


<p style="text-align: center;"> ОҢТҮСТІК ҚАЗАҚСТАН MEDISINA AKADEMIASY «Оңтүстік Қазақстан медицина академиясы» АҚ </p>			<p style="text-align: center;"> SOUTH KAZAKHSTAN MEDICAL ACADEMY АО «Южно-Казахстанская медицинская академия» </p>
<p style="text-align: center;"> Department of Normal Anatomy Department of Normal and Pathological Physiology Department of Pathological Anatomy and Histology Department of Biology and Biochemistry Department of Phthisiopulmonology and Radiology </p>		<p style="text-align: right;"> 044-42/11 044-53/11 044-63/11 044-46/11 044-70/11 1 page of 24 </p>	
<p style="text-align: center;"> Syllabus on the discipline “ Normal musculoskeletal system and skin ” Educational program: "Dentistry" </p>			

Syllabus


Department of Normal Anatomy
 Department of Normal and Pathological Physiology
 Department of Pathological Anatomy and Histology
 Department of Biology and Biochemistry
 Department of Phthisiopulmonology and Radiology

Educational program: 6 B 1 0 1 17 “Dentistry”

Working curriculum (Syllabus) of the discipline

“ The musculoskeletal system and skin are normal ”

The musculoskeletal system and skin are normal			
1.	General information about the discipline		
1.1	Discipline code: ODAKN 2211	1.6	Academic year: 2023-2024
1.2	Name of the discipline: “ Normal musculoskeletal system and skin ”	1.7	Course: 2
1.3	Prerequisites: introduction to the profession, structural organization of human physiological processes	1.8	Semester : 3
1.4	Postrequisites: general pathology, musculoskeletal system and skin.	1.9	Number of credits (ECTS):5
1.5	Cycle: DB	1.10	Component : VK
2.	Description of the discipline		
And the study of the morphofunctional features of the musculoskeletal system and skin, its topical basis for physical diagnosis. Biomechanisms of excitability and contractility occurring in muscles in conjunction with the skeleton, the phenomenon of movement. Knowledge of the macroscopic and microscopic structure of bones, joints, muscles. Visual methods studies of the musculoskeletal system. Morphophysiology of the maxillofacial region, tooth. X-ray anatomy of the tooth			
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		
To develop in students systematic knowledge about the morpho-functional characteristics of the human body and its constituent systems, providing further training at clinical departments to master the professional skills of a dentist; to form students' knowledge about macro-functional morphology of the structure and development of human organ systems, and especially the organs of the oral cavity, which provide the basis for the study of clinical disciplines and contribute to the formation of medical thinking.			
5.	Final learning outcomes (RO disciplines)		
PO1	Demonstrates knowledge of the general patterns of structure and functioning of the musculoskeletal system and skin, their regulatory mechanisms, and the chemical composition and biological functions of bones and skin ;		
PO2	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.		
PO3	Finds and distinguishes anatomical structures of the musculoskeletal system and skin in adults and children based on the results obtained (x-ray, fluorographic, ultrasound, computed tomography, magnetic resonance imaging)		
PO4	Applies knowledge of the structure and topography of organs and systems to master the skills of physical examination and provision of first aid.		

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5.1	RO disciplines	EP learning outcomes with which RO disciplines are associated
	PO1	PO1 Demonstrate and apply knowledge and skills in the field of biomedical, clinical, epidemiological, socio-behavioral sciences, contributing to the formation of a versatile personality with a broad outlook and culture of thinking
	PO2	RO 2 Analyze patterns of growth and development, the structure of the body in normal and pathological conditions, to understand the mechanisms of development of dental diseases
	PO3	LO 3 Demonstrate interpersonal and communication skills resulting in effective information exchange and collaboration with patients, their families and health care providers, including the use of information technology
	PO4	LO4 Provide effective patient-centered care that includes appropriate and effective interventions aimed at diagnosing, treating and preventing dental diseases

6.	Detailed information about the discipline					
6.1	The location of the department is Shymkent, sq. Al-Farabi 1, main academic building, ground floor; pl. Al-Farabi 3 , educational building No. 2.4 – 5 floor internal tel. – 40-82-22, 40-82-26 (263), e - mail anatomy.2012@mail.ru . Email address: www.ukma.kz ; building No. 1, 4 – floor, biology_biochemistry@mail.ru, tel. 40-82-06 (227); st. Kurmanbekova b/n , State Public Enterprise at the Regional Clinical Hospital of the Health Department. Ophthalmology Department , email address: el_nur2@mail.ru ; st. Zhandosova, 92/9 (modular) Shymkent City Multidisciplinary Hospital, No. 2, email address – klinika_skma@mail.ru .					
6.2	Number of hours	Lectures	Pract. zan.	Lab. Zan.	SRO P	SRO
		10	40	-	thirty	70


6.3 Discipline study plan

		1	2	3	4	5	6	7	8	9	10	11	12	13	14
Anatomy	Lecture	1					1			1	1				
	Practical work	2		2		2	1	2		2	1	2		2	
	SROP/SRO	2	1	1		2		1		2		2			1
Physiology	Lecture		1					1							
	Practical work	1	1		1		1		1		1		1	1	
	SROP/SRO				1		1		1		1		1		1
Histology	Lecture			1					1						
	Practical work		1	1	1	1		1	1			1	1		
	SROP/SRO		1	1			1				1	1		1	
Biochemistry	Lecture				1										
	Practical work		1				1			1			1		
	SROP/SRO				1				1				1		
Basics of radiology diagnostics	Lecture					1									
	Practical work				1				1		1			1	
	SROP/SRO			1				1					1		

7.	Information about teachers				
No.	FULL NAME	Degrees and position	Email address	Scientific interests, etc.	Achievements
1.	Tanabaev Baymakhan Dilbarkhanovich	head of the department , acting prof.	b.tanabayev@mail.ru	The direction of scientific research is “Macro-microhemocirculatory bed of the pelvic organs during	Gives lectures and conducts practical classes on anatomy in

