

NON-COMMERCIAL JOINT-STOCK COMPANY « **KARAGANDA MEDICAL UNIVERSITY** »

AGREED

Dean of Faculty
K.K. Toleubekov



« 25.08. 20 22 y.

CONFIRMED

Vice Rector for Academic Work
V.P. Riklefs



« 25 . 20 22 y.



SYLLABUS
General Medicine

Content

Discipline: «History of Kazakhstan»	4
Discipline: Information and communication technologies	7
Discipline: "Physical Culture"	10
Module: Structural Foundations of Life (SFD) Discipline: “Molecular basic”, “Cellular tissue bases” ...	15
Discipline: Movement and Support. The skeletal muscle system.....	22
Discipline: Control and regulation (nerve system, organs of sense, endocrine system)	30
Discipline: “Basic medical procedures”	43
Module: “Social-political studies module”, Discipline: “Sociology”, “Psychology”, “Political science”, “Cultural studies”	45
Module: “Exchange with environment”, Discipline: “Respiratory system”	60
Module: “Exchange with environment”, Discipline: “Digestive system”	71
Module: “Exchange with environment”, Discipline: “Metabolism and energy. Urinary system”	83
Module: “Liquids and Transport”, Discipline: “Cardiovascular system”	89
Module: “Liquids and Trasperts”, Discipline: “Immune system”	103
Module: “Continuing Life”, Discipline: “Reproductive system. Genetics”	108
Module: “Fundamental medicine”, Discipline: “Medical chemistry”	118
Module: “Fundamental medicine”, Discipline: “Patient examination skills”	122
Module: “Fundamental medicine”, Discipline: “Fundamentals of Pharmacology”	130
Module: “Fundamental medicine”, Discipline: “Microbiology”	133
Module: “Fundamental medicine”, Discipline: “The basics of evidence-based medicine”.....	136
Module: “Basic of practical medicine”, Discipline: “Topographic Anatomy”.....	142
Module: “Basic of practical medicine”, Discipline: “General surgery”	149
Module: “Basic of practical medicine”, Discipline: “Healthy and Sick Child”.....	151
Module: “Basic of practical medicine” Discipline: “General pathology”	158
Module: “Development of Scientific Thinking Scientific Project 1”, Discipline: “Patient and Society”, “Research methodology”.....	164
Module: “Mechanisms of Disease”, Discipline: “Cardiovascular system”	182
Module: “Mechanisms of Disease”, Discipline: “Digestive system”	194
Module: “Mechanisms of Disease”, Discipline: “Musculoskeletal system”	211
Module: “Mechanisms of Disease”, Discipline: “Nervous system”	219
Module: “Mechanisms of Disease”, Discipline: “Urinary system”	228
Module: “Mechanisms of Disease”, Discipline: “Hematopoietic system”	235
Module: “Mechanisms of Disease”, Discipline: “Respiratory system”	240
Module: “Adult Health”, Discipline: “Differential diagnosis and therapy principles of circulatory system diseases”	249
Module: “Adult Health”, Discipline: “Differential diagnosis and principles of therapy for diseases of the urinary system, joints, skin pathology”	254

Module: “Adult Health”, Discipline: “Differential diagnosis and principles of therapy at the diseases of breathing organs”	261
Module: “Adult Health”, Discipline: “Differential diagnosis and principles of therapy for diseases of the blood and immune system”	267
Module: “Adult Health”, Discipline: “Differential diagnosis and principles of therapy for diseases of the digestive system”	271
Module: “Adult Health”, Discipline: “Differential diagnosis and principles of therapy of endocrine system diseases”	280
Module: “Women’s Health”, Discipline: “Obstetrics and gynecology”	286
Module: “Women’s Health”, Discipline: “Oncogynecology”	293
Module: “General pathological conditions in paediatrics”, Discipline: “Pathology of manures”, “Pathology of early children and adolescence”, “Children infection disease”	297
Module: “Surgical Conditions Interventions”, Discipline: “Differential diagnosis of major pathological syndromes in surgery”	305
Module: “Surgical Conditions Interventions”, Discipline: “Ear, Nose and Throat. Differential Diagnosis in presence of Basic Pathological Syndromes in Otolaryngology”	308
Module: “Surgical Conditions Interventions”, Discipline: “Ophthalmology. Differential diagnosis and principes theraoy for visual diseases”	310
Module: “Differential diagnosis and principles of therapy in major diseases in psychiatry and neurology”, Discipline: “Neurology”, “Mental health and addiction”	313
Discipline: “Simulation course on emergency conditions”	320
Discipline: “Mental health and neurology in the general physician’s practice”	323
Discipline: "Skin manifestations of somatic pathology"	332
Discipline: "Clinical Biochemuistry"	336

SYLLABUS

Discipline: «History of Kazakhstan»

Educational program:

6B10102 “General Medicine”

Total credits

ECTS: 5

Course: 1

Description of the discipline

Name of the discipline		Code	Educational program			
History of Kazakhstan		STK-1101; OOK 1	Bachelor degree			
Lecturers		Structural division				
Responsible:		Department of History of Kazakhstan				
Lecturers: G.G. Aliyeva, M.T. Aliyeva, A.B. Dolgoplov, B.S. Malybaeva, O.A. Kovtun						
Training level		Type		Module		
Bachelor		GED CC				
Forms of learning activity				Training period		
- lectures – overview in the form of presentations, problematic; - in practical classes, student-centered learning based on a reflexive approach to learning on the part of the student, role-playing games and educational discussions of various formats, solving problem tasks and questions on a given topic, performing written and oral tasks (including test ones), working with a training video on the topic of the lesson; - on SWIT, making notes, filling in tables, compiling a glossary - at SWIT preparation of PowerPoint presentations; development of an educational and research project, writing an essay, preparation of analysis by sources, development of a program or plan, preparation of content analysis by sources (literature)				During the current semester		
Mandatory prerequisites:		Additional prerequisites:				
NO 1		history of Kazakhstan (secondary school program); post-requirements: philosophy.				
ECTS	Hours	Practical training		SWIT	SIW	IA

5	150	30	15	60	15; (2 mid-term exams)
The purpose of the discipline					
The main purpose of the discipline "Modern History of Kazakhstan" is to study objective historical knowledge about the main stages of the history of modern Kazakhstan.					

Learning outcomes

LO from the educational program (code)	LO of discipline	Methods of training	Assessment methods
OOK 1	Analyze socially significant, political and economic processes problems and processes	Active methods of teaching, using TBL-team-oriented learning (practical classes), RVL – problem-oriented learning (lectures, practical classes), seminar-discussion (in practice. classes). development and protection of an educational and research project, preparation of content analysis by sources (on SWIT)	in accordance with the rating system approved by the NAO "MUK" for the current year. "Regulations on the rating system for assessing student performance", 2018.

Thematic plan

№	Section	Topic	Number of study hours:						Assignments (may combine several topics, but not less than 1 and not more than 3 current credit assignments; the total number of assignments in the discipline, including mid-term exams, is not less than 5)
			Lectures	PL/ Lec	SIWT	SIW	IA	Total hours	
Credit 1. "Introduction to discipline; Kazakhstan on the way to Independence, civil-political confrontation"									
1.		Introduction to discipline	2	2	1	4		9	
2.		Kazakhstan on the way to Independence: stages of	2	2	1	4		9	

		formation of the idea of a national state							
3		Civil-political confrontation in 1917 – 1920	2	2	1	4		9	
Credit 2. "Implementation of the Soviet model of state-building, contradictions and consequences of Soviet reforms in Kazakhstan in the second half of the twentieth century, the policy of "perestroika" in Kazakhstan"									
4.		Implementation of the Soviet model of state building in the 20 – 30s of the twentieth century. Development of medicine in Soviet Kazakhstan	2	2	1	4		9	
5.		Contradictions and consequences of Soviet reforms in Kazakhstan in the second half of the twentieth century	2	2	1	4	7,5	16,5	
6.		The policy of "perestroika" in Kazakhstan	2	2	1	4		9	
Credit 3. "Formation of the state structure of the Republic of Kazakhstan, Kazakhstan's model of economic development, social modernization – the basis of the well-being of society"									
7.		Formation of the state structure of the Republic of Kazakhstan	2	2	1	4		9	
8.		Kazakhstan's model of economic development	2	2	1	4		9	
9.		Social modernization is the basis of the well-being of society	2	2	1	4		9	
Credit 4. "Ethnodemographic processes and strengthening of interethnic harmony, socio-political prospects for development and spiritual modernization, the policy of forming a new historical consciousness and worldview of the people of the Great Steppe"									
10.		Ethnodemographic processes and strengthening of interethnic harmony	2	2	1	4		9	
11.		Socio-political prospects of development and spiritual modernization	2	2	1	4		9	
12.		The policy of forming a new historical consciousness and worldview of the people of the Great Steppe	2	2	1	4		9	

Credit 5. "Kazakhstan is a state recognized by the modern world; N.A. Nazarbayev is a personality in history; the formation of a nation of a single future"							
13. Kazakhstan is a state recognized by the modern world	2	2	1	4		9	
14. N.A. Nazarbayev – a personality in history	2	2	1	4	7,5	16,5	
15. Formation of a nation of a single future	2	2	1	4		9	
Total:	30	30	15	60	15	150	

SYLLABUS

Discipline: Information and communication technologies

Educational program:

«6B10102 – General medicine», «6B10122 - Dentistry»

«6B10103- Pharmacy», «6B10106 - Public health»

«6B05101 - Biomedicine», «6B07201 - Pharmaceutical Technology»

«6B10111 - IT Medicine», «6B10108 - Pediatrics»

Number of credits

ECTS: 5

Course 1

Description of the discipline

Name of discipline		Code	Educational program
“Information and Communication Technologies“		61310102	«General medicine»
		61310122	«Dentistry»
		61310103	«Pharmacy»
		61310106	«Public health»
		61305101	«Biomedicine»
		61307201	«Pharmaceutical Technology»
		61310111	«IT Medicine»
		61310108	«Pediatrics»
Lecturers		Structural division	
Responsible: Takuadina A.I.		Informatics and biostatistics department	
Lecturers: Takuadina A.I., Badekova K.Zh., Sydykova A.Zh., Tazhina A.M.		Informatics and biostatistics department	
Training level	Type	Module	
Bachelor	GED CC		
Forms of learning activity			Training period
Practical classes, independent work with a teacher, independent work			
Mandatory prerequisites :		Training period	
school programs on informatics, mathematics and physics		Basics of evidence-based medicine, Biostatistics.	

ECTS	Hours	Lectures	Practical training	SWIT	SIW	IA
5	150	-	45	30	60	15

The purpose of the discipline

Assignment of this discipline is training of the highly qualified specialists owning skills of application of the modern information technologies in the sphere of professional area.

Learning outcomes

LO from educational program (code)	LO of discipline	Methods of training	Assessment methods
«6B10102 - General medicine» ON3	The ability to use modern ICT for selfeducation and other purposes in various fields of professional activity, scientific and practical activities.	Work with educational and additional literature, with electronic information carriers. Team-based learning. Research-based learning. Problem-based learning. Cased-based learning	Implementation of practical tasks, solving situational tasks, oral questioning, answers to test questions. current tasks 60%, final control 40%, total 100%
«6B10122 Dentistry» ON3			
«6B10103 — Pharmacy» ON4			
«6B10106 Public health» ON2			
«6B05101 — Biomedicine» ONI			
«6B07201 Pharmaceutical Technology» ON6			
«6B10111 - IT Medicine» ON7			

Thematic plan

№	Section	Topic	Number of study hours:						Tasks (it may combine some themes but not less than I and not more than 3 current tasks per credit; total number of tasks on discipline, including mid-term exams, not less than 5)
			Lectures	PL/ Lec	SIWT	SIW	IA	Total hours	
Credit 1.									
1.	Section I	Basic concepts of information and communication technologies		3	2			5	Task 1 Solving crosswords, SIWT_1, SIWT_2

2.	Section 2	Introduction to architecture of computer systems. Software.		6	4	8		18	Task 2 Solving individual tasks, SIWT_3, SIW_1
Credit 2.									
3.	Section 3	Bases of the analysis and management of biological data		3	4	8		15	Task 3 Solving individual tasks, SIWT_7, SIWT_8, SIW_3
4.	Section 4	Database systems in medicine		6	2	8		16	Task 4 Individual tasks for creating a database, SIWT_10, SIWT_11
Credit 3.									
5.	Section 5	Basis of Cybersafety.		3	2			5	Task 5 Laboratory work 8 in an electronic textbook https://mbook.kz , SIWT_14
6	Section 6	Networks. Internet technologies		6	4	8		18	Task 6 Individual task for creating a web page, Laboratory work 9 in an electronic textbook https://mbook.kz
Credit 4.									
7.	Section 7	Cloud and mobile technologies.e in the Cloud.		3	2	8		13	Task 7 Laboratory work 10 in an electronic textbook https://mbook.kz
8.	Section 8	Multimedia and Smart technologies		6	4	8		18	Task 8 Creating a video file about diseases, SIWT_13
Credit 5.									
9	Section 9	E — technologies. Electronic government.		6	4	8		18	Task 9 Introduction and registration for egov.kz, registration of online certificates
10	Section 10	Prospects of development of ICT in the professional sphere.		3	2	4		9	Task 10 Write an essay on the topic: ”Perspectives of

										development of ICT in the professional sphere”
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SILLABUS

Discipline: "Physical Culture"

Educational program:

"General Medicine", "Pediatrics", "Dentistry"
 "Public Health", "IT medicine", "Pharmacy", "Biomedicine",
 "Technology of pharmaceutical production", "Nursing",

Total credits

ECTS: 8

Course: 1-2

Description of the discipline

Name of the discipline		Code	Educational program
Physical Culture		5B130100	"General medicine"
Physical Culture		5B10108	"Pediatrics”
Physical Culture		6B10122	"Dentistry"
Physical Culture		5B110300	"Public Health"
Physical Culture		6B10111	"IT medicine"
Physical Culture		5B110400	"Pharmacy"
Physical Culture		5B110300	"Biomedicine"
Physical Culture		6B07201	"Technology of pharmaceutical production"
Physical Culture		6B10101	"Nursing"
Lecturers		Structural division	
Responsible: L.V. Kovalenko		Physical Health Center	
Lecturers: 10 Coaches			
Training level	Type	Module	
Undergraduate	GED		
Forms of learning activity			Training period
PL, SWIT, SIW			2 years
Mandatory prerequisites:		Additional prerequisites:	

<p>-the education of discipline, collectivism, comradely mutual assistance;</p> <p>-development and improvement of the basic motor qualities - endurance, strength, speed, agility, flexibility;</p> <p>- willingness and ability to self-development and personal self-determination;</p> <p>- Willingness to independently use the skills of professional adaptive physical education in labor and life situations;</p>		<p>-formation of the motivational-value attitude to physical culture and the need for systematic physical exercises and sports;</p> <p>-to give basic science-based knowledge about the use of physical culture and sports in the development of vital physical qualities to maintain health and maintain optimal professional performance;</p> <p>- health promotion, hardening and increasing the body's resistance to the effects of adverse factors of labor activity;</p> <p>-development of thinking skills, self-development skills and research skills;</p> <p>-bringing of mental stability, self-confidence, determination, courage and determination, initiative, perseverance and perseverance, endurance and self-control;</p> <p>- to ensure the acquisition of diverse skills and abilities for the development of physical abilities, socio-cultural experience and socio-cultural values of physical culture and sports;</p> <p>-development of communication skills, in particular the ability to use information from various sources, clearly present it in an appropriate form;</p> <p>- the ability to use interdisciplinary concepts and universal educational actions (regulatory, cognitive, communicative) in cognitive, sports, physical education, health and social practice;</p> <p>- willingness and ability to self-informative and informative activities;</p> <p>- the formation of skills to participate in various types of competitive activity;</p> <p>- the ability to use a variety of forms and types of physical education activities for the organization of a healthy lifestyle, active recreation and leisure;</p> <p>- apply this knowledge and understanding in a professional manner;</p> <p>- demonstrate knowledge and understanding in the field under study, including elements of the most advanced knowledge in this field.</p>			
ECTS	Hours	Practical training	SWIT	SIW	IA

8	240	120	60	36	24
The purpose of the discipline					
The purpose of the program is the formation of social and personal competencies of students and the ability to purposefully use the means and methods of physical education, ensuring the preservation, strengthening of health in preparation for professional activities; to persistent transfer of physical exertion, neuropsychological stresses and adverse factors of future work.					

Learning Outcomes

LO from the educational program (code)	LO discipline	Methods of training	Assessment methods
NO 3 NO 13 ON 1 ON 9 PO 9 1.3 3.1 4.1	Physical Culture	Communicative technologies (discussion, educational debate, etc.); -case method (situation analysis); -gaming technologies (small groups -gaming sports); -competitive methods; - method of display and visibility, etc.	The regularity of attending training sessions (Appendix 2); - fulfillment of the requirements of the theoretical section (Appendix 2); - the formation of skills; - Passing physical fitness testing (Appendix 2, control standards); -Self-control in daily mode; -assessment of self-development of additional topics on physical education, taking into account the student's health status, indications and contraindications to the use of physical exercises.

Thematic plan

№	Section	Topic	Number of study hours:	
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			Lectures	PL/ Lec	SIWT	SIW	IA	Total hours	Tasks (can combine several topics, but not less than 1 and not more than 3 current tasks for a loan; the total number of tasks in the discipline, including the Republic of Kazakhstan, is not less than 5)
Credit 1.									
1.		Safety precautions in physical education classes.		2					Understanding of the theory.
2.		Topic: Physical culture as a discipline in the education system of the Republic of Kazakhstan.				2			
3		(Appendix No. 2)		10	3		2		Practical exercises
4		The development of speed - power endurance.		3	4	2			
Credit 2.									
5		Topic: The Basics of a Healthy Lifestyle (HLS). (Appendix No. 2)				2			Understanding of the theory.
6		Motor actions: training and improvement in sports.		8	3		2		Practical exercises
7		Rules of refereeing in the chosen sport.		1	2				
8		The development of physical qualities.			3	3			
9		Assessment of physical fitness. Benchmark		6			2		
				30	15	9	6	60	
Credit 3.									
10		Safety precautions in physical education classes.		2					

11		Topic: Natural-scientific foundations of physical education. (Appendix No. 2)				2			Understanding of the theory.
12		Development of physical qualities (OFP)		13	6	3	2		Practical exercises
Credit 4.									
13		Development of physical qualities (OFP)				4			Practical exercises
14		Assessment of physical fitness. Benchmark		6	4		2		
15		The development of speed - power endurance (athletics)		9	5		2		
				60	15	9	6	60	
Credit 5.									
16		Safety precautions in physical education classes.		2					Understanding of the theory.
17		Topic: Modern wellness systems and the basics of monitoring the physical condition of the body.				2			
18		(Appendix No. 2)			6	2			Practical exercises
19		Development of physical qualities (OFP)		13	3		2		
Credit 6.									
20		Development of physical qualities (OFP, PFP)		9	6	3	2		Understanding of the theory
21		Subject: Basic techniques of independent physical education and sports.				2			Practical exercises
22		(Appendix No. 2)		6			2		
				30	15	9	6	60	
Credit 7.									

23		Safety precautions in physical education classes.		2					Understanding of the theory
24		Subject: Professionally Applied Physical Training (PPFP) (Appendix No. 2)				2			
25		Development of physical qualities (OFP, PPFP)			6	3			Practical exercises
26		Motor actions: training and improvement in sports.		13			2		
27		Rules of refereeing in the chosen sport.			2				
Credit 8.									
28		Development of physical qualities (OFP, PPFP)			4	4			Practical exercises
29		Assessment of physical fitness. Benchmark		6			2		
30		Development of speed - power endurance (PPFP)		9	3		2		
				30	15	9	6	60	
Total:				120	60	36	24	240	

SYLLABUS

Module: Structural Foundations of Life (SFD) Discipline: “Molecular basic”, “Cellular tissue bases”

Educational program:

General medicine

Total credits

ECTS: 6

Course: 1

Description of the discipline

Name of the discipline	Code	Educational program
Structural Foundations of Life (SFD) (Molecular basic; Cellular tissue bases)	6B10102	General medicine
Lecturers	Structural division	
Responsible: Sotchenko R.K., Kopzhasarova A.B., Tatina E.S., Mkhitarian K.E., Klyuev D.A.	Department of Pharmaceutical Disciplines and Chemistry Department of Biology Department of Computer Science and Biostatistics	

		Department of Biological Chemistry			
Lecturers:					
Training level		Type	Module		
Bachelor		BD / UC	Structural Foundations of Life (SFD) (Molecular basic; Cellular tissue bases)		
Forms of learning activity			Training period		
Lecture, PL, SWIT, SIW			1 semester		
Mandatory prerequisites:			Additional prerequisites:		
<p>When starting to study the chemical level, the student must have knowledge of the basic theoretical concepts: atomic-molecular theory, the theory of electrolytic dissociation, the mechanism and conditions of chemical reactions, the periodic law and periodic system of chemical elements by D.I. Mendeleev, the theory of the structure of organic compounds by A.M. Butlerov, the basics of the structure and chemical activity of amino acids, proteins, lipids, carbohydrates, nucleic acids.</p> <p>To know the basics of biology and genetics; to have an idea of the morphological structure of the cell, the basics of the human body.</p> <p>Know the structure of the cell and the general laws of its functioning.</p> <p>Know the basic processes and laws of chemical interactions.</p> <p>When starting to study the biophysical component of the discipline, the student must have knowledge of the basic theoretical concepts: atomic and molecular theory; the structure of the eukaryotic cell; the concept, characteristics of electric current, Ohm's laws; the main characteristics of charge, electric and magnetic fields; the basics of the structure and chemical activity of amino acids, proteins, lipids, carbohydrates, nucleic acids.</p>			<p>The student should be able to: demonstrate an understanding of the course of the main reactions between inorganic and organic substances, solve typical problems, possess mathematical apparatus.</p> <p>Chemical nomenclature.</p> <p>The student should be able to: demonstrate an understanding of the interaction of charged particles, the physical mechanisms of interactions between inorganic and organic substances, solve typical physical problems, possess mathematical apparatus.</p>		
ECTS	Hours	Practical training	SWIT	SIW	IA
6	210	15/60	30	84	21/2
The purpose of the discipline					
<p>Demonstration of knowledge of the general laws of the origin and development of life, the structure of the functioning of cells, tissues, organs and systems of the body in norm and pathology; anatomical and physiological features of the functioning of human body systems in different age periods; the relationship of functional systems of the body and the levels of their regulation in the conditions of normal pathology; fundamentals of molecular biology and genetics, the role of molecular and genetic factors in the pathogenesis of diseases.</p>					

Learning outcomes

LO from the educational program (code)	LO of discipline	Methods of training	Assessment methods
<p>NO 5</p> <p>Analyze the patterns of the structure and functioning of the body as a whole, as well as individual organs and systems of a person in normal and pathological conditions.</p>	<p>To explain the relationship of the structural features and chemical properties of organic compounds with their biological activity; To formulate the essence of acid-base equilibrium and the function of the buffer systems of the body; To explain the nature and features of the physico-chemical properties of high-molecular compounds (IUDs) and biopolymers; To identify the role of bioregulators and biopolymers in the processes of vital activity. To reveal the mechanisms of intracellular processes of vital activity. To determine the role of molecular cellular methods in the study of the cellular level. He knows the structure of proteins and protein structures of the cell, the functions of the main molecular components of the cell, the role of vitamins and their metabolism. To state the relationship of the features of the structure and properties of the biological membrane with the functions performed by it. Be able to determine the regularities of membrane functioning in normal and abnormal conditions. To explain the nature and features of the emergence of the resting potential and the action of the membrane; To formulate the essence of the polarization of the cell membrane; To identify the role of ion transport and nonequilibrium distribution on the membrane as the basis of cell activity.</p>	<p>Lectures: introductory, informational overview, lecture-discussion.</p> <p>Practical classes: seminar, work in small groups, solving training tasks, oral interview, educational discussion, discussion of topics of independent work, solving situational problems, working with schemes, testing.</p> <p>SWIT: consultation on the topics studied, preparation of presentations, essays, solving situational problems,</p> <p>SIW: presentation, solution of situational problems, poster.</p>	<p>Testing, training tasks. Presentation</p> <p>Current control, final control in the form of written work</p>

Thematic plan of the modular discipline: Structural foundations of life (chemical level)

№	S O O		Number of study hours:	Assignments
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		Topic	Lectures	PL/ Lec	SIWT	SIW	IA	Total hours	
Credit 1. "Chemical foundations of the organization of matter"									
1.	1	The atom as the basis of the structure of matter. (Atomic structure, elements and isotopes, atomic weights, electronic and energy levels)				5		5	1. Testing on topics 1-4
2.	1	Chemical bonds forming interatomic interactions (ionic, covalent, hydrogen, state of matter, molecular weight)	1		1			2	
3.	1	Decomposition, compound and exchange reactions as the most important chemical reactions of physiology (Bioenergetics and types of chemical reactions).		2	1			3	
4.	1	Enzymatic catalysis		2	2			4	
5	1	Aqueous solutions of physiological systems (Properties of aqueous solutions, Colloidal dispersed solutions)	1		1			2	1. Solving training tasks on topics 5-7
6	1	pH of biological fluids and its role in homeostasis.		2	1			3	
7.	1	Acids, bases and salts that play an important physiological role (Salts, buffer solutions)		2				2	
8.	1	Preservation of the constancy of the acidity of liquid media in the vital activity of the body.				5		5	
9	1	Preparation for intermediate certification					5	5	
	Total		2	8	6	10	5	30	
Credit 2. "The main components of the cell structure"									
1.	2	Introduction to Bioorganic Chemistry	1		1			2	1. Testing on topics 1-5
2.	2	Carbohydrates. (Monosaccharides, disaccharides and polysaccharides).		2	1			3	

3.	2	Lipids. (Fatty acids, glycerides, steroids, phospholipids and glycolipids)		2	1			3	
4.	2	Proteins. (Structure and stereochemistry of proteins. Proteins as enzymes. The structure of glycoproteins and proteoglycans)	1	2	1			4	
5.	2	Nucleic acids (Structure of nucleic acids: nucleosides, nucleotides, ATP)		1	1			2	
6	2	The most important biopolymers of the body and their role in life				10		10	Presentation on topic 6
7	2	Preparation for intermediate certification					5	5	Mid-term exams on the topics of 1-2 credits
Total			2	7	5	10	5	30	
Total:			4	15	11	20	10	60	

Thematic plan of the discipline: "Structural foundations of vital activity" (cellular level)

№	Section	Topic	Number of study hours					Assignments
			Lectures	PL/ Lec	SIWT	SIW	IA	
Credit 1								
1		Structure and functions of nucleic acids and proteins. Molecular mechanisms of intercellular signaling and integration.	2					Task 1
2		Structure and functions of cell membranes. Molecular mechanisms of intracellular transport.		2				
3		Molecular mechanisms of signal transmission to the cell. The main mechanisms of intracellular signaling. Medical significance.			3			
4		Cytoskeleton. Cellular contacts and intercellular adhesion.		2				
5		Principles of structure and basic functions of biopolymers. Nucleic acids. proteins. Folding		2				

		proteins.							
6		Structure and functions of intracellular cell organelles.			4				Task 2
7		The structure and functions of glycocalyx. General characteristics of specialized membranes (neurons, erythrocytes).			4				
8		Features of the genetic apparatus of viruses. DNA and RNA-containing viruses.			4				
9		Mitochondrial DNA and its role in pathology.		2					
10		Genetic od. Biosynthesis of proteins.	2						
11		Interim certification					3		
		Total	2	8	5	12	3	30	
Credit 2									
1		Molecular mechanisms of regulation of gene expression in prokaryotes and eukaryotes.	2						Task 3
2		DNA replication and repair.		2					
3		Transcription in prokaryotes. Principles, stages. Subunit composition of E.coli RNA polymerase, the concept of operon.			4				
4		Modern methods of molecular genetics research. Polymerase chain reaction. DNA isolation.		2					
5		Modern methods of molecular genetics research. Polymerase chain reaction. DNA amplification. Detection of PCR products.		2					
6		Organization of the human genome.			4				Task 4
7		Classification of chromosomes. Maps of human chromosomes.		2					
8		The problem of under-replication of 3'-ends of linear molecules. Telomeres and telomerase.			4				
9		The genetic apparatus of the cell. Levels of structural organization of chromosomes.		2					
10		Homeostasis and its manifestation in human pathology.		3					

11		PA					3		
		Total	2	8	5	12	3	30	
Credit 3									
1		Apoptosis. Molecular mechanisms of apoptosis.	1						
2		Cell death. General characteristics of molecular events in apoptosis and necrosis.		3					
3		The biological role of mitosis and meiosis.			2				
		Medical significance.							
4		Regulation of the cell cycle. Forms of cell division.			3				Task 5
5		Molecular and cellular research. Determination of sexual chromatin in buccal epithelium.		2					
6		Molecular mechanisms of carcinogenesis.		2					
7		The effect of damaging factors on the cell. Paranecrosis theory.				4			
8		The use of DNA diagnostic methods in medicine.				4			Task 6
9		Investigation of pathological conditions by dermatoglyphics and crystallographic analysis.		2					
10		Stem cells. Medical significance.				4			
11		PA					3		
		Total	1	9	5	12	3	30	
		Total	5	25	15	36	9	90	

Thematic plan of the discipline: "Structural foundations of life" (tissue level)

№	Section	Topic	Number of study hours:					Total hours	Assignments
			Lectures	PL/ Lec	SIWT	SIW	IA		
Credit "Biochemistry"									
1.		Chemical composition of proteins				5		5	Solving the problem of representing the role of enzymes and vitamins in biochemical processes, including regulation of enzyme activity and changes in their activity based on their protein
2.		Physico-chemical properties of proteins		1				1	
3.		Enzymes. Properties of enzymes		2				2	
4.		Regulation of enzyme activity		2				2	
5.		Water-soluble vitamins			2	2		4	

6.	Fat-soluble vitamins			2	2		4	nature
7.	Laboratory workshop "Proteins. Enzymes"		2				2	
8.	Chemical composition of food (proteins, fats, carbohydrates, vitamins and trace elements)			1	1		1	
Total:			7	5	15	3	30	

Thematic plan of the discipline: "Structural foundations of life" (tissue level)

№	Section	Topic	Number of study hours:					Total hours	Assignments
			Lectures	PL/ Lec	SIWT	SIW	IA		
Credit 1. "Biophysical foundations of cell functioning"									
1.	Biophysical foundations of membranes	Biological membranes. Structure, properties and ways to study them. Modern methods of studying the structure and functions of biological membranes. Molecular mechanisms of electrochemical membrane potentials and propagation of a nerve impulse along an excitable fiber. Mechanisms of permeability of biological membranes. Structure and functions of ion channels and carriers. Mechanisms of electrogenesis. Molecular mechanisms of PD and PP when blocking Na ⁺ and K ⁺ channels	3	7	5	12	3		Written or oral response in a practical lesson. SIWT and SIW test task on the Moodle platform
Total:			3	7	5	12	3	30	

SYLLABUS

Discipline: Movement and Support. The skeletal muscle system

Educational program:

General medicine

Total credits
ECTS: 6
Course: 1

Description of the discipline

Name of discipline		Code	Educational program			
Movement and Support. The skeletal muscle system		RFF 2207	«6B10102 – General medicine»			
Lecturers		Structural division				
Responsible: assistant of Professor Karibzhanova R.T.		Department of morphology and physiology				
Lecturers: Application 3		Department of morphology and physiology (Anatomy, Histology, Physiology)				
Training level	Type	Module				
Bachelor	BD UC	Movement and Support. The skeletal muscle system				
Forms of learning activity					Training period	
Lectures, PL, SWIT, SIW					1 semester	
Mandatory prerequisites:			Additional prerequisites:			
Structural basis of life (chemical, cellular, tissue level).			School basic knowledge of biology and anatomy.			
ECTS	Hours	Lectures	Practical training	SWIT	SIW	IA
6	180	14	40	36	72	18
anatomy	60	7	10	13	24	6
histology	60	3	18	9	24	6
physiology	60	4	12	14	24	6
The purpose of the discipline						
Formation of students' knowledge about the structure and basic laRL of functioning of cells, tissues, organs of the musculoskeletal system of a healthy person, mechanisms of their regulation.						

Learning outcomes

LO from the educational program (code)	LO of discipline	Methods of training	Assessment methods
LO 1 Demonstration of knowledge of Gen- eral laRL of origin and development of life, structure and function of cells, tissues, organs and body systems in normal and pathological conditions; anatomical and physiological peculiarities of functioning of human body systems in different age periods; interrelations of functional systems of the body and levels of their regulation in conditions of normal pathology	LO 4 To analyze regularities of struc- ture and functioning of separate organs and systems of the person in norm and at pathology.	discussion, presentations and traditional methods (communica- tion tasks, consultations with teachers, testing); independent study of literature/work on the Internet, preparation of test tasks, abstracts, thematic abstracts, work remotely on the Moodle platform (testing).	Current control: oral interview/ survey, testing / solving situational problems. Intermediate control: written examination
LO 2 Readiness for scientific activity, as- suming possession of methodological knowledge, technology of research activity, recognition of their value and readiness for their use in the	LO 5 Apply scien- tific principles to medical practice and research.	registration of protocols of educa- tional experiments and works, analysis of the results with con- clusions.	Evaluation of the Protocol in the sum- mary of the final evaluation for the evaluation session

professional sphere for the formation of scientifically grounded medical practice.			
LO 3 Readiness of the future specialist to work with people-to work in a group, taking into account the high interactivity of the medical profession and complex modern algorithms of medical care, including a large number of components, tools and, most importantly, human professional resources needed in professional medical education.	LO 6 Communicate effectively with colleagues and patients.	Active learning methods: working in small and mini-groups	assessment of group work

Thematic plan

№	Section	Topic	Number of study hours:					Assessments
			Lectures	PL/ Lec	SIWT	SIW	IA	
Credit 1. «Osteology and Arthrosindesmology»								
1.		Organization of the educational process at the Department of Human Anatomy. Subject and tasks of anatomy. General anatomy of the musculoskeletal system. Bone as an organ. Classification of bones.	1				1	
2.		Anatomical terminology. The concept of the main axes, human planes. General review of the skeleton. Cervical, thoracic, lumbar vertebrae. Sacrum, tailbone, ribs, sternum, their structure.		2			2	
3.		Bones of the belt and the free department of the upper and lower extremities, their structure.			2		2	
4.		The structure of the bones of the upper and lower extremities.				3	3	
5.		The study of the features of				3	3	

		skeleton bones in the age aspect.							
6.		The skull as a whole. Structural features of the bones of the brain and facial parts of the skull.	1					1	
7.		The structure of the frontal, parietal, occipital, ethmoid, temporal and sphenoid bones. Canals of the temporal bone.		2				2	
8.		Bones of the facial section of the skull: upper and lower jaws, zygomatic, nasal, palatine, lower nasal concha, vomer, hyoid and lacrimal bones. Topography of the skull.			2			2	
9.		Topography of the cerebral and facial parts of the skull.				2		2	
10.		The concept of bone joints. Types of bone joints. Joints of the bones of the body. Chest as a whole. Connection of the bones of the skull.	1					1	
11.		Classification of bone compounds. Joints of the spinal column. Rib cage. The connection of the spinal column with the skull. Temporomandibular joint.			2			2	
12.		Anatomical characteristics of the joints of the bones of the upper and lower extremities.	1					1	
13.		Joints of bones of the upper and lower limbs.		2				2	
14.		X-ray characteristic of the joints.				2		2	
15.		Final lesson in osteology and arthro-sindesmology.			1			1	
16.		Intermediate certification.					3	3	
			4	6	7	10	3	30	
Credit 2. «Myology»									
1.		General myology. Muscle as an organ. Muscle classification. Auxiliary muscle apparatus. Muscles and fascia of the head and neck.	1					1	
2.		Mimic and chewing muscles, their fascia, function. Muscles and fascia of the neck, function.		2				2	
3.		Neck topography. Fascias of the neck according to Shevkunenko.				2		2	

4.		Anatomical characteristics of the muscles and fascia of the body.	1					1	
5.		Muscles and fascia of the chest, back and abdomen, function. Vagina of the rectus abdominis muscle. White line of the abdomen. Umbilical ring. Inguinal canal.			2			2	
6.		Modeling the vagina of the rectus abdominis muscle, the white line of the abdomen and the umbilical ring.				2		2	
7.		Modeling of the inguinal canal.				2		2	
8.		Anatomical characteristics of the muscles and fascia of the extremities.	1					1	
9.		Muscles and fascia of the shoulder girdle, shoulder, forearm and hand. Topography of the upper limb.		2				2	
10.		Topography of the upper limb.				2		2	
11.		Muscles and fascia of the pelvic girdle, thigh, lower leg and foot. Topography of the lower limb.			2			2	
12.		Topography of the lower limb.				2		2	
13.		Femoral canal modeling.				2		2	
14.		Bone-fibrous channels and synovial sheaths of the hand and foot.				2		2	
15.		The final lesson in myology.			2			2	
16.		Intermediate certification						3	3
			3	4	6	14	3	30	
Total:			7	10	13	24	6	60	

Histology Unit

No	Section	Topic	Number of study hours:					Assessment
			Lectures	PL/ Lec	SIWT	SIW	IA	
Credit 1								
1.		Teaching about tissues. Epithelial tissues.	1					
2.		Epithelial tissue. Morphofunctional		2				

		characteristics of simple epithelium.							
3.		Epithelial tissue. Morphofunctional characteristics of stratified epithelium.	2						
4.		Epithelial tissue. Morphofunctional characteristics of glandular epithelium. Secretory cycle, phases of secretion.	2	2					
5.		Connective tissues. Loose connective tissue, cellular composition, intercellular substance.	2						
7.		Connective tissues Dense connective tissue. Tissues with special properties.	2	2					
8.		Age-related features of tissues: epithelium, connective tissues. Opportunities and features of regeneration according to age.			12				
Total			1	10	4	12	3	30	
Credit 2									
9.		Histology of skeletal tissues	1						
10.		Cartilage tissues, types, cellular composition, intercellular substance.	2						
11.		Bone tissues, types, cellular composition, intercellular substance.	2	2					
12.		Histology of muscle tissues	1						
13.		Muscle tissues. Smooth and cardiac muscle tissues.	2						
14.		Muscle tissues. Striated skeletal muscle tissue. Histophysiology of muscle contraction.	2	3					
15.		Age related and organ features of tissues: Skeletal and muscle. Opportunities and features of skeletal and muscle tissues` regeneration according to age.			12				
Total			2	8	5	12	3	30	

Distribution of hours on **Physiology** for a university component

“Movement and support. Musculoskeletal system (Locomotor system)”

No	Section	Topic	Number of study hours:	Assessment
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			Lectures	PL/ Lec	SIWT	SIW	IA	Total hours	
Credit 1									
1.	Physiology	General characteristics of physiology as a science. The basic principles of the formation and regulation of physiological functions.	1					1	Preparation for the lecture and study of the lecture material
2.	Physiology	Laws of muscles irritation of and other excitable tissues.	1			2		3	Preparation for the lecture and study of the lecture material
3.	Physiology	Physiology of muscles and other excitable tissues. Excitability parameters.		2	2			4	Based on the discussed material of lectures and classes, solving situational problems and test tasks, drawing up a protocol with analysis and conclusions.
4.	Physiology	Bioelectric phenomena in the muscles.		2	2	2		6	Based on the discussed material of the lesson, the solution of situational problems and test tasks. Studying schemes of various types of potentials.
5.	Physiology	Assessment of the functional state of the muscular system. Methods of physiological research.				3		3	Based on the discussed material of lectures, solving situational problems and test tasks, drawing up a protocol with analysis and conclusions.
6.	Physiology	Physiological properties of mioneuralsynapses.	1		2			3	Preparation for the lecture and study of the lecture material

7.	Physiology	Laws conduction of excitation viaperipheral nerves. Parabiosis.		2		2		4	Based on the discussed material of lectures and classes, solving situa-tional problems and test tasks, drawing up a protocol with analysis and conclusions.
8.	Physiology	Physical properties of skeletal mus-cle.				3		3	Preparation for the lec-ture of the lecture mate-rial
Credit 2									
9.	Physiology	Physiological properties of muscles.		2	2			4	Based on the discussed material of lectures and classes, solving situa-tional problems and test tasks, drawing up a protocol with analysis and conclusions.
10	Physiology	Types and modes of muscle contrac-tions.		2	2			4	Based on the discussed material of lectures and
									classes, solving situa-tional problems and test tasks, drawing up a protocol with analysis and conclusions.
11	Physiology	The mechanism of muscle contrac-tion.		2		2		4	Study of the morpho-physiological character- istics of the skeletal muscle and the mecha- nism of muscle contrac-tion.
12	Physiology	control study			1			1	Discussion
13	Physiology	Systemic mechanisms of regulation of muscle tone and phase movements.	1		3	4		8	Based on the discussed material of lectures and classes, solving situa-tional problems and test tasks, drawing up a protocol with analysis and conclusions.

14	Physiology	Muscle adaptation to physical activity.				4		4	Studying the features of the functioning of bio- rhythms, preparing an abstract / presentation.
15	Physiology	Physiology of labor				2		2	The study of morpho-physiological characteristics and varieties of labor.
Total:			4	12	14	24	6	60	2

SYLLABUS

Discipline: Control and regulation (nerve system, organs of sense, endocrine system)

Educational program:

6B10102 "General Medicine"

Total credits

ECTS: 6

Course: 1

Description of the discipline

Name of discipline			Code		Educational program		
Control and regulation (nerve system, organs of sense, endocrine system)			RFF 2207		«6B10102 – General medicine»		
Lecturers			Structural division				
Responsible: Nurseytova K.T.			Department of Morphology and physiology				
Lecturers:			Application 3				
Training level		Type	Module				
Bachelor		BD UC	Control and regulation (nerve system, organs of sense, endocrine system)				
Forms of learning activity					Training period		
Lectures, practical lessons, SIWT, SIW					2 semester		
Mandatory prerequisites			Additional prerequisites:				
«Locomotion and support. Locomotor system»: structure and main laws of tissue and LMS organs` functioning.			School basic knowledge of biology.				
ECTS	Hours	Lectures	Practical training		SWIT	SIW	IA

6	180	15	45	30	72	18
anatomy	60	6	13	11	24	6
histology	30	2	8	5	12	3
physiology	90	7	24	14	36	9
The purpose of the discipline						
Learning of morphofunctional features of nerve tissue, sense organs, nerve and endocrine systems in normal condition and their mechanism of regulation.						

Learning outcomes

LO from the educational program (code)	LO of discipline	Methods of training	Assessment methods
BC 1 Demonstration of knowledge of General laRL of origin and development of life, structure and function of cells, tissues, organs and body systems in normal and pathological conditions; anatomical and physiological peculiarities of functioning of human body systems in different age periods; interrelations of functional systems of the body and levels of their regulation in conditions of normal pathology	LO 5 To analyze regularities of structure and functioning of separate organs and systems of the person in norm and at pathology.	discussion, presentations and traditional methods (communication tasks, consultations with teachers, testing); independent study of literature/work on the Internet, preparation of test tasks, abstracts, thematic abstracts, work remotely on the Moodle platform (testing).	Current control: oral interview/ survey, testing / solving situational problems. Intermediate control: written examination
BC 2 Readiness for scientific activity, assuming possession of methodological knowledge, technology of research activity, recognition of their value and readiness for their use in the professional sphere for the formation of scientifically grounded medical practice.	LO 5 Apply scientific principles to medical practice and research.	registration of protocols of educational experiments and works, analysis of the results with conclusions.	Evaluation of the Protocol in the summary of the final evaluation for the evaluation session
BC 3 Readiness of the future specialist to work with people-to work in a group, taking into account the high interactivity of the medical profession and complex modern algorithms of medical care, including a large number of components, tools and, most im-	LO 6 Communicate effectively with colleagues and patients.	Active learning methods: working in small and mini - groups	assessment of group work

portantly, human professional resources needed in professional medical education.			
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Thematic plan

№	Section	Topic	Number of study hours					Assignments	
			Lectures	PL/ Lec	SIWT	SIW	IA		Total hours
1.	Histology	Nerve tissue, neurons, neuroglia, nerve fibers, nerve endings.			3				Study of the microscopic and ultramicroscopic structure of neurons, neuroglia, nerve fibers, chemical synapses, nerve endings. On the basis of the material discussed, solution of systematic tasks, test tasks, study and sketching of histological preparations, electronograms, circuits, preparation of protocols descriptions of preparations
2.	Anatomy	Anatomy of the central nervous system.	2						Preparation for the lecture and study of the lecture material.
3.	Anatomy	Spinal cord: shape, topography, internal structure. The formation of spinal nerves. Shells of the spinal cord.		1					Study of the structure of the spinal cord and membranes of the spinal cord according to anatomical models and plates, a schematic representation of a simple reflex arc. Based on the discussed material, the solution of test tasks..

