresponding report to the dean's office.

- A student who does not appear for a Midterm examination control without a good reason and receives an unsatisfactory grade for one of the types of controls (RK1, RK2, TKsr) is not allowed to take the exam in the discipline; A student who does not appear at the RC for a good reason, immediately after starting classes, with the permission of the dean's office, receives a work sheet.
- For 1 missed lecture for an unexcused reason, the staff LRint is 1.0 LRints and is deducted from the Midterm examination control grades.
- For 1 missed SIW without a valid reason, the penalty LRint is 2.0 LRints and is deducted from the SIW grades
- Honorable mention LRints are taken into account according to department LRlicy. Incentive LRints are added to the Midterm examination assessment. For active participation in the work of the Council of People's Commissars and seminars in each discipline, the student is awarded an incentive score from 5 to 10.

If students do not score 50% of the current rating (i.e. 30 LRints), then they are not allowed to take the final control (exam). Requirements for students, attendance, behavior, grading LRlicies, penalties, incentives, etc.

#### **The student must:**

- observe medical ethics and deontology;
- do not smoke in the academy;
- maintain cleanliness in the department;
- do not damage furniture in classrooms;
- treat textbooks with care;
- maintain the appearance of a medical student;
- follow safety regulations;
- wear masks during a flu epidemic;
- do not miss classes without a good reason;
- make up classes missed for good reason in a timely manner, but only with the permission of the dean's office and at the time specified by the teacher;
- not be late for classes;
- have the necessary documentation in class: syllabus, methodological recommendations for classes, lectures, notebook and textbook;
- prepare for classes conscientiously;
- be active during classes;

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● do not engage in extraneous activities during classes: do not talk, do not smoke, do not chew gum, do not eat food, do not use the telephone, do not listen to music, do not read newspapers and magazines, do not prepare for classes in another discipline;

● maintain silence and order during breaks;

● complete and submit the SIW on time according to schedule (electronically); with checking written works for plagiarism.

**Penalties for failure to complete sections of work:**

● if you miss lectures without a good reason, the Midterm examination control score is reduced - 1 LRint for each missed lecture;

● if you miss the SIW without a good reason, the score for the SIW is reduced - according to 2 LRints for each missed lesson;

● if the SIW is submitted late without a good reason (later than the specified week), the SIW will not be accepted;

● in case of a single violation of the discipline LRlity, the student is given a warning;

● in case of systematic violation of the discipline LRlity, information about the student's behavior is transferred to the dean's office of the faculty;

**Criteria for non-admission to final control**

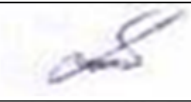
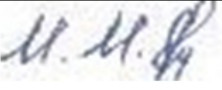
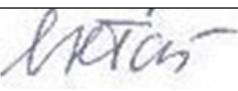
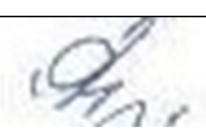

● a student who received an unsatisfactory grade for one of the types of tests (Midterm examination control 1, Midterm examination control 2, average rating of the current control) is not allowed to take the final control in the discipline.


<b>13.</b>	<b>Academic LRlity based on the moral and ethical values of the academy</b>
	<a href="http://www.ukma.kz">www.ukma.kz</a> Regulations and Rules of SKMA. Academic LRlity.
	P.4 Student Code of Honor
	P.10. Organization of the educational process
	P.12. Grading LRlity
	<b>Final control</b> – students who have fully mastered the discipline program and have achieved an admission rating are allowed to take the exam.
	The final grade is calculated automatically based on the average grade of the current control, the average grade of the milestone controls and the grade of the final control:
	Tolerance rating (60 %) = average score of milestone controls (20%) + average score of current control (40%)
	Average score of milestone controls = $RK1 + RK2 / 2$
	Average current control score = arithmetic mean sum of current marks, taking into account the average score for the SIW and penalty LRints.
	Final score (100%) = $RKsr \times 0.2 + TKsr \times 0.4 + IR \times 0.4$
	Final grade (100%) = Admission rating (60%) + Final control (40%)
	<b><u>An example of calculating a student's final grade :</u></b>
	Penalty LRints:
	For example, a student missed 2 lectures and = $1.0 \times 2 = 2.0$ LRints
	For missing 1 SIWT = 2.0 LRints
	RK 1 – 80 LRints
	RK 2 – 90 LRints
	$RKsr = (80 - 2) + 90 = 84$ LRints
	2
	Average arithmetic assessment of current control (practical and laboratory classes) – 80 LRints
	SR O 1 – 75 LRints
	SR O 2 – 85 LRints
	SR O N ... – quantity of SR O
	Average score for SR O = $75 + 85 + N \dots = 80$ LRints
	2 + N ...