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				ligation of the internal iliac arteries.”	Kazakh and Russian.
2.	Murzanova DinarAlpenovna	Ph.D., Acting professors	dina.murzanova@gmail.com	The direction of scientific research is “Adam anatomy of the world”.	Gives lectures and conducts practical classes on anatomy in Kazakh , Russian and English.
3.	Turekulova Akzharkyn Kenesovna	Senior. teacher, master	jarkin-74@mail.ru	The direction of scientific research is “Ystyk climate zhagdayynda korgasynyn arterial main lines kabyrgasynyn kurylymyna tigitetin aseri.”	Gives lectures and conducts practical classes on anatomy in the Kazakh language.
4	Ospanov Daken Tolenovich	Senior. teacher	dakenospanov@list.ru		Gives lectures and conducts practical classes in anatomy in Kazakh and Russian .
5	Dzhubanishbaeva Gaukhar Niyazkulovna	Senior. teaching tel , master	gaukharai_kairat@mail.ru	Direction of scientific research – “MOMS endiru barysyndagy profilaktikalyk zhumysynyn maselelerin aykyndau”	Gives lectures and conducts practical classes on anatomy in the Kazakh language.
6	Tagay Akniet	Teacher	Tagay_Akniet@mail.ru		conducts practical classes in anatomy in English languages.
7	Kylyshbekova Zhuldyzay Talgatbekovna	Teacher	k.juldiz17@gmail.com		conducts practical classes in anatomy in English languages
1.	Sisabekov Kasymkhan Ermekbaevich	Professor, Doctor of Medical Sciences	sisabekov 47@mail.ru	“Neuroimmunogenesdin zhergilikty mechanismderinin morphology and negligence.”	Gives lectures and conducts practical classes on histology in Kazakh and Russian.
2.	Zhumashev Seidaly Nurakhovich	Acting professor, doctor of medical sciences	sult_med@mail.ru	Scientific direction : “Study of the morphological structure of hemo-immunopoiesis”	Gives lectures and conducts practical classes on histology in Kazakh and Russian.
3 .	Toimbetova Karlygash Abibullaevna	senior teacher	tojmbetova71 @ mail . ru	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	Galiya_074@mail.ru	“The influence of bioslastilin on the processes of lipid peroxidation in hepatocytes and blood plasma during phosphorus intoxication” Takypyp Boyynsha Zhumysy	Author of 35 scientific publications, prepared 1 pre-patent, 1 patent .

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				Zhurgizedi, candidate of dissertation of Korgada.	
2.	Satybaldieva Nazgul Mutalkhanovna	master, senior teacher	n_a_z_i_92@mail.ru	Conducts research work on the topic “Tynyszhuyesiaurularynantuyn daitynmugedektiktinaleumettik-medicinalykmaseleleri”. Author of 11 scientific publications.	Gives lectures and conducts practical classes in physiology in Kazakh and Russian.
3.	Murina Natalya Mikhailovna	senior teacher	namuri12@mail.ru	Author of 9 scientific publications.	Gives lectures and conducts practical classes in physiology in Kazakh and Russian.
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.	Senior 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.	Umiraliyev Aset Amiraliyevich	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

8.	Thematic outline of the lecture							
Day	Lesson form	Topic name	Summary	RO	Nu	Forms/metho	Forms/	

				mod ule	mbe r of hou rs	ds/ Technologies training	assessment methods	
1	Anatomy. Lecture.1	Subject and tasks of anatomy. General characteristics of tissues, organs, body systems. General anatomy of the musculoskeletal system.	Anatomy is a fundamental science of medicine. Basic tasks of anatomy. Types of fabrics. The concept of organs and systems of the body. Components of the musculoskeletal system. Chemical composition of bone. Structural unit of bone. Classification of bones. Bones of the trunk and limbs.	PO1 PO2	1	Introductory lecture	Feedback	
	Anatomy. Lecture.2	General overview of the head bones. Bones of the brain and facial skull. Anatomy and topography of the skull as a whole. Development of the human skull. Age, gender and typical features of the structure of the human skull.	The structure of the bones of the brain and facial skull. Age and gender characteristics of the skull. Newborn skull. Fontanelles. Changes in the skull after birth.	PO1 PO2	1	Review lecture	Feedback	
	Anatomy. Lecture 3	Concept of bone joints. Development of connections. Types of bone joints. Classification of bone joints.	Types of bone connections. Biomechanics of joints. Development of connections. Classification of joints.	PO1 PO2	1	Review lecture	Feedback	
	Anatomy. Lecture.4	General myology. Muscle as an organ. Classification of muscles. Accessory apparatus of muscles. Biomechanics of muscles.	Muscle structure. Muscle as an organ. Classification of muscles. Auxiliary apparatus of muscles. Muscle work.		1	Review lecture	Feedback	
	Physiology Lecture. 1	General characteristics of physiology as a science. Physiology of excitable tissues .	Physiology as the science of the functioning (life activity) of a healthy organism. Physiology of excitable tissues. Resting potential. Local response. Action potential. Membrane - ion theory of their origin . Refractoriness. Features of the processes of excitation and inhibition . Parabiosis .	OH1	1	Overview	Answers to security questions	
	Physiology Lecture. 2	Physiological properties of muscles .	The mechanism of muscle contraction and relaxation. Morphophysiological features of smooth muscles . Physiological properties of skeletal, cardiac and smooth muscles.	HE 1	1	Overview	Answers to security questions	

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Histology. Lecture No. 1	Connective tissues.	Classification of connective tissues. Cellular elements of PBST. Types of fibers. Intercellular matrix.	PO1	1	overview	Answers to security questions
Histology Lecture No. 2	Leather and its derivatives.	Tissue composition of different layers of skin. Source of development and function of epidermal cell differentials. Features of the structure of keratinocytes.	PO1	1	overview	Answers to security questions
Biochemistry Lecture No. 1	Biochemistry of tissues	Biochemistry of connective tissue. Biochemistry of bone tissue. Biochemistry of muscle tissue.	PO1	1	Overview	Feedback Questions
Radiation diagnostics Lecture 1	X-ray methods for examining the osteoarticular system	Basic visual methods for studying the musculoskeletal system. Types of radiation diagnostics of the osteoarticular system. Features of the bone -c articular system	PO3 PO4	1	Overview - illustrative	Feedback
				10		
Practical lesson.						
Anatomy. Practical lesson 1.	International anatomical nomenclature. The concept of axes and planes. General overview of the skeleton. The structure of the bones of the body: vertebrae, sternum, ribs.	Anatomical nomenclature. Planes and axes. Skeleton of the body. Spinal column. Rib cage. Features of the structure of the vertebrae. The structure of the sacrum, coccyx, ribs, sternum.	PO1 PO2	2	work in small groups with anatomical preparations, torsos, dummies, tables, tablets, posters. Working on the interactive anatomical table “Pirogov”	oral questioning with demonstrati on of anatomical structures on wet preparations , models, torsos, tablets, tables , posters, interactive anatomical table “Pirogov” .
Anatomy. Practical lesson 2	The structure of the bones of the shoulder girdle and the free part of the upper limb. The structure of the bones of the pelvic girdle and the free part of the lower limb.	Bones of the shoulder girdle. The structure of the scapula and clavicle. Skeleton of the free part of the upper limb. Bones of the pelvic girdle. The structure of the pelvic bone. Bones of the free part of the lower limbs.	PO1 PO2	2	work in small groups with anatomical preparations, torsos, dummies, tables, tablets, posters. Working on the interactive anatomical table “Pirogov”	oral questioning with demonstrati on of anatomical structures on wet preparations , models, torsos, tablets, tables , posters,