4.	Anatomy	General overview of the brain. General characteristics of the base of the brain. Shells of the brain. The processes and sinuses of the dura mater. Inter-shell spaces.			1				Study of the structure of the brain and the membranes of the brain, derivatives of the hard shell of the brain according to the anatomical models and plates, Based on the discussed material, the solution of test
5.									tasks.
6.	Histology	Morphofunctional characteristics of nerve system	1						Preparation to lecture and studying content of lecture.
7.	Physiology	CNS functional characteristic.	1						Preparation for the lecture and study of the lecture material
8.	Histology	Histology of spinal cord, ganglia, nerve, reflex arc		2					Study of the structure of the spinal cord, ganglion, nerve, reflex arc. Based on the discussed material, the solution of situational problems, test tasks, the study and sketching of histological preparations, electron diffraction patterns, diagrams, preparation of protocols / descriptions of preparations
9.	Physiology	Physiology of the spinal cord and brain stem structures		2		2			On the basis of the discussed material of the lecture and the lesson, the work performed on checking reflexes, solving situational tasks and test tasks, drawing up a protocol with analysis and conclusions.

10.	Anatomy	The final brain, its derivatives, structure, functions.		2					The study of the structure and function of derivatives of the finite brain by anatomical models and plates, Based on the discussed material, the solution of situational problems, test tasks..
11.	Anatomy	Cortex. The formation of the cerebral cortex. The concept of analyzers.	1						Preparation for the lecture and study of the lecture material..
12.	Physiology	Integrative activity of the cerebral cortex.	1						Preparation for the lecture and study of the lecture material
13.	Anatomy	Cytoarchitectonics of the cerebral cortex				4			Remotely on the MOODLE platform (testing).
14.	Histology	Histology of brain hemispheres` cortex, cerebellum		2					Study of the structure of the cerebral cortex of the brain, cerebellum. On the basis of the discussed material, the solution of situational tasks, test tasks, study and sketching of histological preparations, electronic grams, schemes, preparation of protocols / descriptions of drugs
15.	Physiology	Physiology of the cerebellum. Physiology of the diencephalon			2			2	Based on the discussed material, performing cerebellar tests, solving situational problems, drawing up a protocol with analysis and conclusions.
16.	Physiology	Integrative activity of the cerebral cortex.		2					Based on the discussed material, performing cerebellar tests, solving situational problems, drawing up a protocol

									with analysis and conclusions
17.	Physiology	Subcortical centers. The basal ganglia. The limbic system				2			Literature study, remotesting on the MOODLE platform.
18.	Anatomy	The intermediate and midbrain, their derivatives, structure, functions.		2					Study of the structure and function of derivatives of the diencephalon and mid-
19.									brain according to anatomical models and plates, Based on the discussed material, the solution of test tasks.
20.	Anatomy	Actually the hind and medulla oblongata, their derivatives, structure, functions. The isthmus of the diamond-shaped brain.				2			Study of the structure and function of derivatives of the posterior and medulla proper according to anatomical models and plates, Based on the discussed material, the solution of test tasks..
21.	Anatomy	Reticular formation, its role in the body, limbic system.				4			Work with literature and electronic media; preparation and delivery of an abstract.
22.	Anatomy	Diamond-shaped fossa. The projection of the nuclei of the cranial nerves into the rhomboid fossa	1						Preparation for the lecture and study of the lecture material.
23.	Physiology	General physiology of the central nervous system. Properties of nerve centers. The basic principles of coordination of the central nervous system.	1						Preparation for the lecture and study of the lecture material

24.	Anatomy	The fourth ventricle. Diamond- shaped fossa. The projection of the nuclei of the cranial nerves into the rhomboid fossa..		1				Study of the structure of the derivative posterior cerebral bladder according to anatomical models and laminates, a schematic representation of the nuclei of the cranial nerves in the rhomboid fossa. Based on the discussed material, the solution of test tasks.
25.	Anatomy	Cerebrospinal fluid circulation.				4		Work with literature and electronic media; preparation and delivery of an abstract
26.	Anatomy	The final lesson on the central nervous system..			2			Based on the material on the study of the central nervous system, solving test tasks and passing practical skills on anatomical models and plates..
27.	Physiology	Research methods of the central nervous system. (RBL)			2			Project preparation and protection
28.	Physiology	Teaching P.K. Anokhin about functional systems..				1		The study of educational literature on the topic, the study of the principle of the functional systems. Preparation of the abstract.
29.	Physiology	Front desk.				1		The study of the morpho-physiological characteristics of the ligand-receptor interaction. Remote testing on the MOODLE platform
30.	Physiology	Features of the spread of excitation in the central nervous system..		2		2		Based on the discussed material of the lesson, solving situational problems. The study of schemes of various

									types of interaction of nerve centers..
31.	Physiology	Braking processes in the central nervous system.		2					Based on the discussed material, the solution of situational problems. Studying schemes of various types of braking.
32.	Physiology	Physiology of the autonomic nervous system				2	3		The study of educational literature on the topic, the study of the principles of the autonomic nervous system.
33.	Anatomy	Cervical and brachial plexus, formation, branches, areas of innervation..		2					Studying the formation of the cervical and brachial plexuses, a schematic representation of the zones of innervation of the branches of the cervical and brachial plexuses. Based on the discussed material, solving situational problems.
34.	Anatomy	Areas of innervation of the branches of the cervical and brachial plexus.				3			Remotely on the MOODLE platform (testing).
35.	Anatomy	Lumbar and sacral plexus formation, branches, areas of innervation..			2				Study of the formation of the lumbar and sacral plexuses, a schematic representation of the zones of innervation of the branches of the lumbar and sacral plexuses. Based on the discussed material, the solution of situational problems.
36.	Anatomy	Areas of innervation of the branches of the lumbar and sacral plexuses..				3			Remotely on the MOODLE platform (testing).

37.	Anatomy	The facial nerve (VII pair), glosso-pharyngeal nerve (IX pair), vagus nerve (X pair), accessory nerve (XI pair) and hyoid nerve (XII pair). Their nuclei, branches, areas of innervation..		2					The study of the nuclei and branches of the facial, glosso-pharyngeal, vagus, accessory, sublingual nerves, a schematic representation of the zones of innervation of their branches.
38.	Anatomy	Trigeminal nerve (V): nuclei, its branches, connections with autonomic nodes, areas of innervation..			2				The study of nuclei and branches of the trigeminal nerve, a schematic representation of the zones of innervation of the branches of the trigeminal nerve.
39.	Anatomy	Schematic description of 12 pairs of cranial nerves.				2			Work with literature and electronic media; preparation and delivery of an abstract.
40.	Anatomy	General principles of the structure and function of the autonomic nervous system..	1						Preparation for the lecture and study of the lecture material
41.	Anatomy	Central and peripheral parts of the autonomic nervous system.				2			Work with literature and electronic media; preparation and delivery of an abstract.
42.	Physiology	Physiology of analyzers. General principles of the structure of sensory systems. Information processing mechanisms. Olfactory analyzer.	1						Preparation for the lecture and study of the lecture material

43.	Anatomy	The path of olfactory and taste analyzers (I pair). The organ of vision, the structure of the eyeball. Auxiliary organs of the eye. Conducting path of visual impulses and pupillary reflex (II pair). The oculomotor nerve (III pair), the block nerve (IV pair), the abducent nerve (VI pair).		2					The study of olfactory and taste analyzers, their pathways, the structure and function of the organ of vision according to anatomical models and plates, a schematic representation of the pathways of olfactory, taste and visual analyzers. The study of nuclei and branches of the oculomotor, block, abducent nerves, a schematic representation of the zones of innervation of their branches. Based on the discussed material, the solution of test tasks.
44.	Anatomy	The structure and functions of the outer, middle and inner ear. Statokinetic and auditory analyzers.			2				The study of statokinetic and auditory analyzers, their pathways, the structure and
45.		The vestibulo-cochlear nerve (VIII pair)							function of the hearing organ according to anatomical models and plates, a schematic representation of the pathways of statokinetic and auditory analyzers.
46.	Histology	Histology of sense organs							The study of the structure of the senses. Based on the discussed material, the solution of situational problems, test tasks, the study and sketching of histological preparations, electronograms, circuits, preparation of protocol protocols / descriptions of

									drugs
47.	Physiology	Physiology of the somatosensory system. Skin analyzer.		2					Based on the discussed material, the execution of work. Studying analyzer circuits.
48.	Physiology	Visual analyzer. Taste analyzer.		2		2			Based on the discussed material, performance of work, solution of situational tasks. Studying analyzer circuits. Registration of protocols..
49.	Physiology	Auditory analyzer. Vestibular analyzer.		2		2			Based on the discussed material, performance of work, solution of situational tasks. Studying analyzer circuits. Registration of protocols.
50.	Physiology	Physiology of adaptation. General adaptation syndrome.	1						Preparation for the lecture and study of the lecture material
51.	Physiology	Congenital and acquired behavior.	1						Preparation for the lecture and study of the lecture material
52.	Physiology	Motivation.				2			The study of educational literature on the topic. Synopsis on the topic.
53.	Physiology	Biorhythmology.				2			The study of the functioning of biorhythms, preparation of an abstract
54.	Physiology	Higher mental functions of man. Typological features of GNI. Emotional stress. Experimental neurosis.				2			The study of educational literature on the topic, the characteristics of emotional stress, the occurrence of experimental neuroses, preparation of an abstract

55.	Physiology	The conditioned reflex activity of the body, neurophysiological mechanisms.		2					Based on the discussed material, performance of work, solution of situational tasks. The study of educational literature on the topic..
56.	Physiology	Inhibition of conditioned reflex activity.			2				Based on the discussed material, performance of work, solution of situational tasks. The study of educational literature on the topic..
57.	Physiology	Memory		2		2	3		Based on the discussed material, performance of work, solution of situational tasks. The study of educational literature on the topic..
58.	Anatomy	Endocrine anatomy	1						Preparation for a lecture and study of the lecture material
59.	Histology	Morphofunctional characteristics of endocrine system	1						Preparation to lecture and studying content of lecture
60.	Physiology	General characteristics of the physiology of the endocrine system.	1						Preparation for the lecture and study of the lecture material
61.	Anatomy	Anatomy of the glands of the internal and endocrine parts of the glands of mixed secretion..		1					The study of the anatomy of the glands of the internal and endocrine parts of the glands of mixed secretion.
62.	Anatomy	General review and classification of the endocrine system.				2	6		Work with literature and electronic media; preparation and delivery of an abstract.

63.	Histology	Central regulatory formations of endocrine system		2					The study of the microscopic structure of the hypothalamus, pituitary, pineal gland. Based on the discussed material, the solution of situational tasks, test tasks, the study and sketching of histological preparations, electron diffraction patterns, diagrams, preparation of protocols / descriptions of preparations
64.	Physiology	Hypothalamic-pituitary system.			2				Based on the discussed material, studying schemes, solving situational problems. The study of educational literature on the topic..
65.	Histology	Peripheral organs of endocrine systems		2					Study of the microscopic structure of the thyroid, parathyroid glands and adrenal gland. On the basis of the discussed material, the solution of situational tasks, test tasks, study and sketching of histological preparations, electronograms, schemes, preparation of protocols / descriptions of slides
66.	Histology	Age related features and development of nervous and endocrine systems` organs				12	3		Study of educational literature on the topic, distance testing on the MOODLE platform
67.	Physiology	General characteristics of the endocrine glands. General properties and functions of hormones.		2	2	3			Based on the discussed material, performance of work, solution of situational tasks. The study of educational literature on the topic.

68.	Physiology	The functions of the thyroid and parathyroid hormones, pancreas.		2	2	3			Based on the discussed material, performance of work, solution of situational tasks. The study of educational literature on the topic.
69.	Physiology	General characteristics of adrenal hormones.		2	1	3			Based on the discussed material, performance of work, solution of situational tasks. The study of educational literature on the topic.
70.	Physiology	Physiology of organs combining non-endocrine function with endocrine and their effect on the activity of the body.				3			Study of educational literature on the subject, distance testing on the MOODLE platform
71.	Physiology	Final consultation			1		3		Based on the material studied in the discipline, discussion of problematic issues.
		Total	15	45	30	72	18	180	

SYLLABUS

Discipline: “Basic medical procedures”

Educational program:

“B086-General Medicine”

Total credits

ECTS: 2

Course: 1

Description of the discipline

Name of the discipline		Code	Educational program
Basic medical procedures		B086	General Medicine
Lecturers		Structural division	
Responsible: Issataeva J.S.		CSET	
Lecturers:			

Aubakirova D.N., Evloeva R.M., Eshetova A.A., Idrissova G.K., Nurekeshova R.J., Saparova A.A., Timahovich M.V., Kasimova M.B., Shmakov A.S.			CSET		
Training level		Type		Module	
Bachelor		GED CC			
Forms of learning activity				Training period	
PL, SIWT, SIW				1-2 semestres	
Mandatory prerequisites:			Additional prerequisites:		
Medical anatomy (knowledge of human anatomy) Fundamentals of medical psychology and communication skills (knowledge of the basics of psychology and communication skills)					
ECTS	Hours	Practical training	SWIT	SIW	IA
2	60	18	12	24	6
The purpose of discipline					
upon completion of this discipline, students should be able to independently perform basic medical manipulations and basic cardiopulmonary resuscitation.					

Learning outcomes

LO from the educational program (code)	LO of discipline	Methods of training	Assessment methods
B086	of basic medical procedures	Active methods training: work in small groups, standardized patient	Check-list, Formative evaluation, GSCE

Thematic plan

№	§	Topic	Number of study hours:	Assignments
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			Lectures	PL/ Lec	SIWT	SIW	IA	Total hours		
Credit 1. «Injections»										
1.		Methods and technique of processing hands and method of putting on gloves	-	2	1	3		6	Skill development according to the execution algorithm	
2.		Intradermal injection. Subcutaneous injection.	-	2	1	3		6	Skill development according to the execution algorithm	
3.		Intravenous injection	-	2	1	3		6	Skill development according to the execution algorithm	
4.		Intravenous infusion	-	2	1	3		6	Skill development according to the execution algorithm	
5.		Intramuscular injection	-	2	1	3		6	Skill development according to the execution algorithm	
Credit 2. «Patient care»										
7.		Care for seriously ill patients	-	2	1	3		6	Skill development according to the execution algorithm	
8.		Technique of cardiopulmonary resuscitation in adults	-	2	2	2		6	Skill development according to the execution algorithm	
9.		Technique of cardiopulmonary resuscitation in children	-	2	2	2		6	Skill development according to the execution algorithm	
10.		Medical interview (SP)	-	2	2	2		6	Skill development according to the execution algorithm	
		Final control					6	6		
Total:					18	12	24	6	60	

SYLLABUS

Module: “Social-political studies module”, Discipline: “Sociology”, “Psychology”, “Political science”, “Cultural studies”

Educational program:

6B08601 “General Medicine”

Total credits

ECTS: 8

Course: 2

Description of the discipline

Name of discipline			Code	Educational Program		
Sociology, Psychology, Political science, Cultural studies				General medicine		
Faculty			Structural Unit			
Responsible: Ossintseva Y.G., Ospanova M.B.			History of Kazakhstan and SPD department			
Lecturers: Ossintseva Y.G., Ospanova M.B., Zhumanbaeva Z.K.			History of Kazakhstan and SPD department			
Training level		Type		Module		
Bachelor		GED OC		SPS		
Forms of learning activity				Training period		
Lectures, practical lessons, SIWT, SIW				semester		
Mandatory prerequisites:			Additional prerequisites:			
Analyse social, political and cultural processes and problems			Use knowledge of sociological, political, cultural and psychological disciplines to form a worldview			
ECTS	Hours	Practical training		SWIT	SIW	IA
	240	60		40	96	24
The Purpose of Discipline						
<p>Our aim is to balance knowledge, understanding and skills in our qualifications to enable students to become effective learners and to provide a solid foundation for their continuing educational journey.</p> <p>Sociology course analyzes the influence of social and cultural factors upon human behavior in such areas as culture, socialization, groups, deviance, stratification, race, gender, economics, family, religion, and the environment. Social dynamics and social institutions will be explored, coupled with the ever-present issues of social change and the impact of these changes on society and the individual.</p> <p>Cultural studies course provides a general introduction to the field of Cultural Studies. It incorporates both the views of culture as a way of life and as a contested site for human discourse and action. Knowledge of key concepts and approaches will equip students to understand and articulate themselves as cultural beings. As an interdisciplinary course, it will be beneficial to medical students.</p> <p>The main goal of the course in political science is to develop students' skills of independent analysis of complex phenomena and trends in the field of political life, to give the necessary minimum knowledge of politics, to help students form a conceptual framework.</p> <p>The study of the discipline "Political Science" is designed to form the political worldview and political culture of students, to promote their active participation in solving the problems facing the Republic of Kazakhstan, as well as to develop the social and humanitarian worldview of students in the context of</p>						

solving the problems of modernization of public consciousness, defined by the state program "Looking into the Future: the modernization of public consciousness.

Mastering the methodological foundations and understanding of psychology as a social science, necessary for the formation and development of a specialist's personality and effective communication in the professional sphere.

Learning outcomes

LO from the educational program (code)	LO of discipline	Methods of training	Assessment methods
6B08601 "General Medicine"	Use knowledge of sociological, political, cultural and psychological disciplines to form a worldview.	Student-centred learning based on a reflexive method competency-based learning role play and debate case study (case analysis) project-based learning essay	Formative assessment - individual, general questioning, oral and written; testing, case study, preparation and presentation of the paper. Summative assessment – written examination.

Thematic plan

№	Section	Topic	Number of study hours					Total hours	Assignments (might combine several topics, but not less than 1 and not more than 3 current Assignments for 1 credit; total number of Assignments for course not less than 5)
			Lectures	PL/ Lec	SIWT	SIW	IA		
Credit 1. «Theoretical and methodological accidence of Cultural studies»									
1	Cultural studies	Culture and its morphology The role of culture in human society. Culture: Definition, Functions, Characteristics, Elements of Culture.	1	1				3	
2		Language of Culture.						5	Essay "The body as a symbolic site"

		Morphology and anatomy of culture: its role in the study of cultural configuration.		1		1	3				
3		Semiotics of Culture. Difference and relation between Civilization and Culture. Types of Culture.		1		1		1	3	-	
4		Anatomy of Culture. Types of Nomadic culture: forms and methods of coding cultural information.	1		1	1		2	5	Essay “Culture of nomads of Kazakhstan as a significant component of Kazakh cultural heritage”	
5		Kazakh Nomadic Culture. Cultural heritage of Sakas, Massagets, Huns, Usuns and Kangly and their role in formation of cultural heritage of Turkic people.		1		1		1	1	4	-
6		The cultural heritage of the proto-Turks. Saka-Massagetian, Scythian culture and Ancient culture: cultural interaction. Demonstrate knowledge of ancient cultures of Eurasian space, cultural heritage and achievement of people of Kazakhstan.		1		1			3	5	Structural Abstract “The Silk Route and Cross-cultural influences”.
7		Medieval culture of Central Asia		1						5	Essay “Turkic Renaissance and its role in global cultural heritage”

		<p>Influence of Turkic cultural heritage on Kazakh culture.</p> <p>The contribution of Turkic people to development of global culture and its role in formation of the medieval Renaissance.</p> <p>Contribution of people of West Asia, Iran, Central Asia, and Kazakhstan to formation of Islamic culture.</p>			1					
8		<p>Turkic cultural heritage</p> <p>Medieval Kazakh culture and its influence on European and Islamic culture.</p>		1	1		2		5	Essay "Mongol invasion as a cultural disaster".
			2	8	7	14	3	34		
Credit 2. «Problems of culture in the contemporary Kazakhstan»										
9		<p>The formation of Kazakh culture</p> <p>Culture and civilization of Turkic people and its role in the development of the culture Silk Road.</p> <p>The development and spread of Islam.</p>		1				1	2	-
10		<p>18th - late 19th century Kazakh culture.</p> <p>Culture of Silk Road. Cultural Exchange on the Silk Road with Europe and Russia. The contribution of Turkic culture to the development of global culture and its influence on East-West dialogue.</p> <p>On How Monuments of Turkic culture Affected</p>		1	1				5	-

		spiritual development of Central Asian and Middle East regions. Special aspects of the development of urban culture in Central Asia. 100 sacral objects of Kazakhstan.				2		1		
11		20th century Kazakh culture. Kazakh culture in the historical dimension: cultural heritage of Kazakh people. Cultural heritage of Kazakh people. Cultural values and ethics of batyrs, poetic heritage and art, Kazakh national sport.		1				1	2	-
12		Kazakh Culture in the Modern World. Culture of Kazakhstan: challenges and opportunities.	1		1				6	Power Point Presentation “20-21st century Western European youth subculture and its influence on Kazakhstan youngsters”
13		Kazakh culture in the context of globalization The culture code of Kazakh nation. Analyze the role of culture code of Kazakh nation in preservation of cultural and ethnic identity	1		1				4	PowerPoint Presentation "State Program “Cultural Heritage”
14		Cultural policy of Kazakhstan. 20th Century Culture. Postmodern Media Culture.							3	Essay “Role of Kazakh language and culture in preservation of cultural code of nation”

		Post Modernism and Mass Culture: major values and patterns.				2			
15		State Program “Cultural Heritage” Political culture of Kazakhstan and its influence on organization of cultural strategy for preservation of cultural identity of Kazakh people.	1	1		2		4	
			3	7	3	10	3	26	
		Total:	5	15	10	24	6	60	

Thematic plan of Sociology

№	Section	Topic	Number of study hours:					Assignments (might combine several topics, but not less than 1 and not more than 3 current Assignments for 1 credit; total number of Assignments for course not less than 5)	
			Lectures	PL/ Lec	SIWT	SIW	IA		Total hours
Credit 1									
1	Sociology	Sociology: Understanding and Changing the Social World. Introduction to Sociology The Basic Concepts of Sociology. Completing assignments according to the Topic Research projects “Social research on contemporary social problems” (select topic with teacher according to list of topics)	1	1	1		1	5	Complete one suggested assignment according to the Topic (select topic with teacher) – see NOTE.

2		<p>Introduction to the theory of Sociology</p> <p>On the evolution of Sociological Theories</p> <p>Completing assignments according to the Topic</p> <p>Research projects (continuation).</p>		2				2		
3		<p>Social structure and social stratification.</p> <p>Social structure and social stratification. Socialization and identity.</p> <p>Equality and Inequality in Modern Society.</p> <p>Completing assignments according to the Topic</p> <p>Research projects (continuation)</p>	1	1	1		2	1	6	Complete one suggested assignment according to the Topic (select topic with teacher) – see NOTE.
4		<p>Socialization and identity.</p> <p>Socialization Throughout the Life Span: institutions and processes.</p> <p>Completing assignments according to the Topic.</p> <p>Research projects (continuation).</p>		1	1		3		5	Complete one suggested assignment according to the Topic (select topic with teacher) – see NOTE.
5		<p>Family in The Modern Society.</p> <p>Family in The Modern Society. Deviance, crime, and social control.</p> <p>Family: types, functions, perspectives.</p> <p>Completing assignments according to the Topic</p> <p>Research projects (continuation)</p>	1	1	1	3		1	7	Complete one suggested assignment according to the Topic (select topic with teacher) – see NOTE.
6		<p>Deviance, crime, and social control.</p>							5	Complete one suggested

		he Social Construction of Crime and Deviance. Completing assignments according to the Topic Research projects (continuation)		1	1	3			assignment according to the Topic (select topic with teacher) – see NOTE.
			3	7	5	12	3	30	
Credit 2									
7		Religion, Culture and Society. Religion, Culture and Society. The sociology of ethnicity and national identity. Education. Media. Religion in Social and Cultural Perspectives. Completing assignments according to the Topic Research projects (continuation)	1			1		4	Complete one suggested assignment according to the Topic (select topic with teacher) – see NOTE.
8		The sociology of ethnicity and national identity. The Role of Ethnic Groups in Social Development: Ethnic group in social survey research. Completing assignments according to the Topic Research projects (continuation)		1	1	1		3	Complete one suggested assignment according to the Topic (select topic with teacher) – see NOTE.
9		Education and Social Inequalities. Sociological Perspectives on Education. Completing assignments according to the Topic Research projects (continuation)		1	1	1		3	Complete one suggested assignment according to the Topic (select topic with teacher) – see NOTE.
10		Media, Technology, and Society. Social Relations and Technology		1				2	Complete one suggested assignment according to the Topic (select topic

		Completing assignments according to the Topic Research projects (continuation)			1			with teacher) – see NOTE.
11		Economic Globalization and its effects on Labor. Economic Globalization and its effects on Labor. Health and medicine. Population, Urbanization and Social Movements.	1				1 2	
12		Health and medicine. Social Epidemiology of Physical Health. Completing assignments according to the Topic Research projects (continuation)		1	1	2	4	Complete one suggested assignment according to the Topic (select topic with teacher) – see NOTE.
13		Population, Urbanization and Social Movements. Social Movements, Protest, and the Social Psychology of Protest. Completing assignments according to the Topic Research projects (continuation)		1		2	3	Complete one suggested assignment according to the Topic (select topic with teacher) – see NOTE.
14		Social change theories. Sociological Perspectives on Social Change. Completing assignments according to the Topic Research projects (continuation)		1	1	1	3	Complete one suggested assignment according to the Topic (select topic with teacher) – see NOTE.
15		Research projects on Sociology How to Conduct Social Research? Completing assignments according to the Topic Research projects (completion). Public presentation		1	1	3	1 6	Complete one suggested assignment according to the Topic (select topic with teacher) – see NOTE. Public

										presentation of Research projects.
			2	8	5	12	3	30		
		Total	5	15	10	24	6	60		

Thematic plan of Political science

№	Section	Topic	Number of study hours:						Assignments (might combine several topics, but not less than 1 and not more than 3 current Assignments for 1 credit; total number of Assignments for course not less than 5)	
			Lectures	PL/ Lec	SIWT	SIW	IA	Total hours		
Credit 1. «The ideological and theoretical foundations of Political Science»										
1.	Political science	<p>Political science as a science and academic discipline. The main stages of the formation and development of political science.</p> <p>Political science in the system of specialist training.</p> <p>The place of political science in the system of modern knowledge, the formation and development of political science. The genesis of political ideas in the history of human civilization.</p>	1			3	1	9	To prepare a reasoned essay “The Importance of Political Science for My Future Professional Activities”.	
2.		<p>The history of the development of political thought in Kazakhstan.</p> <p>he genesis of political ideas in the history of human civilization.</p>		2		3	1	7	Prepare a presentation of "Regular" and "Irregular" forms of government in the history of political thought.	

3.	<p>Political power: essence and mechanism of implementation. Political elites and political leadership.</p> <p>The nature of politics: form, content, process.</p> <p>The concept of politics. Key approaches to policy making. The essence of political power, various approaches to its definition. The functions of power. Sources and resources of political power.</p>	1	2	1	3	1	8	Create a table on the topic: "Comparative analysis of the main interpretations of politics."
4.	<p>The ruling elite and political leadership as social subjects of power.</p> <p>The main theories of elites G. Moska and V. Pareto, the concept of M. Weber. The concept and nature of political leadership, its social functions. The concept of political leadership. Classification of political leadership.</p>		2	1	2	1	6	Case Study - Classification of Political Leadership. Determine the type of political leader and argue your choice.
5.	<p>State and civil society.</p> <p>The concept of the political system. The structure and elements of the political system. The mechanism of functioning of the political system.</p> <p>The main theories of the political system (T. Parsons, D. Easton, G. Almond). Typology of political systems.</p>	1	2	1	2	1	7	To prepare a project on the topic: "Prospects for the development of the political system of Kazakhstan (based on the study of strategic documents of the Republic of Kazakhstan)".
Credit 2. «Sociocultural foundations of Political Science»								

6.		<p>Political parties, party systems and socio-political movements.</p> <p>The formation of the rule of law and civil society.</p> <p>Theories of the origin of the state. Signs and structure of the state.</p> <p>Forms of government and government. The concept and types of political regime.</p>	1	1	1	2	1	6	<p>Write an essay argument on the topic: “Formation of a legal and social state in the Republic of Kazakhstan”.</p>
7.		<p>Political regimes of the modern world and their relationship with the political system of the state.</p> <p>Political regimes of our time: Western polyarchies, new democracies, East Asian regimes, Islamic regime, military regimes.</p>		1	1	2		4	<p>Case studies - Classification of political regimes. Determine the type of political regime and argue your choice.</p>
8.		<p>Political parties and party systems, socio-political movements and organizations: the specifics of functioning.</p> <p>Political parties: concept, essence, signs and functions. Typology of political parties.</p>		1	1	2		4	<p>Case studies - analysis of the strengths and weaknesses of the programs of political parties of the Republic of Kazakhstan.</p>
9.		<p>Political culture and behavior.</p> <p>Political culture, political behavior and political participation.</p> <p>The main models of political culture. Features of political cultures of the western and eastern types. Political socialization:</p>	1	1	1	2		5	<p>Prepare analytical briefing on political models culture (optional).</p>

		essence, stages, models and factors.							
10.		<p>Historical types and features of modern international order. Typology of International Systems relationships and structural patterns of their functioning.</p> <p>The main development trends of modern international relationship. Globalization of world political processes and global challenges of our time.</p>		1		2		4	To develop a program - presentation The role of Kazakhstan in the system of modern international relations.
					1				

Thematic plan of Psychology

№	Section	Topic	Number of study hours:					Total hours	Assignments (might combine several topics, but not less than 1 and not more than 3 current Assignments for 1 credit; total number of Assignments for course not less than 5)
			Lectures	PL/ Lec	SIWT	SIW	IA		
Credit 1. «Psychology»									
1.	1	Psychology as a science. Methods and branches of psychology.	1						
2.		Psychological concept.	1						
3.	2	Motivation, motives and needs of the individual.		2					
		Motivation to achieve success or avoid failure			2				Psychodiagnostics of motivation to achieve success or avoid failure
4.		Motivation for work. Motivational profile of the individual.				2			
5.	3	Psychology in my life and profession				2			

6.		Psychology of emotions. Emotional intelligence.	1						
7.		The role of emotions in a person's life and the ability to empathize				2			
8.		Diagnostics and development of emotional intelligence			2				Psychodiagnostics of emotional intelligence
9.		Psychology of stress: types, stages of development and symptoms of stress. Stress tolerance		2					
10.		Psychology of personal self-regulation (stress management).			2				Psychodiagnostics of stress
11.	4	The program of development of emotional intelligence.				2			
12.		Temperament and properties of the nervous system as the basis of temperament. Character.		2					
	5	Accentuation of character. Personality disorder.				2			
13.		Defense mechanisms of the psyche.		2					
14.		Health psychology. Relationship and mutual influence of the mind and body. Psychological factors of disease occurrence			2				Negative emotions and health. (Write an essay)
15		Strengthening and maintaining professional health.				2			

Credit 2. «Psychology»

16.	6	Communication psychology, interpersonal communication and interaction	1						
17		Types, forms and functions of communication. Aspects of communication		2					
18.		Perception of others in the process of communication.				2			

19.	7	Makings and abilities. I-concept " and self- assessment of the individual		2	1				Psychodiagnostics of personality self-esteem
20.		Psychological portrait of a modern student.				2			
21.		Analysis of the impact of social networks on the formation of dependent behavior in young people.				2			
22.		Psychological barriers in communication and their overcoming.				2			Make a table "Psychological barriers in communication and their overcoming"
23.	8	Burnout syndrome: stages of development and symptoms	1		1				
24		Syndrome of emotional burnout among health care worker				2			
25.	9	Conflict: nature and causes, stages of development, stages, functions and consequences.		2					Mechanisms and techniques for managing conflicts in the team
26.		Conflict prevention technology and rational behavior in conflict		1					
27.		Models of behavior in conflict.				2			
		Total	5	15	10	24	6		
Total:								60	

SYLLABUS

Module: "Exchange with environment", Discipline: "Respiratory system"

Educational program:

6B08601 "General Medicine"

Total credits

ECTS: 5

Course: 2

Description of the discipline

Name of the discipline				Code	Educational program		
Respiratory system					"General Medicine"		
Lecturers				Structural division			
Responsible: Turkhanova Zh. Zh.				Department of Internal Diseases No. 3			
Lecturers: 9				Department of Clinical Pharmacology and Evidence-based Medicine Department of Pathology Department of Morphology and Physiology Department of Oncology and Radiation Diagnostics Department of Internal Diseases No. 3 Department of Biochemistry			
Training level			Type	Module			
Bachelor			BD UC	Respiratory system			
Forms of learning activity				Training period			
Practical classes, SIWT, SIW				V semester			
Mandatory prerequisites:				Additional prerequisites:			
Knowledge of the basic laws of the structure and functioning of individual human organs and systems of people in normal and pathological conditions. Apply scientific principles and knowledge of evidence -based medicine to medical practice and research				Communicate effectively with colleagues and patients.			
ECTS	Hours	Lecture	Practical training	SWIT	SIW	PA	IA
5	90		30	15	36	9	1
The purpose of the discipline							
is to study the knowledge of general laws of the origin and development of life, the structure, functioning of cells, tissues, organs and systems the body in normal and pathological conditions; anatomical and physiological features of the functioning of human body systems in different age periods; interrelations of functional systems of the body and the levels of their regulation in the conditions of normal pathology; fundamentals of molecular biology and genetics, the role of molecular and genetic factors in the pathogenesis of diseases.							

Learning outcomes

LO from the educational program (code)	LO of discipline	Methods of training	Assessment methods
NO 8	NO 8 Consult patients (collect anamnesis, conduct an examination, evaluate clinical analysis, conduct differential diagnosis, make a treatment plan	Practical exercises -oral interview, discussion, working in pairs, working with textbooks, working in small groups, consulting	Current control of the discipline: Evaluation criteria Mid-term test in the discipline: computer testing

BC1	Demonstration of knowledge of the structure and functioning of cells, tissues, organs and systems of the body in normal and pathological conditions; anatomical and physiological features functional systems of the human body in different age periods; interrelations of functional systems of the body and levels of their regulation under normal and pathological conditions; fundamentals of molecular biology and genetics and the role of molecular and genetic factors in the pathogenesis of diseases	with a teacher on all questions that arise, role - playing games, active learning methods: training, based on a clinical case (SBL); Independent work under the guidance of students of the teacher: solving situational problems, completing test tasks, consulting with the teacher on all questions that arise. Independent work of students - remotely on the	Final control in the discipline: 2-stage exam and IA1 computer testing
CD2 diseases	Readiness for scientific activities involving the possession of methodological knowledge, technology research technology, recognition of their value and readiness to use them in the professional sphere for the formation of a scientifically based medical practice.	MOODLE platform (testing)	
BC 3	Readiness of the future specialist to work with people - to work in a group, taking into account the high interactivity of the medical profession and complex modern algorithms for providing medical care, which include a large number of components, tools and, most importantly, human professional resources necessary in professional medical education.		

Thematic plan

№	Topic	Number of study hours:					Total hours	Tasks (they can combine several topics, but not less than 1 and not more than 3 current tasks per credit; the total number of tasks in the discipline, including RC, is not less than 5)
		Lectures	PL/ Lec	SIWT	SIW	IA		
Anatomy								

1.	Topographic based thoracic anatomy wall, breast glands and intercostal spaces. Blood supply, blood flow, blood outflow, lymph outflow and innervation. Age -specific features.		2			2	Active training methods: (problem-oriented training (TBL,). Traditional immunication methods: oral, survey, situational situational problem solving.
2.	Topographic anatomy of the thoracic cavity, pleura and lungs. Blood supply, blood outflow, lymph outflow and innervation. Projection of organs of the respiratory organs on the chest wall. Age-specific features.		2			2	
3.	Topographic anatomy of the nose, larynx, trachea, blood supply, blood outflow, lymph outflow and innervation. Age -specific features.		2			2	
1.	Topographical anatomy of the mammary gland of the breast, internal thoracic artery and diaphragm. Age-specific features.			2		2	practical work with textbooks, with plastinated cadaver and anatomical resources, consultations with the teacher on all возникающим questions that arise.
2.	Topographic anatomy of the pleura and lungs.			2		2	

3.	Topographic anatomy of the larynx and trachea.			2			2	
4.	Malformations Malformation respiratory system.			2		2	4	
1.	Features of topographic anatomy of organs of the respiratory system in newborns.					2	2	On the MOODLE platform (testing), preparation and defense of presentations and abstract, essays.
2.	Age -related features of organs of the respiratory system.					2	2	
	Total		6	8	4	2	20	

Histology

1.	Histophysiological features of the structure and methods respiratory research of respiratory research	1						Integrated lecture.
1.	Histology of the cavity of the nasal cavity		2					Practical lesson.
2.	Histology of airways		2					Practical lesson.
3.	Histology of the respiratory department of the lungs		2					Practical lesson.
1.	Structural-functional characteristics the upper part of the respiratory system			2				Study and sketch of histological preparations, electronograms, diagrams, drawing up protocols /descriptions of preparations/ electronograms, solving of situational problems/ tests
2.	Structural and functional characteristics of the air carrier of the air-bearing apparatus				2			

3.	Structural and functional characteristics of the respiratory department of the lungs.			2				
1.	Features of the MOODLE platform organ structures respiratory y's breathing rate newborns and children							Remotely on of organ structure Remotely on (task/testing)
Total		1	6	6	7	7	20	

Physiology

1.	Morphophysiological lyie features and methods of physical examination organ research of respiratory organs 1.	1						Integrated lecture.
2.	Regulation of respiration. Features of breathing in various physiological conditions.	1						Problem lecture.
1.	External breathing.		2					TBL (Team-oriented training).
2.	Nervous and humoral regulation of respiration.		2					Practical lesson.
1.	Physiological methods for studying the parameters of external respiration (spirometry, spirometry).			2				
2.	Olfactory analyzer.			1				
3.	Study of gas exchange in lungs and tissues. Transport gas stations.			2				

4.	Study of the parameters of external respiration during physical exertion.			3				
1.	Age related features of the respiratory system.				5			Working with literature, preparing test tasks.
2.	Features of respiration in various physiological conditions: in hot climates, in the conditions of high mountains and high barometric pressure.				5			temperatures Remotely on the MOODLE platform(task/test)
Total		2	4	8	10		24	

Biochemistry

1.	Biochemistry of lung tissue		2					
2.	Biochemistry of red blood cells. The role of red blood cells in gas exchange. Effect The Bohr effect			2				
Total		2	2				4	

Pathological physiology

1.	Etiology and pathogenesis of respiratory failure. Age -specific features.	1						Integrated lecture.
1.	Violation of the central mechanisms of respiratory regulation. Forms of insufficiency of external respiration. Alveolar hypo -, hyperventilation. Features of respiratory disorders in children in newborns and		3					TOT (Team-oriented training).

	children.							
2.	Pathogenetic mechanisms of reducing the diffusion ability of alveolar-		2					Practical lesson.
	the capillary membrane. Hypertension of the small circle of blood circulation. Features y in children.							
1.	Types of periodic and terminal respiration. Dyspnea, types and mechanisms. Pathophysiology of respiratory distress syndrome.			3				Drawing up an algorithm for the development of the pathological process. Solving situational problems and answering test tasks
2.	Hypertension of the small circle of blood circulation. Ventilation and perfusion disorders. Features y in children.			2				Drawing up an algorithm for the development of the pathological process. Solving situational problems and answering test tasks
1.	Pathophysiology of the syndrome of increased airiness of the lungs				4			drawing up an algorithm for the development of the pathological process. solving situational problems on the topic, performing a test task in the "Moodle" program
2.	Causes and pathogenesis of pneumonia, mechanism of manifestations in the elderly.				3			Drawing up an algorithm for the development of the pathological process. Solving situational problems and answering test tasks.
1.	Intermediate certification.					3		working with additional literature on electronic media, on the Internet, testing software testing to the program the "Moodle" program
Total		1	5	5	7	3	21	
Pathological anatomy								
1.	Acute pneumonias	1						Answers to the lecturer 's questions (blitz survey 3-5 questions)
2.	Tuberculosis	1						Answers to the lecturer 's questions (blitz survey 3-5 questions)

1.	Acute pneumonia (lobar, bronchopneumonia, interstitial).		2	2	2			Viewing, sketching and describing macro-and micro-preparations Solving situational problems / analyzing the autopsy protocol Working with a training presentation on the topic Preparing a Microsoft Power Point presentation on the topic
2.	Chronic obstructive pulmonary diseases (chronic bronchitis, bronchiectasis, emphysema). Interstitial lung diseases.		2	2	2			Viewing, sketching and describing macro-and micro-preparations Solving situational problems / analyzing the autopsy protocol Working with a training presentation on the topic Preparing a Microsoft Power Point presentation on the topic
3.	Destructive lung diseases of specific etiology (primary, hematogenic, secondary tuberculosis)				2	2		Solving situational problems/analyzing the autopsy protocol Working with a training presentation on the topic Preparing a Microsoft Power Point presentation on the topic
Total			2	4	6	6		18

Introduction to clinical medicine

1.	Survey of patients with diseases of the respiratory system.		2	2				Mastering the skill of collecting anamnesis in patients with diseases of the respiratory system.
2.	Syndrome of lung tissue compaction syndrome. Syndrome of the presence of a cavity in the lung tissue. Reasons. Symptoms. Diagnostic methods.		2	2				Patient care/Situational Problem Solving (CBL). Work in small groups. Remotely on the MOODLE platform (task/test)
3.	The syndrome of violation of bronchial patency. Acute and respiratory failure syndrome. Reasons. Symptoms. Diagnostic methods.		2	2				Practical Skills Center.
4.	Syndrome of fluid accumulation in the pleural cavity. Reasons. Symptoms. Diagnostic methods.		2	2				Patient care/Situational Problem Solving (CBL). Work in small groups. Remotely on the MOODLE platform (task/test)

5.	Final control.					4		Patient care/Solving situational problems. Identification of the main syndromes, their justification. Determining the causes.
Total		8	8			4	20	

Radiation diagnostics

1.	Methods of visual diagnostics in the pathology of DS, features of research in children. General scheme of analysis of pathological changes in the lungs. Visual diagnostics of lung tissue compaction syndromes and bronchial patency disorders. Features in children. Visual diagnosis of the syndrome of the cavity, accumulation of fluid and air in the pleura.							Integrated lecture.
1.	Methods of visual diagnosis of DS, features in children. General scheme of analysis of pathological changes in the lungs. Visual diagnosis of compaction syndrome of lung tissue compaction syndrome.		2					thematic analysis (oral survey), solving situational problems, processing medical documents (description of radiographs, sonograms, tomograms), testing, presentations.
2.	Visual diagnostics of the picture of the syndrome of violation of bronchial patency.		2					

1.	Methods of visual diagnosis of DS, features of DS, features of DS in children. General scheme of analysis of pathological changes in the lungs. Visual diagnosis of compaction syndrome of lung tissue compaction syndrome.			2				Independent study of the topic, work with literature and work on the Internet.
2.	Visual diagnostics of the picture of the syndrome of violation of bronchial patency.			1				
1.	Methods of visual diagnosis of DS, features of DS, features of DS in children. General scheme of analysis of pathological changes in the lungs. Visual diagnosis of compaction syndrome of lung tissue compaction syndrome.				2			
2.	Visual diagnostics of the picture of the syndrome of violation of bronchial patency.				2			
Total		1	4	3	4		11	
Pharmacology								
1.	Drugs used for the syndrome of violation of bronchial patency.	1						Integrated lecture.
2.	Antibacterial drugs used in the pathology of the respiratory system	1						oral interviews, performing practical tasks, writing prescriptions, solving situational problems, testing remotely on the MOODLE

3.	Means used for respiratory failure.	1						
1.	Drugs used for the syndrome of violation of bronchial patency.		2					
2.	Antibacterial drugs used in the pathology of the respiratory system Features		2					
1.	Means used for the syndrome of violation of bronchial patency.			2				
2.	Antibacterial drugs used in the pathology of the respiratory system Features			2				
3.	Means used for respiratory failure.			2				
1.	Means used for the syndrome of violation of bronchial patency.				2			Remotely on the MOODLE platform (task/test). Mid-term and final exam of discipline
2.	Antibacterial drugs used in the pathology of the respiratory system				2			Remotely on the MOODLE platform (task/test). Mid-term and final exam of the discipline.
3.	Means used for respiratory failure.				3			Remotely on the MOODLE platform (task/test). Mid-term and final exam of the discipline.
Total		3	4	6	7			20

SYLLABUS

Module: "Exchange with environment", Discipline: "Digestive system"

Educational program:

6B08601 “General Medicine”

Total credits

ECTS: 6

Course: 2

Description of the discipline

Name of the discipline				Code	Educational program		
Digestive system					«General medicine»		
Lecturers				Structural division			
Responsible: I. A. Baryshnikova				Department of pathology			
Lecturers: Appendix 3							
Training level			Type	Module			
Bachelor			BD UC	Digestive system			
Forms of learning activity				Training period			
Lectures, Practical classes, SIWT. SIW				3 course, V1 semester			
Mandatory prerequisites:				Additional prerequisites:			
Knowledge of the structural and functional foundations of the digestive system, principles and mechanisms of local and systemic regulation. Application of scientific principles and knowledge of evidence-based medicine in medical practice and research.				Communicate effectively with colleagues and patients.			
ECTS	Hours	Lecture	Practical training	SWIT	SIW	IA	
6	180	10	45	37	70	18	
Purpose of the discipline							
The study of morphofunctional features of the digestive system in normal and pathological conditions, the formation of skills of syndromal diagnostics and pharmacological correction, ensuring further successful training in clinical departments to master the professional skills of a doctor.							