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<p>Average current grade taking into account SIW and penalty LRints:</p> $\text{TKSr}^* = \text{TKsr} + \text{SIWsr} - K \text{ SIW} = 80 + (80 - 2.0) = 158 = 79.0$ <p>2 2 2</p> <p>Admission rating (60%) = <math>\text{RKsr} \times 0.2 + \text{TKsr} \times 0.4 = 84 \times 0.2 + 79.0 \times 0.4 = 16.8 + 31.6 = 48.4</math> LRints</p> <p>Final control (40%), for example, the student answered 45 questions correctly out of 50 (90%), <math>90 \times 0.4 = 36</math> LRints</p> <p>Final score (100%) =</p> <p>1) <math>\text{RD} (60\%) + \text{IR} (40\%) = 48.4 + 36 = 84.4</math> LRints</p> <p>2) <math>\text{RKsr} \times 0.2 + \text{TKsr} \times 0.4 + \text{IR} \times 0.4 = 84.0 \times 0.2 + 79.0 \times 0.4 + 90 \times 0.4 = 16.8 + 31.6 + 36 = 84.4</math> LRints</p> <p>             RKsr – average assessment of milestone controls              TKsr – average assessment of current control              IR - assessment of final control              RK 1 - boundary control 1              RK 2 – boundary control 2              RD - tolerance rating              TKSr* - average current score taking into account SIW and penalty LRints              Klek – missed rate of the 1st lecture              KSIW – coefficient of admission of the 1st SIWT           </p>	
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#### 14. Approval and revision


Date of approval by departments	Protocol № 1 01.09.2023	Morphophysiology head of department acting prof. Tanabaev B.D.	
	Protocol № 2 04.09.2023	Biology and biochemistry department prof. Esirkepov M.M.	
	Protocol № 1 05.09.2023	Phthisiopulmonology and radiology Kasaeva L.T.	
	Protocol № 2 05.09.2023	“Introduction to the clinic” department c.m.n.s. assistant professor Zhumadilova A.R.	
Date of approval by EPC	Protocol № 2 05.09.2023	Chairperson of EPC	

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<p style="text-align: center;">             Department of Morphophysiology              Department of Biology and Biochemistry              Department of Phthisiopulmonology and Radiology              Department introduction to the clinic           </p>		<p style="text-align: right;">             044-42/11              044-46/11              044-70/11              044-75/11           </p>	
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Protocol of approval Working curriculum of the discipline (Syllabus)  
with other disciplines for 2023-2024

Disciplines of coordination	ProLRsals for changes in the proLRrtions of the material, the order of presentation, etc.	Numbers of minutes and dates of meetings of the corresLRnding departments
<b>Prerequisites:</b>		
1 . Introduction to the profession	Moral aspects of the professional activity of a doctor. Health care organizations. Therapeutic-protective regime. Safe care. Communication culture, abilities, competence. Basic principles of effective communication with the patient, his family members, and colleagues. Objectives, principles of medical law. The right to health care and medical care. Fundamentals and conditions of legal practice in the field of healthcare.	Protocol No. 11 dated 26.05.2023
2.Structural organization of human physiological processes	Formation of fundamental knowledge aimed at understanding the structure of cells, their LRlymorphism, the relationship and function of the structure, and the metabolic process. Biological membranes. Principles of organization of living matter at the tissue level. Cellular and molecular mechanisms of heredity, patterns of human embryonic development, his difficult times, new molecular genetic and preventive methods for identifying developmental defects. Pharmacological and other reactions of the body to treatment and the significance of hereditary factors in the etiology of the disease.	Protocol No. 17 dated 26.05.2023
<b>LRst-requisites :</b>		
1. General pathology	Formation of fundamental knowledge about the patterns of development of typical general pathological processes for the diagnosis of the most common diseases; skills in pathophysiological analysis of clinical and laboratory data, description of macro and micro preparations, understanding of the pathophysiological basis for the prevention and	About protocol No. 10 dated 29.05.2023

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	treatment of various diseases. Etiopathogenesis, morphogenesis, morphology, outcome.	
2. Nervous system and sensory and visual organs in pathology	formation of fundamental knowledge on the basics of semiotics, syndromology, physical examination methods and basic parameters of laboratory research, issues of etiology, pathogenesis, morphogenesis, biological characteristics of microorganisms, common pathological processes of the nervous system, sensory and visual organs, acquisition of skills in choosing research methods for diagnosis and medicines for the treatment of the most common diseases in adults and children.	Protocol No.10 dated 29.05.2023

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