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							interactive anatomical table “Pirogov” .	
	<i>Anatomy . Practical lesson 3.</i>	The structure of the bones of the brain and facial skull.	Paired and unpaired bones of the brain skull. The structure of the frontal, sphenoid, occipital, parietal, ethmoid, temporal bones. Paired and unpaired bones of the facial skull. The structure of the upper jaw, palatine bones, inferior turbinates, vomer, nasal, lacrimal, zygomatic bones, lower jaw, hyoid bone.	PO1 PO2	2	work in small groups with anatomical preparations, torsos, dummies, tables, tablets, posters. Working on the interactive anatomical table “Pirogov”	oral questioning with demonstration of anatomical structures on wet preparations , models, torsos, tablets, tables , posters, interactive anatomical table “Pirogov” .	
	<i>Anatomy. Practical lesson 4</i>	Topography of the skull. Skull as a whole. Age characteristics.	Skull as a whole. Topography of the cerebral part of the skull. Topography of the facial part of the skull. Vault of the skull. Internal and external base of the skull. Age-related features of the skull .	PO1 PO2	1	work in small groups with anatomical preparations, torsos, dummies, tables, tablets, posters. Working on the interactive anatomical table “Pirogov”	oral questioning with demonstration of anatomical structures on wet preparations , models, torsos, tablets, tables , posters, interactive anatomical table “Pirogov” .	
	<i>Anatomy. Practical lesson 5</i>	Connections of the bones of the head and torso: structure and functions.	Connections of the bones of the skull. Structure and function of the temporomandibular joint. Connections of the bones of the body. Vertebral connections. Connections of the sacrum with the coccyx. Structure and function of the sacroiliac joint. Connections between the spinal column and the skull. Structure and function of the atlanto-occipital, mid-atlanto-axial joints. Spinal column. Connections between the ribs and the spinal column. The chest as a whole.	PO1 PO2	2	work in small groups with anatomical preparations, torsos, dummies, tables, tablets, posters. Working on the interactive anatomical table “Pirogov”	oral questioning with demonstration of anatomical structures on wet preparations , models, torsos, tablets, tables , posters, interactive anatomical table “Pirogov” .	



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<i>Anatomy. Practical lesson 6</i>	Connections of the bones of the shoulder girdle and the free part of the upper limb: structure and functions. Connections of the bones of the pelvic girdle and the free part of the lower limb: structure and functions.	Connections of the bones of the pleural girdle. The structure and functions of the sternoclavicular, acromioclavicular joints. Connections of the bones of the free part of the upper limb. The structure and functions of the shoulder, elbow, and wrist joints. Connections of the bones of the hand. Connections of the bones of the pelvic girdle. The structure and functions of the sacroiliac joint, pubic symphysis. Pelvis as a whole. Connections of the bones of the free part of the lower limb. The structure and functions of the hip, knee joints, joints of the leg bones, foot bones. The foot as a whole.	PO1 PO2	2	work in small groups with anatomical preparations, torsos, dummies, tables, tablets, posters. Working on the interactive anatomical table “Pirogov”	oral questioning with demonstration of anatomical structures on wet preparations , models, torsos, tablets, tables , posters, interactive anatomical table “Pirogov” .
<i>Anatomy. Practical lesson 7</i>	Muscles and fascia of the head and neck: structure, topography and functions.	Muscles and fascia of the head and neck. Structure, topography and functions of masticatory and facial muscles.	PO1 PO2	1	work in small groups with anatomical preparations, torsos, dummies, tables, tablets, posters. Working on the interactive anatomical table “Pirogov”	oral questioning with demonstration of anatomical structures on wet preparations , models, torsos, tablets, tables , posters, interactive anatomical table “Pirogov” .
<i>Anatomy. Practical lesson 8</i>	Muscles and fascia of the trunk: structure, topography and functions. Blood supply, venous outflow, innervation.	Muscles and fascia of the back. Muscles and fascia of the chest. Muscles and fascia of the abdomen. Diaphragm. Blood supply, venous outflow, innervation.	PO1 PO2	2	work in small groups with anatomical preparations, torsos, dummies, tables, tablets, posters. Working on the interactive anatomical table “Pirogov”	oral survey with demonstration of anatomical structures on wet preparations , models, torsos, tablets, tables , posters, interactive anatomical table “Pirogov” .



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Anatomy. Practical lesson 9	Muscles and fascia of the shoulder girdle and the free part of the upper limb: structure, topography and functions. Muscles and fascia of the pelvic girdle and the free part of the lower limb: structure, topography and functions. Leather and its derivatives.	Muscles of the pleural girdle. Shoulder muscles. Forearm muscles. Muscles of the hand. Structure, topography and functions. Muscles of the pelvic girdle. Thigh muscles. Calf muscles. Muscles of the foot. Structure, topography and functions. Leather. Hair. Nail. Sebaceous glands. Sweat glands.	PO1 PO2	2	work in small groups with anatomical preparations, torsos, dummies, tables, tablets, posters. Working on the interactive anatomical table "Pirogov"	oral questioning with demonstration of anatomical structures on wet preparations, models, torsos, tablets, tables, posters, interactive anatomical table "Pirogov" .
Physiology. Practical lesson 1	Physiology of excitable tissues. Excitability parameters.	Lability. Excitation threshold. Chronaxia. Parameters of excitability of various tissues.	PO1	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
Physiology. Practical lesson 2	Biopotentials.	Bioelectric phenomena in living tissues. Resting potential. Action potential. Refractoriness.	PO1		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
Physiology. Practical lesson 3	Parabiosis. Optimum and pessimum of frequency and strength of irritation.	Parabiosis. Optimum and pessimum of frequency and strength of irritation.	PO1		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
Physiology. Practical lesson 4	Physiological properties of skeletal and smooth muscles.	Physiological properties of striated, smooth and cardiac muscles. Morphophysiological properties of smooth muscles.	PO1	1	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
Physiology.	Types of muscle	Types of muscle	PO1	1	discussion of	Oral



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Practical lesson. 5	contractions. The mechanism of muscle contractions.	contractions. The mechanism of muscle contractions.			the main issues of the topic , performing test tasks, solving situational problems	questioning, assessment of test task performance and situational problem solving
Physiology. Practical lesson. 6	Muscle work. Muscle fatigue. Work and fatigue of the masticatory muscles.	Muscle work. Work and fatigue of the masticatory muscles.	PO1	1	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
Physiology. Practical lesson. 7	Functions of the skin. Sweating.	Functions of the skin. Sweating.	PO1		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
Physiology. Practical lesson. 8	Tactile analyzer.	Tactile analyzer. Adaptation of skin receptors.	PO1	1	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
Histology. Practical lesson No. 1	Loose, unformed fibrous connective tissue .	Principles of classification of connective tissues. Cellular elements of PBST and their function. Types of connective tissue fibers. Chemical composition, function and origin of the main amorphous substance.	PO1 PO2	1	Work in small groups, checklist of histological specimens, microphotographs	Practical lesson assessment checklist.
Histology . Practical lesson No. 2.	Connective tissues with special properties . Erekshe kasietteri bar daneke tindi.	Reticular connective tissue. Pigmented, white and brown adipose tissue, mucous tissue. Location, functional significance	PO1 PO2	1	Work in small groups, checklist of histological specimens, microphotographs	Practical lesson assessment checklist.
Histology. Practical lesson No. 3	Cartilage tissue	Identify the types of cartilaginous tissues by the structural features of the intercellular substance and know the histofunctional	PO1 PO2	1	Work in small groups, checklist of histological specimens,	Practical lesson assessment checklist.