Learning outcomes

LO from the educational program (code)	LO of discipline	Methods of training	Assessment methods
Demonstrate knowledge of the General laws of the origin and evolution of life, structure of cells, tissues, organs and systems of organism in norm and pathology; anatomical and physiological peculiarities of the functioning systems of the human body at different ages; interrelation of functional systems of the organism and levels of their regulation in terms of standards of pathology; fundamentals of molecular biology and genetics role of molecular and genetic factors in the pathogenesis of diseases	Acquisition of theoretical and practical knowledge in the field under study. Ability to independently acquire information, analyze, and interpret.	Practical classes: oral / written interview, discussion, solving situational problems, working with a plastinated cadaver and anatomical resources, Working with micro-preparations, drawing the histological structure of organs. Drawing up an algorithm for the development of the pathological process.	Current control of the discipline: see evaluation criteria

<p>Readiness for scientific activity, which involves the possession of methodological knowledge, research technology, recognition of their value and readiness to use them in the professional sphere for the formation of evidence-based medical practice.</p>	<p>Apply scientific principles and knowledge of evidence-based medicine to medical practice and research.</p>	<p>Drawing up a graphological structure and diagnostic algorithms on the example of a clinical case.</p>	
<p>The readiness of the future specialist to work with people - to work in a group, taking into account the high interactivity of the medical profession and complex modern algorithms for providing medical care, including a large number of components, tools and, most importantly, human professional resources required in professional medical education.</p>	<p>Mastering the skill of collecting complaints and anamnesis in patients with a disease of the digestive system. Preparation of diagnostic algorithms and survey plan. Knowledge of the principles of pharmacological correction.</p>	<p>Study of additional research methods, curation of patients with preparation of diagnostic algorithms, examination plan and pharmacological correction.</p>	
<p>Implementation of clinical skills for collecting anamnesis, physical examination, conducting clinical procedures and research, prescribing treatment of various diseases and providing emergency care.</p>	<p>Development of clinical thinking</p>		
<p>The ability to form interpersonal and professional experience of interaction with others, which is necessary for an individual to successfully function in the professional sphere and society</p>	<p>Development of interpersonal and team interaction skills.</p>	<p>Simulation training method SVL (clinical case-based training) PBL (problem-oriented learning) TVL (team-oriented training)</p>	<p>Checking the correctness of solving tasks for a clinical case Checking the effectiveness of communication skills in a team, the correctness of solving a situational problem, and input control tests Final control of the discipline integrated OSE</p>

Thematic plan

№	Section	Topic	Number of study hours:					Tasks
			Lectures	PL/ Lec	SIWT	SIW	IA	
Topographic anatomy								
1		Topographic anatomy of the Antero-lateral wall of the abdomen and abdominal organs. Age characteristics.	1					Problem lecture
2		Topographic anatomy of the anterior-lateral abdominal wall, weak points, blood supply, innervation, blood flow and lymph flow.		2				Study of the projection of the abdominal cavity on the Antero-lateral wall of the abdomen on a plastinated corpse and preparations. Performing practical tasks, solving situational problems.
3		Topographic anatomy of the peritoneum and its derivatives, abdominal organs (esophagus, stomach, small intestine and colon), blood supply, innervation, blood flow and lymph flow.		2				Study of the topography of peritoneal derivatives on a plastinated cadaver and preparations. Performing practical tasks, solving situational problems.
4		Topographic anatomy of the liver, pancreas and gall bladder, bile ducts and their blood supply, innervation, blood flow and lymph flow.		2				Analysis of the topic on a plastinated corpse and preparations. Performing practical tasks, solving situational problems.

5		The doctrine of hernias. Classification and mechanism of development of anterior-lateral abdominal wall hernias.			2				Study topics using anatomical resources. Performing tasks under the guidance of a teacher, writing an essay on a given topic.
6		Malformations of the abdominal organs. Features of the biliary tract and gallbladder			2				
7		Age-related features of the topographic anatomy of the digestive system.			2			Self-study of the topic and completing tasks on the "Moodle" platform»	
8		Age-related features of liver topography.			2				
9		Age-related features of pancreatic topography			2				
10		Malformations of the digestive system.			1	2			
Total			1	6	4	7	2	20	1 task
Histology									
1		Histology of the digestive tube mucosa	1						Problem lecture
2		Histology of the anterior part of the digestive tube		2					The study of the topic. Oral interview, solving situational problems.
3		Histology of the esophagus, stomach, and intestines		2					The study of the topic. Oral interview, solving situational problems.
4		Histology of the liver and pancreas		2					The study of the topic. Solving a situational problem using the method TBL
5		Structural and functional characteristics of the organs of the anterior part of the digestive tube			2				Working with micro-preparations, drawing the
6		Structural and functional characteristics of the stomach, intestines, digestive tube glands			3				histological structure of organs.

7		Age-related features of the digestive system.				7	2		Independent study of the topic and completing the task and the "Moodle" platform
Total by section			1	6	5	7	2	21	1 task
Private physiology									
1		Physiology of digestion and its regulation.	2						Digestion in the stomach. Regulation of gastric secretion and motor function of the stomach. Periodic activity of the digestive organs. The transition of food from the stomach to the intestines. Evacuation of stomach contents to the duodenum. Digestion in the ileum and jejunum. Regulation of intestinal juice secretion. Digestion in the colon. Features of membrane digestion. Absorption of substances.
2.		Digestion in the mouth. Taste analyzer.			2	1			Introduction to the method of obtaining saliva in humans using the Lashley- Krasnogorsky capsule. Study of salivation in dogs for food and rejected substances according to the table Make a diagram of the mechanism of regulation of salivation. Distinguishing the main taste characteristics (taste map of the tongue). The decision of situational tasks.

3.		Methods for studying the functions of the digestive system. Physiological basis of digestion in the stomach.		2		1			Familiarization with the composition and properties of gastric juice in humans according to the table (normal). Introduction to methods of obtaining gastric juice in humans. Fill in the table "Mechanisms of regulation of gastric motility". Completing task on the "Moodle" platform»
4.		Digestion in the small and large intestines. Mechanisms of regulation of intestinal motor function.		1		2			Assessment of motor activity of the small intestine in humans by auscultation. Study of the curves of pancreatic juice separation in dogs for bread, meat, milk (according to graphs). Completing task on the "Moodle" platform»
5.		The role of the liver in the regulation of bile formation and the participation of bile in digestion.				2	1		Introduction to the work "the Effect of bile on fat". Study of the differences between human cystic bile and hepatic bile. Familiarization with the table with the composition and properties of bile. The decision of situational tasks.
6.		Absorption of various substances in the digestive tract, its mechanisms. Regulation of suction.					2		Independent work with literature, preparation of presentations.

7		The main hormones of the digestive tract and their role in regulating the activity of the digestive tract.				2				Independent work with literature, preparation of presentations.
Total			2	3	4	9	3	21	1 task	
Biochemistry										
1		Metabolic disorders of the liver		2						Solving a problem based on a clinical example and reflecting the violation of biochemical processes and neutralization of xenobiotics in the liver
2		The metabolism of ethanol			2					The study of the topic. Solving a situational problem.
3		Metabolic disorders of the liver				2	1			Independent work with literature, performing tasks on the "Moodle" platform
Total				2	2	2	1	7	1 task	
Pathological physiology										
1		Etiology and pathogenesis of gastric and duodenal ulcer.	1							Problem lecture
2		General etiology and pathogenesis of disorders of the digestive system. Causes and mechanisms of development of gastric dyspepsia syndrome. Features of children.		2						Study of the etiology and mechanisms of development of pathology of the digestive system. Drawing up an algorithm for the development of the pathological process. The decision of situational tasks.
3		Pathophysiology of the liver. Features of children.		2						The study of the topic. Drawing up an algorithm for the development of the pathological process and solving tasks for a clinical case (CBL)

4		Violations of secretory function of the pancreas. Features of children.		1					The study of the topic. Drawing up an algorithm for the development of the pathological process.
5		The causes and mechanisms of development of the syndrome of intestinal dyspepsia. Features of children.			2				Study of the topic, drawing up an algorithm for the development of the pathological process under the guidance of a teacher.
6		Violation of bilirubin metabolism in various types of jaundice. Pathophysiology of gastro-esophageal reflux disease.			2	4			Independent study of the topic. Working with additional literature, on electronic media, completing tasks in the program "Moodle»
7		Etiology and pathogenesis of irritable bowel syndrome.				4	3		
	Total		1	5	4	8	3	21	1 task
Pathological anatomy									
1		Morphological features of peptic ulcer disease. Chronic ulcer of the stomach and the LDP	1						Answers to the lecturer's questions (blitz survey of 3-5 questions)
2		Acute and chronic gastritis. Peptic ulcer of the stomach and duodenum.		2	2	3			View, sketch, and description of macro- and micro-preparations.
3		Hepatoses. Viral and alcoholic hepatitis. Cirrhosis.		2	2	3			Solving situational problems/analysis of the autopsy Protocol Working with a training presentation on the topic. Preparing a Microsoft Power Point presentation on the topic.
4		Diseases of the intestines, gall bladder and pancreas (appendicitis, ulcerative colitis, Crohn's disease, gallstone disease, pancreatitis, peritonitis).		2		2			Viewing, sketching and description of macro and micro products Preparation of a Microsoft PowerPoint presentation on the topic
	Total by section		1	6	4	8	2	21	1 task
Introduction to clinical medicine-2									

1		Clinical and diagnostic methods of examination of peptic ulcer disease	1						Drawing up a graphological structure and diagnostic algorithms for peptic ulcer disease on the example of a clinical case
2		Clinical and diagnostic methods of examination for external pancreatic insufficiency syndrome	1						Development of diagnostic algorithms for external secretory pancreatic insufficiency syndrome on the example of a clinical case
3		Interview of patients with diseases of the digestive system	2						Mastering the skill of collecting complaints and anamnesis in patients with a disease of the digestive system.
4		The main clinical syndromes of diseases of the digestive system.			2				Preparation of diagnostic algorithms for digestive system syndromes on the example of a clinical case (Written task).
5		Dysphagia syndrome, gastric dyspepsia. Identification and justification of the syndrome.	2						Curation of patients/ solving of situational problems.
6		Methods for diagnosing diseases of the esophagus and stomach			2				Study of additional methods of investigation of esophageal and stomach pathology
7		The syndrome of intestinal dyspepsia. Identification and justification of the syndrome	2						Curation of patients/ solving of situational problems. Isolation of intestinal dyspepsia syndrome, justification of its criteria and determination of causes.

8		Methods for diagnosing bowel diseases			2					Study of additional methods of intestinal pathology research (Written assignment in the form of an essay)
										1 task
9		The syndrome of exocrine pancreatic insufficiency. Identification and justification of the syndrome.		2						Curation of patients/ solving situational problems. The allocation of the syndrome of exocrine pancreatic insufficiency, a justification of its criteria and the reasons.
10		Syndrome of jaundice, hepatomegaly. Identification and justification of the syndrome.		1						Supervision of patients / problemsolving
11		Methods for diagnosing diseases of the pancreas and hepatobiliary system			1					Study of additional research methods for the pathology of the pancreas and hepatobiliary system (Written task in the form of an essay)
12		Gastroesophageal reflux. Reasons. Diagnostic method				4				Completing tasks on the platform «Moodle»
13		Irritable bowel syndrome. Reasons. Diagnostic method				4				Completing tasks on the "Moodle" platform»
14		Syndrome of cytotoxicity. Syndrome of cholestasis. Reasons. Diagnostic method				3				Completing tasks on the "Moodle" platform»
15		Ascites. Reasons. Diagnostic method				3				Completing tasks on the "Moodle" platform
										3 task
	Total		2	9	7	14	3	35		
Radiodiagnostics										

1		Methods of radiation diagnostics of the digestive system, especially in children.	1						Problem lecture
2		Methods of visual diagnostics of the digestive system. Visual diagnostics of the main clinical syndromes in the pathology of the esophagus, stomach and intestines.		2					Study of methods of visual diagnostics of the digestive system, oral questioning, solving situational problems. Analysis of radiographs, Sonograms
3		Radiologic diagnosis of diseases of the pancreas. Features of children. Visual diagnostics for liver and gallbladder diseases. Features of children.		1					
4		Methods of radiation diagnostics of the digestive system. Visual diagnostic of the main clinical syndromes in the pathology of the esophagus, stomach and intestines.			1				The study of additional methods of research. Analysis of a clinical case, solution of situational problems.
5		Radiologic diagnosis of diseases of the pancreas. Features of children. Visual diagnostics for liver and gallbladder diseases. Features of children.			2				
6		Radiation diagnostics of gastroesophageal reflux disease.				1			Preparation and protection of presentations, essays on the "Moodle" platform»
7		Radiation diagnostics of chronic gastritis.				2			
	Total		1	3	3	3	3	13	1 task
Pharmacology									
1		Pharmacotherapy of peptic ulcer disease	1						Problem lecture
2		Pharmacotherapy of peptic ulcer disease		2					Study of the topic, oral interview, practical tasks.

3		Medicines used for gastric and intestinal dyspepsia		2					Study of the topic, oral interview, practical tasks.
4		The drugs used in case of exocrine insufficiency of the pancreas, diseases of the liver and biliary tract		1					Study of the topic, oral interview, practical tasks.
5		Pharmacotherapy of peptic ulcer disease			2				Writing prescriptions and solving situational problems on the topic of the lesson.
6		Medicines used for gastric and intestinal dyspepsia			2				Medicines used for gastric and intestinal dyspepsia
7		The drugs used in case of exocrine insufficiency of the pancreas, diseases of the liver and biliary tract			1				Writing prescriptions and solving situational problems on the topic of the lesson.
8		Pharmacotherapy of peptic ulcer disease				3			Independent study of the topic. Completing tasks on the "Moodle" platform»
9		Medicines used for gastric and intestinal dyspepsia				3			Independent study of the topic. Completing tasks on the "Moodle" platform»
10		The drugs used in case of exocrine insufficiency of the pancreas, diseases of the liver and biliary tract				2	2		Independent study of the topic. Completing tasks on the "Moodle" platform»
Total			1	5	5	8	2	21	1 task

SYLLABUS

Module: “Exchange with environment”, Discipline: “Metabolism and energy. Urinary system”

Educational program:

6B08601 “General Medicine”

Total credits

ECTS: 6

Course: 2

Description of the discipline

Name of discipline	Code	Educational program
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«Metabolism and energy. Urinary system			MiE 2207		6B10102 - «General medicine»	
Lecturers			Structural division			
Responsible of the departments for the module			Department of morphology and physiology			
Lecturers: Application 3			Department of biomedicine			
Training level			Type		Module	
Bachelor			BD UC		"Exchange with the environment "	
Forms of learning activity					Training period	
lectures, practical classes, SIWT, SIW, PBL cases					3 semester	
Mandatory prerequisites:			Additional prerequisites:			
Biology, chemistry, physics; Structural foundations of life (chemical, cellular, tissue level)			Control and regulation. Nervous system, sense organs, endocrine system.			
ECTS	Hours	Lectures	Practical classes	SIWT	SIW	IA
Exchange with the environment (Metabolism and energy. Urinary system)						
3	90	1	32	13	35	9
Anatomy	20		6+1,7	2,3	8	2
Histology	20		6+1,6	2,4	8	2
Physiology	20	1	5+1,7	2,3	8	2
Biochemistry	15		5	3	5,5	1,5
Biophysics	15		5	3	5,5	1,5
The purpose of the discipline						
Formation of students ' knowledge about the structure and basic patterns of functioning of cells, tissues, organs of the musculoskeletal system of a healthy person, mechanisms of their regulation.						

Learning outcomes

LO from the educational program (code)	LO of discipline	Methods of training	Assessment methods
BC 1 Demonstration of knowledge of General IaRL of origin and development of life, structure and function of cells, tissues, organs and body systems in normal and	LO 5 To analyze regularities of structure and functioning of separate organs and systems of	discussion, presentations and traditional methods (communication tasks, consultations with teachers, testing); independent study of	Current control. Final control: computer exam

Urinary system										
1	Morphofunctional characteristics of the urinary system.	physiology	1						1	<p>The value of excretion for the body.</p> <p>Functional system of urine formation and urination.</p> <p>Kidney function.</p> <p>Processes of urine formation.</p> <p>Neurohumoral mechanisms of regulation of urine formation and urination.</p>
2	General characteristics of the organs of the urinary system. Anatomy of the kidneys.	anatomy		2					3,7	Study of the anatomy of the kidney using anatomical models.
3	Anatomy of the fixing apparatus of the kidneys	anatomy				1,3			1,3	Study of the topography of the kidney using anatomical models.
4	Structural and functional description of kidneys. Types of nephrons and histological structure of nephrons.	histology		2					2	Study of ultramicroscopic structure of main parts of nephron. Based on the discussed material, solving situational problems, test tasks, studying and sketching histological preparations, electronograms, diagrams, drawing up protocols
5.	Features of blood supply of kidney, histophysiology of nephron`s tubules. Endocrine apparatus of kidney.	histology		2		1,4			3,4	To study the features of the blood supply of juxtaglomerular, juxtamedullary nephrons and the participation of

									various parts of the nephron in the process of urination, to study the endocrine apparatus of the kidneys at the ultramicroscopic level. Based on the discussed material, solving situational problems, test tasks, studying and sketching histological preparations, electronograms, diagrams, drawing up protocols.
6.	Mechanisms of glomerular filtration and reabsorption. Secretory processes in the tubules.	physiology		2			4		6,7 Work with electronic media and literature, preparation and submission of abstracts.
7.	Anatomy of the ureters.	anatomy		2					2 The study of the anatomy of the ureters by anatomical models.
8.	Anatomy of the bladder.	anatomy				1			1 The study of the anatomy of the bladder by anatomical models.
9.	The structure of the urethra, gender characteristics.	anatomy		2					2 Study of the anatomy of the uterine canal using anatomical models
10.	Embryological development of kidney. Structure and tissue composition of urinary tract's layers.	histology		2		1			4,6 Study of the features of embryonic development of the kidneys and the structure of the kidney wall and tissue composition of the layers of the urinary tract organs

									at the microscopic level. Based on the discussed material, solving situational problems, test tasks, studying and sketching histological preparations, electronograms, diagrams, drawing up protocols.
11.	Regulation of urine formation and urination	physiology		1				2	Work with electronic media and literature, preparation and submission of abstracts.
12.	Age features of the organs of the urinary system	anatomy				4		4	Working with literature and electronic media; preparation and delivery of abstracts.
13.	Anomalies in the development of urinary system organs	anatomy				4		4	Work with electronic media and literature, preparation and delivery of abstracts.
1.4	Age related features and pathways of physiological regeneration of the organs of the urinary system	his-tol-ogy				8		8	Study of the structural features of the organs of the urinary system in different periods of a person's life and the pathways of physiological regeneration of the organs of the urinary system. Execution and design of the assignment.
	Total urinary system			20	0	4,7	20	45,7	
Metabolism and energy									

15	Heat balance and body temperature regulation. A functional system that maintains an optimal blood temperature for metabolism	physiology		2			1		3	Based on the discussed lesson, the solution of situational tasks, the design of the task
16	Physiological research methods of metabolism and energy, basal metabolism.	physiology				1	1,5		2,5	The study of the scheme of functional systems according to Anokhin, the design of the task.
17	Physiological foundations of nutrition. Functional systems that maintain the optimal metabolic level of nutrients in the blood.	physiology				1,3	1,5		2,8	Study of methods, execution and execution of tasks.
	Intermediate certification	anatomy						2	2	
	Intermediate certification	his-tology						2	2	
	Intermediate certification	physiology						2	2	
	Total metabolism and energy.			2	0	2,3	4	6	14,3	
	Total metabolism and energy. Urinary system.			22	0	7	24	6	60	

SYLLABUS

Module: "Liquids and Transport", Discipline: "Cardiovascular system"

Educational program:

6B08601 "General Medicine"

Total credits

ECTS: 8

Course: 2

Description of the discipline

Name of the discipline				Code	Educational program		
Cardiovascular system					"General Medicine"		
Lecturers				Structural division			
Responsible: Tauesheva Z. B.				Department of Internal Diseases No. 1			
Lecturers: 9				Department of Clinical Pharmacology and Evidence-based Medicine Department of Pathology Department of Morphology and Physiology Department of Oncology and Radiation Diagnostics Department of Internal Diseases No. 1 Department of Biochemistry			
Training level			Type	Module			
Bachelor			BD UC	Cardiovascular system			
Forms of classes				Period of study			
Practical classes, SIWT, SIW				VI semester			
Mandatory prerequisites:				Additional prerequisites:			
Knowledge of the basic laws of the structure and functioning of individual human organs and systems in normal and pathological conditions. Apply scientific principles and knowledge of evidence-based medicine to medical practice and research				Effectively by communicating with colleagues and patients.			
ECTS	Hours	Lecture hours	Practical training	SWIT	SIW	IA	
8	240	10	75	80	51	24	
The purpose of the discipline							
The purpose is to study the knowledge of general laws of the origin and development of life, the structure, functioning of cells, tissues, organs and systems the body in normal and pathological conditions; anatomical and physiological features of functioning of human body systems in different age periods; interrelationships of functional systems of the body and levels of their regulation under normal conditions of pathology; fundamentals of molecular biology and genetics, the role of molecular and genetic factors in the pathogenesis of diseases.							

Learning outcomes

LO from the educational program (code)	LO of discipline	Methods of training	Assessment methods
NO methods NO 8	Consult patients (collect anamnesis, conduct an examination, evaluate clinical analysis, conduct differential diagnosis, make a treatment plan)	Practical exercises - oral interview, discussion, working in pairs,	Current control in the discipline: see evaluation criteria Final control in

BK1	<p>Demonstration of knowledge of the structure and functioning of cells, tissues, organs and systems of the body in normal and pathological conditions; anatomical and physiological features of the functioning of human body systems in different age periods; interrelationships of functional systems of the body and levels of their regulation in the conditions of normal and pathological conditions; fundamentals of molecular biology and genetics and the role of molecular and genetic factors in the pathogenesis of diseases</p>	<p>working with textbooks, working in small groups, consulting the teacher on all questions that arise, -playing games, active teaching methods, clinical case-based learning (CBL); Independent work under the guidance of students of the teacher: solving situational problems, performing test tasks,</p>	<p>the discipline: OSE</p>
CD2 diseases	<p>Readiness for scientific activities that involve the possession of methodological knowledge, technology of research activities, recognition of their value and readiness to use them in the professional sphere for the formation of a scientifically based medical practice.</p>	<p>consulting with the teacher on all questions that arise. Independent work of students - remotely on the MOODLE platform (testing)</p>	
BC 3	<p>Readiness of the future specialist to work with people - to work in a group, taking into account the high interactivity of medical services.</p>		

	<p>profession and complex modern algorithms for providing medical care, which include a large number of components, tools and, most importantly, human professional resources that are necessary in professional medical education.</p>		
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Thematic plan

№	Section	Topic	Number of study hours:					Total hours	Tasks (they can combine several topics, but not less than 1 and not more than 3 current tasks per credit; the total number of tasks in the discipline, including RC, is not less than 5)
			Lectures	PL/ Lec	SIWT	SIW	IA		
Topographic anatomy									
1	Topographic anatomy of the anterior and posterior mediastinum, heart, and large vessels of the thoracic cavity. Age-specific features.	1						Problem lecture	
1.	Topographic anatomy of large vessels of the anterior mediastinum and thoracic cavity. Age-specific features.		2			2		oral interview, performing practical tasks, solving situational problems	
2.	Topographic anatomy of large vessels of the posterior mediastinum and thoracic cavity. Age-specific features		2			2		oral interview, performing practical tasks, solving situational problems	

3.	Topographic anatomy of the heart and its projection on the chest. Heart valves. Blood supply, innervation, blood outflow and lymph outflow. Age - specific features.		2		2	oral interview, performing practical tasks, solving situational problems
4.	Topographic anatomy of large and small circulatory vessels Malformations of the heart and large vessels. blood circulation. Age - specific features	2			2	oral interview, performing practical tasks, solving situational problems
5.	Topographic anatomy of the anterior mediastinal organs		2		2	Work with textbooks, c plastinated cadavers and anatomical resources, consult with the teacher on all questions that arise.
6.	Topographic anatomy of the posterior mediastinal organs.		2		2	Work with textbooks, c plastinated cadavers and anatomical resources, consult with the teacher on any questions that arise.
7.	Age - related features of the topographic anatomy of the heart and blood vessels.		1		1	Work with textbooks, c plastinated cadavers and anatomical resources, consult with the teacher on any questions that arise.
8.	Age - related features of the anterior and posterior mediastinal organs.		2		2	On the MOODLE platform (testing), preparation and defense of the presentation and abstract, essay.
9.	Age - related features of the location of the valvular heart apparatus and the projection of large vessel on the surface of the body surface.		2		2	On the MOODLE platform (testing), preparation and defense of the presentation and abstract, essay.

10.	Age -related features of the topographic anatomy of the conduction band of the cardiac conduction system.			2		2		On the MOODLE platform (testing), preparation and defense of the presentation and abstract,essay.
Total		1	8	5	6	2	22	

Histology

1.	Structural and functional characteristics of the heart wall	1						Lecture -visualization.
2.	Histology of the heart and arteries		2					
3.	Histology of veins,MCR and lymphaticvessels		2					
4.	Structural and functional characteristics of the heart and arteries			2				
5.	Structurally- functional characteristics of the MCR, veins and lymphatic vessels			3				
6.	Age -related features of the structure of the organs- of the cardiovascular system.				1 2			
Total		1	4	5	1 2	2	19	

Physiology

1.	Functional characteristics - of the cardiovascular system.	1						Basic laws of hemodynamics and their use in hemodynamics. Factors that ensure the movement of blood through the vessels. Changes in resistance, blood pressure, and blood flow velocity in different areas of the vascular bed. Factorsthat determine the amountof blood pressure.
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2.	Physiological properties of the heart muscle.	1	2					Features of excitability of the heart muscle. Cardiomyocyte action potential. Conducting system of the heart. Automatic gradient. Features of heart muscle contraction. Conjugation of myocardial excitation and contraction. Basic hemodynamic parameters of the heart. Drawing a graph of the ratio of changes in the excitability of the heart muscle and the action potential. Analysis of the cardiac conduction system (Stannius' experiment). Solving situational problems and test tasks.
3.	Phase structure of the cardiac cycle.		2					Cardiac cycle and its phase structure. Make a diagram (table) of the phases of the cardiac cycle. Determine the duration of the heart cycle in students (by pulse). Calculate systolic (CO) and minute blood volume (MOK). Solving situational problems and test tasks.
4.	Regulation of the activity of the heart and blood vessels.	1						Intracardiac (intracardial) regulatory mechanisms. Intracardiac peripheral reflexes. Extracardiac (extracardial) mechanisms. Regulation of vascular tone.
5.	Physiological bases and analysis		2	2	3			Essence of the electrocardiography method. Electrocardiographic leads. Genesis
	ECG. (TBL)							components of a normal electrocardiogram. ECG changes under the influence of various physiological factors. Registration of an electrocardiogram. ECG analysis. Making an electrocardiographic report. Solving situational problems and test tasks
6.	Hemodynamic parameters.		2					Linear and volumetric blood flow rates. Blood pressure, its types. Methods for determining human blood pressure. Sphygmography, phlebography. Total blood circulation time, study methods. Palpation of the pulse and measurement of blood pressure in a person at rest and after exercise (20 squats in 30 seconds). Solving situational problems and test tasks.

7.	Regulation of cardiac activity			2				Make a scheme for regulating cardiac activity. Draw a diagram of the reflex arc of the eye- heart reflex and explain the mechanism, draw a conclusion on the topic in the form of an essay. Solving situational problems and testtasks.
8.	Regulation of vascular tone.			2				Introduction to methods for studying vascular reactions: sphygmography, rheography, oscillography, electroplethysmography. Analysis of the blood pressure curve under various exposures. Create a scheme for regulating systemic blood pressure. Solving situational problems and testtasks.
9.	Physiology of peripheral blood circulation. Microcirculation.				5			Remote testing on the MOODLE platform.
10.	Lymph circulation.				3			Sketch the action potential and contraction of the lymphangion wall. Draw up a scheme for regulating lymph circulation.
Total		3	8	6	11	3	31	

Biochemistry

1.	Biochemical aspects of vascular tone			regulation	2			A task based on a clinical example and reflecting a violation of endothelium and vascular tone
2.	Dyslipoproteinemia.		1					
3.	Atherosclerosis		2					
Total		3	2				8	

Pathological physiology

1.	Circulatory insufficiency: its types and general characteristics.	1						
2.	Arterial hypertension, etiology and pathogenesis.		2					
3.	Atherosclerosis: etiological factors, pathogenesis.		2					

4.	Lesions of the valvular heart apparatus:causes and mechanisms of development. Features in children. Pathophysiology of coronary insufficiency.		2					
5.	Etiology and pathogenesis of coronary heart disease.			2				
6	Pathophysiology of acute and chronic heart failure. Features in children.		2					
7.	Pathophysiology of cardiac arrhythmias. Features in children.			2				
8.	Mechanisms of urgent adaptation of the heartto overload.			2				
9.	Causes and mechanism of hypertension of hypertensive crisis.				4			
10.	Reasons, mechanism of development of hypertrophy development of cardiac hypertrophy				4			
11.	Cardiogenic shock: causes, mechanisms, and pathophysiological stages.				3			
Total		1	8	6	11		26	
Pathological anatomy								

1.	Pathomorphological features in acute coronary insufficiency syndrome	1					Answers to the lecturer 's questions (blitz survey of 3-5 questions)
2.	Atherosclerosis. Clinical and morphological forms of atherosclerosis.		2	2			Viewing, sketching and describing macro-and micro-preparations Solving situational problems / analyzing the autopsy protocol Working with a training presentation on the topic
3.	Hypertension. Clinical and morphological forms of hypertension.		2	1	3		Viewing, sketching and describing macro-and micro-preparations Solving situational problems / analyzing the autopsy protocol Working with a training presentation on the topic Preparing a Microsoft Power Point presentation on the topic
4.	Acute and chronic CHD. Cardiovascular insufficiency.		2	2	3		Viewing, sketching and describing macro-and micro-preparations Solving situational problems / analyzing the autopsy protocol Working with a training presentation on the topic Preparing a Microsoft Power Point presentation on the topic
5.	Rheumatic diseases as a systemic progressive disorganization of connective tissue. Rheumatism. Systemic lupus erythematosus.		1		3		Viewing, sketching , and describing macro and micro preparations Preparing a Microsoft Power Point presentation on topic
6.	Congenital and acquired heart			diseases 2	2		Solving situational problems/analysis Autopsy protocol Working with a training presentation on the topic Preparing a Microsoft Power Point presentation on the topic
Total		1	7	7	11	3	29

Introduction to clinical medicine

1.	Questioning and examination of patients with pathology cardiovascular pathology of the cardiovascular system.		2				Mastering the skill of collecting anamnesis in patients with cardiovascular diseases.
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2.	Method of examination of the heart area, large and peripheral vessels. Palpation of the precordial area, large and peripheral vessels.		2					Mastering the skill of examining patients with cardiovascular diseases.
3.	Technique and technique of heart percussion. The boundaries of the heart in normal and pathological conditions.		2					Mastering the skill of examining patients with cardiovascular diseases.
4.	Methods and techniques of auscultation of the heart and blood vessels. Heart sounds are normal.		2					Mastering the skill of examining patients with cardiovascular diseases.
5.	Auscultation of the heart: heart sounds and murmurs in pathology. Diagnostic value.		2					Mastering the skill of auscultation of the heart in patients with a disease of the cardiovascular system.
6.	Laboratory methods of research in the pathology of cardiovascular diseases of the cardiovascular system.		2					Interpretation of laboratory parameters in the pathology of the cardiovascular system.
7.	Instrumental methods of research in the pathology of the cardiovascular system.		2					
8.	Essential arterial hypertension syndrome. Causes and symptoms.			2				Practice manual skills at the patient's bedside. Solving situational problems. Identification of arterial hypertension syndrome, justification of its criteria.
	Diagnostic methods.							

9.	Valvular heart failure syndrome: mitral valve insufficiency and stenosis . Reasons. Hemodynamics. Symptoms. Diagnostic methods.		2			Practice manual skills at the patient's bedside. Identification of valvular heart failure syndrome, justification of its criteria.
10.	Valvular heart failure syndrome: aortic valve insufficiency and stenosis . Reasons. Hemodynamics. Symptoms. Diagnostic methods.		2			Practice manual skills at the patient's bedside. Identification of valvular heart failure syndrome, justification of its criteria.
11.	Coronary insufficiency syndrome (angina pectoris, myocardial infarction). Reasons. Symptoms. Diagnostic methods.		2			Practice manual skills at the patient's bedside. Identification of coronary insufficiency syndrome, justification of its criteria.
12.	Syndrome of acute and chronic heart failure (left ventricular and right ventricular). Acute vascular insufficiency (syncope, collapse, shock). Reasons. Symptoms.		1			Practice manual skills at the patient's bedside. Identification of acute and chronic heart failure syndromes, justification of its criteria.
13.	Acute and chronic heart failure syndrome			3		Completing a task on the Moodle platform
	the syndrome coronary insufficiency syndrome, arterial hypertension, acute and chronic					

	<p>vascular and heart failure.</p> <p>The role of ultrasound, CT, and MRI of the heart in the diagnosis of arterial hypertension, acute and chronic heartily-cardiovascular insufficiency.</p>					
4.	<p>Radiation diagnostics heartily-of the cardiovascular system, and methods research methods, features u features in children.</p> <p>X diseases -ray chemiotics of heart and large vascular diseases.</p> <p>Radiotherapy diagnostics the syndrome of coronary insufficiency syndrome, arterial hypertension, acute and chronic vascular and heart failure.</p>			2		
5.	<p>The role of ultrasound, CT, MRI of the heart in the diagnosis of arterial hypertension, acute and chronic</p>			2		

	heartily- cardiovascular insufficiency.						
	Radiation diagnostics of congenital diseases of congenital heart defects.						
6.	Radiation diagnostics of the cardiovascular system, research methods, features in children. X-ray chemiotics of heart and large vascular diseases. Radiation diagnostics of the syndrome of coronary insufficiency syndrome, arterial hypertension, acute and chronic vascular and heart failure.				4		
7.	The role of ultrasound, CT, and MRI of the heart in the diagnosis of arterial hypertension, acute and chronic cardiovascular insufficiency. Radiation diagnostics of congenital heart defects.				4		
Pharmacology							
1.	Antihypertensive drugs, characteristics of the main 4 groups(ACE inhibitors, thiazide diuretics, calcium blockers channels, b- blockers).	1	2	2	3		oral interview, performing practical tasks, writing prescriptions, solving situational problems, testing remotely on the MOODLE platform
	channels, b- blockers).						

2.	Antianginal drugs. Mechanism of action, indications, contraindications and side effects. Features of their use y in children.		2	2	3		
	Medications used for chronic heart failure.		3	2	3		
Total		1	7	6	11	3	28

SYLLABUS

Module: “Liquids and Trasperts”, Discipline: “Immune system”

Educational program:

6B08601 “General Medicine”

Total credits

ECTS: 1,4

Course: 2

Description of the discipline

Name of the discipline		Code	Educational program
Immune system		ZhiTIS-1202	6B10102-General medicine
Lecturers		Structural division	
Responsible: Koshkarbayeva B. S.		Department of Internal Diseases	
Lecturers: Akhmetova N. Sh., Tashkenbayeva V. B., Knaus A. A.		Regional Allergological Center	
Training level	Type	Module	
Bachelor	DB UC	Liquid and transport	
Forms of learning activity			Training period
Seminar, small group work, oral survey, discussion			
Mandatory prerequisites:		Additional prerequisites:	
-Demonstrate knowledge of anatomical, morphological, and physiological features of the functioning of the hematopoietic, lymphatic, and immune systems; - Analyze information on the regularities of functioning and regulation of immunological processes in a healthy body from the standpoint of general immunology, and evaluate its significance.		Improve and develop the acquired knowledge and skills throughout your professional career for continuous professional development.	

ECTS	Hours	Lectures	Practical training	SWIT	SIW	IA
. 1, 4	42	3	10	8	16,8	4,2
The purpose of the discipline						
is to form students ' scientific ideas about the structure and functions of the immune system at the organ, cellular and molecular levels, as well as about the role of the immune system in the life of a healthy organism and the emergence of immunopathological processes.						

Learning outcomes

LO from the educational program (code)	LO of discipline	Methods of training	Assessment methods
ON1 Analyze the regularities of the structure and functioning of individual human organs and systems in normal and pathological	conditions Describe the regularities of the functioning and regulation of immunological processes in a healthy body from the standpoint of general immunology, name and define the main modern methods of clinical and laboratory research.	Lectures-review online Practical exercises: TBL, seminar, work in smallx groups of SRSP: a set of training tasks using technical tools, writing essays, preparing presentations using electronic databases and library resources. SRS: PCompleting test tasks on the platform https://moodle.qqmu.edu.kzedu.kz . Working with additional literature sources.	Frontal survey-oral feedback Comparison (self-assessment, mutual assessment) - invite students to compare the work of another group, find differences, explain the differences that have arisen, analyze them and draw conclusions.
ON2 Apply scientific principles and knowledge of evidence-based medicine to medical practice and research	Make personal judgments, formalize information in the form of essays, presentations, projects and present it at practical classes, student circle meetings, student scientific conferences		Current control: written test tasks, written / oral survey, solving situational problems, checking the design of the results of tasks, etc., self-assessment and group assessment when working in small groups (TBL). Final control: written exam on the platform https://session.qmu.edu.kz://session.qmu.edu.kz

Thematic plan

№	Section	Topic	Number of study hours:						Assignments
			Lectures	PL/ Lec	SIWT	SIW	IA	Total hours	
Credit 1									
1.	Immune System (WB)	Structure of the immune system. Central and peripheral organs of the immune system.	1						Task 1 1. Describe the structure of the thymus, bone marrow, spleen, and lymph node. List the types of lymphoid tissue. Explain the functional differences between the central and peripheral organs of the immune system. 2. Give the concept of specific and non-specific humoral immunity. Describe B-lymphocytes and the main subpopulations (B1 and B2 cells). Name the classes of antibodies and describe them. 3. Tell us: the complement system and its functions. Ways to activate complement. The role of the complement
		Structure of the immune system. Central and peripheral organs of the immune system. Antigens: structure, classification, properties. Immunological adjuvants, pathways of antigen		2					
		Immunity: classification, types of immunity. Local immunity. Lymphoid tissues associated with mucous membranes, lungs, and skin			1	2,8			
2.	Immune system (WB)	Humoral immunity system: the concept of specific and non-specific humoral immunity. B-lymphocytes, structure, differentiation, populations and subpopulations of B-lymphocytes.	1						
		B-lymphocytes, structure, differentiation, populations and subpopulations of B-lymphocytes. Antibodies, immunoglobulins: structure and classification. The complement system and		2					

		its functions. Ways to activate complement. The role of the complement system in the immune response.						system in the immune response.	
		Antibodies, immunoglobulins: structure and classification. Works by R.Porter and D. Edelman on the establishment of the chemical structure of antibodies. Regulation of antibody production. Monoclonal antibodies: hybridomic technology. Main areas of application of MAB in immunology			1	2,8		4. Tell us about the cellular immune system (T-lymphocytes, structure, differentiation, population and subpopulation of T-lymphocytes). 5. Name the features and functions of the GKG. Describe the association of HLA antigens with hereditary predisposition to diseases. Define the concept of "Transplant immunity" and describe the transplant antigens, specify their localization.	
3.	The immune system (WB)	The system of cellular immunity, the concept of specific and non-specific cellular immunity. T-lymphocytes, structure, differentiation, populations and subpopulations of T-lymphocytes	1						
		Origin and development of T-lymphocytes. Positive and negative selection in the thymus. Subpopulations of T-lymphocytes. Immunological memory: types, cells of immunological memory. Immunological tolerance: mechanisms of tolerance.		2					
		Cytokines: properties, characteristics, classification. The concept of cytokine network. Mechanisms of cytokine action.			1	2,8			

4.	Immune system (WB)	HLA human system, structure, functions of loci. Connection with diseases. The concept of histocompatibility genes and antigens. The role of HLA molecules in cell-to-cell interactions		2					
		Transplant immunity. Stages of transplant immunity. Types of transplantation.			1				
		Vaccines and vaccinoprophylaxis. Principles of creating modern vaccines				2,88			
5.	The immune system (WB)	Types and classification of immunopathological reactions. Clinical forms of allergic diseases		2					
		The concept of immunodeficiency. Primary and secondary immunodeficiency states.			2	2.8			
Credit 2 (beginning of credit-continued biochemistry)									
6.	The immune system (WB)	HIV infections: etiology, immunological disorders and pathogenesis, transmission routes, prevention			2	2,8			<p>Task 2</p> <p>Give an idea of immunodeficiency. Tell us the ID classification.</p> <p>Prepare a presentation on HIV infections: etiology, immunological disorders and pathogenesis, transmission routes, prevention. Diagnosis of HIV infection.</p>
Total:			3	10	8	16.8	4.2		

SYLLABUS

Module: “Continuing Life”, Discipline: “Reproductive system. Genetics”

Educational program:

6B08601 “General Medicine”

Total credits

ECTS: 5

Course: 2

Description of the discipline

Name of the discipline		Code	Educational program		
Reproductive system. Genetics.			6B10102 General medicine		
Lecturers		Structural division			
Responsible: Assistant Professor R. T. Karibzhanova		Department of Morphology and Physiology Department of Biomedicine			
Lecturers: teachers of departments					
Training level		Type	Module		
Bachelor		DB UC	Continuation of life.		
Forms of learning activity				Training period	
Lecture, practical classes, SIWT, SIW				3 semester	
Mandatory prerequisites:			Additional prerequisites:		
Biology, chemistry, physics; Structural bases of life activity (chemical, cellular, tissue level). "Movement and support. Musculoskeletal system".			"Control and regulation. Nervous system, sensory organs, endocrine system".		
ECTS	Hours	Practical training	SWIT	SIW	IA
. Continuation of life (Reproductive system. Genetics)					
5	150	0/46/46	29	60	15
Reproductive system					
Anatomy	30	0/9	5.5	12.5	3
Histology	31	0/10	5.5	12.5	3
Physiology	14	0/4	3	5.5	1.5
Biochemistry	15	0/5	3	5.5	1.5
Genetics					
Genetics	54	0/14	10	24	6

Biochemistry	6	0/4	2	0	0
The purpose of the discipline					
of the discipline is to demonstrate knowledge of the general laws of cells, tissues, organs of the reproductive system of the human body in normal and pathological conditions; anatomical and physiological features of the functioning of the reproductive system of the human body in different age periods; interrelationships of functional systems of the body and levels of their regulation in conditions of normal pathology; fundamentals of molecular biology and genetics, the role of molecular and genetic factors in pathogenesis of diseases.					