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			features.			microphotographs	
Histology. Practical lesson No. 4	Bone tissue.	Distinguish lamellar bone tissue from coarse fibrous tissue and know their histofunctional features.	PO1 PO2	1	Work in small groups, checklist of histological specimens , microphotographs	Practical lesson assessment checklist.	
Histology. Practical lesson No. 5	Skeletal muscle tissue.	Sources of development. The structure of skeletal muscle as an organ. Features of the structure of myofibrils. Sarcomere. Methods of skeletal muscle regeneration.	PO1 PO2	1	Work in small groups, checklist of histological specimens, microphotographs	Practical lesson assessment checklist.	
Histology. Practical lesson No. 6	Cardiac muscle tissue.	Sources of development. The structure of cardiac muscle tissue. Features of the structure of myofibrils.	PO1 PO2	1	Work in small groups, checklist of histological specimens, microphotographs	Practical lesson assessment checklist.	
Histology. Practical lesson No. 7	Leather.	Source of skin development. General plan of the structure and tissue composition of the skin. Differentons of epidermal cells. Features of the structure of “thin” and “thick” skin.	PO1 PO2	1	Work in small groups, checklist of histological specimens, microphotographs	Practical lesson assessment checklist.	
Histology. Practical lesson No. 8	Skin glands.	Structural and functional features of the sebaceous and sweat glands of the skin.	PO1 PO2	1	Work in small groups, checklist of histological preparations and microphotographs	Practical lesson assessment checklist.	
Biochemistry Practical lesson No. 1	Biochemistry of connective tissue.	Features of the structure and functions of connective tissue. Organic and inorganic composition of connective tissue. Collagen, elastin. Composition, synthesis, structures. Scleroproteins of connective tissue and skin. Glycosoamine glycans and proteoglycans of connective tissue. Structural organization of the intercellular matrix and basement membranes. Metabolism in connective tissue.	PO1 PO2	1	with seminar , situational tasks	Check list	
Biochemistry Practical lesson No. 2	Biochemistry of bone tissue.	Bone tissue proteins. Bone enzymes. Carbohydrates, lipids and other organic	PO1 PO2	1	with seminar , situational tasks , testing	Check list	

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			compounds of bone tissue. Bone minerals. Features of metabolism in bone tissue.				
Biochemistry Practical lesson No. 3	Biochemistry of muscle tissue.	Structural organization and characteristics of the chemical composition of muscle tissue. Muscle proteins. Sarcoplasmic and myofibrillar proteins. Features of energy metabolism in muscles.	PO1 PO2	1	seminar , situational tasks _	Check list	
Biochemistry Practical lesson No. 4	Biochemical mechanism of contraction and relaxation of muscle tissue.	Biochemical mechanism of contraction and relaxation of muscle tissue.	PO1 PO2	1	with seminar , situational tasks , testing.	Check list	
Basics of educational diagnostics Practical lesson No. 1	Radiation diagnostics of the musculoskeletal system . X-ray of the osteoarticular system. Electroradiography of the musculoskeletal system .	Radiation anatomy of the musculoskeletal system. Basic and additional research methods X-ray of the osteoarticular system. Electroradiography musculoskeletal system.	R O 3 R O 4	1	discussion , work with provided radiological images	verbal questioning, description of images, solving test tasks, solving crossword puzzles, working with radiological images	
Basics of educational diagnostics Practical lesson No. 2	Linear tomography musculoskeletal system . Computed tomography . Magnetic resonance tomography . Radionuclide naya diagnostics . Ultrasound diagnostics musculoskeletal system	Linear tomography of the musculoskeletal system. CT scan. Magnetic resonance imaging. Radionuclide diagnostics. Ultrasound diagnostics of the musculoskeletal system.	R O 3 R O 4	1	discussion , work with provided radiological images	verbal questioning, description of images, solving test tasks, solving crossword puzzles, working with radiological images	
Basics of educational diagnostics Practical lesson No. 3	Radiation diagnostics of the upper jaw and teeth.	Radiation diagnostics of the upper jaw, teeth. Methods of visual examination of the upper jaw and teeth. Peculiarities.	RO 1	1	discussion , work with provided radiological images	verbal questioning, description of images, solving test tasks, solving crossword puzzles, working	

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							with radiological images	
	Basics of educational diagnostics Practical lesson No. 4	Radiation diagnostics of the lower jaw and teeth.	Radiation diagnostics of the lower jaw and teeth. Basic methods of visual diagnostics.	RO 2	1	discussion , work with provided radiological images	verbal questioning, description of images, solving test tasks, solving crossword puzzles, working with radiological images	
					40			
	Anatomy of SROP/SRO 1	Determining whether paired bones belong to the right or left half of the skeleton.	Skeletal bones. Paired skeleton bones.	PO1 PO2	2	Working with educational literature, passing the SRO in the form of: - presentation - execution of the diagram of the course and area of innervation of the nerves	Oral survey. Evaluation sheets for all forms of completed assignments .	
	Anatomy. SROP/SRO 2	Topography of the facial part of the skull.	Eye socket. Nasal cavity. Bone (hard) palate, temporal fossa, infratemporal fossa. Pterygopalatine fossa.	PO1 PO2	1	Working with educational literature, passing the SRO in the form of: - presentation - execution of the diagram of the course and area of innervation of the nerves	Oral survey. Evaluation sheets for all forms of completed assignments .	
	Anatomy. SROP/SRO 3	Canals of the temporal bone.	Sleepy channel. Musculo-tubal canal. Facial canal. Drum canal. Mastoid canal.	PO1 PO2	1	Working with educational literature, passing the SRO in the form of: - presentation - execution of the diagram of the course and area of	Oral survey. Evaluation sheets for all forms of completed assignments .	



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						<i>innervation of the nerves</i>	
<i>Anatomy. SROP/SRO4.</i>	Simulation of joint movements.	Characteristics of joints. Basic and auxiliary elements of joints. Biomechanics of joints.	PO1 PO2	2	Working with educational literature, passing the SRO in the form of: - <i>presentation</i> - <i>execution of the diagram of the course and area of innervation of the nerves</i>	Oral survey. Evaluation sheets for all forms of completed assignments .	
<i>Anatomy. SROP/SRO5</i>	Frontier control -I.	Consolidation of the material covered on the topics of lectures, practical classes, SROP and SRO	PO1 PO2	1	Working with educational literature, passing the SRO in the form of: - <i>presentation</i> - <i>execution of the diagram of the course and area of innervation of the nerves</i>	Oral survey. Evaluation sheets for all forms of completed assignments .	
<i>Anatomy. SROP/SRO6</i>	Practical meaning of neck triangles. Blood supply, venous outflow, innervation of the muscles of the head and neck.	Neck triangles. Borders and contents of triangles. Blood supply, venous outflow, innervation of the muscles of the head and neck.	PO1 PO2	2	Working with educational literature, passing the SRO in the form of: - <i>presentation</i> - <i>execution of the diagram of the course and area of innervation of the nerves</i>	Oral survey. Evaluation sheets for all forms of completed assignments .	
<i>Anatomy. SROP/SRO 7</i>	Linea alba. Sheath of the rectus abdominis muscle. Inguinal canal. Blood supply, venous outflow, innervation.	Structure, topography and function. Formation of the white line of the abdomen, its practical significance. Inguinal rings . Walls of the inguinal canal . Blood supply, venous outflow, innervation.	PO1 PO2	2	Working with educational literature, passing the SRO in the form of: - <i>presentation</i> - <i>execution of the diagram of the course and area of innervation of the nerves</i>	Oral survey. Evaluation sheets for all forms of completed assignments .	




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Anatomy. SROP/SRO 8	Frontier control -II.	Consolidation of the material covered on the topics of lectures, practical classes, SROP and SRO	PO1 PO2	1	Testing.	Testing.
Physiology of SROP/SRO 1.	Types of muscle contraction.	Single reduction. Smooth and serrated tetanus.	RO 1	1	Preparation and defense of presentations.	Checklist for SRO assessment
Physiology of SROP/SRO 2.	The mechanism of muscle contraction and relaxation.	Interaction of actin and myosin filaments.	RO 1	1	Preparation and defense of presentations.	Checklist for SRO assessment
Physiology of SROP/SRO 3.	Bulshykettin hypertrophy and atrophy. Muscle hypertrophy and atrophy.	Working hypertrophy and muscle atrophy.	RO 1	1	Preparation and defense of presentations.	Checklist for SRO assessment
Physiology of SROP/SRO 4.	The effect of vitamins on bone growth.	Vitamins and their types . Significance in the life of the body . Need for vitamins . Vitamins affecting bone remodeling .	RO 1	1	Preparation and defense of presentations.	Checklist for SRO assessment
Physiology of SROP/SRO 5.	The importance of water and salts in the body.	Basic principles of exchange of mineral salts and water. Intracellular fluid. Tissue or interstitial fluid. Sodium, potassium, calcium values.	RO 1	1	Preparation and defense of presentations.	Checklist for SRO assessment
Physiology SROP/SRO 6	Skin receptors	Types of cutaneous receptors: corpuscles (Vater-Pacini), corpuscles (Meissner) , Ruffini corpuscles .	RO 1	1	Preparation and defense of presentations.	Checklist for SRO assessment
Histology. SROP/SRO1.	Dense fibrous connective tissue . Tygыз talshykty daneker tin.	Cellular elements of PVST and their function. Types of connective tissue fibers. Localization in the body, functional significance	PO1 PO2	1/2	Work in small groups, defending a presentation, compiling a glossary .	Checklist for SRO assessment
Histology. SROP/SRO2	Cartilage. Regeneration. Shemirshek. Regeneration	Age -related characteristics of cartilage tissue. Mechanism of regeneration of cartilage tissue. Implications for medicine.	PO1 PO2	1	Work in small groups, defending a presentation, compiling a glossary .	Checklist for SRO assessment
Histology. SROP/SRO3.	Restructuring of bone, factors influencing its structure. Connection of bones.	Factors influencing bone remodeling, types of bone connections . Implications for medicine.	PO1 PO2	1/2	Work in small groups, defending a presentation, compiling a glossary .	Checklist for SRO assessment
Histology. SROP/SRO4.	Possibilities of regeneration of cardiac muscle tissue.	Physiological properties of the heart muscle . The mechanism of muscle contraction and relaxation.	PO1 PO2	1/2	Work in small groups, defending a presentation,	Checklist for SRO assessment

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			Features of regeneration of cardiac muscle tissue.			compiling a glossary .	
	Histology. SROP/SRO5.	Muscle tissues of epidermal and neural origin .	Physiological properties of smooth muscles . The mechanism of muscle contraction and relaxation.	PO1 PO2	1/2	Work in small groups, defending a presentation, compiling a glossary .	Checklist for SRO assessment
	Histology SROP/SRO 6	The structure of hair and nails.	Features of the structure of hair and nail structures.	PO1 PO2	1/1	Work in small groups, defending a presentation, compiling a glossary .	Checklist for SRO assessment
	Biochemistry SROP/SRO 1	Structural organization of the intercellular matrix and basement membranes.	Structural organization of the intercellular matrix and basement membranes. Changes in connective tissue during aging and collagenosis.	PO1 PO2	1	essay, presentation, glossary	checklist for SRO assessment.
	Biochemistry SROP/SRO 2	Biochemistry of bone tissue.	Formation and maintenance of bone tissue structure. Biochemical changes in bone tissue during pathology.	PO1 PO2	1	essay, presentation, glossary	checklist for SRO assessment .
	Biochemistry SROP/SRO 3	Non-muscle contractile proteins and cellular motility.	Muscle extractives, biological role. Non-muscle contractile proteins and cellular motility. Biochemical changes in muscular dystrophies and muscle denervation. Creatinuria.	PO1 PO2	1	analysis of scientific articles on the topic, glossary	checklist for assessing SRO , assessing understanding, ability to analyze a scientific article and the formation of certain scientific concepts
	Fundamentals of educational diagnostics SROP/SRO 1	Ultrasound of the osteoarticular system. Basic and additional research methods	Ultrasound of the osteoarticular system. Basic radiological methods for studying the musculoskeletal system. Types of radiation diagnostics of the osteoarticular system. Features of the bone -c articular system	PO1	1	preparing presentations, composing crosswords, test tasks, situational tasks , working with radiological images	defending presentations, solving crossword puzzles, test tasks, situational tasks , working with radiological images .
	Basics of educational diagnostics SROP/SRO2	Radiation diagnostics of the upper jaw and teeth. Basic and additional research methods	Radiation diagnostics of the upper jaw and teeth. Methods of radiation examination of the upper jaw and teeth. Peculiarities.	PO1	1	preparing presentations, composing crossword puzzles, test	defending presentations, solving crossword puzzles, test