Learning outcomes

LO from the educational program (code)	LO of discipline	Methods of training	Assessment methods
methods Analyze the patterns of the structure and functioning of the human body as a whole, individual organs and systems in normal and pathological conditions (BC1)	<p>Demonstrate knowledge about the patterns of the structure and functioning of the organs of the reproductive system in normal and pathological conditions based on morphological and functional features of the structure, basic histological, microbiological and physiological characteristics of the organs of the reproductive system. Microbiological methods research method for determining the microflora of the reproductive system.</p> <p>To reveal the mechanisms of intracellular processes of vital activity, types and variants of inheritance of traits, genetics of individual development, the influence of environmental factors on the occurrence of mutations at the genetic and cellular level.</p> <p>To determine the role of molecular-cellular methods of diagnostics and prevention of hereditary pathologies in studying the cellular level.</p>	<p>discussion, presentations and traditional methods (situational tasks, consultations with the teacher, testing, studying histological preparations with subsequent sketching); independent study of literature/work on the Internet, preparation of test tasks, notes, thematic abstracts, working remotely on the MOODLE platform (testing).</p> <p>Practical exercises: oral survey, educational discussion, question-answer, active forms of learning (TBL, PBL), solving genetic and situational problems, discussing topics of independent work.</p> <p>SIWT: presentation, poster, essay, solving</p>	<p>Current control.</p> <p>Final control: written exam.</p>

	Histology	Embryology. Progenesis, the initial period of development.	2					2	Study of the ultrastructure of germ cells, the nature of human embryo fragmentation, and the structure of the human blastula. Based on the discussed material, solving situational problems, test tasks, studying and sketching histological preparations, electronograms, diagrams, drawing up protocols /drug descriptions/
	Histology	and Embryology. The embryonic period of development. Extra-embryonic organs.	2	2				4	Study of the stage of implantation, gastrulation, differentiation of germ sheets, and the structure of extra-germ organs. Based on the discussed material, solving situational problems, test tasks, studying and sketching histological preparations, electronograms, diagrams, drawing up protocols /drug descriptions/
	Anatomy	General anatomical characteristics of the reproductive system. Male sexual organs. Testicular anatomy.	2					2	Study of testicular anatomy, testicular appendages, and testicular membranes using anatomical models.
	Anatomy	Anatomy of these seminal vesicles, bulbourethral glands, предстательной and prostatey.	1					1	Study of the anatomy of seminal vesicles, bulbourethral glands, and prostate using anatomical models.

	Anatomy	Anatomy of the spermaticcord a, vas deferensa.		1.5				1.5	Study of the anatomy of thesaphenous cord, vas deferens according to anatomical models.
	Anatomy	External male genitalia, structure, functions.		1				1	Study of the anatomy of external male genitalia by anatomical models.
	Histology	Structural and functional characteristics of MPS organs, spermatogenesis, regulation of spermatogenesis.	2	1				3	Study of the structure of organs of the male reproductive system. Based on the discussed material, solving situational problems, test tasks, studying and sketching histological preparations, electronograms, diagrams, drawing up protocols /drug descriptions /
	Physiology	Physiology of sexual development of men.	2	1,5				3,5	Studying the physiology of periods of sexual development of men, spermatogenesis, the role of sex hormones in the regulation of body functions; solving situational problems.
	Anatomy	of female genital organs. Anatomiya yaichnika.		2				2	Study of the anatomy of the ovary, ovarian appendages, ligamentous apparatus of the ovary according to anatomical models.

	Histology	Structural and functional characteristics of the ovary, ovogenesis, regulation of ovogenesis.	2					2	Study of ovarian structure, ovogenesis and its hormonal regulation. Based on the discussed material, solving situational problems, test tasks, studying and sketching histological preparations, electronograms, diagrams, drawing up protocols /drug descriptions/
	Anatomiya	Anatomiya matkI..	2					2	Study of the anatomy of the uterus and its fixing apparatus according to anatomical models.
	Anatomy	Anatomiya Anatomiya matochnyx trub.	1					1	Study of anatomy fallopian tube according to anatomical models.
	Histology	Structural and functional characteristics of the oviducts, uterus, and mammary glands. Ovarian-menstrual cycle, its regulation.	2	2,5				4,5	Study of the structure of the oviducts, uterus, mammary glands and regulation of the ovarian-menstrual cycle. Based on the discussed material, solving situational problems, test tasks, studying and sketching histological preparations, electronograms, diagrams, drawing up protocols /drug descriptions/
	Anatomy	of the Vagina: structure, functions.	1					1	Study of the anatomy of the vagina, glands of the vestibule of the vagina according to anatomical models.

	Anatomy	of external female genitalia, structure, functions.		1				1	Study of the anatomy of external female genital organs by anatomical models.
	Anatomy	Anatomy of the male and female perineum	2					2	Study of the anatomy of the muscles and fascia of the male and female perineum using anatomical models.
	Anatomy	of the male perineal muscle and fascia.			4			4	Self-study of the muscles and fascia of the male perineum using electronic media, work with literature; preparation and submission of research papers.
	Anatomy	of the female perineal muscle and fascia.			4			4	Self-study of the muscles and fascia of the female perineum using electronic media, work with literature; preparation and submission of research papers.
	Physiology	Physiology of sexual development of women.	2	1.5				3.5	Study of the physiology of periods of sexual development of women, the menstrual cycle, the role of sex hormones in the regulation of body functions; solving situational problems.
	Physiology	Physiological bases of human reproductive activity.			5,5,5			5,5,5	Study of age-related features of sexual development, puberty and sexual behavior of both men and women, preparation for classes.

	Histology	Critical periods of human development			6		6	Working with literature, solving situational problems, test tasks
	Anatomy	Anomalies in the development of reproductive organs.			4,5, 5		4,5, 5	Independent study of the development of reproductive organs and their anomalies using electronic media, work with literature; preparation and submission of research papers.
	Histology	Age-related features of репродуктивной of human reproductive system organsthe human reproductive system			6.5		6.5, 5	Working with literature, solving situational problems, test tasks
	Anatomy	PA				3	3	
	Histology	PA				3	3	
	Physiology	PA				1.5	1.5, 5	
	Anatomy	Total:	9	5.5	12.5	3	30	
	Histology	Total:	10	5.5	12.5	3	31	
	Physiology	Total:	4	3	5.5	1.5	14	
		Total:	23	14	30.5	7.5	75	

block Biochemistry

№	Section	Topic	Number of study hours:					Tasks	
			Lectures	PL/ Lec	SIWT	SIW	IA		Total hours
		<p>Cholesterol exchange. Features of cholesterol synthesis in various organs. Sources of cholesterol.</p> <p>Understanding of cholesterol biosynthesis, regulation of this process.</p> <p>Inclusion of cholesterol in VLDL, LDL, HDL</p> <p>Synthesis of bile acids. Elimination of cholesterol and bile acids from the body.</p>							<p>Task 1</p> <p>Study of educational literature on the topic Based on the discussed material, solving situational problems</p>
		<p>Cytosolic receptors. Hormones acting through cytosolic receptors (sex hormones, cortisol, calcitriol, thyroxine). The mechanism of signal transmission through cytosolic receptors is sex hormones. Features of the synthesis of sex hormones. Metabolic effects.</p> <p>Regulation of gene expression, the concept of enhancers and silencers.</p> <p>The role of hormones in regulating cell differentiation (maturation) (estrogens, insulin).</p> <p>Protein expression in ontogenesis (fetus, child, adult), the concept of cancer markers (alpha-fetoprotein, cancer-embryo antigen, CA 125, CA 19.9, etc.) and their diagnostic significance.</p>							<p>Task 2</p> <p>Study of educational literature on the topic Based on the material discussed, solving situational problems</p>

		Intermediate certification					1.5		
Total:			5	3	5.5	1.5	15		

Block Genetics

№	Section	Topic	Number of study hours:					Total hours	Tasks (can combine several topics, but not less than 1 and not more than 3 current tasks per credit; total number of tasks in the discipline, including RC, not less than 5)
			Lectures	PL/ Lec	SIWT	SIW	IA		
Credit 1									
1.	Genetics	Genomic level of organization of hereditary material. Types and variants of inheritance.		2				2	Task 1 Practical exercises: oral survey, educational discussion, question-answer, solving genetic and situational problems, discussion of topics of independent work. SROP: poster, essay, solving genetic problems. SROP: poster
2.		Genetic determination of sex			2			2	
3.		Mutation. Classification of mutations. Gene, chromosomal, and genomic mutations. Classification of hereditary diseases.		2				2	
4.		Fundamentals of epigenetics, ecogenetics and pharmacogenetics		1				1	
5.		Genetics of congenital malformations		2				2	
6.		Genetics of aging.			3			3	
7.		The role of the environment in the development of				12		12	

		pathogenesis. Carcinogenesis.							
		PA					3	3	
		Total:		7	5	12	3	2	7
Credit 2									
1.		Modern research methods. Determination of mutation by PCR.		2				2	Task 2 Practical exercises: oral survey, educational discussion, question- answer, active forms of learning (PBL), solving genetic and situational problems, discussion of topics of independent work. Laboratory work. SROP: essay solving genetic problems. SROP: poster
2.		Degenerative diseases of the nervous system. Alzheimer's disease, Parkinson's disease.			3			3	
3.		The most common genetic, chromosomal and genomic diseases. Clinical manifestations, diagnosis, and types of inheritance (PBL) .		4				4	
4.		Methods of diagnosis and prevention of hereditary pathology.		1				1	
5.		Patterns of distribution of gene diseases in human populations.			2			2	
6.		Fundamentals of genetic engineering.				12		1 2	
		PA					3	3	
		Total		7	5	12	3	27	
		Total:		14	10	24	6	54	

SYLLABUS

Module: “Fundamental medicine”, Discipline: “Medical chemistry”

Educational program:

6B08601 “General Medicine”

Total credits

ECTS: 3

Course: 2

Description of the discipline

Name of the discipline		Code	Educational program		
Medical chemistry		6B10102	"General medicine"		
Lecturers		Structural division			
Responsible: Khrustaleva A. A.		School of Pharmacy			
Lecturers: Khrustaleva A. A. Sotchenko R.K.		School of Pharmacy			
Training level		Type		Module	
Bachelor		DB UC		Fundamental medicine	
Forms of learning activity				Training period	
Practical classes; SIWT; SIW				2nd year	
Mandatory prerequisites:			Additional prerequisites:		
Know the basic laws of chemistry, classification, and nomenclature of organic and inorganic compounds.			Be able to perform computational actions.		
ECTS	Hours	Practical training		SWIT	SIW
.3	90	27		18	36
The purpose of the discipline					
is to teach molecular and cellular mechanisms, organ-system mechanisms, interaction, toxicology of medicinal substances and medicinal chemistry that contributes to the understanding of drug therapy in various pathological conditions.					

Learning outcomes

LO from the educational program (code)	LO of discipline	Methods of training	Assessment methods
methods ON1 / Analysis of the laws of construction and functioning of individual elements and systems in normal and pathological conditions	Describe the laws of functioning and regulation of processes in the body from the standpoint of medical chemistry; Explain the relationship of the biological functions of medicines with their	Practical exercises, SIWT, SIW	Performing practical tasks, written work, testing

	structure and biological activity		
ON2 / Application of scientific principles of evidence-based medicine in medical practice and research	Be able to conduct patent search on a given topic, plan research work on	SIW chemistry	abstract

Thematic plan

№	Section	Topic	Number of study hours:					Total hours	Tasks (can combine several topics, but not less than 1 and not more than 3 current tasks per credit; total number of tasks in the discipline, including RC, not less than 5)
			Lectures	PL/Lec	SIWT	SIW	IA		
Credit 1. Pharmacokinetics									
1.		Introduction to Medical Chemistry		1				1	Performing a practical task, computer testing on the MOODLE platform (SRO)
2.		Kinetics of chemical reactions. Pharmacokinetic parameters. Performing a practical task on enzymatic catalysis.		3	2			5	
3.		Colligative properties of solutions		2	1			3	

4.		Suction. Problems of ionization and lipophilicity of biologically active compounds		2	1			3	
5.		Types of interaction on the interface. Structure of cell membranes		1	2			3	
6.		Elimination, deposition, metabolism				12		12	
		Preparation for intermediate certification					3	3	
		Total		9	6	12	3	30	

Credit 2

1		Heterofunctional compounds and their biological activity		3	2			5	Accomplishment Practical assignment and computer testing, abstract (SRO)
2		Heterocyclic compounds and their biological activity. Nucleosides, nucleotides as drugs.		3	2			5	
3		Amino acid derivatives as medicinal products (TBL)		3	2	12		17	
		Preparation for intermediate certification					3	3	
		Total		9	6	12	3	30	

Credit 3

1		Chemical methods of directed modification of the structure of a leading compound		1	1	3		5	Performing a practical task and computer testing on the MOODLE platform (SRO)
2		Structural features of chemical compounds effects on various target molecules		2	2	3		7	
3		Relationship between stereoisomerism and the biological activity		of drugs 3	1	3		7	
4		Modern physico-chemical methods of analysis in medical chemistry		3	2	3		8	
		Preparation for intermediate certification					3	3	
				9	6	12	3	30	
Total:				27	18	36	9	90	

SYLLABUS

Module: “Fundamental medicine”, Discipline: “Patient examination skills”

Educational program:

6B08601 “General Medicine”

Total credits

ECTS: 3

Course: 2

Description of the discipline

Name of discipline		Code		Educational program	
Patient examination skills		5B130100		«General medicine»	
Lecturers			Structural division		
Responsible: Lee V.V.					
Lecturers: Professor S. M. Kabieva teacher tutor Turchinov W W assistant Ashirbekova B. D assistant Professor Lee, W. assistant Umirbaev A. I. assistant-trainee Akhmetova M. K					
Training level		Type	Module		
Bachelor		GED CC			
Forms of learning activity			Training period		
Practical lessons SIWT, SIW CBL. Role-playing games. Round table.			3-4 semester		
Compulsory prerequisites :			Additional prerequisites:		
In the course of studying clinical disciplines, teaching the basics of deontology and professional ethics, mastering objective and functional methods of examining patients.					
ECTS	Hours	Practical training	SWIT	SIW	IA
3	90		27	18	36
Purpose of the discipline					
Teaching basic knowledge of communication skills during medical interviews, basic knowledge and practical skills of identifying patients' problems from a client-centered position.					

Learning outcomes

LO from the educational program (code)	LO of discipline	Methods of training	Assessment methods
Provide psychoemotional support to patients with various conditions and diseases	Know the stages of a medical interview and standard communication techniques when conducting a medical interview. Apply communication technologies in medical interviews. Identify, formulate, and discuss the patient's problems during medical interviews.	Practical classes - oral interview, discussion, work in pairs, work with textbooks, work in small groups, consultations with the teacher on all emerging issues, role-playing games, active learning methods: clinical casebased learning (CBL); Independent	Current control of the discipline: see evaluation criteria Final control of the discipline: Written exam (QuestionAnswer). OCKE

	Plan actions during the medical interview.	work under the guidance of students of the teacher:	
Improve and develop the acquired knowledge and skills throughout the professional activity	<p>Know the methodology and be able to conduct a survey, physical and laboratory instrumental examination of the respiratory, cardiovascular, genitourinary, nervous, endocrine, digestive, hematopoietic and musculoskeletal systems.</p> <p>* Know the principles of effective communication, possess communication skills when conducting a medical interview.</p> <p>Possess the skills of public speaking with the presentation of their own judgments, analysis and synthesis of information in the field of study, transfer to students their own knowledge</p>	<p>performance of clinical and creative tasks, consultations with the teacher on all emerging issues, preparation of video materials on methods of physical examination of organs and systems, project; analysis of a scientific article; preparation of an album; development of diagrams, algorithms, tables; presentation; preparation of video material, glossary, essay, abstract, etc.</p>	
	and skills when working with information (educational, reference, scientific)	(work with electronic databases). business game, poster preparation, training and drawing up an algorithm for communicating with the patient, role-playing games, interview preparation, analysis of examples of medical interviews.	
Communicate effectively with colleagues and patients	<input type="checkbox"/> Comment on your professional actions, report information in a client-centered model		
Collect and interpret information to form judgments based on social, ethical and scientific considerations	Comment on their professional actions, report information in a client-centered model.		

Communicate information, ideas, and problems and solutions to both professionals and nonprofessionals	<p>The ability to transfer their own knowledge and skills when drawing up an algorithm for conducting a patient's examination, to explain the observed facts and phenomena, their cause-and-effect relationships</p> <p>* Transmit their own conclusions based on the knowledge gained on the main patterns of formation of the main symptoms and syndromes in the defeat of the respiratory, cardiovascular, genitourinary, nervous, endocrine, digestive, hematopoietic and musculoskeletal systems.</p>		
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Thematic plan

№	Section	Topic	Number of study hours:					Total hours	Tasks (it may combine some themes but not less than 1 and not more than 3 current tasks per credit; total number of tasks on discipline, including RK, not less than 5)
			Lectures	PL/ Lec	SIWT	SIW	IA		
Credit 1 " Respiratory system»									
1.	Methods of examination of the respiratory system: examination, examination and palpation of the chest. Rules and technique of percussion of the lungs. Physical properties of sound.		1					<p>An oral interview. The development of practical skills.</p> <p>Curation of patients under the guidance of a teacher.</p>	
2.	Comparative and topographical percussion of the lungs.		1		2				

3.	Auscultation of the lungs. Rules and techniques of auscultation of the lungs. The main respiratory sounds, mechanisms of their occurrence		1	2	2	1		Preparation of tasks for a clinical case; project; analysis of a scientific article; preparation of an album; development of schemes, algorithms, tables; presentation; preparation of video material, glossary, essay, abstract, etc. (work with electronic databases).
			3	2	4	1	10	
"The cardiovascular system»								
1.	Collection of complaints and examination of patients with pathology of the cardiovascular system. Palpation of the precordial area, large and peripheral vessels. The method and technique of percussion of the heart.		1		2			An oral interview. The development of practical skills. Curation of patients under the guidance of a teacher.
2.	Methods and techniques of		1					
	auscultation of the heart. Components of tone formation.							
3	Percussion of the heart. Absolute and relative dullness of the heart.		1	2	2		1	Preparation of tasks for a clinical case; project; analysis of a scientific article; preparation of an album; development of schemes, algorithms, tables; presentation; preparation of video material, glossary, essay, abstract, etc. (work with electronic databases).
			3	2	4	1	10	
"Musculoskeletal system»								
1.	Collection of complaints and examination of patients with pathology of the musculoskeletal system. Examination, palpation of the musculoskeletal system.		1					An oral interview. The development of practical skills.

2.	Collection of complaints and examination of patients with pathology of the musculoskeletal system. Examination, palpation of the musculoskeletal system.			1	2			Preparation of tasks for a clinical case; project; analysis of a scientific article; preparation of an album; development of schemes, algorithms, tables; presentation; preparation of video material, glossary, essay, abstract, etc. (work with electronic databases).
			1	1	2		4	
Credit 2 "The endocrine system»								
1.	Collect anamnesis and examination of patients with diseases of the endocrine system. Palpation of the thyroid gland.		1					An oral interview. The development of practical skills.
2.	Collect anamnesis and examination of patients with diseases of the endocrine system. Palpation of the thyroid gland.			1	2	1		An oral interview. The development of practical skills.
			1	1	2	1	5	
"The nervous system»								
1.	Collection of anamnesis and examination of patients with diseases of the nervous system. Assessment of consciousness.		2					An oral interview. The development of practical skills.
2.	Methods of investigation of neurological status: sensory and motor disorders.			1	1			An oral interview. The development of practical skills.
			1	1	1		3	
"Digestive system»								

1.	Collection of anamnesis and examination of patients with diseases of the digestive system. Methods and techniques of superficial and deep palpation of the abdomen		1	1				An oral interview. The development of practical skills.
2.	Methods and rules of palpation and percussion of the liver.		1		2			
3.	Palpation and percussion of the liver. Palpation of the gallbladder. The projection area of the pancreas		1	1	2	1		
			4	2	4	1	11	

"Urinary system»

1.	Collection of anamnesis and examination of patients with diseases of the urinary system.		1					An oral interview. The development of practical skills.
2.	Method of palpation of the kidneys in a horizontal and vertical position. Palpation, percussion of the kidneys, bladder		1	1	1,2			Preparation of tasks for a clinical case; project; analysis of a scientific article; preparation of an album; development of schemes, algorithms, tables; presentation; preparation of video material, glossary, essay, abstract, etc. (work with electronic databases).
			2	1	1,2			

" Hematopoietic system»

1.	Collection of anamnesis and methods of clinical examination of patients with hematopoietic pathology. Palpation of the lymph nodes. Percussion and palpation of the spleen..		1					An oral interview. The development of practical skills.
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2	Collection of anamnesis and methods of clinical examination of patients with hematopoietic pathology. Palpation of the lymph nodes. Percussion and palpation of the spleen..			1	1	0,8	Preparation of tasks for a clinical case; project; analysis of a scientific article; preparation of an album; development of schemes, algorithms, tables; presentation; preparation of video material, glossary, essay, abstract, etc. (work with electronic databases).
			1	1	1	0,8	
			15	11	19	55	0
Credit 3 Communication skills							
1	Communicative aspects of a medical interview. Purpose and objectives.		1		2		Discussion. Questionnaire "Diagnostics of the level of empathy". Preparing the poster
2	Types of questions: open and closed questions.		1	1	2		Group work. Working with a virtual board Padlet.
3	Establishing contact and collecting information in a medical interview.		1	1	2		Role-playing games. Small group work (in online work rooms)
4	Types of questions. Interview Management Techniques of empathy and active listening in a medical interview.		2	1	2		
5	Techniques of empathy and active listening in a medical interview. Collecting feedback, summing up the results, completing the interview		2	1	2		Performing creative assignments. Training. Medical interview script writing.

6	Commenting and providing information during the interview process. Informing and planning during the interview process		2	2	2			Discussion. Questionnaire "Diagnostics of the level of empathy". Preparing the poster	
			7	4	11,5	2,5	2,5		
Center for Modeling and Educational Technology									
1	Methods and techniques of auscultation of the lungs. The main respiratory sounds		2	1	3		1,0	7	The acquisition of clinical skills in auscultation of the lungs on mannequins
2	Methods and techniques of palpation of the precordial area, large and peripheral vessels, auscultation of the heart.		3	2	2,5		0,5	8	Acquisition of clinical skills for palpation and auscultation on mannequins
Total			5	3	5,5		1,5	15	

SYLLABUS

Module: “Fundamental medicine”, Discipline: “Fundamentals of Pharmacology”

Educational program:

6B08601 “General Medicine”

Total credits

ECTS: 3

Course: 2

Description of the discipline

Name of the discipline	Code	Educational program
Fundamentals of Pharmacology	6B130100	General Medicine
Lecturers		Structural division
Responsible: Sabira Zhaugasheva Lyubov Piven Aissulu Issabekova		Clinical Pharmacology and evidence-based medicine

Lecturers: Sabira Zhaugasheva Lyubov Piven Aissulu Issabekova Timofey Komarov Nikita Savin Manoj Sharma Kumar		Clinical Pharmacology and evidence-based medicine			
Training level		Type		Module	
Bachelor		Basic discipline university component		Fundamental Medicine	
Forms of learning activity			Training period		
Lectures, PL, SIWT, SIW, intermediate certification (IC)					
Mandatory Prerequisites:				Additional Prerequisites:	
Movement and support. The musculoskeletal system. Control and regulation. Interchange with the environment. Liquids and transportation. Continuation of life				Medical Chemistry. Fundamentals of Microbiology	
ECTS	Hours	Practical training	SWIT	SIW	IA
3	90	5	22	18	36
The purpose of the discipline					
Upon completion of the study of the discipline, students should be able to analyze the effect of medicinal substances in terms of the totality of their pharmacological properties to ensure a rational choice of drugs for various diseases in accordance with national clinical protocols from the standpoint of evidence-based medicine.					

Learning outcomes

LO from the educational program (code)	LO of discipline	Methods of training	Assessment methods
SR 5 SR 8	to analyze the action of medicinal substances in terms of the totality of their pharmacological properties, mechanisms and localization of action to choose rational medicines for the treatment and prevention of various pathological conditions. to differentiate undesirable and side effects of drugs, adjust their prevention and make recommendations for elimination in case of their occurrence. To choose the optimal route of drug administration To choose the medicines for targeted changes in the functions of various organs and systems of the body.	Lectures - problematic. Practical classes - a seminar, work in pairs, solving situational tasks, active teaching methods, consultation with a teacher on all issues SIWT: solving situational tasks, prescriptions, consulting with a teacher on all emerging issues SIW – performing tasks remotely in the «MOODLE» platform.	Discipline monitoring: seminar, writing prescriptions, solving situational tasks, completing the tasks on the MOODLE platform Final Control: Written exam on https://session.kgmu

Thematic plan

№	Topic	Number of study hours:						Tasks (may combine several topics, but not less than 1 and not more than 3 current tasks for a loan; the total number of tasks in the discipline, including the IC, is not less than 5)
		Lectures	PL/ Lec	SIWT	SIW	IA	Total hours	
Credit 1.								
1	2	3	4	5	6	7	8	9
1.	General Recipe. Rules for writing solid, soft and liquid dosage forms.		2	1	3			oral interview, writing prescriptions, solving situational problems, tasks completion on the MOODLE platform
2.	Pharmacokinetics of medicines	1	1	1	2			
3.	Pharmacodynamics of medicines		1	1	2			
4.	Means that affect afferent innervation.		1	1	3			
5.	Molecular pharmacology of cholinergic agents.	1	2	2	2			
	Total	2	7	6	12	3	30	
Credit 2.								
1.	Molecular pharmacology of adrenergic agents	1	1	1	2			oral interview, writing prescriptions, solving situational problems, tasks completion on the MOODLE platform
2.	Molecular pharmacology of narcotic analgesics. Non-narcotic analgesics		2	1	3			
3.	Molecular pharmacology of hypnotics		1	1	3			
4.	Molecular pharmacology of psychotropic drugs		1	1	2			
5.	Anti-inflammatory drugs Antiallergic agents	1	2	2	2			
	Total	2	7	6	12	3	30	
Credit 3.								
1.	Antiseptics and disinfectants.			2	1			oral interview, writing prescriptions, solving situational problems, tasks completion on the MOODLE platform
2.	Antibiotics.	1	2		2			
3.	Synthetic antimicrobial agents of different chemical structure.		2		2			
4.	Anti-TB drugs.		2		2			
5.	Antifungal means. Antiviral agents.		2	1	2			
6.	Antiprotozoal preparations. Anthelmintic preparations.			1	2			
7.	General principles of acute drug poisoning treatment.			2	1			
	Total	1	8	6	12	3	30	

Total	5	22	18	36	9	90	
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SYLLABUS

Module: “Fundamental medicine”, Discipline: “Microbiology”

Educational program:

6B08601 “General Medicine”

Total credits

ECTS: 3

Course: 2

Description of the discipline

Name of the discipline		Code	Educational program				
Microbiology		6B10102	General Medicine				
Lecturers		Structural division					
Responsible: Aigul Medetova - PhD, Candidate of medicalsciences		Department of Clinical Immunology, Allergology and Microbiology					
Lecturers		Department of Clinical Immunology, Allergology and Microbiology					
Training level		Type	Module				
Bachelor		GED CC	Fundamental medicine				
Forms of learning activity			Training period				
Lectures, independent work with a teacher, independent work			III – IV Semester				
Mandatory prerequisites			Additional prerequisites:				
To present and understand the results of molecular research in microbiology and the use of the discipline knowledge of general microbiology, molecular biology, medical genetics, ecology and sustainable development, chemistry, medical biophysics, biochemistry are required			Assess, synthesize and transform the knowledge of the discipline of molecular microbiology for the purpose of further independent training, as well as for training in the disciplines of infectology, laboratory diagnostics, surgical diseases, internal diseases, epidemiology, general immunology, general hygiene, environmental microbiology.				
ECTS	Total hours	Lectures	Practical training	SWIT	SIW	IA	
3	90	27	18	36	9	3	
The purpose of the discipline							

Molecular microbiology is a discipline directly related to microbiology and its sections such as bacteriology, virology, mycology, protozoology. Important components of the study of Molecular microbiology are Microbial physiology, Microbial genetics, Environmental microbiology, Evolutionary microbiology. Molecular methods of diagnostics and indication of microbes in the environment play the significant role in the laboratory diagnostics.

Molecular microbiology studies the molecular and genetic basics of the pathogenicity of human infectious disease pathogens, the taxonomy and classification of microorganisms.

Knowledge of the molecular mechanisms and methods of laboratory diagnostics of microbial diseases is necessary for the doctor to understand the principals of correct and early diagnosis, treatment and prevention.

The educational process has a practical and scientific-theoretical orientation.

Learning outcomes

LO from the educational program (code)	LO of discipline	Methods of training	Assessment methods
BD	Molecular and genetical basics of Physiology of Bacteria and other Microbes (Metabolism, Growth, Nutrition). Molecular and genetical basics of Morphology of Bacteria (shape, cytoskeleton, organelles, cell wall, peptidoglycan, spores). Molecular mechanisms of Pathogenicity of Microbes. The molecular and genetical mechanisms of drug resistance of bacteria.	Lectures IDW w T IDW Lectures: by type of review, problem, Practical classes situational tasks, TBL, training games	Fulfillment of tasks No. 1, final control Border control: test tasks, assay, theoretical question, problem solving Final control: test
BD	The importance of molecular methods in the classification of microorganisms (Evolution, Ierarchy, Classification etc)	Independent work under the guidance of a teacher: test tasks, problem solving Student's	tasks Final control in the form of a test, exam, essay, written work
BD	The new molecular methods used for identification of Microbes and diagnostics of diseases and environmental detection.	independent work: test	final control in the form of a test, exam, project, written work
BD	Professional using of the obtained information for diagnostics,	tasks	

BD	To transmit to the competitors (students, teachers, examiners) their own conclusions based on the knowledge gained. Discuss them and demonstrate the skills of public speaking with the provision of their own ideas, analysis and synthesis in the studied area.		
BD	To evaluate, synthesize and transform the knowledge gained for the purpose of further self-study, as well as for training in the disciplines Infectology, Hygiene, Public Health.		

Thematic plan

№	Section	Topic	Number of study hours					Tasks	
			Lectures	PL/ Lec	SIWT	SIW	IA		Total hours
Credit 1 "General Microbiology"									
1.		The role of microorganisms in human life. Diversity of Microbes. The History of Microbiology and Molecular Microbiology. Subdisciplines. Microbiological methods used for detection and identification.	2		2	4		3	Colloquium Task 1
2		The principles of taxonomy, classification and nomenclature of microorganisms. Using of Molecular methods in Taxonomy.	2		2	4		3	
3		Bacterial Genetics. Genome. DNA/RNA. Genetic code. Genotype/ Phenotype. The flow of genetic information. The Regulation of Bacterial Gene Expression.	2		2	4		3	

4		Mutation. Genetic recombination of bacteria, viruses. Transduction, transformation, conjugation.	2		2	4		3	
5		The Molecular basics of Morphology(shape, cytoskeleton, organelles, cell wall, peptidoglycan, spores nucleoid, cytoplasm, inclusions, membrane, capsule.)	2		2	4		3	
6		Molecular and genetical basics of the Physiology of Bacteria and other Microbes (Metabolism, Growth, Nutrition, respiration, the molecular mechanisms of transport through the CPM. Study of the growth pattern of various microbes.	2		2	4		3	
7		Identification of Microbes. Molecular methods.	2		2	4		3	
8		Bacteriophages. The structure, life cycle, importance for Molecular Microbiology.	2		2	4		3	
9		Ecology of microorganisms. Environmental molecular methods.	2		2	4		3	
10		Molecular aspects of Pathogenicity and virulence of microbes	2		2	4		3	
11		The molecular mechanisms of drug resistance of bacteria	2		2	4		3	
12		The final lesson in the section. Colloquium				2		2	
		Total	22		22	46		90	

SYLLABUS

Module: “Fundamental medicine”, Discipline: “The basics of evidence-based medicine”

Educational program:

6B08601 “General Medicine”

Total credits

ECTS: 3

Course: 2

Description of discipline

Name of the discipline		Code	Educational program			
The basics of evidence-based medicine		6B10102	General Medicine			
Lecturers		Structural division				
Responsible: Simokhina N.A.		Department of clinical pharmacology and evidence-based medicine				
Lecturers: 7						
Training level		Type		Module		
Bachelor		BD UC		Fundamental Medicine		
Forms of learning activity				Training period		
Practical training, IWSUGT, IWS				III- IV semester		
Mandatory prerequisites:				Additional prerequisites:		
<p>To call and to give the basic definition of the terms used in EBM; list the types of research used in clinical epidemiology;</p> <p>list databases of evidence-based medicine; explain the hierarchy of evidence, summarize the concept of clinical audit.</p> <p>Formulating clinical question using the principle PICO; to work in a search system using filters EBM; to detect the type of clinical research and level of evidence, an indicative plan for clinical audit of their practice.</p> <p>To conduct analysis and critical evaluation of medical publications, analysis of clinical audit errors.</p>				To be skilled in public speaking with the representation of their own opinions, analysis and synthesis of information in the field of evidence-based medicine		
ECTS	Hours	Practical training		SWIT	SIW	IA
3	90	27		18	36	9
The purpose of the discipline						
On completion of study disciplines, students should be able to search for medical information databases using evidence-based medicine and to critically evaluate medical information for rational use in further practical activities.						

Learning outcomes

LO from the educational program (code)	LO of discipline	Methods of training	Assessment methods

<p>Apply scientific principles and knowledge of evidence-based medicine to medical practice and research (ON 2).</p>	<p>To call and to give the basic definition of the terms used in EBM, list the types of research used in clinical epidemiology;</p> <p>list databases of evidence-based medicine; explain the hierarchy of evidence, summarize the concept of clinical audit</p> <p>Formulating clinical question using the principle PICO; to work in a search system using filters EBM; to detect the type of clinical research and level of evidence. To conduct analysis and critical evaluation of medical publications, analysis of clinical audit errors.</p> <p>To search and evaluation of evidence obtained from different sources</p>	<p>Oral questioning, discussions, work with literature, work in databases of evidence-based medical information; Team-based learning (TBL), small group work, a solution of test questions, clinical questions on PICO, medical publication analysis</p>	<p>Current control.</p> <p>Final control.</p>
<p>Apply effective communication skills to colleagues, patients and their families (ON 3)</p>	<p>To be skilled in public speaking with the representation of their own opinions, analysis and synthesis of information in the field of evidence-based medicine</p>	<p>Team-based learning (TBL), small group work, a solution of test questions, medical publication analysis</p>	<p>Current control.</p> <p>Final control.</p>

Thematic plan

№	Section	Topic	Number of study hours:						Tasks (it may combine some themes but not less than 1 and not more than 3 current tasks per credit; total number of tasks on discipline, including RK, not less than 5)
			Lectures	PL/ Lec	SIWT	SIW	IA	Total hours	
Credit 1.									

1.		The history of the development of evidence-based medicine. The role of evidence-based medicine in the world and domestic clinical and scientific research practice. Review of the five stages of evidence-based medicine.	-	2	-	-	-	2	The solution of test questions
2.		Clinical epidemiology. The concept of the design of clinical research. Classification of clinical trials by levels of evidence.	-	2	-	-	-	2	The solution of test questions
3		Five stages of evidence-based medicine. Formulating a clinical problem using the PICO principle in a standardized clinical case.	-	2	-	-	-	2	The formulation of clinical questions on PICO
4		Search of information in evidence-based medicine databases, according to a standardized clinical case, using the formulated search query.	-	3	-	-	-	3	TBL – team based learning
5		Preclinical and clinical trials / trials of medicines and medical products	-	-	2	-	-	2	Testing on e-learning platform Moodle
6		The strategy of improving the quality of care through the introduction of evidence-based clinical practice. National clinical protocols and clinical guidelines.	-	-	2	-	-	2	Testing on e-learning platform Moodle
7		Electronic sources of evidence: bibliographic databases, Tripdatabase, National Guideline Clearinghouse.	-	-	2	-	3	5	Testing on e-learning platform Moodle
8		Evidence-based medicine as a means of promoting medicines. Signs of incorrect advertising of medicines.	-	-	-	4	-	4	Testing on e-learning platform Moodle
9		Pharmacoepidemiology and pharmacoconomics: definition, stages of development, basic principles. The use of economic	-	-	-	4	-	4	Testing on e-learning platform Moodle

		evaluation as an element of decision-making in medicine.							
10		Legislative basis for conducting clinical trials in RK, international standards. GCP-Good Clinical Practice.	-	-	-	4	-	4	The solution of tasks
Total:			-	9	6	12	3	30	
Credit 2.									
1.		Purpose, objectives and structure of the description of cases, transverse studies. Sequence of implementation, advantages and disadvantages. Search for studies of the design in databases of evidence-based medicine.		2				2	The solution of test questions, tasks
2		Purpose, objectives and structure of the case-control study. Sequence of implementation, advantages and disadvantages. Search for studies of the design in databases of evidence-based medicine.		2				2	The solution of test questions, tasks
3		Purpose, objectives and structure of the cohort studies. Sequence of implementation, advantages and disadvantages. Search for studies of the design in databases of evidence-based medicine.		3				3	The solution of test questions, tasks
4		Purpose, objectives and structure of randomized controlled trials. Sequence of implementation, advantages and disadvantages.		2				2	The solution of test questions, tasks
5		Electronic sources of evidence: Medline, Cochrane Library			4			4	Testing on e-learning platform Moodle
6		Algorithm for the analysis of medical publication.			2		3	5	Search and critical analysis of

									medical publication.
7		Elaboration of initial skills in scientific research.	-	-	-	12	-	12	The project
Total:			-	9	6	12	3	30	
Credit 3.									
1		Purpose, objectives and structure of randomized controlled trials. Search for studies of the design in databases of evidence-based medicine.	-	2	-	-	-	2	The solution of test questions, tasks
2		The purpose, objectives and structure of systematic reviews and meta-analysis. Sequence of implementation, advantages and disadvantages. Search for studies of the design in databases of evidence-based medicine.	-	4	-	-	-	4	The solution of test questions, tasks
3		The fourth and fifth stages of EBM. Application of the received data to practice on the example of revision of the educational clinical protocol on the basis of selected methodologically qualitative studies.	-	3	-	-	-	3	The solution of test questions, tasks
4		Analysis of articles and their critical evaluation.	-	-	2	-	-	2	Search and critical analysis of medical publication
5		The problem of unreliable publications.	-	-	2	-	-	2	Search and critical analysis of medical publication
6		Approximate planning and conduct of clinical audit. Analysis of errors and planning of re-audit.	-	-	2	-	-	2	The solution of test questions, tasks
7		Elaboration of initial skills in scientific research.	-	-	-	12	-	12	The project

Total:	-	9	6	12	3	30	
Total:	-	27	18	36	9	90	

SYLLABUS

Module: “Basic of practical medicine”, Discipline: “Topographic Anatomy”

Educational program:

6B08601 “General Medicine”

Total credits

ECTS: 3

Course: 3

Description of the discipline

Name of the discipline		Code	Educational program
Topographic Anatomy		6B10102	«General medicine»
Lecturers		Structural division	
Responsible: Kayirbekova K.K.		Department of Morphology and Physiology	
Lecturers: 6		Department of morphology and physiology Department of pathology Department of pediatrics and neonatology Department of surgical diseases CSOT	
Training level	Type	Module	
Bachelor	BD UC	Fundamentals of Practical Medicine	
Forms of learning activity			Training period
Lectures Practical classes SIWT SIW			V- VI semester
Mandatory prerequisites:		Additional prerequisites:	
Knowledge of the foundations of the regularity of the structure and functioning of individual organs and systems of a person in health and disease. Apply scientific principles and knowledge to medical practice and research.		- She learns independently and improves her knowledge, skills and abilities throughout the training. - Communicate effectively with colleagues and patients.	

ECTS	Hours	Lectures	Practical training, hours	IWSUGT, hours	IWS, hours	MA, hours
3	90	-	27	18	36	9
The purpose of the discipline						
Study of knowledge of the general laws of the origin and development of life, structure, functioning of cells, tissues, organs and systems of the body in health and disease; topographic and anatomical features of the functioning of the systems of the human body in different age periods; the relationship of the functional systems of the body and the levels of their regulation in conditions of norm and pathology.						

Learning outcomes

LO from the educational program (code)	LO of discipline	Methods of training	Assessment methods
BK1	<ul style="list-style-type: none"> - Demonstration of knowledge of the structure and functioning of cells, tissues, organs and systems of the body in normal conditions and pathology; - anatomical and physiological features of the functioning of the systems of the human body in different age periods; - the relationship of the functional systems of the body and the levels of their regulation in conditions of norm and pathology; - the foundations of molecular biology and genetics and the role of molecular and genetic factors in the pathogenesis of diseases. 	<p>Practical exercises - topic analysis, oral interview, discussion, work in pairs, work with textbooks, work in small groups, role-playing games, active teaching methods: TBL team-oriented learning; Traditional methods: solving test tasks, situational tasks, oral questioning with a demonstration of anatomical structures on anatomical preparations, plates.</p> <p><u>SROP</u>-traditional methods: work with textbooks, discussion of topics of independent work, in-depth study of individual issues of practical classes, consultations with a teacher on all emerging issues;</p>	<p>Discipline monitoring: see Evaluation Criteria</p> <p>Final control by discipline: written examination</p>
BK2	Readiness for scientific activity, which presupposes possession of methodological knowledge, technology of research activity, recognition of their value and readiness for their use in the professional sphere for the formation of evidence-based medical practice.		