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						tasks, situational tasks , working with radiological images	tasks, situational tasks , working with radiological images .	
	Basics of educational diagnostics SROP/SRO3	Radiation diagnostics of the lower jaw and teeth. Basic and additional research methods	Radiation diagnostics of the lower jaw and teeth. Basic methods of visual diagnostics. Methods for visual examination of the lower jaw and teeth. Diagnostics of the lower jaw and teeth. Peculiarities.	PO2	4	preparing presentations, composing crosswords, test tasks, situational tasks , working with radiological images	defending presentation s, solving crossword puzzles, test tasks, situational tasks , working with radiological images .	
					thirt y			
	Preparation for intermediate certification				15			
9.	Learning and teaching methods							
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 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 solving, assessing practical skills, assessing the description of radiological images .					
9.3	SRO/SROP		Consultation on the most complex issues of the curriculum when performing SRO, 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, <u>Form of control:</u> Evaluation sheets for certain forms of completed assignments					
9.4	Frontier control		in writing - solving integrated situational problems <u>Form of control</u> : assessment of the implementation of integrated situational tasks.					
10.	Evaluation criteria							
10.1	Criteria for assessing the learning outcomes of the discipline							
No. RO	Name of learning outcomes	unsatisfactor y	Satisfactorily	Fine		Great		
PO1	Demonstrates knowledge of structure organs and systems . (see score sheet for oral response, score sheet for description of anatomical preparations	Does not know the structure of organs and systems.	1. Makes gross mistakes when describing the structure of organs. 2. Makes gross mistakes when describing organs on	1.Knows the structure of organs. 2. Shows the main parts of organs on models, wet anatomical preparations and		1. Demonstrates deep knowledge of the structure of organs and organ systems, and correctly uses anatomical terminology when describing. 2. Confidently shows organs.		

<p style="text-align: center;">OÑTÜSTIK QAZAQSTAN MEDISINA AKADEMIASY «Оңтүстік Қазақстан медицина академиясы» АҚ</p>		 <p style="text-align: center;">SOUTH KAZAKHSTAN MEDICAL ACADEMY АО «Южно-Казахстанская медицинская академия»</p>
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)		models, wet anatomical preparations and the interactive table of Organ Pies.	Pirogov's interactive table.	their parts and structural details on models, wet anatomical preparations and Pirogov's interactive table.
PO2	Demonstrates knowledge of topography and organs and systems . (see score sheet for oral response, score sheet for description of anatomical preparations)	Does not know the topography of organs and systems.	1. Makes mistakes when describing blood supply, venous and lymph flow, and innervation of organs. 2. Makes mistakes when describing organs on models, wet anatomical preparations and Pirogov's interactive table.	1. Describes blood supply, venous and lymph flow, innervation of organs. 2. Shows the relative positions of organs on models, wet anatomical preparations and Pirogov's interactive table. 3. Describes the relationship of organs to the skeleton.	1. Fully describes the blood supply, venous and lymph flow, innervation of organs. 2. Shows the relative positions of organs on models, wet anatomical preparations and Pirogov's interactive table. 3. Describes the relationship of organs to the skeleton. 4. Determines the location and projection of organs and their parts on the surface of the body .
PO3	Able to clearly demonstrate and illustrate an understanding of the structure and topography of organs and systems. (see the assessment sheet for completing the diagram of the course of arteries , veins, nerves)	Unable to visually present information .	Makes gross mistakes when sketching the course of arteries, veins, and nerves.	Makes unprincipled mistakes when sketching the course of arteries, veins, and nerves.	Demonstrates understanding of the topic by sketching the course of arteries, veins, and nerves.
PO4	Able to present information clearly and logically in the form of a presentation. (see presentation performance evaluation sheet)	Unable to visualize information	Experiences difficulties in visually presenting information in the form of a presentation.	1. Able to clearly and logically present information in the form of a presentation. 2. Shows readiness for self-study , has good skills in working with educational and scientific literature 3. Possesses the skills of conducting a discussion and reasoned speech	1. Able to clearly and logically present information in the form of a presentation. 2. Shows readiness for self-learning , has good skills in working with educational and scientific literature, Internet sources, and electronic databases . 3. Possesses the skills of conducting discussion, reasoned speech and working in a team .

10.2 Criteria for assessing teaching technology methods

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 , checklist for assessing a practical lesson, assessing crossword puzzles, assessing practical skills, assessing the description of radiological images), The magazine displays their average score.

Checklist for SRO : Evaluation sheets for certain forms of completed assignments

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Interim certification : OSPE. Testing

Multi-point knowledge assessment system


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

Verbal response

Form control	Grade	Criteria for evaluation
Verbal response	Great Corresponds to points: 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.
	Fine Corresponds to points: 85-89 80-84 75-79 70-74	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.
	Satisfactorily Corresponds to points: 65-69 60-64 50-59	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.
	Unsatisfactory Corresponds to points 0-49	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.

Performing test tasks (testing)

form of control	Grade	Criteria for evaluation
Performing test tasks (testing)	Great Compliant points: 95-100 90-94	The student completed 90-100% of test tasks correctly.
	Fine Corresponds to points: 85-89 80-84 75-79 70-74	The student completed 75-89% of test tasks correctly.

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	<p>Satisfactorily Corresponds to points: 65-69 60-64 50-59</p>	The student completed 50-69% of test tasks correctly.
	<p>Unsatisfactory Corresponds to points 0-49</p>	The student completed less than 50% of the test tasks correctly.