BK3	The willingness of a future specialist to work with people is to work in a group, taking into account the high interactivity of the medical profession and complex modern algorithms for the provision of medical care, including a large number of components, means and, most importantly, human professional resources necessary in professional medical education.	CPO - work with literature and electronic media, preparation of presentations and presentation of abstracts and essays, testing on the MOODLE platform.	
PC2	The ability to form interpersonal and professional experience of interaction with others, which is necessary for an individual to successfully function in the professional sphere and society		
PC2	Ability to improve knowledge and skills throughout professional activity for continuous professional development and provision of quality medical care		

Thematic plan

№	Section	Topic	Number of study hours:					Tasks (can combine several topics, but not less than 1 and not more than 3 current tasks for credit; the total number of tasks in the discipline, including RK, is not less than 5)	
			Lectures	PL/ Lec	SIWT	SIW	IA		Total hours
Credit 1.									
1.	Topographic anatomy	Topographic anatomy of the cerebral section of the head. Blood supply, blood flow, lymph drainage and innervation.		2				2	Exercise 1

2		Topography of the facial part of the head. Blood supply, blood flow, lymph drainage and innervation		2				2	
3		Topographic anatomy of the neck, division into regions. Topographic anatomy of the neck organs (larynx, trachea, pharynx, esophagus, thyroid and parathyroid glands). Blood supply, blood outflow, lymph outflow and innervation .		2				2	
4		Topographic anatomy of the chest wall, mammary gland, intercostal spaces, diaphragm and organs of the chest cavity (pleura, lungs). Blood supply, blood flow, lymphatic drainage and innervation.		2				2	
5		Topographic anatomy and features of the cerebrospinal fluid system.			2			2	
6		Malformations of the brain department of the head.			2			2	
7		Malformations and facial department of the head.			2			2	
8		Malformations of the neck and neck organs.			2			2	
9		Age features of the cerebral section of the head.				2		2	
10		Age features of the facial part of the head.				2		2	
11		Age features of the spinal column and spinal cord, and their membranes, vessels and cranial nerves.				2		2	
12		Age features of the thymus gland and thoracic lymphatic duct.				2		2	

13		Age features projection (boundaries) of the organs of the chest cavity (lung, pleura) and mediastinum (heart, valves and large vessels).				2		2	
14		Age features of the location of the valve apparatus of the heart and the projection of large vessels on the surface of the body.				2		2	
Credit 2.									
1		Topographic anatomy of the organs of the anterior and posterior mediastinum. Blood supply, blood flow, lymphatic drainage and innervation.		2				2	Exercise 2
2		Topographic anatomy of the anterior-lateral wall of the abdomen, weaknesses, peritoneum and its derivatives, blood supply, innervation, blood flow and lymph flow.		2				2	
3		Topographic anatomy of the organs of the upper and lower floors of the abdominal cavity, blood supply, innervation, blood flow and lymph flow.		2				2	
4		Topographic anatomy of the organs of the lumbar region and retroperitoneal space, weaknesses. Blood supply, blood flow, lymphatic drainage and innervation.		2				2	
5		Malformations of the organs of the mediastinum and blood vessels.			2			2	
6		The doctrine of hernias. Classification and mechanism of development			2			2	

		of hernias of the anterior-lateral wall of the abdomen.							
7		Malformations of the abdominal cavity and small pelvis.			2			2	
8		Age features of the topographic anatomy of the cardiac conduction system				2		2	
9		Age features of the topography of the abdominal organs.				2		2	
10		Age features of the topographies of the organs of the lumbar region and retroperitoneal space.				2		2	
11		Age features of the topography of the muscles and fascia of the perineum.				2		2	
12		Age features of topographies in the male and female pelvis.				2		2	
13		Age features of the topographies of the vessels and nerve plexuses in the small pelvis.				2		2	
Credit 3.									
1		Topographic anatomy of the pelvic organs, perineum and cellular spaces. Topographic anatomy of male and female genital organs. Blood supply, blood flow, lymphatic drainage and innervation.		2				2	Exercise 3
2		Topographic anatomy of the upper limb, neurovascular formations, fascia, cellular spaces and joints. Blood supply, blood flow, lymphatic drainage and innervation.		2				2	

3		Topographic anatomy of the lower limb, neurovascular formations, fascia, cellular tissue and joints. Blood supply, blood flow, lymph drainage and innervation.		2				2	
		CSOT							
4		Projection of the organs of the chest cavity and mediastinum on the chest wall. The projection of the abdominal organs on the anterior-lateral wall and pelvic organs.		2				2	
5		Projection of neurovascular limb formation on the surface of the human body.		3				3	
6		Features of the cellular spaces of the small pelvis and fascia. Malformations of the female and male genital organs.			1			1	
		CSOT							
7		Lymph nodes of the neck, chest cavity and retroperitoneal space. General overview of the topography of the organs of the anterior and posterior mediastinum.			2			2	
8		The relationship of blood vessels and fascia of the limb. The case structure of the fascial-muscular system of the limbs.			1			1	
9		Age features of the topography of the joints of the upper limb.				2		2	
10		Age features of the topography of the joints of the lower extremity.				2		2	
11		Age features of the topographies of the				2,5		2,5	

		neurovascular formations of the upper and lower extremities.							
		CSOT							
12		The position of the organs of the chest cavity, mediastinum and abdominal, pelvic cavity.				3		3	
13		Differences in the external structure of the blood vessels and nerves of the limb.				2,5		2,5	
				27	18	36	9	90	

SYLLABUS

Module: “Basic of practical medicine”, Discipline: “General surgery”

Educational program:

6B08601 “General Medicine”

Total credits

ECTS: 3

Course: 3

Description of the discipline

Name of the discipline	Code	Educational program	
Introduction to the specialty	UKM 3204	« General surgery»	
Lecturers		Structural division	
Responsible: ass. Goroshko O.V.		Department of surgery	
Lecturers : 9			
Training level		Type	Module
Bachelor program		PD UC	General surgery
Forms of learning activity		Training period	
Practical classes, SIWT , SIW		V –VI semester	
Mandatory prerequisites:		Additional prerequisites:	
1)apply at a professional level their knowledge, understanding and ability to solve problems in pediatrics, in a wider interdisciplinary context;		Demonstrate developing knowledge and understanding in the sphere of study,	

<p>2) to collect and interpret information to form judgments taking into account social, ethical and scientific considerations;</p> <p>3) clearly and unambiguously communicate information, ideas, conclusions, problems and solutions, both to specialists and non-specialists;</p> <p>4) the training skills necessary for independent continuation of further education in the field of study.</p> <p>5) apply knowledge of the pharmacology of anatomy, physiology, biochemistry</p>				<p>including elements based on advanced knowledge of the field.</p> <p>Invite students to study children's diseases and elective disciplines in pediatrics.</p> <p>Invite students to study surgical diseases and elective disciplines of surgery.</p>	
ECTS	Hours	Practical training	SWIT	SIW	IA
3	90	27	18	45	9
The purpose of the discipline					
<p>Formation of knowledge and skills on the basics of surgical pathology, general principles of diagnosis and treatment of major surgical diseases.</p> <p>All this is necessary for high-quality professional training for subsequent activities of the doctor.</p>					

Learning outcomes

LO from the educational program (code)	LO of discipline	Methods of training	Assessment methods
UKM 3204	1) learning outcomes- written examination	Practical lesson: thematic analysis, seminar TBL, CBL, IWSUGT, IWS	Final attestation Exam at the end of the semester: 1) Written exam

Thematic plan

№	Section	Topic	Number of study hours:						Tasks (it may combine some themes but not less than 1 and not more than 3 current tasks per credit; total number of tasks on discipline, including RK, not less than 5)
			Lectures	PL/ Lec	SIWT	SIW	IA	Total hours	
Credit 1									
1.		History of surgery		1	1			2	

2.		Deontology in surgery				3		3	
3.		Disurgery		1	1			2	
4.		Asepsis and antisepsis		2	1	5		8	
5.		Anaesthetization		2	1	3		6	
6.		Bleeding		2	1	4		7	
7.		Wounds		1	1			2	
				9	6	15		30	
Credit 2									
8.		Wounds		1	1	3		5	
9.		Groups of blood. Blood transfusion		3	1	3		7	
10.		Traumatology. Injuries of soft tissue and internal organs.		2	2	3		7	
11.		Traumatology. Shock.		1	1	3		5	
12.		Traumatology. Dislocations, fractures		2	1	3		6	
				9	6	15		30	
Credit 3									
13.		Burns, frostbites. Elektrotraumatology		2	1	3		6	
14.		Surgical infection		2	1	3		6	
15.		Surgical operation, Pre- and postoperative period		2	1	3		6	
16.		Onkology		1	1	2		4	
17.		Disorder of blood circulation		1	1	2		4	
18.		Defect of development. Transplantology		1	1	2		4	
				9	6	15		30	
Total:				27	18	45		90	

SYLLABUS

Module: “Basic of practical medicine”, Discipline: “Healthy and Sick Child”

Educational program:

6B08601 “General Medicine”

Total credits

ECTS: 3

Course: 3

Description of the discipline

Name of the discipline		Code	Educational program		
Healthy and Sick Child		6B10102	Healthy and Sick Child		
Lecturers		Structural division			
Responsible: Kurilova V.V.		Department of Pediatrics and Neonatology			
Lecturers: 4					
Training level	Type		Module		
Bachelor	BD UC		Healthy and Sick Child		
Forms of learning activity			Training period		
Practical classes, SIW, SIWT.CSET			V –VI semester		
Mandatory prerequisites:		Additional prerequisites:			
<p>1) apply their knowledge, understanding and abilities at a professional level to solve problems in pediatrics, in a broader interdisciplinary context;</p> <p>2) to collect and interpret information for the formation of judgments, taking into account social, ethical and scientific considerations;</p> <p>3) clearly and unambiguously communicate information, ideas, conclusions, problems and solutions, both to specialists and non-specialists;</p> <p>4) learning skills necessary for independent continuation of further education in the field of study.</p> <p>5) apply knowledge of cardiology, pharmacology and children's diseases.</p>		<p>Demonstrate developing knowledge and understanding in the field of study, including elements based on advanced knowledge of the field.</p> <p>Invite students to study childhood diseases and elective disciplines in pediatrics.</p>			
ECTS	Hours	Practical training	SWIT	SIW	IA
3	Healthy and Sick Child 90	27	18	36	9
	CSET 15	5	3	5,5	1,5
The purpose of the discipline					

Formation of students' high motivation in acquiring knowledge about the anatomical and physiological characteristics of organs and systems of the child's body, master the methodology for assessing the physical development of children in the age aspect, mastering the skills of collecting complaints and anamnesis, mastering the method of physical examination of children of different ages. To teach students the peculiarities of interaction with a sick child and his legal representatives.

All this is necessary for high-quality professional training for the follow-up of a doctor.

Learning outcomes

LO from the educational program (code)	LO of discipline	Methods of training	Assessment methods
6B10102	1) results learning - written exam	Practical lesson: thematic analysis, seminar TBL, CBL, SIWT. SIW	final examination End of semester exam: 1) Written exam

Thematic plan

№	Section	Topic	Number of study hours:					Tasks (can combine several topics, but not less than 1 and not more than 3 current tasks for credit; the total number of tasks in the discipline, not less than 5)
			Lectures	PL/ Lec	SIWT	SIW	IA	
Credit 1.								
1.		Extra- and intrauterine stages and periods of child development. Features of the physical development of infants and young children, children over 3 years old. Principles for monitoring the development of young children.		2				
2.		Psychosocial development of children. Early childhood developmental care. Providing a safe environment. Features of		2				

		interaction with a sick child and his legal representatives							
3		Embryogenesis, anatomical and physiological features of the musculoskeletal and muscular system in children. Characteristics of the skin. Semiotics of skin lesions arising during the neonatal period.		2					
4		Semiotics of lesions of the muscular system in children (hypotrophy, atrophy) Violation of muscle tone. Myopathy Semiotics of damage to the skeletal system and joints in children (developmental anomalies, pain in bones and joints, deformities)		2					
5.		Procedures for anthropometric research and physical development of young children. Methodology for assessing the physical development of children over 3 years old and adolescents.			1				
6.		Providing advice to parents / legal representatives of children on preventing accidents in children and identifying cases of abuse and violence against children			2				
7		Research methodology of the muscular system in children. Assessment of muscle tone in newborns. Joint research technique, shape, size, range of motion, pain			1				
8.		Research methodology for examining the skin and mucous membranes, skin appendages and subcutaneous adipose tissue in children.			2				

9.		Neuropsychic development of young children. Stages of motor development of speech, criteria for assessing performance. Windows of achievements in motor development of children.				4			
10.		Healthy baby food. Natural feeding. The principles of natural feeding. Benefits of breastfeeding. Introduction of complementary foods, basic requirements. Semiotics of malnutrition.				4			
11.		Deviations in the development of the musculoskeletal system and joints. Features of phosphorus - calcium metabolism in children, its regulation. The daily requirement of children of different ages for calcium, phosphorus, vitamin D2.				4			
				8	6	12		26	
Credit 2									
12.		Embryogenesis, anatomical and physiological features of the respiratory system in children. Semiotics of congenital malformations, lesions of the respiratory system in children.				1			
13.		Embryogenesis, anatomical and physiological characteristics of the heart in children. Semiotics of congenital heart defects, damage to the cardiovascular system in children.				1			
14.		Embryogenesis, anatomical and physiological features of the blood and the hematopoietic system in children of different ages.		1					
15		Anatomical and physiological features of lymph nodes in children. Groups of lymph		1					

		nodes. Semiotics of lymph node involvement.							
16.		The method of physical examination of the respiratory system in children of different ages. Percussion. Auscultation		2	1	2	0, 5		ИСОТ
17.		Method of physical examination of the cardiovascular system in children of different ages. Percussion, auscultation		3	2	3, 5	1, 0		ИСОТ
18		Features of the hemogram of healthy and sick children of different ages.			1				
19.		Method of physical examination of lymph nodes in children			1				
20.		Anatomical and physiological features and features of the methodology for examining the sensory organs in children. Hearing and vision testing of a child				2			
21.		Nutrition of a sick child. Diet for various diseases in children. Diet tables.				2, 5			
22.		Blood coagulation system. Features of hemostasis in newborns. Fibrinolysis				2			
				7	7	12		26	
Credit 3									
23.		Embryogenesis, anatomical and physiological features of the digestive system in children. The method of physical research and semiotics of congenital malformations of the digestive system in children.		2					
24.		Embryogenesis, anatomical and physiological features of the kidneys and urinary system in children. Physical examination technique and semiotics of congenital malformations,		2					

		kidney and urinary tract damage in children						
25.		Embryogenesis, anatomical and physiological features and an algorithm for examining the endocrine system in children of different ages. Semiotics of endocrine system damage.		2				
26		The immune system in children. Nonspecific and specific defense mechanisms. Semiotics of damage and an algorithm for examining the immune system in children of different ages		2				
27.		Features of digestion in children. Methodology for physical examination of the digestive system in children				3		
28.		Functional features of the urinary system in children. Method of physical examination of the kidneys and urinary system in children				3		
29.		The method of physical examination of the endocrine system in children of different ages.				3		
30.		Semiotics of damage to the immune system in children. Primary and secondary immunodeficiency states.		2	2			
36.		Laboratory and instrumental methods for the study of the gastrointestinal tract in children. Methods for the diagnosis of orphan diseases.				3		
37.		Laboratory and instrumental methods of studying the kidneys and urinary system in children.				3		
38.		Laboratory and instrumental methods for studying the endocrine system in children.		2				

				12	5	12		29	
Total:				27	18	36	9	90	

SYLLABUS

Module: “Basic of practical medicine” Discipline: “General pathology”

Educational program:

6B08601 “General Medicine”

Total credits

ECTS: 3

Course: 3

Description of the discipline

Name of the discipline			Code		Educational program		
General pathology					Basic of practical medicine		
Lecturers			Structural division				
Responsible: Kostyleva O.A. (List your responsible)			Department of pathology				
Lecturers:							
Pathophysiology:							
Pathological Anatomy: 11							
Training level		Type		Module			
Bachelor		PD UC		General Pathology			
Forms of learning activity					Training Period		
Practical Lesson, SIWT, SIW, PBL cases							
Mandatory prerequisites:				Additional prerequisites:			
Review the structure of the cell, the basics of the life of the body in the norm, the anatomical structure of the human body, the macro- and microscopic (histological) structure of organs and tissues in the norm				Know the basics of Latin medical terminology			
ECTS	Hours	Practical training		SWIT	SIW	IA	
	120	40		20	48	12	
Purpose of the discipline							
The purpose of mastering the discipline «Fundamentals of Pathology» is to form students' integrated scientific ideas about the general principles of the interaction of the organism with external and internal factors leading to the development of the disease; causes, mechanisms of							

development, course of typical pathological processes and the most common metabolic disorders; mechanisms of the body's defense response, structural foundations, morphogenetic mechanisms, macro- and microscopic picture and outcomes of general pathological processes.

Learning outcomes

LO from the educational program (code)	LO of discipline	Methods of training	Assessment methods
RE 5,6 To analyze the regularities of the structure and functioning of the body as a whole, as well as individual organs and systems of a person in normal and pathological conditions.	Know the main patterns of development of typical pathological processes, typical forms of metabolic disorders, their morphological manifestations and outcomes.	Solution of situational problems / analysis of autopsy protocols Performing the experiment, interpreting the conclusion, drawing up an algorithm for the development of the pathological process. solution of situational problems	Evaluation of the correctness of answers to the questions of the situational task / protocol
	Perform microscopy of histological preparations	Micro preparation skills training	Evaluation of a schematic drawing and description of a micro preparation
	Determine the relationship between macroscopic and microscopic studies	Solution of situational problems / analysis of autopsy protocols, performance of test tasks	Evaluation of the correctness of answers to the questions of the situational task / protocol
	Compare different types of morphological changes in general pathological processes	Solution of situational problems / analysis of autopsy protocols, performance of test tasks	Evaluation of the correctness of answers to the questions of the situational task / protocol

Thematic plan

No	Section	Topic	Number of study hours:	Tasks

			Lectures	PL/ Lec	SIWT	SIW	IA	Total hours		Resource s tasks
Credit №1 «Injury, circulatory failure										
1	pathological anatomy	Damage (alteration). Types of damage. Dystrophy. Causes, morphogenetic mechanisms. Classification.		2				2	Tasks 1	pathological anatomy [:https://www.studentlibrary.ru/ru/book/ISBN9785970432600.html 3. Appendix 5 to the syllabus «Brief summary of general pathological processes»
2		Parenchymal dystrophies, morphological characteristics of granular, hyaline-drip, hydropic, horny dystrophies		2				2		
3		Stromal-vascular dystrophies. Morphology of progressive disorganization of connective tissue. Morphological characteristics of mucoid swelling, fibrinoid swelling, hyalinosis		2				2		
4		Parenchymal lipidosis. Morphological characteristics of fatty degeneration of the myocardium and liver.			1			1		
5		Stromal-vascular lipidosis: general obesity, atherosclerosis, malnutrition (cachexia).			1			1		
6		Mixed dystrophies. General morphological characteristics. Metabolic disorders of hemoglobinogenic pigments, morphological characteristics.			2			2		
7		Metabolic disorders of proteinogenic pigments, morphological characteristics.			1			1		
8		Morphological characteristics of general and local arterial plethora.		2				2		

9		Morphological characteristics of venous plethora, thrombosis, embolism, infarction		2				2		
10		Death, the concept of biological and clinical death, signs of death. Thanatogenesis. Posthumous changes.					3		3	
11		Calcium metabolism disorders, calcinosis. Morphogenesis of stone formation					3		3	
12		Metabolic disorders of lipidogenic pigments, morphological characteristics.					3		3	
13		DIC syndrome. Shock. Causes, types, morphological characteristics.					3		3	
Credit №2 «Inflammation, compensation and adaptation, tumor growth»										
1	pathological anatomy	Inflammation. General morphological characteristics. Pathological anatomy of exudative inflammation.		2				2	Tasks 2	1. pathological anatomy https://www.studentlibrary.ru/ru/book/ISBN9785970432600.html 3. Appendix 5 to the syllabus «Brief summary of general pathological processes»
2		Morphological characteristics of productive inflammation. Granulomatous inflammation.		2				2		
3		Pathological anatomy of interstitial inflammation. Morphological features of specific inflammation			2			2		
4		Morphological characteristics of hypertrophy, atrophy.		2						
5		Morphology of the regenerative process			1			1		
6		Morphology of wound healing.			1					
7		The structure of the tumor tissue. Morphological characteristics of precancerous changes, morphogenesis of the neoplastic process.		2				2		
8		Structural criteria for benign and malignant. Principles of classification of tumors. General		2				2		

		morphological characteristics of epithelial, mesenchymal tumors.							
9		Morphological characteristics of nevi, melanoma.			1			1	
10		Morphological characteristics of dysplasia and metaplasia.				3		3	
11		Morphology of sclerosis, pathology of regulation of connective tissue growth				3		3	
12		tumor progression. Theory of the tumor surface.				3		3	
13		Morphological features of childhood tumors				3		3	
		General nosology. General etiology and pathogenesis		2				2	
		Modeling of pathological processes			1			1	
		Pathogenic effect of environmental factors on the human body. Pathogenic effect on the body of mechanical factors of electric current and ionizing radiation.		2				2	
		Painful effect on the body of high and low barometric pressure, noise, ultrasound, laser radiation, hypo and hyperthermia.				2		2	
		Pathophysiological aspects of alcoholism, drug addiction, substance abuse, tobacco smoking.				2		2	
		General cell pathology. Local and general body reactions to damage (stress, shock).			1			1	
		The role of heredity and reactivity of the organism in pathology			1			1	
		Pathophysiology of apoptosis.				2		2	

	Inflammation: etiology and pathogenesis of the inflammatory response.		2				2		
	Peripheral circulation and microcirculation disorders.		2				2		
	Pathophysiology of sepsis				2		2		
	Fever: definition, causes and mechanisms of development.			1					
	Modeling of febrile reaction in the experiment.				2		2		
	Allergy: pathogenesis of the most common human allergic diseases.		2				2		
	Hypoxia: etiology, pathogenesis and indicators of blood gases in the main types of hypoxia.		2				2		
	Pathophysiology of the immune system. AIDS.				2		2		
	Tumors: etiology and pathogenesis		2				2		
	tissue growth disorder.				2		2		
	Disorder of water and electrolyte metabolism: edema, pathogenetic factors		2				2		
	Disturbance of Acid-base disorders: acidosis, alkalosis.		2				2		
	Disorder of the acid-base state: compensatory mechanisms in violation of the acid-base balance.			1			2		
	Pathophysiological principles of homeopathic therapy of disorders of water-electrolyte and acid-base balance.				2		2		
	Disorders of carbohydrate metabolism: hypoglycemia, hyperglycemia types, causes and mechanisms of development.		2				2		
	Carbohydrate metabolism disorders: etiology and		3				3		

	pathogenesis of diabetes mellitus		PB L						
	Carbohydrate metabolism disorders: extra pancreatic insulin deficiency. Metabolic syndrome, etiology and pathogenesis.				2		2		
	Disturbance of lipid and protein metabolism.		2				2		
	Etiology and pathogenesis of starvation.				2		2		
	Etiology and pathogenesis of obesity.				2		2		
	Disturbance of the metabolism of vitamins and minerals.				2		2		
Total:			40	20	48	12	120		

SYLLABUS

Module: “Development of Scientific Thinking Scientific Project 1”, Discipline: “Patient and Society”, “Research methodology”

Educational program:

6B08601 “General Medicine”

Total credits

ECTS: 5

Course: 3

Description of the discipline

Name of the discipline		Code	Educational program
«Development of Scientific Thinking Scientific Project 1»		6B10102	«General medicine»
Lecturers		Structural division	
Responsible: Annexure 3		Department of Informatics and Biostatistics	
Lecturers: see Annex 3		Department of Informatics and Biostatistics School of Public Health	
Training level	Type	Module	
Bachelor	GED UC	Patient and society	
Forms of learning activity			Training period

Lectures, Practical classes, SIWT, SIW					3 course, VI semester	
Compulsory prerequisites:			Additional prerequisites:			
Demonstrate and apply knowledge about society as a holistic system and person Analyze, summarize, process and interpret information and phenomena Know basic definitions, models, and concepts of health and disease Assesses the impact of air, hydrosphere and lithosphere pollutants on human health and living conditions. Analyze data, test hypotheses and statistical significance of indicators; apply statistical methods in analyzing health indicators and in biomedical research			Ensures the implementation of basic ethical principles in healthcare			
ECTS	Hours	Lectures	Practical training	SWIT	SIW	IA
5	150	6	45	39	45	15
The purpose of the discipline						
To introduce basic public health concepts to the theoretical management of public health problems, including disease prevention, health promotion, health economics and policy						

Learning outcomes

LO from the educational	LO of discipline	Methods of training	Assessment methods
ON2	Analytically discuss, in written form, basic scientific concepts, methodological perspectives, and factors that govern public health	Lectures: review, problem, lecture with pre-planned errors Practical classes: situational tasks, educational game, student as a teacher, TBL Self-work: preparation	Midterm and final control in the form of a test, preparation and presentation of the project
ON 10	Discuss the evaluation of global trends affecting health, including communicable and non-communicable disease as well as the health impact of different environmental and	Lectures: review, problem, lecture with pre-planned errors Practical classes: situational tasks, educational game, student as a teacher, TBL Self-work: preparation	Midterm and final control in the form of a test, preparation and presentation of the project

ON9	Apply basic public health concepts to the theoretical management of public health problems, including disease prevention, health promotion, health economics and policy	Lectures: review, problem, lecture with pre-planned errors Practical classes: situational tasks, educational game, student as a teacher, TBL Self-work: preparation of a report, test	Midterm and final control in the form of a test, preparation and presentation of the project
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Thematic plan

№	Section	Topic	Number of study hours					Tasks	
			Lectures	PL/ Lec	SIWT	SIW	IA		Total hours
Credit 1. Comprehensive assessment of public health and legal basis									
1.		Public health system. Methods of studying Public health		2				2	Assignment 1
2.		Medical and social aspects of demographic processes		2				2	
3.		Morbidity statistics. Morbidity and disability indicators. Physical development indicators		2				2	
4.		Socially significant diseases and factors affecting morbidity			2			2	
5.		Topic-based literature and database review				6		6	Assignment 2
6.		Organizational and legal framework of public health.		2				2	
7.		Strategic documents for the development of healthcare		2				2	
8.		Insurance medicine. Fundamentals, principles, implementation, examples		2				2	
9.		Ensuring the sanitary and epidemiological well-being of the population			2			2	
10.		Ensuring the quality of medical care. Rules and audit.			2			2	
11.		Public health data processing, analysis and visualization				6		6	

Credit 2. "Organization of medical care"										
12.		Organization and performance of outpatient facilities. Management and financing of PHC			2			2		Task 2
13.		Maternal and child care. Organization, characteristics and issues			2			2		
14.		Organization of medical care for rural population		2				2		
15.		Organization and performance of inpatient facilities. Management and financing of hospitals			2			2		
167		Clinical and economic analysis		2				2		
17.		Healthcare systems of the low-, middle- and high-income countries				6	6	12		
18.		Project preparation				6		6		
19.		Project presentation		18	12	24	6	60		

Credit 3 Statistical Methods in Medicine

2		The basic concept of the confidence interval (CI). Types of CL Calculation of the confidence interval and its interpretation		2	1	2		5		Task 3
2		P level concept. One-sided and two-sided P level. Interpretation of the results of statistical analysis depending on the value of the P level		1	2	2		5		
2		Two-way analysis of variance. Features of the method and conditions for its use. The procedure for performing two-way analysis of variance. Interpretation of results.		2	1	2		5		
2		Assessment of chances and risks. Assessment of the sensitivity and specificity of diagnostic tests		3	1	2		6		
2		Survival analysis. Censored data. Kaplan Meier method. Survival curve. Median survival rate.		1	1	4		6		

Credit 4 Planning and conducting statistical analysis

1.		Formulation of statistical hypotheses in accordance with the goals and objectives of scientific research in medicine		2	2	4		8		Task 4
2.		Justification of the choice of statistical methods for testing the formulated statistical hypotheses		2	2	4		8		
3.		Statistical analysis using software packages and / or online statistical calculators		5	2	4		11		

Credit 5 Presentation of statistical analysis results

4.	Presentation of the results of statistical analysis in the form of tables and graphs	3	2	4	10	Task 4
5.	Analysis and interpretation of the results of statistical analysis. Formation of conclusions.	3	2	4	10	
6.	Preparation of presentation and poster.	3	2	4	10	Task 5
Total:		27	18	36	9	90
Total:		45	30	60	15	150

SYLLABUS

Module: “Mechanisms of Disease”, Discipline: “Endocrine system”

Educational program:

6B08601 “General Medicine”

Total credits

ECTS: 5

Course: 3

Description of the discipline

Name of the discipline		Code	Educational program
«Mechanisms of Diseases. Endocrine system»		6B10102	«General medicine»
Lecturers		Structural division	
Responsible: Piven L.I.		Department of Clinical Pharmacology and Evidence-Based Medicine	
Lecturers: see Annex 3		Department of Pathology Department of Biomedicine Department of Internal Medicine Department of Oncology and Radiation Diagnostics Department of Clinical Pharmacology and Evidence-Based Medicine	
Training level	Type	Module	
Bachelor	BD UC	Mechanisms of Diseases	
Forms of learning activity			Training period
Lectures, Practical classes, IWSUGT, IWS			3 course, VI semester
Mandatory prerequisites:		Additional prerequisites:	

<p>"Morphology and physiology of the digestive system": structure and basic patterns of functioning of cells, tissues, organs, systems of a healthy person, mechanisms of biochemical regulation of the digestive system; signal transduction pathways in cells</p> <p>"Fundamentals of pathological processes": typical pathological processes - the main patterns of occurrence, development and completion of pathological reactions, processes and conditions, structural principles and their morphogenetic mechanisms</p> <p>"Fundamentals of Pharmacology": the effect of medicinal substances on the totality of their pharmacological properties to ensure a rational choice of drugs for various diseases in accordance with national clinical protocols from the standpoint of evidence-based medicine.</p> <p>"Patient examination skills": methods of physical examination of the digestive system with their normative indicators and communication skills, patient-centered approach in communicating with colleagues and patients.</p>	<p>Control and regulation. Interactions with the environment. Liquids and transportation. Continuation of life. Patient examination skills. Fundamentals of Pharmacology. Medical chemistry. The immune system.</p> <p>"Immune system": structure and functions of the immune system, the concept of immunity, mechanisms of innate and acquired immunity, disorders of the immune status and causes of occurrence</p> <p>"Fundamentals of Microbiology": classification of microorganisms; morphology, physiology and ecology of microorganisms, methods of their study; concept of asepsis, antiseptics, sterilization and disinfection</p>
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ECTS	Hours	Lectures	Practical training	SWIT	SIW	IA
	150	6	45	39	45	15

The purpose of the discipline

Study of the morphofunctional features of the endocrine system in pathology, the formation of skills in syndromic diagnosis and their pharmacological correction.

Learning outcomes

LO from the educational program (code)	LO of discipline	Methods of training	Assessment methods	LO from the educational program (code)

PK1	NO 8	<p>To analyze the laws of the structure and functioning of individual organs and systems of a person in normal and pathological conditions.</p> <p>Advise patients (to take an anamnesis, conduct an examination, to interpret clinical analysis, conduct a syndromic diagnosis, draw up an examination plan, principles of pharmacological correction).</p>	<p>Practical classes: oral interview, discussion, situational tasks, work with textbooks, sketching of the histological structure of organs, work in pairs, work in small groups, consultations with a teacher on all emerging issues, role-playing games, active teaching methods - case-based learning (CBL), team-based learning (TBL), research-based learning (RBL) .</p> <p>Independent work of students under the guidance of a teacher: analysis of the results of practical work, solving situational tasks, performing test tasks, working with textbooks, with micropreparations, sketching the histological structure of organs, consultations with the teacher on all arising issues.</p> <p>Students' independent work: remotely on the MOODLE platform (testing).</p>	<p>Current control by discipline: see "Evaluation Criteria"</p> <p>Discipline Final Control: OSKE</p>
BK2		<p>Ready for scientific activities, involving the possession of methodological knowledge, technology, research, recognition of their values and the willingness to use them in the professional field for the formation of evidence-based medical practice.</p>	<p>Students' independent work: remotely on the MOODLE platform (testing).</p>	
BK 3		<p>Readiness future specialist to work with people - work in a group, taking into account the high interactivity of the medical profession, and today's complex health care algorithms, including a large</p>		

		number of components, equipment and most importantly, human professional resources need for professional medical education.		
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Thematic plan

№	Section	Topic	Number of study hours:					Tasks	
			Lectures	PL/ Lec	SIWT	SIW	IA		Total hours
«Endocrine system»									
1.1	Biochemistry	Molecular mechanisms of hormonal regulation disorders (insulin, cortisol, growth hormone, thyroxine, parathyroid hormone).	2					A task based on a clinical example and reflecting a violation of biochemical processes when the content of individual hormones changes, the interaction of several hormones at the level of effects and the manifestation of changes in the patient.	
1.2		Biochemical aspects of metabolic disorders in diabetes mellitus (insulin, cortisol, growth hormone, adrenaline, thyroid hormones).		4	2				
1.3		Hormones that regulate reproductive function. Pathology of the exchange of sex hormones.			2	3			
				2	4	4	3	1	1 task
2.1	Pathological physiology	General etiology and pathogenesis of endocrine disorders.		2					The study of the topic. Drawing up an algorithm for the development of the

								pathological process. The decision of situational tasks.
2.2		Pathophysiological mechanisms of hypo- and hyperthyroidism.		2				The study of the topic. Drawing up an algorithm for the development of the pathological process. The decision of situational tasks.
2.3		Pathophysiological mechanisms of hypo- and hyperglycemia, features of endocrine disorders in				3		Study of the topic, drawing up an algorithm for the development
		diabetes mellitus.						of the pathological process under the guidance of a teacher. The decision of situational tasks.

2.4		Pathophysiology of the adrenal glands (hypo- and hypercortisolism).		4					The study of the topic. Drawing up an algorithm for the development of the pathological process. The decision of situational tasks.
2.5		Pathophysiology of the parathyroid glands.		2					The study of the topic. Drawing up an algorithm for the development of the pathological process. The decision of situational tasks.
2.6		Pathophysiological mechanisms of endocrine disorders of the reproductive system.		3					The study of the topic. Drawing up an algorithm for the development of the pathological process. The decision of situational tasks.
2.7		PBL				5			Case analysis
2.8		Pathophysiology of the thymus. General adaptation syndrome.					4		Independent study of the topic. Working with additional literature, on electronic media, completing

									tasks in the program " Moodle»
2.9		Etiology and pathogenesis of endocrine obesity.					5		Independent study of the topic. Working with additional literature, on electronic media, completing tasks in the program " Moodle»
2.10		Pathophysiology of the thymus, epiphysis.					4		Independent study of the topic. Working with additional literature, on electronic media, completing tasks in the program " Moodle»
				13		8	13	4	1 task
3.1	Pathological anatomy	Pathomorphology of thyroid diseases (goiter)		2	2				Oral discussion, view, sketch and description of macro and micropreparations. Solving situational problems / analysis of the autopsy protocol. Work with a training presentation on the topic

3.2		Pathomorphology of thyroid disease (thyroiditis)		2				Oral discussion, view, sketch and description of macro and micropreparations
3.3		Pathomorphology of diabetes mellitus		2	2	3		Oral discussion, view, sketch and description of macro and micropreparations
3.4		Pathological anatomy of diseases of the hypothalamic-pituitary system (Cushing's disease, acromegaly, diabetes insipidus)		2	2			Solving situational problems / analysis of the autopsy protocol. Work with a training presentation on the topic Preparing a Microsoft Power Point presentation on the topic
3.5		Pathological anatomy of adrenal diseases			2	2		Solving situational
								problems / analysis of the autopsy protocol. Work with a training presentation on the topic
3.6		Tumors and precancerous diseases of the female and male reproductive systems (cervical intraepithelial neoplasia and cervical cancer, endometrial hyperplasia and cancer of the uterine body, adenoma /prostate cancer)				3		Preparing a Microsoft Power Point presentation on the topic

3.7		Pathomorphology of inflammatory diseases of the female and male reproductive system (endometritis, cervical erosion, prostatitis)				2,5			Preparing a Microsoft Power Point presentation on the topic
				8	8	10,5	3,5	30	1 task
4.1	Pharmacology	Classification of hormonal drugs. The principles of hormone therapy.	1						Completing assignments in the MOODLE system.
4.2		Hormonal drugs used for hyper- and hypothyroidism syndromes.	1	2					Oral interview, prescriptions writing, situational cases analysis in the systems: Platonus, WebEx.
4.3		Principles of pharmacological correction of thyroid diseases.			2				Completing assignments in the MOODLE system.
4.4		Hormonal agents used for hyper- and hypoglycemic syndromes.	1	2					Oral interview, prescriptions writing, situational cases analysis in the systems: Platonus, WebEx.
4.5		Principles of pharmacological correction of diabetes mellitus.			2				Completing assignments in the MOODLE system.
4.6		Hormonal drugs used for hyper- and hypocorticism syndromes.			2				Completing assignments in the MOODLE system.
4.7		Hormonal drugs that regulate reproductive function.			1				Completing assignments in the MOODLE system.
4.8		Principles of pharmacological correction of diseases of the endocrine system.				7			Completing assignments in the MOODLE system.
			3	4	7	7	2	23	1 task.

5.6		Visual research methods in endocrinology. Radiation anatomy of the endocrine glands, especially in children			2				Solving situational tasks. Be able to describe an X-ray image. Working with a training presentation on atopic. Preparing a Microsoft Power Point presentation on the topic.
5.7		Visual diagnostics of diseases of the thyroid, parathyroid glands. Features in children. Visual diagnostics of diseases of the hypothalamic-pituitary system, pancreas. Features in children			3				Solving situational tasks. Be able to describe an X-ray image. Working with a training presentation on atopic. Preparing a Microsoft Power Point presentation on the topic.
			6	5	5	2	18	6	1 task
6.1	Internal medicine	Questioning and examination of patients with diseases of the endocrine system		1					History taking, physical examination of patients with diseases of the endocrine system.
6.2		The main clinical syndromes of endocrine system diseases.			1				Control: test on the Moodle platform.

6.3		The syndromes of hyperthyroidism and hypothyroidism. Underlying and justification of syndromes. List of diseases for differential diagnosis.		2				History taking, physical examination and laboratory tests in patients with syndromes of hyperthyroidism and hypothyroidism. Underlying and justification of syndromes using diagnostic criteria. List of diseases for differential
								diagnosis. Control: Curation of patients / Solving situational problems.
6.4		Thyroid disease diagnostic methods		2				Features of instrumental methods of thyroid pathology: scintigraphy, ultrasound examination. Control: essay writing

6.5		Insipidus syndrome. Hyperglycemic syndrome. Underlying and justification of syndromes.List of diseases for differential diagnosis.		2					History taking and physical examination in patients with insipidus syndrome and hyperglycemic syndrome. Underlying and justification of syndromes. Listof diseases for differential diagnosis. Control: Curationof patients / Solving situational problems.
6.6		Diagnostics of diabetes mellitus.		2					Additional laboratory research methods in diabete smellitus: featuresof immunological and bioche mical parameters in diabetes mellitus Control: essay writing
6.7		Hypocorticism syndrome. Underlying and justification of syndromes. List of diseases for differential diagnosis.							History taking, physical examination and laboratory tests in patients with hypocorticism sm
									and adrenal insufficiency.

6.8	Adrenal insufficiency syndrome. Underlying and justification of syndromes. List of diseases for differential diagnosis.						Underlying and justification of syndromes. List of diseases for differential diagnosis. Control: Curation of patients / Solving situational problems.
6.9	Diagnostics of diseases of hypothalamic-pituitary-adrenal axis.			2			Features of laboratory and instrumental methods of diseases of hypothalamic-pituitary-adrenal axis. Control: essay writing
6.10	Hyperparathyroidism syndrome. Underlying and justification of syndromes. List of diseases for differential diagnosis.				4		History taking, physical examination and laboratory tests in patients with
6.11	syndrome. Underlying and justification of syndromes. List of diseases for differential diagnosis.				3		hyperparathyroidism and hypoparathyroidism. Underlying and justification of syndromes. List of diseases for differential diagnosis. Control: test on the Moodle platform.

6.12		Hypogonadism syndrome. Premature puberty. Underlying and justification of syndromes.List of diseases for differential diagnosis.				3,5			History taking, physical examination and laboratory tests inpatients with hypogonadism syndrome and premature puberty. Underlying and justification of syndromes. Listof diseases for
									differential diagnosis. Control: test on the Moodle platform.
				7	7	10,5	2,5	27	2 tasks
Total:			6	45	39	45	15	150	10 tasks

SYLLABUS

Module: “Mechanisms of Disease”, Discipline: “Cardiovascular system”

Educational program:

6B08601 “General Medicine”

Total credits

ECTS: 6

Course: 3

Description of the discipline

Name of the discipline		Code	Educational program
Cardiovascular system		6B10102	«General medicine»
Lecturers		Structural division	
Responsible: Tauesheva Z.B.		Department of Biomedicine	
Lecturers: Appendix 3			
Training level	Type	Module	
Bachelor course	DB UC	The Disease Mechanisms module. Cardiovascular system»	
Forms of learning activity		Training period	
Lectures, Practical classes, SIWT. SIW		3 course, V1 semester	
Mandatory prerequisites:		Additional prerequisites:	

<p>"Morphology and physiology of the digestive system": the structure and basic laws of the functioning of cells, tissues, organs, systems of a healthy person, mechanisms of biochemical regulation of the digestive system; ways of signal transmission in cells</p> <p>"Fundamentals of pathological processes": typical pathological processes - the main patterns of occurrence, development and completion of pathological reactions, processes and states, structural principles and their morphogenetic mechanisms</p> <p>"Fundamentals of pharmacology": the effect of medicinal substances on the totality of their pharmacological properties to ensure a rational choice of drugs for various diseases according to national clinical protocols from the standpoint of evidence-based medicine.</p> <p>"Patient examination skills": methods of physical examination of the digestive system with their normative indicators and communication skills, a patient-centered approach to communicating with colleagues and patients</p>				<p>Control and regulation. Exchange with the environment. Liquids and transport. Continuation of life..</p> <p>« Medical chemistry»: the structure and transformation of inorganic and organic substances underlying the processes of vital activity; biological, physico-chemical interactions of substances in the human body at the molecular and cellular levels.</p> <p>"immune system": the structure and functions of the immune system, the concept of immunity, the mechanisms of innate and acquired immunity, violations of the immune status and the causes of</p> <p>"Fundamentals of microbiology": classification of microorganisms; morphology, physiology and ecology of microorganisms, methods of their study; the concept of asepsis, antiseptics, sterilization and disinfection</p>			
ECTS	Time	Lecture	Practical training	SWIT	SIW	IA	
6	180	7	54	45	56	18	
Purpose of the discipline							
Study of the morphofunctional features of the Cardiovascular system in pathology, the formation of skills in syndromic diagnosis and their pharmacological correction.							

Learning outcomes

LO from the educational program (code)	LO of discipline	Methods of training	Assessment methods
NO 8	<p>Analysis of the patterns of the structure and functioning of individual organs and systems in the pathology of the hematopoietic system.</p> <p>Advise patients (collect anamnesis, conduct an examination, evaluate a clinical analysis, conduct syndromic diagnostics, draw up an examination plan, principles of pharmacological</p>	<p>Practical exercises: oral interview, discussion, situational problem solving, work in pairs, work with textbooks, work in small groups, consultations with a teacher on all emerging issues, role-playing games, active teaching methods: case-based learning (CBL); Independent work of a</p>	<p>Discipline monitoring: see evaluation criteria</p> <p>Final control by discipline: General structured clinical exam</p>

	correction).	<p>student under the guidance of a teacher: solving situational problems, performing test tasks, consulting with a teacher on all emerging issues. Independent work of students - remotely on the MOODLE platform (testing, essay preparation, situational tasks)</p>	
	<p>Readiness for scientific activity, which presupposes possession of methodological knowledge, technology of research activity, recognition of their value and readiness for their use in the professional sphere for the formation of evidence-based medical practice.</p>		
	<p>The willingness of a future specialist to work with people - to work in a group, taking into account the high interactivity of the medical profession and complex modern algorithms for the provision of medical care, including a large number of components, means and, most importantly, human professional resources necessary in professional medical education</p>		

Thematic plan

№	Section	Topic	Number of study hours:					Total hours	Assignments (may combine several topics, but not less than 1 and not more than 3 current credit assignments; the total number of assignments in the discipline, including mid-term exams, is not less than 5)
			Lectures	PL/ Lec	SIWT	SIW	IA		
Credit 1. "Introduction to discipline; Kazakhstan on the way to Independence, civil-political confrontation"									
1		Molecular mechanisms of dysregulation of vascular tone (substances involved in the regulation of angiotensin, nitric oxide, calcium, endothelin, ADP), peculiarities of synthesis, reception. The relationship between inflammation and vascular tone		2	2	1			
2		Dyslipidemia and atherosclerosis. Biochemical disorders in endothelial dysfunction				2			
3		Laboratory markers for the diagnosis of acute coronary syndrome. Proteins characterizing disorders of energy supply and contractile function of the myocardium			2	1	1		
		Total		4	3	4	1	12	
Pathology:									
Pathological physiology									
1		Pathophysiological							

		features, methods of clinical and instrumental examination and principles of treatment for essential hypertension syndrome	1				1	
2		Arterial hypertension, etiology and pathogenesis.		2				The study of the topic. Drawing up an algorithm for the development of the pathological process. The decision of situational tasks.
3		Atherosclerosis: etiological factors, pathogenesis.		2				The study of the topic. Drawing up an algorithm for the development of the pathological process. The decision of situational tasks.
4		Lesions of the valvular apparatus of the heart: causes and mechanisms of development. Features in children. Pathophysiology of coronary insufficiency.		2				The study of the topic. Drawing up an algorithm for the development of the pathological process. The decision of situational tasks.
5		Etiology and pathogenesis of coronary heart disease			2			Study of the topic, drawing up an algorithm for the development of the pathological process under the guidance of a teacher. The decision of situational tasks.

6		Pathophysiology of acute and chronic heart failure. Features in children.		3					The study of the topic. Drawing up an algorithm for the development of the pathological process. The decision of situational tasks.
7		Vascular pathophysiology.		2					The study of the topic. Drawing up an algorithm for the development of the pathological process. The decision of situational tasks.
8		Pathophysiology of heart rhythm disorders. Features in children.			1				Study of the topic, drawing up an algorithm for the development of the pathological process under the guidance of a teacher. The decision of situational tasks.
9		Pathophysiological features, methods of clinical and instrumental examination and principles of treatment for essential hypertension syndrome	1					1	
		<u>PBL</u>			5				
1		Causes and mechanism of hypertensive crisis.				4			Independent study of the topic. Working with additional literature, on electronic media,

									completing tasks in the program " Moodle»
2		Causes, mechanism of development of hypertrophy of the heart.				3			Independent study of the topic. Working with additional literature, on electronic media, completing tasks in the program " Moodle»
3		Cardiogenic shock: causes, mechanisms, pathophysiological stages.				3			Independent study of the topic. Working with additional literature, on electronic media, completing tasks in the program " Moodle»
		Intermediate attestation							
		Total	1	11	8	10	3	33	
		Pathological anatomy							
1.		Pathomorphological features in acute coronary insufficiency syndrome	1						
2.		Atherosclerosis. Clinical and morphological forms of atherosclerosis.		2	2				
3.		Hypertonic disease. Clinical and morphological forms of hypertension.							
				2	2	2			
4.		Acute and chronic coronary heart disease. Cardiovascular failure.							

				3	2	3			
5.		Rheumatic diseases as asystemic progressive disorganization of connective tissue. Rheumatism. Systemic lupus erythematosus.		2	2	3			
6.		Congenital and acquired heart defects			2	2			Solving situational problems / analysis of the autopsy protocol Work with a training presentation on the topic Preparing a Microsoft Power Point presentation on the topic
		Total	1	9	9	10	3	32	
		Pharmacology							
1		Drugs for arterial hypertension syndrome treatment.	1	2					
2		Arterial hypertension treatment principles			3				
3		Drugs used in coronary insufficiency syndrome.	1	2					
4		Principles of pharmacological correction of coronary insufficiency syndrome			3				
5		Drugs used in rhythm disturbance syndrome.		2					
6		Medicines used in heart failure.		2					

7	Principles of pharmacological correction of heart and vascular failure.			3				
8	Principles of pharmacological correction of the cardiovascular system diseases.				9			
	Total	2	8	9	9	3	31	
	Pathophysiological features, methods of clinical instrument testing and principles of treatment for Essential Hypertension Syndrome.	1						Integrated lecture
	Pathomorphological features and methods of clinical instruments for acute coronary insufficiency syndrome.	1						Integrated lecture
	Interrogation and examination of patients with pathology of the cardiovascular system.		2					Mastering the skill of collecting anamnesis of the patients with a cardiovascular system disease.
	Arterial hypertension syndrome (essential hypertension, secondary hypertension). Causes and symptoms. Diagnostic methods.		2		2			Mastering the skill of collecting anamnesis of the patients with the arterial hypertension syndrome. Practicing the clinical propedeutic skills. Detecting the arterial hypertension syndrome, substantiation of the criteria. Solving the situational task.

		<p>Chest pain syndrome (ACS, angina pectoris, myocardial infarction). Causes. Symptoms.</p> <p>Diagnostic methods.</p>		2					<p>Mastering the skill of collecting anamnesis of the patients with the chestpain syndrome. Practicing the clinical propedeutic skills. Detecting the chest pain syndrome, substantiation of the criteria. Solving the situational task.</p>
		<p>Valvular heart diseases. Hemodynamics. Causes. Symptoms. Diagnostic methods.</p>		2					<p>Mastering the skill of collecting anamnesis of the patients with valvularheart disease. Practicing the clinical propedeutic skills. Detecting the valvular heart disease, substantiation of the criteria. Solving the situational task.</p>
		<p>Auscultation methods and techniques of the heart and vessels. Normal heartsounds (Lesson in the Center for Simulation and Educational Technologies).</p>			2				<p>Mastering the skill of heart auscultation of the patients with cardiovascular diseases. Simulation-based learning (Lesson in the Center for Simulation and Educational Technologies).</p>

		Heart auscultation: pathological sounds and murmurs. Diagnostic value (Lesson in the Center for Simulation and Educational Technologies).		2					Mastering the skill of heart auscultation of the patients with cardiovascular diseases. Simulation-based learning (Lesson in the Center for Simulation and Educational Technologies).
		Valvular heart diseases: mitral insufficiency and stenosis. Hemodynamics. Causes. Symptoms. Diagnostic methods (Lesson in the Center for Simulation and Educational Technologies).		2					Mastering the skill of heart auscultation of the patients with cardiovascular diseases. Simulation-based learning (Lesson in the Center for Simulation and Educational Technologies).
		Valvular heart diseases: aortic insufficiency and stenosis. Hemodynamics. Causes. Symptoms. Diagnostic methods (Lesson in the Center for Simulation and Educational Technologies).		2		2			Mastering the skill of heart auscultation of the patients with cardiovascular diseases. Simulation-based learning (Lesson in the Center for Simulation and Educational Technologies).
		Syndrome of cardiac arrhythmias. Causes. Symptoms. Diagnostic methods (ECG).		2					Mastering the skill of collecting anamnesis of the patients with the cardiac arrhythmia syndrome. Practicing the clinical propedeutic skills.

									<p>Detecting the cardiac arrhythmia syndrome, substantiation of the criteria.</p> <p>Solving the situational task.</p>
		<p>Acute and chronic heart failure syndrome (left- and right-sided). Acute vascular insufficiency (Syncope, collapse, shock). Causes. Symptoms.</p>							<p>Mastering the skill of collecting anamnesis of the patients with acute and chronic heart failure syndrome (left- and right-sided).</p> <p>Practicing the clinical propedeutic skills. Detecting the acute and chronic heart failure syndrome (left- and right-sided), substantiation of the criteria. Solving the situational task.</p>
		Chest pain syndrome (ACS, angina pectoris, myocardial infarction).							Writing a fragment of a medical history.
		Essential hypertension, secondary hypertension syndromes.							Writing a fragment of a medical history.
		Syndrome of cardiac arrhythmias.							Writing a fragment of a medical history.
		Acute and chronic heart failure syndrome (left- and right-sided).			2				Completing the task on the platform "moodle".
		Total	2	12	6	12	35	36	
						,5			

		Total (CSET)		4	4	5, 5			
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SYLLABUS

Module: “Mechanisms of Disease”, Discipline: “Digestive system”

Educational program:

6B08601 “General Medicine”

Total credits

ECTS: 6

Course: 3

Description of the discipline

Name of the discipline		Code	Educational program
Digestive system			«General medicine»
Lecturers		Structural division	
Responsible: I. A. Baryshnikova		Department of pathology	
Lecturers: Appendix 3			
Training level	Type	Module	
Bachelor course	BD UC	The Disease Mechanisms module. Digestive system»	
Forms of learning activity		Training period	
Lectures, Practical classes, SIWT. SIW		3 course, V1 semester	
Mandatory prerequisites:		Additional prerequisites:	
<p>"Morphology and physiology of the digestive system":the structure and basic laws of the functioning of cells, tissues, organs, systems of a healthy person, mechanisms of biochemical regulation of the digestive system; ways of signal transmission in cells</p> <p>"Fundamentals of pathological processes": typical pathological processes - the main patterns of occurrence, development and completion of pathological reactions, processes and states, structural principles and their morphogenetic mechanisms</p> <p>"Fundamentals of pharmacology": the effect of medicinal substances on the totality of their pharmacological properties to ensure a rational choice of drugs for various diseases according to national clinical protocols from the standpoint of evidence-based medicine.</p> <p>"Patient examination skills": methods of physical examination of the digestive system with their normative indicators and communication skills, a patient-centered approach to communicating with colleagues and patients</p>		<p>Control and regulation. Exchange with the environment. Liquids and transport. Continuation of life..</p> <p>« Medical chemistry»: the structure and transformation of inorganic and organic substances underlying the processes of vital activity; biological, physico-chemical interactions of substances in the human body at the molecular and cellular levels.</p> <p>"immune system": the structure and functions of the immune system, the concept of immunity, the mechanisms of innate and acquired immunity, violations of the immune status and the causes of</p> <p>"Fundamentals of microbiology":classification of microorganisms; morphology, physiology and ecology of microorganisms, methods of their study; the concept of asepsis, antiseptics, sterilization and disinfection</p>	

ECTS	Time	Lecture	Practical training	SWIT	SIW	IA	
6	180	10	52	45	57	16	
Purpose of the discipline							
The study of morphofunctional features of the digestive system in pathological conditions, the formation of skills of syndromal diagnostics and pharmacological correction, ensuring further successful training in clinical departments to master the professional skills of a doctor.							

Learning outcomes

LO from the educational program (code)	LO of discipline	Methods of training	Assessment methods
Demonstrate knowledge of the General laws of the origin and evolution of life, structure of cells, tissues, organs and systems of organism in norm and pathology; anatomical and physiological peculiarities of the functioning systems of the human body at different ages; interrelation of functional systems of the organism and levels of their regulation in terms of standards of pathology; fundamentals of molecular biology and genetics role of molecular and genetic factors in the pathogenesis of diseases	Acquisition of theoretical and practical knowledge in the field under study. The ability to independently state the laws of the structure and functioning of the human digestive system in normal and in different age periods; explain the causes and mechanisms of development of the most common diseases of the digestive system; to establish the role of molecular genetic factors in the development of diseases of the digestive system interpret the morphological picture of the most common diseases of the digestive system;	Practical classes: oral / written interview, discussion, solving situational problems, working with a plastinated cadaver and anatomical resources, Working with micro-preparations, drawing the histological structure of organs. Drawing up an algorithm for the development of the pathological process. Drawing up a graphological structure and diagnostic algorithms on the example of a clinical case. Curation of sick patients, compliance with communication skills, formation of clinical syndromes and	Current control of the discipline: see evaluation criteria

<p>Readiness for scientific activity, which involves the possession of methodological knowledge, research technology, recognition of their value and readiness to use them in the professional sphere for the formation of evidence-based medical practice.</p>	<p>Analyze information about methods of diagnosis and pharmacological correction of diseases of the digestive system from the standpoint of evidence-based medicine Apply scientific principles and knowledge of evidence-based medicine to medical practice and research.</p>	<p>identification of the main (leading) syndrome, drawing up a plan of examination and</p>	
<p>The readiness of the future specialist to work with people - to work in a group, taking into account the high interactivity of the medical profession and complex modern algorithms for providing medical care, including a large number of components, tools and, most importantly, human professional resources required in professional medical education.</p>	<p>work in a team to create and further improve the interactivity of the medical profession to provide a patient-centered approach for the safe, timely, effective delivery of medical care</p>	<p>pharmacological correction Simulation training method SVL (clinical case-based training) PBL (problem-oriented learning)</p>	<p>Checking the correctness of solving tasks for a clinical case</p>
<p>Implementation of clinical skills for collecting anamnesis, physical examination, conducting clinical procedures and research, prescribing treatment of various diseases and providing emergency care медицинской помощи.</p> <p>The ability to form interpersonal and professional experience of interaction with others, which is necessary for an individual to successfully function in the professional sphere and society</p>	<p>collect complaints and anamnesis from patients with a disease of the digestive system demonstrate knowledge of communication skills in communicating with the patient and his relatives conduct a physical examination identify clinical syndromes, the main (leading) syndrome develop a diagnostic search plan for diseases of the digestive system interpret laboratory data, analyze visual and other research methods</p>	<p>TVL (team-oriented) training Independent work of students under the guidance of a teacher: analysis of the results of practical work, solving situational problems, defense of essays, working with textbooks, electronic</p>	<p>Checking the effectiveness of communication skills in a team, the correctness of solving a situational problem, and input control tests</p>

	<p>for the pathology of the digestive system- to show knowledge of the principles of pharmacological correction of diseases of the digestive system use an algorithm for providing emergency medical care in emergency conditions practice teamwork for the further creation and development of interprofessional relations carry out activities to promote health, prevent diseases of the digestive system</p> <p>Development of interpersonal and team interaction skills. demonstrate patient care skills, psychological support and communication skills in communicating with the patient and his relatives for the successful provision of medical care</p>	<p>resources, consultations with the teacher on all emerging issues. Independent work of students: remotely on the Moodle platform, preparation and defense of presentations, essays.</p>	
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Thematic plan

№ п/п	Section	Topic	Number of training hours:					Total hours	Tasks
			Lectures	PL/ Lec	SIWT	SIW	IA		
Biochemistry									
1		Molecular mechanisms of neutralization of substances in pathology.	1						

2		Molecular mechanisms of metabolic dysregulation in liver pathology	1						
3		Molecular mechanisms of bile acid metabolism pathology. Disorders of bilirubin metabolism. Molecular mechanisms of metabolic regulation disorders in the pathology of individual organs of the digestive system (liver, pancreas)		6	2				The study of the topic. Solving a situational problem.
4		The metabolism of ethanol. The metabolism of xenobiotics. The concept of inducers and inhibitors of cytochrome P450.			1	3			The study of the topic. Solving a situational problem.
Total of section			2	6	3	3	1	15	1 task
Pathological physiology									
5		Morphophysiological features and methods of clinical and instrumental examination and principles of treatment of peptic ulcer disease	1						Problem lecture
6		General etiology and pathogenesis of disorders of the digestive system. Causes and mechanisms of gastric dyspepsia syndrome. Features in children.		2					The study of the topic. Drawing up an algorithm for the development of the pathological process. The decision of situational tasks.

7		Causes and mechanisms of intestinal dyspepsia syndrome. Features in children.			2			Study of the topic, drawing up an algorithm for the development of the pathological process under the guidance of a teacher. The decision of situational tasks.
8		Pathophysiology of the liver. Features in children.		3				The study of the topic. Drawing up an algorithm for the development of the pathological process. The decision of situational tasks.

9		Violation of bilirubin metabolism in various types of jaundice.		2				The study of the topic. Drawing up an algorithm for the development of the pathological process. The decision of situational tasks.
10		Disorders of the secretory function of the pancreas. Features in children.		2				Study of the topic, drawing up an algorithm for the development of the pathological process under the guidance of a teacher. The decision of situational tasks.
11		PBL		5				Working with the case, discussing hypotheses,

									solving the problem
12		Pathophysiology of gastroesophageal-reflux disease.				4			Independent study of the topic.
13		Etiology and pathogenesis of the irritable bowel.				5			Working with additional literature, on electronic media, completing tasks in the program " Moodle»
14		Pathophysiology of the operated stomach				2			
15		Interim certification (IC)						3	
		Total of section	1	9	7	11		3	31
Pathological anatomy									
16		Morphological features of peptic ulcer disease. Chronic gastric ulcer and duodenal ulcer	1						Answers to the lecturer's questions (quick survey 3-5 questions)
17		Acute and chronic gastritis.				2			Solving situational problems / analyzing the autopsy protocol Working with a tutorial presentation on atopic
18		Peptic ulcer and duodenal ulcer.		2	2				Oral discussion, viewing, sketching and description of

								macro- and micropreparations Solving situational problems / analyzing the autopsy protocol Working with a tutorial presentation on atopic
19		Stomach cancer.				2		Preparing a Microsoft Power Point presentation on the topic
20		Hepatosi s (toxic liver dystrophy, fatty hepatosis).				2		Solving situational problems / analyzing the autopsy protocol Working with a tutorial presentation on atopic
21		Viral and alcoholic hepatitis.				2		Oral discussion, viewing, sketching and description of macro- and micropreparations
22		Cirrhosis of the liver.				2		Oral discussion, viewing, sketching and description of macro- and micropreparations

23		Liver tumors.				3			Preparing a Microsoft Power Point presentation on the topic
24		Bowel diseases (enteritis, colitis, ulcerative colitis, Crohn's disease, appendicitis, peritonitis).		2		2			Oral discussion, viewing, sketching and description of macro- and micropreparations Preparing a Microsoft Power Point presentation on the topic
25		Diseases of the gallbladder and pancreas (cholecystitis, gallstone disease, pancreatitis)			2				Solving situational problems / analyzing the autopsy protocol Working with a tutorial presentation on a topic
26		Intestinal tumors.				3			Preparing a Microsoft Power Point presentation on the topic
		Total of section	1	8	8	10	3	30	1 task
Pharmacology									
27		Medicines used to treat peptic ulcer disease.	1 integrated.	2					Oral interview, prescriptions writing, situational cases analysis in the systems: Platonus, WebEx.

28		Principles of pharmacological correction of peptic ulcer disease.			4				Completing assignments in the MOODLE system.
29		Medicines used for gastric and intestinal dyspepsia.	1	2					Oral interview, prescriptions writing, situational cases analysis in the systems: Platonus, WebEx.
30		Principles of pharmacological regulation of gastric and intestinal dyspepsia.			5				Completing assignments in the MOODLE system.
31		Drugs used for irritable bowel syndrome.		2					Completing assignments in the MOODLE system.
32		Drugs used for exocrine pancreatic insufficiency.		1					Completing assignments in the MOODLE system.
33		Drugs used in diseases of the liver and biliary tract.		1					Oral interview, prescriptions writing, situational cases analysis in the systems: Platonus, WebEx.
34		Pharmacology of drugs used for dysfunction of the digestive system.				10			Completing assignments in the MOODLE system.
		Total of section	2	8	9	10	3	32	1 task.
Radiation Diagnostics									
35		Methods of radiation diagnostics of the digestive system, especially in children	2						Problem lecture

36		Methods for visual diagnostics of the		3				Study of methods of visual
		digestive system. Visual diagnostics of the main clinical syndromes in pathology of the esophagus, stomach and intestines						diagnostics of the digestive system, oral questioning, solving situational problems. Analysis of radiographs, Sonograms
37		Radiation diagnosis of diseases of the pancreas. Features in children. Visual diagnostics for liver and gallbladder diseases. Features in children.		3				Study of methods of visual diagnostics of the digestive system, oral questioning, solving situational problems. Analysis of radiographs, Sonograms
38		Methods of radiation diagnostics of the digestive system. Visual diagnostics of the main clinical syndromes in pathology of the esophagus, stomach and intestines.			3			The study of additional methods of research. Analysis of a clinical case, solution of situational problems
39		Radiation diagnosis of diseases of the pancreas. Features in children. Visual diagnostics for liver and gallbladder diseases. Features in children.			3			The study of additional methods of research. Analysis of a clinical case, solution of situational problems.

40		Radiation diagnosis of gastroesophageal reflux disease				3			Self-study of the topic. Working with literature and working on the Internet
41		Radiation diagnostics of chronic gastritis.				2			Self-study of the topic. Working with literature and working on the Internet
Total of section			2	6	6	5	2	21	1 task
Internal diseases									
42		Morphophysiological features, methods of clinical and instrumental	1						Integrated, problematic lecture. Drawing
		research and principles of treatment of peptic ulcer disease							up a graphological structure and diagnostic algorithms for peptic ulcer disease on the example of a clinical case.
43		Clinical and diagnostic methods of examination for external pancreatic insufficiency syndrome	1						Integrated, problematic lecture. Development of diagnostic algorithms for external secretory pancreatic insufficiency syndrome on the example of a clinical case

44		Dysphagia and gastroesophageal reflux syndromes. Identification and justification of the syndrome.		2				Patient supervision / Solution of situational tasks. Isolation of dysphagia syndrome, gastroesophageal reflux, justification of their criteria and determination of the causes.
45		The main clinical syndromes of diseases of the digestive system		2				Drawing up diagnostic algorithms for the syndromes of the digestive system using the example of a clinical case (Written assignment)
46		Gastric dyspepsia syndrome. Identification and justification of the syndrome.		2				Patient supervision / Solution of situational tasks. Isolation of gastric dyspepsia syndrome, justification of its criteria and determination of

									the causes.
47		Methods for diagnosing diseases of the esophagus and stomach			2				Study of additional methods for studying the pathology of the esophagus and stomach (Written assignment in the form of an essay)
48		Intestinal dyspepsia syndrome. Identification and justification of the syndrome			2				Patient supervision / Solution of situational tasks. Isolation of intestinal dyspepsia syndrome, justification of its criteria and determination

									of the causes
49		Methods for the diagnosis of intestinal diseases			2				Study of additional methods for the study of intestinal pathology (Written assignment in the form of an essay)
50		Irritable Bowel Syndrome. The reasons. Diagnostic methods				4			Performing test tasks on the "Moodle" platform 1 task
51		Syndrome of exocrine pancreatic insufficiency. Identification and justification of the syndrome.		2					Patient supervision / Solution of situational tasks. Isolation of the syndrome of exocrine pancreatic insufficiency

								malabsorption syndrome, justification of their criteria and determination of the causes.
52		Methods for diagnosing diseases of the pancreas.		2				Study of additional research methods for the pathology of diseases of the pancreas (Written assignment in the form of an essay)
53		Jaundice and hepatomegaly syndromes. Identification and		2				Patient supervision / Solution of situational tasks. Isolation of the
		justification of the syndrome.						jaundice and hepatomegaly syndromes, justification of their criteria and determination of the causes.
54		Methods of diagnostic of hepatobiliary system diseases.		1				Study of additional methods for studying the pathology of the hepatobiliary system (Written task

									in the form of an essay)
55		Syndrome of cytolysis. Syndrome of cholestasis. Reasons. Diagnostic method				4			Performing test tasks on the "Moodle" platform
56		Ascites. Reasons. Diagnostic method				4,5			Performing test tasks on the "Moodle" platform
									2 task
Total of section			2	10	9	12,5	2,5	36	
Center for simulation and educational technologies									
57		Clinical challenge with a standardized patient (SP)		5	3	5,5			Mastering the skill of collecting complaints and anamnesis using communication skills in standardized patients with diseases of the digestive system
Total of section				5	3	5,5	1,5	15	1 task
Total:			10	52	45	57	16	180	

SYLLABUS

Module: "Mechanisms of Disease", Discipline: "Musculoskeletal system"

Educational program:

6B08601 "General Medicine"

Total credits

ECTS: 5

Course: 3

Description of the discipline

Name of the discipline				Code		Educational program	
Musculoskeletal system				6B10102		"General Medicine"	
Lecturers				Structural division			
Responsible: G. T. Akalieva.				Department of Oncology and Radiation Diagnostics			
Lecturers: 30				Department of Pathology Department of Clinical Pharmacology and Evidence-Based Medicine Department of Biomedicine Department of Internal Medicine Department of Oncology and Radiation Diagnostics			
Training level			Type		Module		
Bachelor			BD UC		Module "Disease Mechanisms. Musculoskeletal system"		
Forms of learning activity						Training period	
Lecture Practical lessons SIWT, SIW						V semester	
Mandatory prerequisites:				Additional prerequisites:			
Control and regulation. Sharing with the environment. Liquids and transportation. Continuation of life Patient examination skills.				Medical chemistry. The immune system. Fundamentals of Pharmacology. Basics of Evidence-Based Medicine. Fundamentals of Microbiology.			
ECTS	hours	Lectures	Practical training	SWIT	SIW	IA	
3	90	3	28	21	30	9	
The purpose of the discipline							
Study of knowledge of the general laws of the origin and development of life, structure, functioning of cells, tissues, organs and systems of the body in health and disease; topographic, anatomical and physiological features of the functioning of the systems of the human body in different age periods; the relationship of the functional systems of the body and the levels of their regulation in conditions of norm and pathology.							

Learning outcomes

LO from the educational program (code)	LO of discipline	Methods of training	Assessment methods

NO 8	<p>Analysis of the patterns of the structure and functioning of individual organs and systems in pathology.</p> <p>Advise patients (collect anamnesis, conduct an examination, evaluate a clinical analysis, conduct differential diagnostics, draw up a treatment plan</p>	<p>Practical exercises - discussion of the topic, oral interview, discussion, work in pairs, work with textbooks, work in small groups, consultations with a teacher on all emerging issues, role-playing games, active teaching methods: case-based learning (CBL); work at the patient's bedside.</p>	<p>Discipline monitoring: see Evaluation Criteria</p>
	<p>Demonstration of knowledge of the structure and functioning of cells, tissues, organs and systems of the body in the norm and pathology;</p> <p>anatomical and physiological features of the functioning of the systems of the human body in different age periods;</p> <p>the relationship of the functional systems of the body and the levels of their regulation in conditions of norm and pathology;</p> <p>fundamentals of molecular biology and genetics and the role of molecular and genetic factors in the pathogenesis of diseases.</p>	<p>Independent work under the guidance of a teacher: -solution of situational tasks, performance of test tasks, consultations with the teacher on all emerging issues.</p> <p>Independent work of students - remotely on the MOODLE platform (testing)</p>	<p>Final control by discipline: OSKE</p>
BK2	<p>Readiness for scientific activity, which presupposes possession of methodological knowledge, technology of research activity, recognition of their value and readiness for their use in the professional sphere for the formation of evidence-based medical practice.</p>		
BK 3	<p>The willingness of a future specialist to work with people is to work in a group, taking into account the high interactivity of the medical profession and complex modern algorithms for the provision of medical care, which include a large number of components, means and, most</p>		

3		Pathophysiology of inflammatory and dystrophic lesions of the supporting apparatus (articular syndrome)							Study of the topic. Drawing up an algorithm for the development of the pathological process. Solving situational tasks.
			3						
4		Pathophysiology of inflammatory and dystrophic skin lesions.							Study of the topic. Drawing up an algorithm for the development of the pathological process. Solving situational tasks.
				2					
		Pathophysiology of rickets.							Self-study of the topic. Working with additional literature, on electronic media, completing assignments in the program "Moodle"
					6				
	Total:		5	4	6	1	16		
Патологическая анатомия									
1		Pathomorphology of joint diseases (rheumatoid arthritis, deforming osteoarthritis, gout, ankylosing spondylitis).		2	2				Oral discussion, viewing, sketching and description of macro- and micropreparations
2		Pathomorphology of diseases of the skeletal system (osteomyelitis, osteoporosis, osteopetrosis, rickets)			2				Solving situational problems / analyzing the autopsy protocol Working with a tutorial presentation on a topic
3		Pathomorphology of diseases of the skeletal system (fibrous dysplasia, parathyroid osteodystrophy, Paget's disease)				3			Preparing a Microsoft Power Point presentation on the topic
		Pathomorphology of diseases of the muscular system (muscular dystrophy of Duchenne, Erb)				3			Preparing a Microsoft Power Point presentation on the topic

		and Leiden, myasthenia gravis)							
		Tumors of the epidermis and melanocytic system of the skin (papilloma, squamous cell carcinoma, nevus, melanoma)		2					Oral discussion, viewing, sketching and description of macro- and micropreparations
	Total:			4	4	6	2	16	
Internal illnesses.									
1	Musculoskeletal system	Features, methods of clinical and instrumental examination and principles of treatment for articular syndrome	1					1	problematic
2		Interrogation of patients with diseases of the musculoskeletal system.		2	1			3	Mastering the skills of collecting complaints, anamnesis in patients with diseases of the musculoskeletal system.
3		Features of examination of patients with diseases of the musculoskeletal system		2	1			3	Mastering examination skills in patients with diseases of the musculoskeletal system.
4		Inflammatory diseases of the musculoskeletal system. Causes. Symptoms Diagnostic methods (RA, gout, rheumatoid arthritis, SLE).		2	1	2		5	Patient supervision / situational problem solving (CBL). Small groupwork. Isolation of the main syndromes, their substantiation. Determining the causes
5		Dystrophic diseases of the musculoskeletal system. Causes. Symptoms Diagnostic methods (osteoarthritis, ankylosing spondylitis, osteoarthritis).		2	1	2		5	Patient supervision / situational problem solving (CBL). Small group work.

6		Basic laboratory and instrumental research methods for inflammatory diseases of				2		2	Work with educational and additional literature; with
		the musculoskeletal system.							electronic data carriers Preparing a Microsoft Power Point presentation on the topic.
7		Basic laboratory and instrumental research methods for dystrophic diseases of the musculoskeletal				2		2	Work with educational and additional literature; with electronic data carriers Preparing a Microsoft Power Point presentation on the topic.
8		Final control						3	3 Work with educational and additional literature; with electronic data carriers Preparing a Microsoft Power Point presentation on the topic.
	Total:		1	8	4	8	3	24	

Radiation diagnostics

1		Methods of visual diagnostics of the musculoskeletal system Normal age-related x-ray anatomy of the osteoarticular system X-ray picture of inflammatory and dystrophic changes in the joints.		1		1			Traditional methods: oral, questioning, solving situational problems. Disassembly of radiographs, sonograms
1		X-ray anatomy of the musculoskeletal system is normal, age-related features. Modern radiation methods for studying the musculoskeletal system.		1					Analysis of a clinical case, solving situational problems.

2		Degenerative-dystrophic, metabolic and immune diseases of the osteoarticular system (gout, deforming arthrosis, osteoporosis,rickets, osteomalacia, rheumatoid arthritis).		1	1				Preparing a Microsoft Power Point presentation on the topic
1		X-ray anatomy of the musculoskeletal system is normal, age-related features. Modern radiation methods for studying the musculoskeletal system.				1			On the MOODLE platform (testing), preparation and defense of presentation, abstract, essay.
2		Radiation diagnosis of inflammatory and dystrophic lesions of the musculoskeletal system.				1			Traditional methods: oral, questioning, solving situational problems. Disassembly of radiographs, sonograms
1		X-ray anatomy of the musculoskeletal system is normal, age-related features. Modern radiation methods for studying the musculoskeletal system.			2	1			On the MOODLE platform (testing), preparation and defense of presentation, abstract, essay.
2		Radiation diagnosis of inflammatory and dystrophic lesions of the musculoskeletal system.		1					Traditional methods: oral, questioning, solving situational problems. Disassembly of radiographs, sonograms
	Total:			4	3	3	1	11	
Pharmacology									
1		Drugs that affect the formation of the skeleton and regulate calcium-phosphorus metabolism.		2					Oral interview, prescription writing, situational problem solving in AIS Platonus, WebEx systems.
2		Anti-inflammatory drugs used for articular syndromes.		2					Oral interview, prescription writing, situational problem solving in AIS Platonus, WebEx systems.

1		Drugs used to treat gout (reactive arthritis).		1					Oral interview, prescription writing, situational problem solving in AIS Platonus, WebEx systems.
2		Principles of pharmacological correction of diseases of the musculoskeletal system.				5			Completing tasks on the MOODLE platform.
1		PBL			5				Case solution in the "Open Labyrinth" program.
	Total:			5	5	5	1	16	

SYLLABUS

Module: "Mechanisms of Disease", Discipline: "Nervous system"

Educational program:

6B08601 "General Medicine"

Total credits

ECTS: 5

Course: 3

Description of the discipline

Name of discipline		Code	Educational program
"Mechanisms of the disease" module Nervous system		6B10102	General medicine
Lecturers		Structural division	
Responsible: Belyaev R.A.		Neurology, psychiatry and rehabilitation department	
Lecturers: 30		Biomedicine department Clinical pharmacology and evidence based medicine department Pathology department Oncology and radiational diagnostics departments Internal diseases department CSET	
Training level	Type	Module	

Bachelor		BD OC		“Mechanisms of the disease” module		
				Nervous system		
Forms of learning activity				Training period		
Lectures, PT, SIWT, SIW				VI semester		
Mandatory prerequisites:				Additional prerequisites:		
<p>"Morphology and physiology of the nervous system": structure and basic laws of functioning of cells, tissues, organs, systems of a healthy person, mechanisms of biochemical regulation of the nervous system; signal transduction pathways in cells</p> <p>"Fundamentals of pathological processes": typical pathological processes - the main patterns of occurrence, development and completion of pathological reactions, processes and conditions, structural principles and their morphogenetic mechanisms</p> <p>"Fundamentals of Pharmacology": the effect of medicinal substances on the totality of their pharmacological properties to ensure a rational choice of drugs for various diseases in accordance with national clinical protocols from the standpoint of evidence-based medicine.</p> <p>"Patient examination skills": methods of physical examination of the nervous system with their normative indicators and communication skills, patient-centered approach in communicating with colleagues and patients</p>				<p>Control and regulation. Metabolism with the environment. Liquids and transportation. Continuation of life. Patient examination skills. Fundamentals of Pharmacology. Medical chemistry. The immune system.</p> <p>"Immune system": structure and functions of the immune system, the concept of immunity, mechanisms of innate and acquired immunity, disorders of the immune status and causes</p> <p>"Fundamentals of Microbiology": classification of microorganisms; morphology, physiology and ecology of microorganisms, methods of their study; the concept of asepsis, antiseptics, sterilization and disinfection</p>		
ECTS	Hours	Lectures	Practical training	SWIT	SIW	IA
5	150	5	42	38,5	49,5	15
The purpose of the discipline						
The study of morphological and functional features of the nervous system in normal and pathological conditions, making syndromic diagnosis and pharmacological treatment.						

Learning outcomes

LO from the educational program (code)	LO of discipline	Methods of training	Assessment methods
NO 8	<p>To analyze the laws of the structure and functioning of the nervous system in pathological conditions.</p> <p>Advise patients (collect anamnesis, conduct an examination, evaluate a clinical analysis, conduct syndromic diagnostics, draw up an examination plan, principles of pharmacological correction).</p>	<p>Practice class: oral questioning, discussion, solving clinical problems, work in pairs, work in small groups, consultations with the teacher on all possible questions, roleplaying, active teaching methods: CBL.</p>	<p>Current control: see assessment criteria</p> <p>Final control: OSCE</p>
	<p>Readiness for scientific activity, which presupposes possession of methodological knowledge, technology of research activity, recognition of their value and readiness for their use in the professional sphere for the formation of evidence-based medical practice.</p>	<p>Individual work of student under the guidance of the teacher: solving clinical cases, test questions, consultations with the teacher.</p>	
.	<p>The willingness of a future specialist to work with people - to work in a group, taking into account the high interactivity of the medical profession and complex modern algorithms for the provision of medical care, which include a large number of components, means and, most importantly, human professional resources necessary in professional medical education</p>	<p>Individual work of student: distant work on MOODLE platforms (testing, essays, clinical cases).</p>	

Thematic plan

№	Section	Topic	Number of training hours	
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			Lectures	PL/ Lec	SIWT	SIW	IA	Total hours	Tasks (it may combine some themes but not less than 1 and not more than 3 current tasks per credit; total number of tasks on discipline, including RK, not less than 5)
Biochemistry									
		Molecular mechanisms of the violations of synaptic connection, axonal transportation and myelin synthesis.		1	0, 5	0, 5			
		Total:	1	0, 5	0, 5				
Pathological physiology									
		General pathology of the nervous system. Pathophysiology of pain.	1						
		Pathophysiology of the nervous system.		2					
		Violations of higher nervous functions. Neurosis. Features in children.		2					
		Pathogenetic features of the nervous system damage in newborns and infants.			2				
		Neurogenic movement disorders. Neurogenic trophic disorders.		2					
		Etiology and pathogenesis of an acute cerebrovascular accident (ischemic, hemorrhagic stroke)			3				
		Convulsive conditions, their types, development mechanisms.			3				

		Neurogenic disorders of sensitivity.		2					
		Pathophysiology of the sleep and memory violations			2				
		Neuroinfection. Definition of a concept. Syndrome of the lesion of the meninges.				3			
		Pathophysiology of comatose state				2			
		Pathophysiology of the autonomic nervous system				3			
		Midterm examination					3		
		Total::30	1	8	10	8	3		

Pathological anatomy

		Cerebrovascular diseases	1						Answering the lecturer's questions (blitz 3-5 questions)
		Pathological anatomy of the brain infarction		2					Oral discussion, viewing, sketching and description of macro and micropreparations
		Pathological anatomy of the non-traumatic intracerebral hemorrhage		2					Oral discussion, viewing, sketching and description of macro and micropreparations
		Pathological anatomy of the transient ischemic attack				2			Preparing a Microsoft Power Point presentation on the topic
		Pathomorphological features of the cerebrovascular diseases complications			2				Solving situational problems / analysis of the autopsy protocol

									Work with a training presentation on the topic
		Pathological anatomy in infections of the nervous system (meningococcal meningitis, tuberculous meningitis, encephalitis)		2					Oral discussion, viewing, sketching and description of macro and micropreparations
		Pathological anatomy in infections of the nervous system (neurosyphillis, poliomyelitis, rabies, toxoplasmosis)			2				Solving situational problems / analysis of the autopsy protocol Work with a training presentation on the topic
		Tumors of the central nervous system		2					Oral discussion, viewing, sketching and description of macro and micropreparations
		Tumors of the peripheral nervous system			3				Solving situational problems / analysis of the autopsy protocol Work with a training presentation on the topic
		Degenerative diseases of the central nervous system (Alzheimer's disease, amyotrophic lateral sclerosis)				3			Preparing a Microsoft Power Point presentation on the topic
		Degenerative diseases of the central nervous system (Parkinson disease and secondary parkinsonism)				2			Preparing a Microsoft Power Point presentation on the topic
		Demyelinating diseases of the central nervous system (multiple sclerosis).				3			Preparing a Microsoft Power Point presentation on the topic

		Midterm examination					3		
		Total::29	1	8	7	10	3		
Neurology (Internal diseases)									
		Sensitivity and its disorders. Studies of superficial and deep sensitivity. Symptoms and syndromes of violation. Voluntary movements and their disorders. Examination technique.	1	2					Traditional methods: oral questioning, solving situational tasks.
		Extrapyramidal system. Research methods and syndromes of its disorders. Cerebellum. Examination of coordination of movements and syndromes of their disorders.			2	1			Traditional methods: oral questioning, solving situational tasks.
		Higher cortical functions. Examination technique and syndromes of their disorders.		2					Traditional methods: oral questioning, solving situational tasks.
		Cranial nerves. Examination technique and syndromes of their disorders.		2					Traditional methods: oral questioning, solving situational tasks.
		Pyramidal syndrome. Spinal cord lesions			2	1.5			Curation of patients, a fragment of the medical history / Solving situational problems
		Syndromes of damage to the cerebral cortex, cerebellum and extrapyramidal system.				5			Curation of patients, a fragment of the medical history / Solving situational problems
		Alternating syndromes.				5			Curation of patients, a fragment of the medical history / Solving situational problems

		Cerebrovascular diseases.		2					Preparation of MCQ for a clinical case; project; analysis of a scientific article; album preparation; development of schemes, algorithms, tables; presentation, glossary, essay, abstract, etc. (work with electronic databases)
		Infectious diseases of the nervous system		2					Preparation of MCQ for a clinical case; project; analysis of a scientific article; album preparation; development of schemes, algorithms, tables; presentation, glossary, essay, abstract, etc. (work with electronic databases)
		Midterm examination					2,5		
		Total:	1	10	4	12,5	2,5	30	
Radiational diagnostics									
		X-ray anatomy of the structures of the brain and spinal cord. Modern visual methods for studying the pathology of the nervous system.		3					
		Radiation diagnostics of cerebral circulation disorders (ischemic, hemorrhagic stroke).		2					
		Radiation diagnosis in comas				3			Self study topics. Work with literature and work on the Internet

		Radiation diagnosis of meningitis in children.				2				Self study topics. Work with literature and work on the Internet
		X-ray anatomy of the structures of the brain and spinal cord.			3					
		Modern visual methods for studying the pathology of the nervous system..			2					
		Total:		5	5	5				
Pharmacology										
		Drugs used in violation of cerebral circulation.	1	2						Oral interview, prescriptions writing, situational cases analysis in the systems: Platonus, WebEx.
		Pathogenetic and symptomatic treatment of neuroinfection (meningitis).	1	2						Oral interview, prescriptions writing, situational cases analysis in the systems: Platonus, WebEx.
		Principles of the treatment of convulsive syndrome (epilepsy).		2						Oral interview, prescriptions writing, situational cases analysis in the systems: Platonus, WebEx.
		Antiparkinsonian drugs.			3					Completing assignments in the MOODLE system.
		Pharmacological correction of diseases of the nervous system.				8				Completing assignments in the MOODLE system.
		PBL			5					Case solution in the program «Open Labyrinth».
		Total:	2	6	8	8	3	27		
CSET										

		Clinical challenge with a standardized patient (SP)		4	3	5, 5	1, 5		The skill of collecting history and examining the patient (SP)
		Total:		4	4	5, 5	1, 5	15	

SYLLABUS

Module: “Mechanisms of Disease”, Discipline: “Urinary system”

Educational program:

6B08601 “General Medicine”

Total credits

ECTS: 6

Course: 3

Description of the discipline

Name of the discipline		Code	Educational program
Disease Mechanisms Module. Urinary system		6B10102	«General Medicine»
Lecturers		Structural division	
Responsible: A.I. Umirbaeva		Department of Internal Medicine	
Lecturers: 30		Department of Biomedicine Department of Pathology Department of Clinical Pharmacology and Evidence-Based Medicine Department of Oncology and RadiationDiagnostics Department of Internal Medicine	
Training level	Type	Module	
Bachelor	DB UC	Module Disease Mechanisms.	
Forms of learning activity		Training period	
Lecture Practical lessons Independent work of a student with a teacher Independent student work		VI semester	
Mandatory prerequisites:		Additional prerequisites:	

<p>«Morphology and physiology of the hematopoietic system»: structure and basic regularities of functioning of cells, tissues, organs, systems of a healthy person, mechanisms of biochemical regulation of the hematopoietic system of the system; signal transduction pathways in cells</p> <p>«Fundamentals of pathological processes»: typical pathological processes - the main patterns of occurrence, development and completion of pathological reactions, processes and conditions, structural principles and their morphogenetic mechanisms</p> <p>«Fundamentals of Pharmacology»: the effect of medicinal substances on the totality of their pharmacological properties to ensure a rational choice of drugs for various diseases in accordance with national clinical protocols from the standpoint of evidence-based medicine.</p> <p>«Patient examination skills»: methods of physical examination of the digestive system with their normative indicators and communication skills, patient-centered approach in communicating with colleagues and patients</p>				<p>Control and regulation. Sharing with the environment. Liquids and transportation. Continuation of life. Patient examination skills. Fundamentals of Pharmacology. Medical chemistry. The immune system.</p> <p>«Immune system»: structure and functions of the immune system, the concept of immunity, mechanisms of innate and acquired immunity, disorders of the immune status and causes of occurrence</p> <p>«Fundamentals of Microbiology»: classification of microorganisms; morphology, physiology and ecology of microorganisms, methods of their study; concept of asepsis, antiseptics, sterilization and disinfection</p>		
ECTS	Hours	Lectures	Practical training	SWIT	SIW	IA
6	120	4	35	28,5	40,5	12
The purpose of the discipline						
Study of the morphofunctional features of the urinary system in pathology, the formation of skills in syndromic diagnosis and their pharmacological correction.						

Learning outcomes

LO from the educational program (code)	LO of discipline	Methods of training	Assessment methods
NO 8	<p>Analysis of the patterns of the structure and functioning of individual organs and systems in the pathology of the hematopoietic system.</p> <p>Advise patients (collect anamnesis, conduct an examination, evaluate a clinical analysis, conduct syndromic diagnostics, draw up an examination plan, principles of pharmacological correction).</p>	<p>Practical exercises: oral interview, discussion, situational problem solving, work in pairs, work with textbooks, work in small groups, consultations with a teacher on all emerging issues, role-playing games, active teaching methods: case-based learning (CBL);</p>	<p>Discipline monitoring: s criteria</p> <p>Final control by discipline</p> <p>General structured clinic</p>

Core competencies 1	Demonstration of knowledge of the structure and functioning of cells, tissues, organs and systems of the body are normal and pathology; anatomical physiological characteristics systems functioning the human body in various age periods; interrelationships functional systems of the body and the levels of their regulation in conditions norms and pathologies; fundamentals molecular biology and genetics and the role of molecular and genetic factors in the	Independent work of a student under the guidance of a teacher: solving situational problems, performing test tasks, consulting with a teacher on all emerging issues. Independent work of students - remotely on the MOODLE platform (testing, essay preparation, situational tasks)	
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Thematic plan

№	Section	Topic	Number of study hours:					Total hours	Tasks (can combine several topics, but not less than 1 and not more than 3 current tasks for credit; the total number of tasks in the discipline, not less than 5)
			Lectures	PL/ Lec	SIWT	SIW	IA		
Biomedicine / Biochemistry									
1		Molecular mechanisms of urinary tract disorders. Metabolic disorders in kidney pathology (phosphorus-calcium, water-salt metabolism, anemia).		1	0,5	0,5			1 task
		Total:					2		
Pathological physiology									
1.		Pathophysiological characteristics of inflammatory diseases of the urinary system.		2					Study of the topic. Drawing up an algorithm for the development of the pathological process. Solving situational tasks.