Evaluation paper
Criteria for evaluating descriptions of anatomical preparations

FULL NAME. student _____

No. steps	Step Evaluation Criteria	Great 90-100 Gave a clear, comprehensive answer, correctly named the organs in Latin and Greek	Fine 70-89 He gave a fairly complete answer, but was confused about the terminology; made minor inaccuracies	Satisfactory 50-69 partially coped with the task : I was confused in my answer and did not give the full names of anatomical structures	Not ud 0-49 Failed the task: failed to name anatomical structures
1.	The student recognizes the organ, gives its name in Latin, and, if necessary, in Greek	18-20	14-17.8	10-13.8	0-9.8
2.	The student describes the holotopy of the organ using professional terminology	18-20	14-17.8	10-13.8	0-9.8
3.	The student describes the skeletotopy of the organ using professional terminology	18-20	14-17.8	10-13.8	0-9.8
4.	The student describes the syntopy of the organ using professional terminology	18-20	14-17.8	10-13.8	0-9.8
5.	Describes the anatomical structure of the organ.	18-20	14-17.8	10-13.8	0-9.8

the maximum score is 100. Total points _____ Teacher signature _____


Evaluation paper
Criteria for assessing the implementation of the scheme (arterial courses)

FULL NAME. student _____


Maximum score – 100. Total points _____ Signature of the teacher _____

No. _	Step Evaluation Criteria	Level			
		Great 90-100	Fine 70-89	Satisfactory 50-69	Not ud 0-49
1.	The student must correctly find and draw a diagram of the courses of the arteries	18-20	14-17.8	10-13.8	0-9.8
2.	The student must give the full name of the arteries in Latin.	18-20	14-17.8	10-13.8	0-9.8
3	The student must correctly indicate the topography and projection of the arteries	18-20	14-17.8	10-13.8	0-9.8
4.	Must list all branches of arteries	18-20	14-17.8	10-13.8	0-9.8
5.	The student must indicate the areas of blood supply	18-20	14-17.8	10-13.8	0-9.8

Evaluation paper


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Criteria for assessing the implementation of the scheme (formation of veins and lymphatic vessels)					
FULL NAME. student _____					
The maximum score is 100. Total points _____ Signature of the teacher _____					
No. _	Step Evaluation Criteria	Level			
		Great 90-100	Fine 70-89	Satisfactory 50-69	Not ud 0-49
1.	The student must correctly draw a diagram of the formation of veins and lymphatic vessels)	18-20	14-17.8	10-13.8	0-9.8
2.	The student must give the full name of veins and lymphatic vessels in Latin.	18-20	14-17.8	10-13.8	0-9.8
3	The student must correctly indicate the topography of veins and lymphatic vessels	18-20	14-17.8	10-13.8	0-9.8
4.	Must indicate all tributaries of veins and lymphatic vessels.	18-20	14-17.8	10-13.8	0-9.8
5.	The student must indicate the areas drained by a given vein or lymphatic vessel	18-20	14-17.8	10-13.8	0-9.8
Evaluation paper					
Criteria for assessing the implementation of the scheme (nerve courses)					
FULL NAME. student _____					
Maximum score – 100. Total points _____ Teacher's signature _____					
No. _	Step Evaluation Criteria	Level			
		Great 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 topography 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
Evaluation paper					
Criteria for evaluating presentations in multimedia format					
FULL NAME. student _____					
No.	Criterion	Level, score			
		Great 90-100	Fine 70-89	satisfied 50-69	unsatisfactory 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 report clearly, competently, and consistently.	9-10 _	7-8.9	5-6.9	0-4.9

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<p>Department of Normal Anatomy Department of Normal and Pathological Physiology Department of Pathological Anatomy and Histology Department of Biology and Biochemistry Department of Phthisiopulmonology and Radiology</p>		<p>044-42/11 044-53/11 044-63/11 044-46/11 044-70/11 1 page of 24</p>	
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9.	The ability to defend one's position and the ability to respond 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
Maximum score – 100. Total points _____ Teacher's signature _____					

eleven. Learning Resources	
Electronic resources	<ol style="list-style-type: none"> SKMA repository http://lib.ukma.kz/repository/ Republican Interuniversity Electronic Library http://rmebrk.kz/ Student consultant http://www.studmedlib.ru/ Ashyk kitapkhana https://kitap.kz/ Website: www.s kma.kz
Electronic textbooks	<ol style="list-style-type: none"> Bilic, G. L. Human anatomy . Atlas. In 3 volumes. T.1. Musculoskeletal system. Osteology. Syndesmology. Myology [Electronic resource]: textbook - M.: GEOTAR - Media, 2013. Bilic, G. L. _ Human anatomy . Atlas. In 3 volumes. T. 2 [Electronic resource]: M.: GEOTAR - Media, 2013 Bilic, G. L. Human anatomy . Atlas. V. 3 t. T. 3 [Electronic resource]: textbook M.: GEOTAR - Media, 2013. Human anatomy . In 2 volumes. T. 1 [Electronic resource]: textbook M.: GEOTAR - Media, 2013. Human anatomy . In 2 volumes. T. 2 [Electronic resource]: textbook - M.: GEOTAR - Media, 2013 Atlas. Anatomy and physiology. Yesimbekova R.I. , 2013/Central Bank Aknurpress / https://aknurpress.kz/login Nesep-zhynys azalaryny anatomy. Ahmad N.S., 2019 / Central Bank Aknurpress / https://aknurpress.kz/login Adam Anatomy . Dosaev T.M. , 2019./ Central Bank Aknurpress / https://aknurpress.kz/login Anatomy. Omash K., 2013/CB Aknurpress/. https://aknurpress.kz/login Adam anatomy : Okulyk . / T . S. _ Kosmanbetov , A. _ M. _ Iskindirova , B. _ Sh . Shakenov t . b ., Zhalpy ed . baskargan T. _ M. _ Dosaev ; S. _ J. _ Asfendiyarov atyndagy Kazakh Ulttyk melekettik medicine universities . - Almaty : AKHYB Baspas , 2013. - 366-ISBN 9965-604-95-9. /RMEB/ http://rmebrk.kz/ Gavrilov L.F., Tatarinov V.G. Anatomy: Textbook, - 2nd ed., revised. and additional – Almaty: Evero, 2020. – 424 p., ill. https://elib.kz/ru/search/read_book/279
Literature	<p>Main:</p> <ol style="list-style-type: none"> Borzyak E.I. Human anatomy. Photographic atlas. In 3 vols. T. 3. Internal organs, nervous system: textbook - M.: GEOTAR - Media, 2016. - 488 p. Borzyak E.I. Human anatomy. Photographic atlas. In 3 volumes. Volume 2. Cardiovascular system. Lymphatic system. - M.: GEOTAR - Media, 2015. – 368 p. Borzyak E.I. Human anatomy. Photographic atlas. In 3 volumes. Volume 1. Musculoskeletal system. - M. : GEOTAR - Media, 2014. - 480 p. Gaivoronsky I.V. Human anatomy. In 2 vols. T. 1. System of organs of support and movement. Splanchnology: textbook - M.: GEOTAR - Media, 2014 Human anatomy. In 3 volumes. T. 1. Musculoskeletal system: illustrated textbook / ed. L. L. Kolesnikova; Ministry of Education and Science of the Russian Federation.. - M.: GEOTAR - Media, 2014. - 320 p. 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. Sinelnikov R. D. Atlas of human anatomy. In 4 volumes. T. 2. The doctrine of the viscera and endocrine glands: textbook. allowance . - 7th ed., revised. - M.: New Wave: Publisher Umerenkov, 2012. Sinelnikov R. D. Atlas of human anatomy. In 4 volumes. T. 3. The doctrine of blood vessels and lymphoid organs: textbook. allowance. - 7th ed., revised. – M.: New Wave: Publisher Umerenkov, 2012. Sinelnikov R. D. Atlas of human anatomy. In 4 volumes. T. 4. The doctrine of the nervous system and sensory organs: textbook. allowance . - 7th ed., revised. – M.: New Wave: Publisher Umerenkov, 2012. Gain M. G. Human Anatomy: textbook. -12th ed., revised. and additional - St. Petersburg: Publishing house. house. SPbMAPO, 2009. <p>Additional :</p> <ol style="list-style-type: none"> Sisabekov K.E., Tanabaev B.D., Ospanov D.T. Bass zhane moiynyn klinikal'nyk anatomysy men operativnyk surgery: oku kuraly – Shymkent: “Alem” baspakhanasy, 2018.- 136 b. Netter F. Atlas of human anatomy: atlas - M.: GEOTAR - Media, 2015. - 624 p. Human anatomy. In 3 volumes. Volume 2. Splanchnology and the cardiovascular system: an illustrated textbook / Ministry of Education and Science of the Russian Federation; edited by L. L. Kolesnikova. - M.: GEOTAR - Media, 2014. - 320 p.

<p style="text-align: center;"> ОҢТҮСТІК ҚАЗАҚСТАН MEDISINA AKADEMIASY «Оңтүстік Қазақстан медицина академиясы» АҚ </p>			<p style="text-align: center;"> SOUTH KAZAKHSTAN MEDICAL ACADEMY АО «Южно-Казахстанская медицинская академия» </p>
<p style="text-align: center;"> Department of Normal Anatomy Department of Normal and Pathological Physiology Department of Pathological Anatomy and Histology Department of Biology and Biochemistry Department of Phthisiopulmonology and Radiology </p>		<p>044-42/11 044-53/11 044-63/11 044-46/11 044-70/11</p>	
<p style="text-align: center;"> Syllabus on the discipline “ Normal musculoskeletal system and skin ” Educational program: "Dentistry" </p>		<p>1 page of 24</p>	

	<p>4. Anatomy according to Pirogov. Atlas of human anatomy. In 3 vols. T. 2. Head. Neck: M.: GEOTAR - Media, 2013</p> <p>5. Boyanovich Yu. V. Human anatomy: atlas. - Rostov n/a: Phoenix, 2011</p> <p>6. Fenish X. Pocket atlas of human anatomy: atlas: trans. from English – 5th ed., rev. and additional – St. Petersburg: Dilya, 2010</p> <p>7. Ellis G. Atlas of human anatomy in sections, CT and MRI images: atlas: trans. sleep - M.: GEOTAR - Media, 2010.</p>
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12.	Discipline policy
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Requirements for students :

1. not be late for classes ;
2. do not miss classes without good reason ;
3. have anatomical gloves, tweezers and a scalpel ;
4. be active during practical exercises ;
5. be able to work in a team;
6. timely, on schedule, carry out and submit the SRS ;
7. do not engage in extraneous activities during classes ;
8. be tolerant, open and friendly towards fellow students and teachers ;
9. observe ethical standards of conduct when working with anatomical specimens and organs of the human body ;
10. treats the property of the department with care ;
11. make up missed classes in a timely manner for valid reasons ;
12. Follow safety precautions in the classroom.
13. During lectures / practical classes / SROP, 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 discipline policy, the student receives a verbal warning from the teacher.
2. In case of repeated violations of the discipline policy, the student provides an explanatory note addressed to the head of the department.
3. In case of systematic violation of the discipline policy, the head of the department submits a corresponding report to the dean's office.
 - A student who does not appear for a midterm 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 point is 1.0 points and is deducted from the midterm control grades.
 - For 1 missed SRO without a valid reason, the penalty point is 2.0 points and is deducted from the SRO grades
 - Honorable mention points are taken into account according to department policy. Incentive points are added to the midterm 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 points), then they are not allowed to take the final control (exam).

13.	Academic policy based on the moral and ethical values of the academy
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P.4 Student Code of Honor

P.10. Organization of the educational process

P.12. Grading Policy

Final control – 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 SRO and penalty points.

Final score (100%) = $RKsr \times 0.2 + TKsr \times 0.4 + IR \times 0.4$

Final grade (100%) = Admission rating (60%) + Final control (40%)

An example of calculating a student's final grade :

Penalty points:

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<p>For example, a student missed 2 lectures and = $1.0 \times 2 = 2.0$ points For missing 1 SROP = 2.0 points RK 1 – 80 points RK 2 – 90 points $RKsr = (80 - 2) + 90 = 84$ points 2 Average arithmetic assessment of current control (practical and laboratory classes) – 80 points SR O 1 – 75 points SR O 2 – 85 points SR O N ... – quantity of SR O Average score for SR O = $75 + 85 + N \dots = 80$ points 2 + N ... Average current grade taking into account SRO and penalty points: $TKSr^* = TKsr + SROsr - K sro = 80 + (80 - 2.0) = 158 = 79.0$ 2 2 2 Admission rating (60%) = $RKsr \times 0.2 + TKsr \times 0.4 = 84 \times 0.2 + 79.0 \times 0.4 = 16.8 + 31.6 = 48.4$, 4 points Final control (40%), for example, the student answered 45 questions correctly out of 50 (90%), $90 \times 0.4 = 36$ points Final score (100%) = 1) $RD (60\%) + IR (40\%) = 48.4 + 36 = 84.4$ points 2) $RKsr \times 0.2 + TKsr \times 0.4 + IR \times 0.4 = 84.0 \times 0.2 + 79.0 \times 0.4 + 90 \times 0.4 = 16.8 + 31.6 + 36 = 84.4$ points 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 SRO and penalty points Klek – missed rate of the 1st lecture Ksro – coefficient of admission of the 1st SROP</p>	
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Дата утверждения на кафедрах	Протокол № 10 35.05.23	Заведующий кафедрой нормальной анатомии, и.о. проф. Танабаев Б.Д.	
	Протокол № 10 28.05.23	Заведующий кафедрой нормальной и патологической физиологии и.о. проф. Жакинбекова Г.С.	
	Протокол № 11 26.06.23	Заведующий кафедрой патологической анатомии и гистологии, и.о. проф. Салькова А.Ш.	
	Протокол № 12 04.09.23	Кафедра молекулярной биологии и биохимии, профессор Есиркепов М.М.	
	Протокол № 14 05.09.23	Кафедра фтизиопульмонологии и радиологии Касаева Л.Т.	
Дата утверждения на КОП	Протокол № 12 15.06.23	председатель КОП Кенбаева Л.О.	