2.	Obstructive uropathy. Causes and mechanisms of kidney stones formation.			3				Studying the topic, drawing up an algorithm for the development of the pathological process under the guidance of a teacher. Solving situational tasks.
3.	Pathophysiological characteristics of certain forms of kidney pathology (acute glomerulonephritis).		2					Studying the topic, drawing up an algorithm for the development of the pathological process under the guidance of a teacher. Solving situational tasks.
4.	Pathophysiological characteristics of certain forms of kidney pathology (chronic glomerulonephritis, nephrotic syndrome).		2					Studying the topic, drawing up an algorithm for the development of the pathological process under the guidance of a teacher. Solving situational tasks.
5.	Pathophysiological mechanisms of acuterenal failure.			2				Studying the topic, drawing up an algorithm for the development of the pathological process under the guidance of a teacher. Solving situational tasks.
6.	Pathophysiology of chronic renal failure. Uremia. Renal coma.		2					Studying the topic, drawing up an algorithm for the development of the pathological process under the guidance of a teacher. Solving situational tasks.
	Symptoms Diagnostic methods.							reasons.
2.	Nephrotic syndrome. Causes. Symptoms Diagnostic methods. Nephritic Syndrome. Causes. Symptoms Diagnostic methods		2					Patient supervision / fragment of the case history. Work in small groups. Remotely on the MOODLE platform, Isolation of the main syndromes, their substantiation. Determination of the reasons.
3.	Acute renal failure syndrome. Causes. Symptoms Diagnostic methods. Chronic renal							Patient supervision / Solution of situational tasks. Small group work. Remotely on the MOODLE platform (task). Isolation of the main syndromes, their substantiation.

	failure syndrome. Symptoms methods. Causes. Diagnostic		2					Determination of the reasons. Patient supervision. Small group work. Remotely on the MOODLE platform (task). Isolation of the main syndromes, their substantiation. Determination of the reasons.
4.	Diagram of the medical history		2					Analysis of the scheme for compiling the patient's medical history: passport part, complaints, history of the present disease (anamnesis morbi), patient's lifehistory (anamnesis vitae), objective examination of the general and by systems (status praesens), construction of a graphological structure, preliminary diagnosis and its justification, plan examination and treatment plan, list of references.
5.	Protection of the course history of the disease.		2					Protection of the course history of the disease.
1.	The main methods of laboratory, instrumental diagnostics of the urinary system (quantitative, functional).			2				Preparation of test items for a clinical case; project; analysis of a scientific article; preparation of the album; development of schemes, algorithms, tables; presentation, glossary, essay, abstract, etc. (work with electronic databases)

2.	Renal arterial hypertension syndrome (vasorenal and parenchymal). Causes. Diagnostic Symptoms methods			2				Preparation of test items for a clinical case; project; analysis of a scientific article; preparation of the album; development of schemes, algorithms, tables; presentation, glossary, essay, abstract, etc. (work with electronic databases)
3.	Clinical and laboratory manifestations of acute renal failure, chronic renal failure.			2				Preparation of test tasks for a clinical case in accordance with the updated ES of the Ministry of Health of the Republic of Kazakhstan, RCHRH in 2014. clinical protocol for AKI; project; analysis of a scientific article; preparation of the album; development of schemes, algorithms, tables; presentation, glossary, essay, abstract, etc. (work with electronic databases) Preparation of test tasks for a clinical case in accordance with the updated ES of the Ministry of Health of the Republic of Kazakhstan, RCHRH in 2016. clinical protocol for CKD;
1.	Amyloidosis of the kidneys. Causes. Symptoms Diagnostic methods				3			
2.	Urinary Syndrome. Edematous syndrome.				3			Solving situational tasks on MOODLE platform (task)
3.	Nephrotic syndrome. Nephritic Syndrome.				3			Solving situational tasks on MOODLE platform (task)
4.	Primary secondary and tubulopathies.				3			
5.	Compilation of a course medical history				2			
1.	Intermediate certification (IC)					4		Mini Clinical Exam
Total		1	10	6	14	4	35	
Radiation diagnostics								

1.	Methods of radiological diagnosis of diseases of the kidneys, urinary tract. Features in children. Radiation semiotics of inflammatory diseases of AIM, obstructive uropathies.	1						Integrated lecture.
1.	Methods of radiological diagnosis of diseases of the kidneys, urinary tract. Features in children. radiation semiotics of inflammatory diseases of AIM, obstructive uropathies.	2						thematic analysis (oral survey), solving situational problems, registration of honey. documents (description of radiographs, sonograms, tomograms), testing, presentations.
2.	Radiation semiotics of glomerulopathies. Radiation diagnosis of chronic renal failure. Radiation diagnosis of obstructive uropathy.	2						thematic analysis (oral survey), solving situational problems, registration of
1.	Methods of visual diagnostics of diseases of the kidneys, urinary tract. Features in children. Visual semiotics of inflammatory diseases of AIM, obstructive uropathies.			2				honey. documents (description of radiographs, sonograms, tomograms), testing, presentations.
2.	Radiation semiotics of glomerulopathies. Radiation diagnosis of chronic renal failure. Radiation diagnosis of obstructive uropathy.			2				Independent study of the topic, work with literature and work on the Internet.
1.	Radiation diagnosis of urolithiasis				2			
2.	Chronic pyelonephritis in children				1			

	Intermediate certification (IC)					1		
Total		1	4	4	3	1	13	

SYLLABUS

Module: “Mechanisms of Disease”, Discipline: “Hematopoietic system”

Educational program:

6B08601 “General Medicine”

Total credits

ECTS: 5

Course: 3

Description of the discipline

Name of the discipline		Code	Educational program
Disease Mechanisms Module.Hematopoietic system		6B10102	«General Medicine "
Lecturers		Structural division	
Responsible: Butyugina M.N.		Department of Internal Medicine	
Lecturers:		Department of Biomedicine Department of Pathology Department of Clinical Pharmacology and Evidence-Based Medicine Department of Oncology and Radiation Diagnostics Department of Internal Medicine Center for Simulation Technologies	
Training level	Type	Module	
Bachelor	DB UC	Module Disease Mechanisms.	
Forms of learning activity			Training period
Lecture Practical lessons independent work of a student with a teacher independent student work			VI semester
Mandatory prerequisites:		Additional prerequisites:	

<p>«Morphology and physiology of the hematopoietic system»: structure and basic regularities of functioning of cells, tissues, organs, systems of a healthy person, mechanisms of biochemical regulation of the hematopoietic system of the system; signal transduction pathways in cells</p> <p>"Fundamentals of pathological processes": typical pathological processes - the main patterns of occurrence, development and completion of pathological reactions, processes and conditions, structural principles and their morphogenetic mechanisms</p> <p>"Fundamentals of Pharmacology": the effect of medicinal substances on the totality of their pharmacological properties to ensure a rational choice of drugs for various diseases in accordance with national clinical protocols from the standpoint of evidence-based medicine.</p> <p>"Patient examination skills": methods of physical examination of the digestive system with their normative indicators and communication skills, patient-centered approach in communicating with colleagues and patients</p>	<p>Control and regulation. Sharing with the environment. Liquids and transportation. Continuation of life. Patient examination skills. Fundamentals of Pharmacology. Medical chemistry. The immune system.</p> <p>"Immune system": structure and functions of the immune system, the concept of immunity, mechanisms of innate and acquired immunity, disorders of the immune status and causes of occurrence</p> <p>"Fundamentals of Microbiology": classification of microorganisms; morphology, physiology and ecology of microorganisms, methods of their study; concept of sepsis, antiseptics, sterilization and disinfection</p>
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ECTS	Hours	Lectures	Practical lessons, hours	SWIT	SIW	IA
5	150	3	47	43	42	15

The purpose of the discipline

Study of the morphofunctional features of the hematopoietic system in pathology, the formation of skills in syndromic diagnosis and their pharmacological correction.

Learning outcomes

LO from the educational program (code)	LO of discipline	Methods of training	Assessment methods

NO 8	<p>Analysis of the patterns of the structure and functioning of individual organs and systems in the pathology of the hematopoietic system. Advise patients (collect anamnesis, conduct an examination, evaluate a clinical analysis, conduct syndromic diagnostics, draw up an examination plan, principles of pharmacological correction).</p>	<p>Practical exercises: oral interview, discussion, situational problem solving, work in pairs, work with textbooks, work in small groups, consultations with a teacher on all emerging issues, role-playing games, active teaching</p> <p>methods: case-based learning (CBL); Independent work of a student under the guidance of a teacher: solving situational problems, performing test tasks, consulting with a teacher on all emerging issues. Independent work of students - remotely on the MOODLE platform (testing, essay preparation, situational tasks)</p>	<p>Discipline monitoring: see evaluation criteria</p> <p>Final control by discipline: General structured clinical exam</p>
	<p>Readiness for scientific activity, which presupposes possession of methodological knowledge, technology of research activity, recognition of their value and readiness for their use in the professional sphere for the formation of evidence-based medical practice.</p>		

	The willingness of a future specialist to work with people - to work in a group, taking into account the high interactivity of the medical profession and complex modern algorithms for the provision of medical care, including a large number of components, means and, most importantly, human professional resources necessary in professional medical education		
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Thematic plan

№	Subject	Number of training hours:						Tasks (can combine several topics, but not less than 1 and not more than 3 current tasks for credit; the total number of tasks in the discipline, not less than 5)
		lectures	PC	SWIW	SWI	intermediate	Total hours	

Biochemistry

1	Molecular mechanisms of anemia (IDA, ACD, hemolytic, B12-deficient, hemolytic, aplastic)		2					
2	Biochemical mechanisms of disseminated intravascular coagulation	1						
3	Pathology of the hemostasis system: mechanisms of decrease / increase in the activity of individual components of the hemostasis system, DIC syndrome		3	3				
4	Complete blood count, indicators, diagnostic value			2	2			
		1	5	5	2	1	14	

Pathological physiology

1	Pathophysiological mechanisms of anemia development.	1						Problem lecture
2	Disorders of physiological functions in anemic syndrome.		3					Study of the topic. Drawing up an algorithm for the development of the pathological process. Solving situational tasks.
3	Pathophysiology of red blood cells and hemoglobin.			3				Studying the topic, drawing up an algorithm for the development of the pathological process under the guidance of a

							teacher. Solving situational tasks.
4	Leukocytosis and leukopenia: types, mechanisms of development, changes in the leukocyte formula.		4				Study of the topic. Drawing up an algorithm for the development of the pathological process. Solving situational tasks.
5	Violation of the total blood volume. Violation of the physical and chemical properties of blood.		2				Study of the topic. Drawing up an algorithm for the development of the pathological process. Solving situational tasks.
6	Pathophysiology of hemoblastosis. General characteristics. Features in children.		2				Study of the topic. Drawing up an algorithm for the development of the pathological process. Solving situational tasks.
7	Pathophysiology of disorders of the hemostatic system.		3				Studying the topic, drawing up an algorithm for the development of the pathological process under the guidance of a teacher. Solving situational tasks.
8	PBL		5				Case analysis
9	The main changes in vascular-platelet and coagulation hemostasis in DIC syndrome (disseminated intravascular)				5		Self-study of the topic. Working with additional literature, on electronic media, completing assignments in the program "Moodle"
1	Anemic Syndrome: Identification and Substantiation of the Syndrome.		2				Interview, solving situational problems in AIS Platonus, WebEx / offline.
2	Laboratory diagnostics of anemic syndrome.		2				
3	The main clinical and laboratory syndromes in various anemias				2		Isolation of the syndrome, substantiation of its criteria. Determination of the reasons.
4	Hemorrhagic syndrome. Identification and substantiation of the syndrome.		2				Interpretation of a complete blood count for anemia of various origins (IDA, vitamin B12, aplastic anemia, hemolytic anemia)
5	Laboratory diagnostics of research in hemorrhagic syndrome.		2				Interpretation of the coagulogram (Written assignment)
6	Hemorrhagic syndrome. Types of bleeding				2		Performing tasks remotely on the moodle.kgmu.kz platform
7	Lymphadenopathy syndrome. Identification and substantiation of the syndrome.		2				interview, solving situational problems in AIS Platonus, WebEx / offline.
8	Splenomegaly syndrome. Identification and substantiation of the syndrome.		2				Isolation of the syndrome, substantiation of its criteria. Determination of the reasons.
9	The main clinical syndromes and symptoms in splenomegaly syndrome, lymphadenopathy				3		Compilation of diagnostic algorithms for the syndrome of lymphadenopathy and splenomegaly (Written assignment)
10	The main clinical and laboratory syndromes in acute and chronic leukemia				3		Performing a task remotely on the moodle.kgmu.kz platform

			8	7	7	3	25	
Center for Simulation and Educational Technologies								
1	Iron-deficiency anemia		2	2	3	1		Solution of clinical problems in the Academix 3D program
2	Leukemia		2	1	3	1		Solution of clinical problems in the Academix 3D program

SYLLABUS

Module: “Mechanisms of Disease”, Discipline: “Respiratory system”

Educational program:

6B08601 “General Medicine”

Total credits

ECTS: 5

Course: 3

Description of the discipline

Name of the discipline		Code	Educational program				
Respiratory system			"General medicine"				
Lecturers		Structural division					
Responsible: Turkhanova Zh.Zh.		Department of Internal Medicine					
Lecturers: 9		Department of Pathology Department of Biomedicine Department of Internal Medicine Department of Oncology and Radiation Diagnostics Department of Clinical Pharmacology and Evidence-Based Medicine Center for Simulation and Educational Technologies					
Training level	Type	Module					
Undergraduate	DB UC	Module “Disease Mechanisms. Respiratory system”					
Forms of conducting classes		Period of study					
Lecture Practical lessons, SIWT SIW		V semester					
Mandatory prerequisites:		Additional prerequisites:					
Control and regulation. Sharing with the environment. Liquids and transportation. Continuation of life. Patient examination skills. Fundamentals of Pharmacology. Basics of Evidence-Based Medicine. Fundamentals of Microbiology. Respiratory and Digestive System.		Medical chemistry. The immune system.					
ECTS	Hours	Lectures	Practical training	SWIT	SIW	IA	
6	180	9	49	48	56	18	0
The purpose of the discipline							

Study of morphological and functional features of the respiratory system in pathology, the formation of skills in syndromic diagnosis and their pharmacological correction.
 The features of biochemical processes in the body, pathological anatomy and pathological physiology of the respiratory system are presented. Methods for diagnosing pathological disorders in this body system, the main symptoms and syndromes, methods of instrumental and laboratory diagnostics, pharmacological correction are being studied.

Learning outcomes

LO from the educational program (code)	LO of discipline	Methods of training	Assessment methods
NO 8	Analysis of the patterns of the structure and functioning of individual organs and systems in pathology. Advise patients (collect anamnesis, conduct an examination, evaluate a clinical analysis, conduct syndromic diagnostics, draw up an examination plan, principles of pharmacological correction).	Practical classes - oral interviews, discussions, work in pairs, work with textbooks, work in small groups, consultations with a teacher on all emerging issues, role-playing games, active teaching methods: clinical case-based training (CBL); Independent work under the guidance of students of the teacher: solving situational problems, completing test tasks, consulting with the teacher on all emerging issues. Students' independent work - remotely on the MOODLE platform (testing)	Discipline monitoring: see Evaluation Criteria. Final control by discipline: OSKE
BK2	Ready for scientific activities, involving the possession of methodological knowledge, technology, research, recognition of their values and the willingness to use them in the professional field for the formation of evidence-based medical practice.		
BK 3	Readiness future specialist to work with people - work in a group, taking into account the high interactivity of the medical profession, and today's complex health care algorithms, including a large number of components, equipment and most importantly, human professional resources need for professional medical education.		

Thematic plan

№	section	The me	Number of training hours:					Total Hours	Tasks (can combine several topics, but not less than 1 and not more than 3 current tasks for a loan; the total number of tasks in the discipline, including the Republic of Kazakhstan, is not less than 5)
			ecture	ractical class	ST	ISW	IS		
Department of Biomedicine / Biochemistry									

1.	The dependence of the partial pressure of oxygen on the pH of the medium. Acidosis. Alkalosis. The role of the pentose phosphate pathway of glucose oxidation in red blood cells. Surfactant synthesis, the role of vitamin B9 and B12, phospholipid metabolism.	2	2	1			
2.	Biochemistry of red blood cells. The role of erythrocyte membrane proteins in the transport of gases. Methemoglobin reductase and glutathione peroxidase system. Lipoprotein metabolism, its role in the pathology of the lungs, blood vessels and heart	4	2	2			
1.	The final lesson.				2		
Total		6	4	3	2	15	
Pathological physiology							
1.	Pathophysiological features, methods of clinical and instrumental examination and principles of treatment for bronchial patency disorder	1					Integrated lecture.
2.	Etiology and pathogenesis of respiratory failure. Age-specific features.	2					The study of the topic. Drawing up an algorithm for the development of the pathological process. The decision of situational tasks.
3.	Violation of the central mechanisms of respiratory	2					The study of the topic. Drawing up an algorithm for the development of the pathological process. The decision of situational tasks.

	regulation.						
4.	Types of periodic and terminal respiration.			3			Study of the topic, drawing up an algorithm for the development of the pathological process under the guidance of a teacher. The decision of situational tasks.
5.	Forms of external respiratory failure. Alveolar hypo -, hyperventilation. Features of respiratory disorders in newborns and children.		2				The study of the topic. Drawing up an algorithm for the development of the pathological process. The decision of situational tasks.
6.	Dyspnea, types and mechanisms. Pathophysiology of respiratory distress syndrome.			3			Study of the topic, drawing up an algorithm for the development of the pathological process under the guidance of a teacher. The decision of situational tasks.
7.	Pathogenetic mechanisms of reducing the diffusion capacity of the alveolar-capillary membrane. Hypertension of the small circle of blood circulation. Features in children.		2				The study of the topic. Drawing up an algorithm for the development of the pathological process. The decision of situational tasks.
8.	Hypertension of the small circle of blood circulation. Ventilation and perfusion disorders. Features in children.			2			Study of the topic, drawing up an algorithm for the development of the pathological process under the guidance of a teacher. The decision of situational tasks.
9.	Pathophysiology of the syndrome of increased airiness of the lungs				5		Independent study of the topic. Working with additional literature, on electronic media, completing tasks in the program " Moodle»
10.	Causes and pathogenesis of pneumonia, the mechanism of manifestation the s				5		Independent study of the topic. Working with additional literature, on electronic media, completing tasks in the program " Moodle»

	elderly.							
11.	Interim certification (IC)					4		
Total		1	8	8	10	4	31	

Pathological anatomy

1.	Pathomorphological features and methods of clinical and instrumental examination in the syndrome of compaction of the lung tissue	1						Answers to lecturer's questions (quick-survey of questions)
2.	Acute pneumonia (lobar, bronchopneumonia, interstitial).		2	2				View, sketch and description of macro and micropreparations. Solving situational problems / analysis of the autopsy protocol. Work with a training presentation on the topic
3.	Acute bronchitis				2			Preparing a Microsoft Power Point presentation on the topic
4.	Chronic obstructive pulmonary disease (chronic bronchitis, bronchiectasis).		2	2				View, sketch and description of macro and micropreparations. Solving situational problems / analysis of the autopsy protocol. Work with a training presentation on the topic
5.	Chronic obstructive pulmonary disease (pulmonary emphysema, bronchial asthma).		2					View, sketch and description of macro and micropreparations.
6.	Chronic interstitial lung disease (fibrosing alveolitis, pneumonitis).				3			Preparing a Microsoft Power Point presentation on the topic
7.	Destructive pulmonary diseases of specific etiology		2	2				View, sketch and description of macro and micropreparations. Solving situational problems / analysis of the autopsy protocol. Work with a training presentation on the topic.

	(primary, hematogenous, secondary tuberculosis.							
8.	Acute destructive processes in the lungs (abscess and gangrene of the lung)				3			Preparing a Microsoft Power Point presentation on the topic.
9.	Lung cancer			2				Solving situational problems / analysis of the autopsy protocol. Work with a training presentation on the topic.
10.	Pleurisy				2			Preparing a Microsoft Power Point presentation on the topic.
	Intermediate attestation					3		
Total		1	8	8	10	3	30	

Internal illnesses.

1.	Pathomorphological features and methods of clinical and instrumental examination in the syndrome of compaction of the lung tissue.	1						Integrated, problematic lecture
2.	Pathophysiological features, methods of clinical and instrumental examination and principles of treatment for the syndrome of impaired bronchial patency.	1						Integrated, problematic lecture
3.	Questioning of patients with respiratory diseases.		2	2	2			Mastering of collecting anamnesis skills in patients with respiratory system disease.
4.	Lung tissue compaction syndrome. Cavity syndrome in the lung tissue. Causes. Symptoms. Diagnostic methods		3	3	4			Patient supervision / situational problem solving (CBL). Small group work. Isolation of the main syndromes, their substantiation. Determining the causes

5.	Syndrome of bronchial obstruction. Syndrome of acute and respiratory failure. Causes. Symptoms. Diagnostic methods		3	2	3. 5			Patient supervision / situational problem solving (CBL). Small group work. Isolation of the main syndromes, their substantiation. Determining the causes
6.	Syndrome of accumulation of fluid, air in the pleural cavity. Symptoms Diagnostic methods.		3	3	3			Patient supervision / situational problem solving (CBL). Small group work. Isolation of the main syndromes, their substantiation. Determining the causes
7.	Final control.					2 .5		Examination of patients / Solution of situational tasks. Remotely on the MOODLE platform (task / test)
Total		2	11	10	1 2. 5	2 .5	36	

Center for Simulation and Educational Technologies.

1.	Auscultation of the lungs in pathology. Adverse respiratory noise in broncho-obstructive syndrome.		2, 5	2	2, 5			Consolidation of the method and technique of auscultation of the lungs. Acquisition of the skills of auscultation of the lungs in pathology.
2.	Auscultation of the lungs in pathology. Adverse breathing sounds in lung tissue hardening syndrome		2, 5	1	2, 5			Consolidation of the method and technique of auscultation of the lungs. Acquisition of the skills of auscultation of the lungs in pathology.
Total			5	3	5, 5	1 ,5	15	

Radiation diagnostics

	diagnosis of lung tissue							
	compaction syndrome.							
5.	Visual diagnosis of the syndrome of bronchial obstruction.			3				
6.	Methods of visual diagnosis of RS, especially in children. The general scheme of the analysis of pathological changes in the lungs. Visual diagnosis of pulmonary tissue compaction syndrome.				3			
7.	Visual diagnosis of the syndrome of bronchial obstruction.				2			
8.	The final lesson.					2		
Total		2	6	6	5	2	21	
Pharmacology								
1.	Drugs used in the syndrome of impaired bronchial passability.	1	2					Integrated lecture. Oral interview, practical exercises, writing prescriptions, solving situational problems, remote testing on the MOODLE platform
2.	Principles of pharmacological correction of broncho-obstructive syndrome.			4				Completing assignments in the MOODLE system.
3.	Antibacterial drugs used in the pathology of the respiratory system.	1	2					Oral interview, prescriptions writing, situational cases analysis in the systems: Platonus, WebEx.

4.	Principles of antibacterial therapy for inflammatory diseases of the respiratory system.			4				Completing assignments in the MOODLE system.
5.	Drugs used for respiratory failure.	1	2					Oral interview, prescriptions writing, situational cases analysis in the systems: Platonus, WebEx.
6.	Principles of pharmacological correction of respiratory failure.			2				Completing assignments in the MOODLE system.
7.	Pharmacology of drugs used in bronchopulmonary syndromes.				1	0		Completing assignments in the MOODLE system.
	The final lesson.						3	
Total		3	6	10	1	0	3	32

SYLLABUS

Module: “Adult Health”, Discipline: “Differential diagnosis and therapy principles of circulatory system diseases”

Educational program:

6B08601 “General Medicine”

Total credits

ECTS: 3

Course: 4

Description of the discipline

Name of discipline	Code	Educational program
Differential diagnosis and therapy principles of circulatory system diseases	6B10102	General medicine
Teachers	Structural subdivision	
Responsible person: Toleuova A.S.	Internal Diseases Department	
Teachers: Toleuova A.S., Turemuratova D.T.		
<i>If a discipline is taught by more than 5 teachers, only number of teachers from every subdivision is to be mentioned, and the list of them is to be entered in the syllabus annexure</i>		
Level of training	Type	Module(s)
Bachelor	PD UC	Adult health
Forms of learning activity		Training period

Clinical analysis of the patient / clinical situational problems solution. ECG interpretation and clinical problems solution on the MOODLE platform. Solution of clinical situational problems in the Platonus system followed by discussion with the teacher. Compilation of a diagnostic search algorithm for a clinical case. Compilation of a treatment algorithm according to the evidence-based medicine.					7-8 semester
Compulsory prerequisites :			Additional prerequisites:		
Describe the etiology, epidemiology of common cardiac diseases; explain the mechanisms of development of diseases and differentiate them according to the leading syndrome; interpret the results of laboratory and instrumental research methods; to formulate preliminary and clinical diagnoses of common cardiological diseases, to apply general principles of therapy based on evidence-based medicine, in accordance with the clinical protocols of the Kazakhstan Republic.					
ECTS	Hours	Practical training	SWIT	SIW	IA
3	90 (75/15)	27 (22/5)	18 (15/3)	36 (30.5/5.5)	9 (7.5/1.5)
The purpose of the discipline					
Formation of knowledge and skills in diagnostics, differential diagnostics and therapy principles of common cardiological diseases.					

Learning outcomes

LO from the educational program (code)	LO of discipline	Methods of training	Assessment methods
To demonstrate the knowledge and understanding in the study fields, including of the most advanced knowledge in these fields.	To differentiate and classify the various cardiological diseases manifestations To describe the etiology and pathogenesis of common cardiological and diseases. To interpret the modern methods of the clinical laboratory and instrumental investigation results.	Practical class: Clinical analysis at the patient's bedside. Clinical scenario in the conditions of CSET. Solving problem situations in a CSET with using high-tech mannequins. Solution of clinical situational tasks followed by discussion with the teacher. Compilation of a diagnostic search algorithm and treatment guidelines for a clinical case SIWTC:	Testing of the theoretical knowledge. Evaluation of the written work. Evaluation of the skills of practical skills at the patient's bedside / in the conditions of the CSET. Assessment of the task on the moodle.kgmu.kz platform followed by discussion with the teacher. Assessment of the clinical thinking ability. Assessment of communication skills. Assessment of teamwork skills.
To apply this knowledge and understanding in a professional level.	Possess the skills of collecting anamnesis, physical examination of	Clinical scenario in the conditions of CSET - 3 hours according to the schedule; solving clinical	Final control of the discipline: a comprehensive written examination.

	<p>patients with cardiac pathology. Apply modern principles of treatment of common cardiological diseases. Determine indications for performing various laboratory and instrumental research methods for patients with cardiac pathology, in accordance with the clinical protocols of the Republic of Kazakhstan. Demonstrate skills in diagnosing and providing emergency care for life-threatening conditions</p>	<p>situational tasks, thematic patients curation, decoding the ECG followed by discussion with the teacher. SIW: work with literature and electronic sources. ECG analysis with angina pectoris and myocardial infarction on the moodle.kgmu.kz</p>	
<p>To formulate arguments and solve problems in the field of study.</p>	<p>To evaluate the results of a comprehensive examination of patients with the most common cardiac diseases. To make a differential diagnosis of the leading syndrome and substantiate the clinical diagnosis.</p>	<p>platform. ECG analysis with various arrhythmias on the moodle.kgmu.kz platform. Completion of the SIW tasks on the moodle.kgmu.kz platform by the each credit.</p>	
<p>To evaluate the results of a comprehensive examination of patients with the most common cardiac diseases To make a differential diagnosis of the leading syndrome and substantiate the clinical diagnosis.</p>	<p>Make personal judgments, arrange in the form of a presentation and prepare an algorithm for a diagnostic search for a cardiological profile patients. Transfer your own skills to the examiner, make personal judgments based on the identified signs.</p>		
<p>Communicate</p>	<p>Able to compile</p>		

information, ideas and problems and solutions, both to specialists and non-specialists.	information. Competently formulate an algorithm for differential diagnosis of the leading syndrome. Perform all sections of the SIW.	
Ability to continue further self-study.	Demonstrate the need to acquire clinical skills for further training. Transfer your own knowledge and skills to examiners. Provide patients with recommendations for promoting healthy lifestyles and rehabilitation issues.	

Thematic plan

№	Section	Topic	Number of teaching hours:						Tasks	
			Lectures	PL/ Lec	SIWT	SIW	IA	Total hours		
1.	1.1	Differential diagnosis in chest pain syndrome: Differential diagnostic criteria and principles of therapy for ACS with ST-segment elevation and without ST-segment elevation. Algorithm for diagnostic search for pain syndrome in the heart region.		3		3				Carrying out a differential diagnosis for chest pain syndrome, drawing up an examination plan, formulating and substantiating a preliminary clinical diagnosis, interpreting ECG data, complete blood count, biochemical blood test, coagulation test, determining patient management tactics.
	1.2	Differential diagnosis for chest pain syndrome: Differential diagnostic criteria and therapy principles for coronary artery disease, stable		3		3	6			

		angina pectoris according to the FC and unstable angina pectoris according to Braunwald.										
	1.3	Differential diagnosis of chest pain syndrome: Differential diagnostic criteria and therapy principles of coronary artery disease, myocardial infarction.		3				6				
		Total for 1 credit hours:		9		6		12	3	30		
2	2.1	Differential diagnosis in arterial hypertension syndrome: Differential diagnostic criteria and principles of therapy for essential arterial hypertension.		3		3		6	2			Carrying out a differential diagnosis of hypertension syndrome, drawing up a survey
	2.2	Differential diagnosis for arterial hypertension syndrome: Symptomatic hypertension (cerebral, endocrine, renoparenchymal, renovascular).		3								plan, formulating and substantiating a preliminary / clinical diagnosis, interpreting laboratory and instrumental data, determining patient management tactics.
	2.3	Differential diagnosis in edematous syndrome and ascites: Differential diagnostic criteria and CHF therapy principles. Clinical signs of circulatory failure. Classification of CHF by functional classes, stages.		3		3		6	1			Carrying out a differential diagnosis for edematous-ascites syndrome, drawing up an examination plan, formulating and substantiating a preliminary / clinical diagnosis, interpreting laboratory and instrumental data, determining the tactics of patient management.
		Total for 2nd credit hours:		9		6		12	3	30		
3	3.1	Differential diagnosis in arrhythmia syndrome: Differential diagnostic criteria and principles of therapy for atrial fibrillation and atrial flutter, extrasystole.		4		3		6	1			Carrying out a differential diagnosis of arrhythmic syndrome, drawing up an examination plan, formulating and substantiating a preliminary / clinical diagnosis, interpreting ECG data, HM of ECG, ECHO CG, determining patient management tactics.

3.2	Differential diagnosis in the syndrome of valvular heart disease in valvular heart diseases: Differential diagnostic criteria for mitral insufficiency, aortic stenosis, mitral stenosis, aortic valve insufficiency.	3			1						Carrying out a differential diagnosis of the syndrome of valvular heart disease, differential diagnosis of diastolic and systolic heart murmurs in valvular heart diseases, drawing up an examination plan, formulating and substantiating a preliminary /
3.3	Differential diagnosis in arrhythmia syndrome: Differential diagnostic criteria and principles for the treatment of paroxysmal tachycardia.	2			2						Auscultatory diagnostics of cardiac arrhythmias. ECG interpretation with various arrhythmias.
	Total for 3 rd credit hours:	5	4		3	3			12	3	30

SYLLABUS

Module: “Adult Health”, Discipline: “Differential diagnosis and principles of therapy for diseases of the urinary system, joints, skin pathology”

Educational program:

6B08601 “General Medicine”

Total credits

ECTS: 3

Course: 4

Description of discipline

Name of the discipline	Code	Educational program
Differential diagnosis and principles of therapy for diseases of the urinary system, joints, skin pathology	6B10102	
Teachers	Structural subdivision	
Responsible person: Satzhanova G.B. assistant	Internal diseases	
Responsible: Dauenova A.T. assistant	Infectious disease	
Teachers:	List of teachers in Appendix 3 to the syllabus	
Level of training	Type	Module(s)
Bachelor	GED	Adult health
Forms of learning activity	Training period	

Practical exercises: Clinical examination at the patient's bedside or standardized patient / clinical situational problem solving, workshop; supervision of patients. IWSU: drawing up a diagnostic search algorithm for the leading syndrome; solving situational tasks (written task on the Platon.kgmu.kz platform or other CIS) IWS: written assignment in platonus.kgmu.kz, completing assignments on moodle.kgmu.kz platform. Working with additional sources of literature.		7-8 semester		
Compulsory prerequisites : Practical exercises: Clinical examination at the patient's bedside or standardized patient / clinical situational problem solving, workshop; supervision of patients IWSU: drawing up a diagnostic search algorithm for the leading syndrome; solving situational tasks (written task on the Platon.kgmu.kz platform or other CIS) IWS: written assignment in platonus.kgmu.kz, completing assignments on moodle.kgmu.kz platform. Working with additional sources of literature.		Additional prerequisites: learns independently and improves his knowledge, skills and abilities throughout the training. communicate effectively with colleagues and patients.		
ECTS	Hours	Practical training	SWIT	SIW
3	90	45	15	30
The purpose of the discipline				
formation of knowledge and skills in diagnosis, differential diagnosis and principles of therapy of common diseases of nephrological, rheumatological and infectious profile.				

Learning outcomes

LO from the educational program (code)	LO of discipline	Methods of training	Assessment methods
BK1 - NO 5	explain the etiology, mechanisms of development of common diseases of the urinary system, joints and skin; classify the manifestations of common diseases of the urinary system, joints and skin;	Practical exercises: Clinical examination at the patient's bedside or standardized patient / clinical situational problem solving, workshop; supervision of patients IWSU: drawing up a diagnostic search algorithm for the leading syndrome; solving situational tasks (written task on the Platon.kgmu.kz platform)	Current control (formative assessment): oral questioning, written assignments, solving clinical problems, tests; Final control (summative assessment): written examination
BK2 - NO 6	apply scientific principles, methods and knowledge to		

	medical practice and		
	research	or other CIS) IWS: written assignment in platonus.kgmu.kz, completing assignments on moodle.kgmu.kz platform. Working with additional sources of literature.	
PK1 - NO 8	<p>collect anamnesis, physical examination of patients with pathology of the urinary system, joints and skin to determine indications for performing various laboratory and instrumental research methods in patients with pathology of the urinary system, joints and skin, according to the protocol for the diagnosis and treatment of RK; evaluate the results of modern methods of clinical, laboratory and instrumental research; carry out differential diagnostics according to the syndrome: urinary syndrome, articular syndrome, renal insufficiency syndrome and skin syndrome.</p> <p>justify the preliminary and clinical diagnosis substantiate modern principles of therapy for common diseases of the urinary system, joints and skin; predict the course and outcome of various diseases of the urinary system, joints</p>		

	and skin;		
PK1 - NO 10	provide patient care that minimizes the risk of harm to patients to provide patients with recommendations on promoting a healthy	Practical exercises: Clinical examination at the patient's bedside or standardized patient / clinical situational problem solving,	Current control (formative assessment): oral questioning, written assignments, solving clinical problems, tests;
	lifestyle, prevention and rehabilitation issues for diseases of the endocrine system;	workshop; supervision of patients IWSU: drawing up a diagnostic	Final control (summative assessment): written examination
BK3- NO 7	formulate a preliminary and clinical diagnosis. Draw up a plan of examination and treatment, according to the protocols of the Republic of Kazakhstan. Establish a relationship of trust with the patient, family members, colleagues and other workers.	search algorithm for the leading syndrome; solving situational tasks (written task on the Platon.kgmu.kz platform or other CIS) IWS: written assignment in platonus.kgmu.kz, completing assignments on moodle.kgmu.kz platform. Working with additional sources of literature.	
PK2- NO 11	advise on primary prevention of the disease		

Thematic plan

№	Topic	Number of training hours:							Tasks		
		lectures	practical lesson		IWS, hours			MA, hours		Total hours	
			practical	clinic	distance	practical	clinic	distance	distance learning		
1.	Differential diagnosis of urinary syndrome. Differential diagnosis for leukocyturia. Diagnostic criteria and principles of therapy for			3.0				3		6	Differential diagnosis in asymptomatic and symptomatic (with extrarenal and renal manifestations) urinary syndrome

	urinary tract infections (UTI).								(proteinuria, leukocyturia, cylindruria). Differential diagnosis for infectious and non-infectious leukocyturia (UTI, renal tuberculosis, interstitial nephritis, glomerulonephritis), taking into account the clinical and immunological extrarenal manifestations. Compilation of diagnostic search algorithms and principles of therapy for infections of the upper and lower urinary tract, depending on age, gender, pregnancy. Complicated forms of UTI. Antibiotic therapy regimens.
2.	Differential diagnosis and examination algorithms for proteinuria. Diagnostic criteria of primary and secondary glomerulonephritis.		3.0			3	6	12	Differential diagnosis depending on the type of proteinuria, nephrotic syndrome (primary and secondary glomerulonephritis in the framework of systemic vasculitis, SLE, amyloidosis, paraneoplastic syndrome, kidney cancer).

3.	Differential diagnosis of renal failure syndrome. Diagnostic criteria of AKD and CKD.		3,0			3	6	12	<p>Compilation of a differential diagnostic search algorithm for a clinical case in CKD and AKF. GFR calculation.</p> <p>Compilation of an algorithm for differential diagnostic search for a clinical case</p> <p>Solving situational problems with the isolation of renal failure syndromes in the framework of AKF and CKD. Determination of indications for the initiation of acute, urgent and chronic hemodialysis.</p> <p>Evaluation and interpretation of instrumental and laboratory research methods, carrying out a differential diagnosis, formulating and substantiating a clinical diagnosis, and determining the principles of treatment.</p>
4.	<p>Differential diagnosis for skin lesions.</p> <p>Diagnostic criteria and principles of therapy for systemic lupus erythematosus (SLE),</p> <p>scleroderma and dermatomyositis.</p>		3.0				6	9	<p>Features of skin syndrome in systemic lupus erythematosus, systemic scleroderma and dermatomyositis.</p> <p>Differential diagnostic criteria and principles of therapy for systemic lupus erythematosus.</p> <p>Compilation of an algorithm for differential diagnostic search and principles of therapy on a clinical case.</p>

	TOTAL:			14			9	18	45	
PSC,										
5.	Differential diagnosis for articular syndrome. Differential diagnostic criteria for rheumatoid arthritis and osteoarthritis.			3.5			4.	6	15	Carrying out a differential diagnosis for articular syndrome, determining the range of diseases for differential diagnosis (rheumatoid arthritis, osteoarthritis, gout, psoriasis, infectious arthritis), drawing up an examination plan, formulating and substantiating a preliminary / clinical diagnosis, interpreting data from a general blood test, coagulogram, biochemical blood test, analysis of synovial fluid. Carrying out differential diagnosis of articular syndrome, drawing up differential diagnostic criteria for rheumatoid arthritis and osteoarthritis.
	TOTAL:								15	
Inf.dies. and Ph.										
1.	Differential diagnosis in diseases of the genitourinary system: diagnostic criteria for brucellosis, chlamydia.			3.			3	4	10	Isolation of syndromes, determination of the range of diseases for the differential diagnosis of

										the leading syndrome, drawing up an examination program, interpreting the results of laboratory and instrumental studies, formulating and substantiating a
2.	Differential diagnosis in diseases of the genitourinary system: diagnostic criteria for brucellosis.			3			3	4	10	clinical diagnosis based on diagnostic criteria, defining treatment principles according to the treatment protocols of the Ministry of Health of the Republic of Kazakhstan.
3.	Differential diagnosis of infectious diseases occurring with exanthema: meningococemia.			3.0			3	4	10	Solving situational tasks on moodle.kgmu platforms. kz, platonus.kgmu.kz, Microsoft Teams
TOTAL:				9			9	12	30	

SYLLABUS

Module: “Adult Health”, Discipline: “Differential diagnosis and principles of therapy at the diseases of breathing organs”

Educational program:

6B08601 “General Medicine”

Total credits

ECTS: 1,5

Course: 4

Description of discipline

Name of discipline	Code	Educational program
«Differential diagnosis and principles of therapy at the diseases of breathing organs»	6B10102	General medicine
Teachers	Structural subdivision	
Responsible: Mirzo E.I.	A department is internal illnesses	
Teachers: 10		
<i>If discipline is taught more, than by 5 teachers, to specify only the amount of teachers from every structural subdivision, and to drive a list to the appendix to syllabusу</i>		
Training level	Type	Module
Bachelor	PD UC	Health of adults

Forms of realization of employments					Period of educating
Clinical analysis at a sick-bed (at the improvement of situations) of clinical situational tasks Interpretation of ECG and decision of clinical tasks on the platform of MOODLE Clinical scenario with the use of simulation technologies, employment in CSET; Drafting of algorithm of diagnostic search					7-8 semester
Mandatory prerequisites:			Additional prerequisites:		
To describe etiology, epidemiology of widespread diseases of pulmonology profile; to explain the mechanisms of development of diseases and differentiate them on a leading syndrome; to interpret the results of laboratory-instrumental methods of research; to formulate the preliminary and clinical diagnoses of widespread diseases of cardiologic and pulmonology profile, apply general принципы therapies according to clinical protocols of РК.					
ECTS	Hours	Practical training	SWIT	SIW	IA
1, 5	38	12	7	15	4
The purpose of the discipline					
Forming of knowledge and abilities on diagnostics, differential diagnostics and principles of therapy of widespread diseases of pulmonology profile.					

Learning outcomes

LO from the educational program (code)	LO of discipline	Methods of training	Assessment methods
To demonstrate knowledge and understanding in the studied area, plugging the elements of the most front-rank knowledge in this area	To differentiate and classify the displays of different diseases of pulmonology profile To describe etiology and pathogeny of widespread diseases of pulmonology profile. To interpret the results of modern methods of клинико-лабораторных and instrumental researches.	Decision of problem situation. A clinical analysis of thematic patient TBL is Decision of clinical situational tasks of CBL	Verification of knowledge. Estimation of abilities of implementation of practical skills at a sick-bed. Estimation of ability of the clinical thinking.

<p>To apply these knowledge and understanding at professional level.</p>	<p>To own skills of taking the history, физикального examination of patients with pathology of pulmonology profile. To apply modern principles of treatment of widespread diseases of pulmonology profile. To determine testimonies for implementation of different laboratory and instrumental methods of research to the patients with pathology of pulmonology profile, in obedience to clinical protocols of ПК. To demonstrate possession registration of the medical documentation, foreseen by a legislation on a health protection, skills of communication for establishment of maximally confidence relationships with a patient, his relatives, colleagues and other workers. To show skills of diagnostics and providing of the first aid at the threatening to life states</p>	<p>Decision of problem situation. A clinical analysis of thematic patient TBL is Decision of clinical situatioonal tasks of CBL</p>	<p>Verification of knowledge. Estimation of abilities of implementation of practical skills at a sick-bed. Estimation of ability of the clinical thinking.</p>
<p>To formulate arguments and work out problems in the studied area.</p>	<p>To estimate the results of complex inspection of patients with by the most often meeting diseases of pulmonology profile To conduct a differential diagnosis on a leading syndrome and ground a clinical diagnosis with formulation of conclusion.</p>	<p>Decision of problem situation. A clinical analysis of thematic patient TBL is Decision of clinical</p>	<p>Verification of knowledge. Estimation of abilities of implementation of practical skills at a sick-bed. Estimation of ability of the</p>
	<p>To forecast a flow and end of most often meeting diseases and pulmonology profile, verify a clinical diagnosis on the basis of differential diagnosis on a leading syndrome.</p>	<p>situatioonal tasks of CBL</p>	<p>clinical thinking.</p>
<p>To carry out collection and to интерпритацию information for forming of judgements taking into account the social, ethic and scientific considering.</p>	<p>To do the personal judgements, design as presentation and to preparation of educational hospital of patients of pulmonology profile chart. To pass to the examiner own abilities, to do the personal judgements on the educed signs.</p>	<p>A clinical analysis of thematic patient TBL is Decision of clinical situatioonal tasks of CBL</p>	<p>Verification of knowledge. Estimation of abilities. Estimation of ability of the clinical thinking.</p>

To report information, ideas and problems and decisions, as to the specialists, so not specialists.	Able to compile information. Correctly to design fragments educational to the hospital chart on differential diagnostics on a leading syndrome. To execute all divisions of CPO.	A clinical analysis of thematic patient TBL is Decision of clinical situational tasks of CBL	Verification of knowledge. Estimation of abilities. Estimation of ability of the clinical thinking.
Ability to continue the further independent educating.	To prove the necessity of acquisition of clinical skills for the further educating. To hand on to the examiners own torches and abilities. To pass to the patients of recommendation on propaganda of healthy character of life and questions of rehabilitation.	A clinical analysis of thematic patient TBL is Decision of clinical situational tasks of CBL	Verification of knowledge. Estimation of abilities. Estimation of ability of the clinical thinking.

Thematic plan

№	Section	Topic	Number of study hours:						Tasks
			Lectures	PL/ Lec	SIWT	SIW	IA	Total hours	
1.	1.1	Differential diagnosis on bronchobstructive syndrome. Differential-diagnostic criteria and principles of therapy of COPD		3				3	Realization of differential diagnosis on bronchobstructive syndrome, drafting of plan of inspection, formulation and ground of preliminary/clinical diagnosis, interpretation of data of global analysis of blood, coagulogram, biochemical blood, global analysis of sputum test, tank.sowing of sputum, BALL with determination of sensitiveness to the antibiotics, spirometry, sciagraphies/x-ray,
	1.2	Differential diagnosis on bronchobstructive syndrome. Differential-diagnostic criteria and principles of therapy of bronchial asthma	3 T e a c h e r s						

1.1	Differential diagnosis on the syndrome of compression of pulmonary tissue. Differential-diagnostic criteria and principles of therapy of pneumonia		3 III C							1,5	Realization of differential diagnosis on the syndrome of compression of pulmonary tissue, exposure of features of аускультативной picture, drafting of plan of inspection, formulation and ground of preliminary/clinical diagnosis, interpretation of data of global analysis of blood, coagulogram, biochemical blood, global analysis of sputum test, tank.sowing of sputum, BALL with determination of sensitiveness to the antibiotics, pulseoximetry, sciagraphies/of KT ОГК, determination of tactics of conduct.
1.2	Algorithm of differential-diagnostics search on the syndrome of compression of pulmonary tissue			1,5				3			Drafting of algorithm of differential- of diagnostic search on the clinical case of virtual patient with the syndrome of compression of pulmonary tissue
1.3	Differential diagnosis on the syndrome of								6		Decision of situational tasks with

	compression of pulmonary tissue : diagnostic criteria and principles of therapy at pneumonias of different genesis											the selection of syndromes, interpretation of instrumental and laboratory methods of research, realization of differential diagnosis, formulation and ground of clinical diagnosis, and determination of principles of treatment.
	Total		7	12		2	5	6		4	38	

SYLLABUS

Module: “Adult Health”, Discipline: “Differential diagnosis and principles of therapy for diseases of the blood and immune system”

Educational program:

6B08601 “General Medicine”

Total credits

ECTS: 3

Course: 4

Description of discipline

Name of discipline		Code	Educational program
"Differential diagnosis and principles of therapy for diseases of the blood and immune system"		DDPZSKIS	6B10102- General medicine
Teachers		Structural subdivision	
Responsible: Mendibay S.T., Butyugina M.N., Ismailovich M.R. - assistant		Department of Internal Medicine (immunology, Allergology) (Regional allergological.center, Tereshkova str., 29) Department of Internal Medicine No. 2(32 Erubaeva str., Ground floor)	
Level of training	Type	Module(s)	
Bachelor	PD UC	Adult Health.	
Forms of learning activity			Training period

Practical exercises: seminar, clinical debriefing at the patient's bedside, clinical scenario with the participation of a standardized patient in the CSOT. Working with the program "Botkin" - a screen simulator of a virtual patient SRSP: drawing up a diagnostic search algorithm for the leading syndrome; solving situational tasks (written task on the Platon.kgmu.kz platform or other CIS) SRS: written assignment in platonus.kgmu.kz, completing assignments on moodle.kgmu.kz platform. TBL, analysis of a clinical case with an assessment of the immune status - interpretation of an immunogram, oral questioning, a seminar, testtasks, situational tasks, discussion, presentations, performing tasks remotely on the moodle.kgmu.kz platform.		VII-VIII semestr			
Compulsory prerequisites :		Additional prerequisites:			
demonstrate knowledge of the theoretical foundations and methods of the general immune system at the organismic, cellular and molecular levels, as well as the role of the immune system in the life of a healthy organism and the occurrence of immunopathological processes. to demonstrate knowledge of the anatomical, morphological, physiological features of the functioning of the hematopoietic system in adults explain the etiology, mechanisms of development of common diseases of the organs of the hematopoietic system; to demonstrate the skills of collecting complaints and anamnesis in patients with diseases of the hematopoietic system. describe the principles of therapy.		Able to evaluate and critically analyze scientifically-based material			
ECTS	Hours	Practical training	SWIT	SIW	IA
3	90	27	18	36	9
The purpose of the discipline					
Formation of the skill of interpreting the immunogram in various acute inflammatory diseases.					

Learning outcomes

learning outcomes from an educational program (code)	discipline learning outcomes	Teaching methods	Assessment methods
BK1 - NO 5	explain the etiology, mechanisms of development of common diseases of the hematopoietic organs and the immune system; classification of manifestations of general diseases of the hematopoietic and immune systems;	Practical Exercises - Practical Exercises: Clinical Examination at the Patient's Bed or standardized patient / clinical situational problem solving, workshop; supervision of patients	Current control by discipline: oral questioning, written assignments, solving clinical problems, tests;
BK2 - NO 6	apply scientific principles, methods and knowledge to medical practice and research	SRSP: drawing up a diagnostic search algorithm	

Credit 1. «Name of credit»							
1.		The concept of immunodeficiencies. Primary immunodeficiencies. Classification, etiology, clinical presentation.	3	2			1. To study the norms of immunological parameters of healthy people of different ages 2. To study changes in immunological parameters under the influence of various factors. 3. Completing tasks on moodle.kgmuplatform. kz "moodle.kgmu.kz"
		Laboratory diagnosis and principles of therapy			4		
2.		Secondary immunodeficiency states. HIV. General principles of immunodiagnosis of immunodeficiency states	3	2			To assess the immune status of a person by the immunogram - to identify the immunological parameters that most strongly react to the inflammatory process. To analyze the changed parameters of the immunogram with the definition of further treatment tactics.
		Signs to suspect immunodeficiency and a plan for immuno-laboratory screening			4		
3.		Mechanism of development of immediate-type hypersensitivity (ILH) and delayed-type hypersensitivity (DHS). Jell- Combs classification.	3	2			Determine in which cases the immunogram has prognostic value. Performing tasks on moodle.kgmu platform. kz
		General principles of allergy diagnosis and principles of allergy therapy			4		
		Total:	9	6	12	3	30

Credit 2. «Name of credit»							
1.		Differential diagnosis of anemia syndrome: Differential diagnostic criteria and principles for the treatment of iron deficiency anemia, B12-deficient, hemolytic anemia	6		1 2		Analysis of the clinical case
2		Differential diagnosis for hemorrhagic syndrome: Differential diagnostic criteria and principles of therapy	3				Analysis of the clinical case
3		Diagnostic search algorithm for anemia syndrome		6			development of a diagnostic search algorithm
		Total:	9	6	1 2	3	3 0

Credit 3. «Name of credit»

1.	Differential diagnosis of lymphadenopathy syndrome. Differential diagnostic criteria and principles for the treatment of acute leukemia and chronic lymphocytic leukemia	3		1 2			Analysis of the clinical case
2.	Differential diagnosis of hepatosplenomegaly syndrome. Differential diagnostic criteria and principles for the treatment of chronic myelogenous leukemia	3					Analysis of the clinical case.
	clinical analysis of the patient / solution of clinical situational problems		3				development of a diagnostic search algorithm
	Diagnostic search algorithm for splenomegaly syndrome		3				development of a diagnostic search algorithm
Total:		9	6	1 2	3	3	
Total:		27	18	36	9	9	

SYLLABUS

Module: “Adult Health”, Discipline: “Differential diagnosis and principles of therapy for diseases of the digestive system”

Educational program:

6B08601 “General Medicine”

Total credits

ECTS: 3

Course: 4

Description of discipline

Name of discipline	Code	Educational program
Differential diagnosis and principles of therapy for diseases of the digestive system	6B10102	General medicine
Teachers	Structural subdivision	
Responsible person: Ospanova G. G. Knaus A.A., Zhumaliyeva V.A.	Department of internal diseases Department of infection diseases and phthisiology Department of Oncology and Radiation Diagnostics	
Teachers: <i>If a discipline is taught by more than 5 teachers, only number of teachers from every subdivision is to be mentioned, and the list of them is to be entered in the syllabus annexure 3</i>		
Level of training	Type	Module(s)

Bachelor		BD UC		Adult health	
Forms of learning activity					Training period
<p>Practical sessions: seminar, clinical debriefing at the patient's bedside, clinical scenario with the participation of a standardized patient at the; clinical analysis of the patient / solution of clinical situational problems; Independent work of a student with a teacher: drawing up a diagnostic search algorithm for the leading syndrome; solving situational tasks (written task on the Platon.kgmu.kz platform or other information systems);</p> <p>Independent student work: writing assignment in platonus.kgmu.kz, completing assignments on moodle.kgmu.kz platform; Working with additional sources of literature</p>					7-8 semester
Compulsory prerequisites :					Additional prerequisites:
<p>demonstrate knowledge of the anatomical, morphological, physiological characteristics of the functioning of the digestive system in adults explain the etiology, mechanisms of development of common diseases of the digestive system;</p> <p>demonstrate skills in collecting complaints and anamnesis in patients with diseases of the digestive system.</p> <p>describe the principles of pharmacological correction.</p>					<p>Learns independently and improves his knowledge, skills and abilities throughout the training.</p> <p>Communicates effectively with colleagues and patients.</p>
ECTS	Hours	Practical training	SWIT	SIW	IA
3	90	27	18	36	9
Discipline point					
the formation of knowledge and skills in the diagnosis, differential diagnosis and treatment principles of common diseases of the gastroenterological profile, infectious and oncological diseases.					

Learning outcomes

LO from the educational program (code)	LO of discipline	Methods of training	Assessment methods
BK1 - NO 5	<p>demonstrate knowledge of the anatomical, morphological, physiological features of the functioning of the digestive system in adults explain the etiology, mechanisms of development of common diseases of the digestive system;</p> <p>to classify the manifestations of various diseases of the digestive system;</p>	<p>Practical exercises: Clinical examination at the patient's bedside or standardized patient / clinical situational problem solving; seminar; supervision of patients</p> <p>Independent work of a student with a teacher: drawing up a diagnostic search algorithm for the leading syndrome;</p> <p>Independent work of students: solving clinical problems on the Platon.kgmu.kz platform, moodle.kgmu or other</p>	<p><i>Current control (formative assessment):</i> oral survey, written assignments, solution of clinical problems, tests</p> <p>Drawing up and solving cases Protection of abstracts, presentations, projects</p> <p><i>Final control (summary assessment):</i> written exam</p>
BK2 - NO 6	<p>apply scientific principles, methods and knowledge to medical practice and research</p>		

PK1 - NO 8	<p>collect anamnesis, physical examination of patients with pathology of the digestive system; to determine the indications for performing various laboratory and instrumental research methods for patients with pathology of the digestive system, according to the protocol; evaluate the results of modern methods of clinical, laboratory and instrumental research; carry out differential diagnostics for the syndrome of gastric dyspepsia and abdominal pain syndrome, intestinal dyspepsia with constipation or diarrhea, jaundice, syndrome of</p>	<p>information systems); Working with additional sources of literature</p>	
	<p>pathological discharge from the rectum; justify the preliminary and clinical diagnosis with the formulation of a conclusion substantiate modern principles of therapy for various diseases of the digestive system; predict the course and outcome of various diseases of the digestive system;</p>		

PK1 - NO 9	<p>recognize and evaluate acute medical emergencies;</p> <p>Demonstrate skills in diagnosing and providing emergency care for life-threatening conditions</p>	<p>Practical exercises: Clinical examination at the patient's bedside or standardized patient / clinical situational problem solving; seminar; supervision of patients</p> <p>Independent work of a student with a teacher: drawing up a diagnostic search algorithm for the leading syndrome;</p> <p>Independent work of students: solving clinical problems on the Platon.kgmu.kz platform, moodle.kgmu or other information systems); Working with additional sources of literature</p>	<p><i>Current control (formative assessment):</i> oral survey, written assignments, solution of clinical problems, tests Drawing up and solving cases Protection of abstracts, presentations, projects</p> <p><i>Final control (summary assessment):</i> written exam</p>
PK1 - NO 10	<p>provide patient care that minimizes the risk of harm to patients</p> <p>take measures to prevent the spread of infection</p> <p>provide patients with recommendations on promoting healthy lifestyles and rehabilitation issues;</p>	<p>Practical exercises: Clinical examination at the patient's bedside or standardized patient / clinical situational problem solving, seminar; supervision of patients</p> <p>Independent work of a student with a teacher:</p>	<p><i>Current control (formative assessment):</i> oral survey, written assignments, solution of clinical problems, tests Drawing up and solving cases Protection of abstracts, presentations, projects</p>
BK3- NO 7	<p>Demonstrate proficiency in the design of medical documentation, as required by healthcare legislation, skills.</p> <p>Establish a relationship of trust with the patient, relatives, colleagues and other workers.</p>	<p>drawing up a diagnostic search algorithm for the leading syndrome;</p> <p>Independent work of students: solving clinical problems on the Platon.kgmu.kz platform, moodle.kgmu or other information systems);</p>	<p><i>Final control (summary assessment):</i> written exam</p>
PK2- NO 11	<p>advise on primary prevention of the disease</p>	<p>Working with additional sources of literature</p>	

Thematic plan

№	Section	Theme	Number of educational hours:						The tasks	
			Lectures	PL/ Lec	SIWT	SIW	IA	Total hours		
1.	1.1	Differential diagnosis of gastric dyspepsia syndrome and abdominal pain syndrome: diagnostic criteria and principles of therapy for gastric ulcer and duodenal ulcer		3						<p>Identification of syndromes, determination of the range of diseases for the differential diagnosis of gastric dyspepsia syndrome and abdominal pain syndrome, preparation of an examination program, interpretation of the results of laboratory and instrumental studies (EGDS, X-ray pictures of the upper gastrointestinal tract, gastropannel, tests for the diagnosis of Hp infection), formulation and substantiation of the clinical diagnosis based on diagnostic criteria, determination of the principles of treatment of the following diseases: functional dyspepsia, chronic gastritis, gastric / duodenal ulcer, including those associated with H. pylori.</p>
	1.2	Differential diagnosis of intestinal dyspepsia syndrome with constipation or diarrhea: diagnostic criteria and principles of therapy for irritable bowel syndrome and inflammatory bowel		3						<p>Identification of syndromes, determination of the range of diseases for differential diagnosis of intestinal dyspepsia syndrome, preparation of an</p>

		diseases (ulcerative colitis and Crohn's disease)											examination program, interpretation of
													the results of laboratory and instrumental studies (coproscopy, colonoscopy, etc.), formulation and substantiation of clinical diagnosis based on diagnostic criteria, determination of the principles of treatment of the following diseases: irritable bowel syndrome, ulcerative colitis, Crohn's disease.
1.3		Differential diagnosis for jaundice syndrome. Diagnostic criteria and principles of therapy for liver cirrhosis.			3								Identification of syndromes, determination of the range of diseases for the differential diagnosis of jaundice syndrome (suprahepatic, hepatic and subhepatic genesis), preparation of an examination program, interpretation of the results of laboratory and instrumental studies (assessment of liver functional parameters - ultrasound, CT, MRI pictures), formulation and substantiation of clinical diagnosis based on diagnostic criteria, determination of the principles of treatment of chronic diffuse liver diseases. (chronic

												hepatitis, liver cirrhosis).
1.4	Diagnostic search algorithm for syndromes: (gastric dyspepsia syndrome and abdominal pain syndrome; intestinal dyspepsia syndrome with constipation and diarrhea; jaundice syndrome).						6					Drawing up an algorithm for differential diagnostic search for the leading syndrome.
								12				
	SUMMARY:			9			6	12	3	30		
1.1	Differential diagnosis of jaundice syndrome: diagnostic criteria of acute viral hepatitis A and E.			3								Indication of syndromes, determination of the range of diseases for differential diagnosis of jaundice syndrome, preparation of an examination program, interpretation of the results of laboratory and instrumental
												examinations, formulation and substantiation of a clinical diagnosis based on diagnostic criteria, determination of the principles of treatment of the following diseases: viral hepatitis A, viral hepatitis E.
1.2	Differential diagnosis of jaundice syndrome: diagnostic criteria and principles of therapy for acute viral hepatitis B, C and D.			3								Indication of syndromes, determination of the range of diseases for differential diagnosis of jaundice syndrome, preparation of an examination program, interpretation of the results of laboratory

												and instrumental examinations, formulation and substantiation of a clinical diagnosis based on diagnostic criteria, determination of the principles of treatment of the following diseases: viral hepatitis B, C and D.
		Differential diagnosis of diarrhea syndrome: diagnostic criteria and principles for the treatment of dysentery, salmonellosis, food poisoning.			3							Indication of syndromes, determination of the range of diseases for differential diagnosis of diarrhea syndrome, preparation of an examination program, interpretation of the results of laboratory and instrumental examinations, formulation and substantiation of clinical diagnosis based on diagnostic criteria, determination of the principles of treatment of the following diseases: dysentery, salmonellosis, food poisoning.
	1.4	Algorithm of diagnostic search for syndromes (diarrhea and jaundice)						6				Formation an algorithm for differential diagnostic search for the leading syndrome.
									12			
		Bcero			9			6	12	3	30	
	1.1	Differential diagnosis in diseases of the digestive system: diagnostic criteria for			3							Determination of syndromes, the range of diseases for differential diagnosis of

												clinical diagnosis based on diagnostic criteria, determining the principles of treatment of the following diseases: colon and rectal cancer ...
	1.4	Algorithm for diagnostic search for syndromes (syndromes of dysphagia, pylorus stenosis, pathological rectal discharge)						6				Drawing up an algorithm for differential diagnostic search for the leading syndrome.
		Total			9			6	12	3	30	
		Total			27			18	36	9	90	

* - if the epidemiological situation worsens, the PL will be carried out in the conditions of a CSEP or by DE

** - with the improvement of the epidemiological situation, PL will be carried out in a clinic P - training is carried out by the teaching staff of the department

SYLLABUS

Module: "Adult Health", Discipline: "Differential diagnosis and principles of therapy of endocrine system diseases"

Educational program:

6B08601 "General Medicine"

Total credits

ECTS: 3

Course: 4

Description of discipline

Name of discipline		Code	Educational program
Differential diagnosis and principles of therapy of endocrine system diseases		6B10102	General medicine
Teachers		Structural subdivision	
Responsible person: Serikbaeva A.A.		Department of internal diseases	
Teachers: <i>The list of teachers on the discipline is performed at annexure 3</i>			
Level of training	Type	Module(s)	
Bachelor	BD UC	Adult's health	
Forms of learning activity			Training period

Practical classes included real patients' cases discussion, seminars, discussion on clinical scenarios at CSET. Working with the demo version of the virtual patient simulator for internal medicine AcademiX3D. SIWTC: creation of diagnostic search algorithm on the leading syndrome; solving of situational clinical cases (written task placed at the Platon.kgmu.kz or another types of task) SIW: written task at the platonus.kgmu.kz, or solving tasks at the moodle.kgmu.kz. Work with additional literature					7-8 semester
Compulsory prerequisites :					Additional prerequisites:
to demonstrate the knowledge of anatomical, morphological, and physiological features of the endocrine system in adults to explain the etiology, mechanisms of development of common endocrine diseases; to demonstrate skills of medical history taken of patients with diseases of the endocrine system. describe the principles of pharmacological correction					-to get knowledge independently and to perfect the skills during education process. - to communicate effectively with colleagues and patients.
ECTS	Hours	Practical training	SWIT	SIW	IA
3	90	27	18	36	9
Discipline objective					
the formation of knowledge and skills of diagnostics, differential diagnosis, and treatment principles of common endocrinological diseases.					

Learning outcomes

LO from the educational program (code)	LO of discipline	Methods of training	Assessment methods
NO 5	to explain the etiology and mechanisms of development of common endocrine diseases to classify the manifestations of common diseases of the endocrine system;	Practical classes: Clinical discussion at a "patient's bed" or standardized patient / clinical situational tasks, seminar; curation of patients SIWTC: composition of the diagnostic search algorithm on the leading syndrome.	<i>Current control (formative assessment): discussion, written assignments, solution of clinical cases, test</i> <i>Final control (cumulative assessment): written exam (clinical case)</i>
NO 6	To apply scientific principles and knowledge to medical practice and research	SIW: of clinical tasks on the Platon.kgmu.kz, or moodle.kgmu.kz or other tasks).	

<p>NO 8 Consultation of patients (history taken, medical examination), evaluation of clinical discussion, conduct a differential diagnosis, make a treatment plan</p>	<p>to provide medical history taking, physical examination of patients with endocrine pathology to determine of various laboratory and instrumental examination according to the recommendation of Ministry of health of Kazakhstan to give interpretation of the results of modern clinical, laboratory and instrumental tests. to make a differential diagnosis on the syndrome: thyrotoxicosis, hypothyroidism, hyperglycemia in combination with insipid syndrome and without insipid syndrome, obesity. to underline the preliminary and clinical diagnosis to choose modern principles of therapy of common diseases of the</p>	<p>Work with additional sources of literature</p>	
	<p>endocrine system. to predict the course and outcome of various diseases of the endocrine system;</p>		

1.	1.1	Differential diagnosis on thyrotoxicosis syndrome in combination with an enlarged thyroid gland(with goiter and without goiter). Differential diagnostic criteria and principles for the treatment of thyrotoxicosis		6		Isolation of syndromes, a range of diseases for differential diagnosis of thyrotoxicosis / hypothyroidism syndrome, drawing up an examination program, interpreting the results of laboratory and instrumental studies (hormones, ultrasound of the thyroid gland), formulating and substantiating a clinical diagnosis based on diagnostic criteria, determining the principles of treatment of the following diseases: diffuse toxic goiter, Plummer's disease, AIT, subacute thyroiditis, primary hypothyroidism (subclinical, manifest), secondary, tertiary and peripheral hypothyroidism.
	1.2	Differential diagnosis on hypothyroidism syndrome. Differential-diagnostic criteria and principles of therapy for primary hypothyroidism		3		Drafting differential algorithm of diagnostic search on the leading syndrome
	1.3	Algorithm of diagnostic search for syndromes: thyrotoxicosis / hypothyroidism				Select the leading syndrome and make a differential diagnosis of the leading syndrome (3 nosologies). Formulate the clinical diagnosis and justify each fragment of the diagnosis. Create a treatment program from an evidence-based medicine perspective
	1.4	Differential diagnosis of thyrotoxicosis / hypothyroidism syndrome. Differential diagnostic criteria and principles of therapy.				
2	2.1	Differential diagnosis on hyperglycemia syndrome in combination with and without insipidary syndrome. Differential diagnostic criteria and principles of therapy for type 1, 2 diabetes mellitus		4		Isolation of syndromes, a range of diseases for differential diagnosis of hyperglycemia syndrome in combination with and without insipid syndrome, drawing up a survey program, interpreting the results of laboratory and instrumental studies (glycemia, glucose tolerance test, HbA1c, insulin, C peptide), formulation and substantiation of the clinical diagnosis based on diagnostic criteria, determination of the principles of treatment of the following diseases: prediabetes (impaired fasting glycemia, impaired glucose tolerance), type 1 and 2 diabetes mellitus,
				5		

						diabetes insipidus
	2.2	Algorithm for diagnostic search for hyperglycemia syndrome in combination with and without insipid syndrome				Compilation of an algorithm for differential diagnostic search for hyperglycemia syndrome in combination with and without insipid syndrome
	2.3	Differential diagnosis for hyperglycemia syndrome. Differential diagnostic criteria and principles of diabetes mellitus therapy				Select the leading syndrome and make a differential diagnosis of the leading syndrome (3 nosologies). Formulate the clinical diagnosis and justify each fragment of the diagnosis. Create a treatment program from an evidence-based medicine perspective
3	3.1	Differential diagnosis for obesity syndrome. Differential diagnostic criteria and principles of therapy for obesity		9		Isolation of syndromes, a range of diseases for differential diagnosis of obesity syndrome, to assess the type of obesity, drawing up an examination program, formulating and substantiating a clinical diagnosis, interpreting the results of laboratory and instrumental studies, including the hormones TSH, cortisol, insulin, MRI, CT, ultrasound
	3.2	Obesity Syndrome Diagnostic Search Algorithm				Compilation of an algorithm for differential diagnostic search for obesity syndrome (alimentary- constitutional, abdominal-visceral, metabolic syndrome)
	3.3	Differential diagnosis in diseases of the endocrine system.				Solving tasks on moodle.kgmuplatform. kz
		Total		4	23	3

Note: the place and time of the practical training can be change on the conditions of the clinical Base

* - in case of a bad epidemiological situation, practical classes will be carried out in the conditions CEST

** - with the improvement of the epidemiological situation, practical classes will be carried out in a clinic

SYLLABUS

Module: “Women’s Health”, Discipline: “Obstetrics and gynecology”

Educational program:

6B08601 “General Medicine”

Total credits

ECTS: 6

Course: 4

Description of discipline

Name of the discipline	Code	Educational program
obstetrics and gynecology	6B10102	General Medicine
Lecturers	Structural division	
Responsible: Zhanabaeva S.U.	Department of Obstetrics, Gynecology and Perinatology	
Teachers: 10		
If the discipline is taught by more than 5 teachers, indicate only the number of teachers from each structural unit, and list the list in the annex to the syllabus		
Training level	Type	Module
Bachelor	CD LC	Women's Health
Forms of learning activity	Training period	
Clinical analysis of pregnant women, women in childbirth and gynecological patients / solution of clinical situational problems Interpretation of gravidograms and partograms and solving test tasks on the MOODLE platform, writing and protecting the history of childbirth Compilation of a diagnostic search algorithm	7-8 semester	

Mandatory prerequisites:				Additional prerequisites:	
Describe the etiology, epidemiology of common diseases of the obstetric-gynecological profile; explain the mechanisms of disease development and differentiate them according to the leading syndrome; interpret the results of laboratory and instrumental research methods; to formulate preliminary and clinical diagnoses of common diseases of the obstetric-gynecological profile, apply general treatment prints according to the clinical protocols of the Republic of Kazakhstan.					
ECTS	Hours	Practical training	SWIT	SIW	IA
6	195	57	38	78	19,5
The purpose of the discipline					
the formation of knowledge and skills in the diagnosis and management of pregnancy, childbirth and the postpartum period, diagnosis, care and prevention for common obstetric and gynecological pathologies.					

Learning outcomes

LO from the educational program (code)	LO of discipline	Methods of training	Assessment methods
NO 8	<p>Differentiate and classify the manifestations of various pathologies of the obstetric-gynecological profile</p> <p>Describe the etiology and pathogenesis of common diseases of the obstetric-gynecological profile.</p> <p>Interpret the results of modern methods of clinical laboratory and instrumental studies.</p>	<p>The solution to a problem situation.</p> <p>Clinical analysis of a TBL case patient Solving CBL clinical situational problems</p>	<p>Knowledge check. Assessment of practical skills at the patient's bed.</p> <p>Assessment of the ability of clinical thinking.</p>
NO 9	<p>To have skills in collecting an anamnesis, physical examination of pregnant women, women in childbirth, puerperas and gynecological patients</p>	<p>The solution to a problem situation.</p> <p>Clinical analysis of a TBL case</p>	<p>Knowledge check. Assessment of practical skills at the patient's bed.</p> <p>Assessment of the ability of clinical thinking.</p>

	<p>with pathology of the obstetric-gynecological profile.</p> <p>Apply modern principles of treatment of common diseases of the obstetric-gynecological profile.</p> <p>Determine indications for performing various laboratory and instrumental methods for the study of patients with pathology of the obstetric-gynecological profile, according to the clinical protocols of the Republic of Kazakhstan.</p> <p>Demonstrate knowledge of the design of medical documentation required by healthcare legislation, communication skills to establish the most trusting relationships with the patient, his relatives, colleagues and other employees.</p> <p>Demonstrate skills in diagnosing and providing emergency care in life-threatening conditions</p>	<p>patient Solving CBL clinical situational problems</p>	
<p>NO 9</p>	<p>To evaluate the results of a comprehensive examination of patients with the most common pathologies of the obstetric-gynecological profile.</p> <p>Conduct a differential diagnosis of the leading syndrome and substantiate the clinical diagnosis with the conclusion.</p> <p>Predict the course and outcome of the most</p>	<p>The solution to a problem situation. Clinical analysis of a TBL case patient Solving CBL clinical situational problems</p>	<p>Knowledge check. Assessment of practical skills at the patient's bed. Assessment of the ability of clinical thinking.</p>

	common obstetric-gynecological diseases, verify the clinical diagnosis based on the differential diagnosis of the leading syndrome.		
NO 11	Make personal judgments, draw up in the form of a presentation and preparation of a medical history of the disease or childbirth obstetric-gynecological profile. Transfer your own skills to the examiner, make personal judgments based on the identified signs.	Clinical analysis of a TBL case patient Solving CBL clinical situational problems	Knowledge check. Assessment of skills. Assessment of the ability of clinical thinking.

Thematic plan

№	Section	subject	The number of training hours:						
			lectures	PL	SWST	SWS	IC	Total hours	
Credit 1.									
1.	obstetrics and gynecology	The system of organizing obstetric and gynecological care. Regionalization of perinatal care in the Republic of Kazakhstan	-	4	3				oral questioning, solving a problem situation
		Neuroendocrine regulation of the menstrual cycle. Physiology of pregnancy. Fertilization. Implantation. Research methods for pregnant women.							oral questioning, solving a problem situation, clinical analysis of a thematic patient, work in groups (TBL).

2		Dispensary observation of pregnant women and women in childbirth. Methods for examining the state of the fetus (assessment of the fetal heart rate). Physio-psychoprophylactic preparation of pregnant women for childbirth. Making pregnancy safer according to WHO recommendations.	-	4	3				Filling out medical documentation, work in KIIS; solution of clinical situational problems of CBL;
3		Reproductive health care. Family planning.	-			12	3		Essay in "MOODLE"
Credit 2.									
4	obstetrics and gynecology	Extragenital pathology and pregnancy. Features of pregnancy and childbirth management with EGD. Treatment principles.	-						Oral questioning, solving clinical situational problems CBL; filling out medical documentation, work in KMIS
5		Bleeding during pregnancy, premature detachment of the normally located placenta, placenta previa. The role of GPs in the provision of emergency medical care at the pre-hospital stage.	-						oral questioning, solving a problem situation, clinical analysis of a thematic patient, work in groups (TBL).
6		Interpretation of gravidograms							Clinical case in the «MOODLE»
Credit 3									
7	obstetrics and gynecology	Early toxicosis. Vomiting of pregnant women. Providing emergency care at the prehospital stage.	-						Solving clinical situational problems CBL

8		Pregnancy-related hypertension. Severe preeclampsia. Eclampsia. Providing emergency medical care at the pre-hospital stage.	-						oral questioning, solving a problem situation, clinical analysis of a thematic patient, work in groups (TBL).
		HELLP syndrome: diagnosis, intensive care.							Presentation in the «MOODLE»
Credit 4									
9	obstetrics and gynecology	Physiological childbirth. Safe childbirth concept. Labor management. Assessment of risk factors on the eve of childbirth.							Oral questioning, solving clinical situational problems CBL; filling out medical documentation, work in KMIS
10		Physiological postpartum period. Lactation, breastfeeding.							oral questioning, solving a problem situation, clinical analysis of a thematic patient, work in groups (TBL).
11		Obstetric bleeding in the postpartum period. Providing emergency medical care at the pre-hospital stage.							oral questioning, solving a problem situation, clinical analysis of a thematic patient, work in groups (TBL).
12		Interpretation of partograms.							Clinical case in the «MOODLE»
Credit 5									

13	obstetrics and gynecology	Purulent-septic complications in obstetrics. Classification.							oral questioning, solving a problem situation, clinical analysis of a thematic patient, work in groups (TBL).
14		Purulent-septic complications in obstetrics. Clinic. Providing emergency medical care at the pre-hospital stage.							Solving clinical situational problems CBL
		Hygiene and diet of parturient women. Asepsis and antiseptics of the postpartum department.							Essay in "MOODLE"
Credit 6									
15		Research methods in gynecology (two-handed vaginal examination, rectal examination, examination and taking smears from the cervical canal). Semiotics of gynecological diseases. Classification of gynecological diseases.							Oral survey, discussion.
16		Inflammatory diseases of the genital organs (sexually transmitted infections, genital tuberculosis). Principles of treatment in primary care.							oral questioning, solving a problem situation, clinical analysis of a thematic patient, work in groups (TBL).
17		"Sharp abdomen" in gynecology. Providing emergency medical care at the prehospital stage							Oral survey Work in groups (TBL).

18		Neuroendocrine syndromes (premenstrual, climacteric and post-castration)							Tests in the "MOODLE"
	Total:			57	38	78	19,5	195	

SYLLABUS

Module: "Women's Health", Discipline: "Oncogynecology"

Educational program:

6B08601 "General Medicine"

Total credits

ECTS: 3

Course: 4

Discipline description

Name of the discipline	Code	Educational program
Women's Health: Oncogynecology		6B10102 - General Medicine
Teachers		Structural subdivision
Responsible: A.R. Beisenayeva, Yu.M. Fomenko		School of Medicine
Teachers: V.B. Sirota, Yu.M. Fomenko, A.R. Beisenayeva, Ya.L. Poluektova, V.A. Zhumaliyeva		
Level of study	Type	Module (s)
Bachelor	major/ intra-university component	Women's Health
Forms of classes		Period of study
Full-time		7-8 semester
Mandatory prerequisites:		Additional prerequisites:
Knowledge the normal anatomy, histology, physiology of the organs of the female reproductive system, the menstrual-ovarian cycle is normal, the hormonal regulation of the female body, the periods of a woman's life, the main pathological conditions of women according to these periods. The ability to detail complaints and collect anamnesis, physically examine a gynecological		Know the features of preparing patients for various methods of laboratory and instrumental research.

patient, interpret the results of the main diagnostic procedures in gynecology.						
ECTS	Hours	Lectures, hours	Practical training	SWIT	SIW	IA
3	90	0	27	18	36	9
The purpose of the discipline						
The formation of knowledge, skills and abilities of early diagnosis of precancerous and malignant diseases, including strengthening public health, on-alertness, and prevention of these diseases.						

Learning outcomes

LO from the educational program (code)	LO of discipline	Methods of training	Assessment methods
Effectively use information technology in the field of medicine (NO 4)	Risk factors and “theories” of occurrence, semiotics, diagnosis, staging, prevention and basic methods of treatment of gynecological oncological diseases.	<p>Practical lessons:</p> <p>Workshop</p> <p>Analysis of clinical cases.</p> <p>SIWT:</p> <p>Discussions, round table, preparation of presentations and essays, consultations with the teacher on all arising questions.</p> <p>SIW: work with additional sources of literature</p>	<p>Oral interview</p> <p>Solution of clinical cases</p> <p>Abstracts</p> <p>Presentations</p>
Work with Patients (NO 8)	<p>to collect a detailed history,</p> <p>to examine the patient,</p> <p>conduct differential diagnostics,</p> <p>make a treatment plan</p>	<p>Practical lessons:</p> <p>Workshop</p> <p>Analysis of clinical cases.</p> <p>SIWT:</p> <p>Discussions, round table, preparation of presentations and essays, consultations with the teacher on all arising questions.</p>	<p>Oral interview</p> <p>Solution of clinical cases</p> <p>Abstracts</p> <p>Presentations</p>

		SIW: work with additional sources of literature	
To carry out preventive and rehabilitation measures (NO 10)	Knowledge of risk factors and “theories” of the occurrence of malignant tumors of the female reproductive system and methods for their prevention.	Practical lessons: Workshop Analysis of clinical cases. SIWT: Discussions, round table, preparation of presentations and essays, consultations with the teacher on all arising questions. SIW: work with additional sources of literature	Oral survey Solution of clinical cases Abstracts Presentations

Thematic plan

№	Section	Topic	Number of training hours:						Tasks (can combine several topics, but not less than 1 and not more than 3 current tasks for a loan; the total number of tasks in the discipline, including the Republic of Kazakhstan, is not less than 5)
			Lectures	PL/ Lec	SIWT	SIW	IA	Total hours	
Credit 1									
1		General terminology and general concepts in oncology. Theories of cancer development. Modern diagnostic methods, treatment principles. State scree of cancer of the reproductive system.		4	3	6		13	Task number 1 Oral survey Solution of clinical cases Abstracts

2		Background, precancerous diseases of the cervix. Etiopathogenesis. Clinic, diagnosis, treatment.		5	3	6		14	
3		Cervical cancer. Etiopathogenesis. Clinic, diagnosis, treatment.							
Credit 2									
4		Precancerous diseases of the endometrium. Endometrial cancer. Etiopathogenesis. Clinic, diagnosis, treatment.		4	3	6		13	Task number 2 Oral survey Solution of clinical cases Abstracts
5		Benign and malignant ovarian tumors. Borderline ovarian tumors. Etiopathogenesis. Clinic, diagnosis, treatment.		5	3	6		14	
Credit 3									
6		Precancerous diseases of the mammary gland (mastopathy, fibroadenoma, intraductal papilloma)		4	3	6		13	Task number 3 Oral survey Solution of clinical cases Abstracts
7		Breast cancer Etiology, clinic, diagnosis, classification. The principles of treatment.		5	3	6		14	
8		List of practical skills 1. Palpation of peripheral lymph nodes. 2. Examination, palpation of the mammary glands. 3. Gynecological examination: examination of the external genitalia, examination in mirrors,							

		bimanual examination, rectovaginal examination.							
Examination preparation						5			
Examination						4			
Total:		0	27	18	36	9	90		

SYLLABUS

Module: “General pathological conditions in paediatrics”, Discipline: “Pathology of manures”, “Pathology of early children and adolescence”, “Children infection disease”

Educational program:

6B08601 “General Medicine”

Total credits

ECTS: 12

Course: 4

Description of discipline

Name of discipline				Code	Education programme			
"General pathological conditions in paediatrics"				"5B 130100"	"General medicine"			
Teachers				Structural unit				
Responsible: Turlybekova S.A.Serikova G.B.				Department of Paediatrics and Neonatology Department of Infectious Diseases and Phthisiology				
Teachers: 28								
Level of training		View		Module(s)				
Bachelor's degree		AP VC		3				
Forms of study				Study period				
Lectures, SIWT, SIW, SBL. TBL.				2019-2020				
Mandatory prerequisites:				Additional prerequisites:				
Interpret the examination and examination results of a patient to make a differential diagnosis, make a provisional diagnosis, develop a treatment plan and monitor make a preliminary diagnosis, develop a treatment plan, monitor the patient's condition the patient's condition overtime, followed by Give a discharge summary. Provide emergency medical care.				Carry out prevention and rehabilitation Interventions in the population. Improve and develop the knowledge and skills acquired throughout their professional life for Continuous professional development.				
ECTS	Hours	Lectures	Practical training	SWIT	SIW	IA		
12	360	6	102	72	144	36		
Purpose of the discipline								

To train highly specialised professionals capable of meeting the needs of society for the provision of medical care, to apply and develop advanced and innovative technologies in medicine, science and practice. To carry out the educational process in the discipline "Basic pathological conditions in paediatrics". To form knowledge and skills on the issues of diagnosis and treatment in the period of newborn and childhood.

Learning outcomes

LO from the educational program (code)	LO of discipline	Methods of training	Assessment methods
Implementation of clinical skills in the collection of The clinical skills of history taking, physical examination, clinical procedures and investigations, prescribing treatment for various illnesses and providing emergency medical care. The acquisition of clinical responsibility, which includes health promotion, disease prevention and patient care activities, while participation in patient care should contribute to the acquisition of relevant experience in working with members of the public and in teams with other health-care professionals (inter-professional communication).	<p>Counselling patients (collect medical history, examine, assess the clinical picture, make a differential diagnosis, draw up a treatment plan)</p> <p>Provide emergency medical care, including first aid and resuscitation</p> <p>Carry out preventive and rehabilitative activities among the population</p> <p>Provide psycho-emotional support to patients and their relatives with various conditions and illnesses.</p>	<p>Lectures: introductory, informational, problem-based. Practical sessions: method s (TBL), (SBL); methods: ward work - case management, case studies and tests, interpretation of laboratory Clinical methods: supervised case management, self-management of patients, clinical case studies, rounds, clinical conferences. supervised case management, independent case management, clinical debriefings, rounds, clinical conferences. Guided self-study. Independent work of students: supervision of patients, in-depth study of individual issues of practical classes, work with literature, electronic databases and computer training programs, preparation of presentations, essays, development of schemes and tables.</p>	<p>Current discipline control: oral questioning, solving tests, interviewing, solving situational tasks, interpretation of tests, assessment of practical skills at the patient's bedside. Final control of the discipline: written work after the end of each module. Final Final control of the discipline: mini clinical exam, testing at the computer centre.</p>

Thematic plan

No	Section	Topic	Lectures	PL/ Lec	SIWT	SIW	IA	Total hours	(may combine several topics, but no less than 1 and no more than 3 current credit assignments; total number of discipline assignments, including RCs, no less than 5)
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Neonatal Pathology module

Credit 1.

1.		Neonatology service of the Republic of Kazakhstan: current status and ways of development. Organization of perinatal care and principles of medical care for newborns in Obstetric hospital. Regionalization of perinatal service. Structure of perinatal morbidity and mortality of newborns.		3	2	4		9	Preparing the topic of the session, supervising children, solving situation tasks, tests, compiling differential diagnostic tables (DDS).
2.		Healthy newborn baby. Anatomical and physiological features of the newborn. Complete examination of the newborn.		3	2	4		9	
3		Early neonatal adaptation and borderline conditions in newborns. Care of a healthy newborn in labour and the postnatal period. newborn in		3	2	4		9	

Credit 2.

1.		Breastfeeding breastfeeding. Mother and baby friendly hospitals. Ten principles of breastfeeding. Proper breastfeeding. The benefits of breastfeeding.		3	2	4		9	Preparing the topic of the session, supervising children, solving situation tasks, tests, compiling differential
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		Prevention of hypogalactia. Breastfeeding techniques.						
2.		Assessment and classification of a sick infant The IVBDV programme. Presence of severe illness or local bacterial infection, diarrhoea or feeding problems in the infant. Educating the mother on how to care for the infant and how to identify problems. How to calculate the amount of food	3	2	4		9	diagnostictables (DDS).
3.		Newborns with low birth weight "low birth weight babies". Definition. The main causes of birth. Features of low birth weight babies. Classification. Diagnosis.	3	2	4		9	
Credit 3.								
1.		Newborns with low birth weight "Low birth weight babies. Peculiarities of nursing. Principles of nursing. Kangaroo method.	3	2	4		9	Preparing the topic of the session, supervising children, solving situation tasks, tests, compiling differential diagnostic tables (DDS).
2.		Jaundice syndrome in newborn babies. Classification of jaundice according to the IBVDV. Features of bilirubin metabolism of the fetus and newborn. Classification of neonatal jaundice.	3	2	4		9	
3.		Haemolytic Haemolytic disease in newborns. Causes, classification, clinic, Diagnosis, principles of treatment. Prevention.	3	2	4		9	
Credit 4.								
1.		Regurgitation and vomiting syndrome.	3	2	4		9	Preparing the topic of the session, supervising children, solving situation
2.		Non-infectious Skin, subcutaneous tissue diseases in newborn children. Causes. Clinical manifestations. Diagnosis.	3	2	4		9	

3.		Infectious diseases of the skin, subcutaneous tissue in newborn babies. Causes. Clinical manifestations. Diagnosis.	3	2	4		9	problems, tests, compiling differential diagnostic tables (DDS).
		Intermediate assessment					12	12
		Total	36	24	48		12	120

Early childhood and adolescent pathology module

Credit 1.

1.		Differential diagnosis of chronic eating disorders in young children. BEN, hypostasis, paratrophy.	2	2			7	Preparing the topic of the lesson, supervising the children, solving the situation
		Diet therapy for protein-energy deficiency in children.			3			
2.		Rickets, rickets-like diseases. Spasmophilia. Hypervitaminosis D.	2	2			7	The programme is designed to provide a variety of differentiated tasks, tests, and differential diagnostic tables (DDS).
		Principles of treatment for rickets, spasmophilia, hypervitaminosis D.			3			
3.		Differential diagnosis of anaemic syndrome in childhood. Anaemia deficiencies. WD. B12 and folic-deficiency anaemia.	3	1			7	
		The principles of treatment for			3			
4.		Differential diagnosis of cough syndrome in children. Bronchitis, bronchiolitis.	2	1			6	
		Differential diagnosis of croup syndrome in children.						
		Principles of treatment of bronchitis, bronchiolitis. Stenotic laryngotracheitis.			3			

Credit 2.

1.		Acute pneumonia. Features of pneumonia caused by different pathogens.	3	2			8	Preparing the topic of the session, supervising children, solving situation
		Treatment of pneumonia at the present stage.			3			
2.		Allergic diseases of the ENT. Bronchial asthma. Differential diagnosis of respiratory failure syndrome.	2	1			6	problems, tests, compiling differential diagnostic tables (DDS).

		Stepwise approach to baseline therapy and emergency care in an asthma attack. A stepwise to			3			
3.		Differential diagnosis of congenital heart disease in children (ASD, ASD, OAP, Fallo's tetrad, aortic stenosis). Pulmonary artery stenosis. Coarctation of the aorta transposition of the great vessels.	2	2			7	
		Indications for surgical correction of congenital heart disease.			3			
4.		Differential diagnosis of ARL and acquired heart disease in children. Myocarditis. JIA.	2	1			6	
		Principles of treatment for diffuse connective tissue disease.			3			

Credit 3.

1.		Differential Diagnosis of diffuse connective tissue diseases in children. Dermatomyositis. Systemic sclerosis. Systemic lupus erythematosus.	2	2			7	Preparing for the topic of the session, conducting children, solving situational tasks, test tasks, compiling differential diagnostic tables (DDS).
		Circulatory insufficiency.			3			
2.		Differential diagnosis in nephrotic syndrome. Nephrotic syndrome. (Alport syndrome).	2	1			6	
					3			
3.		Differential diagnosis in urinary syndrome. Urinary tract infection. Differential diagnosis in renal failure syndrome (acute and chronic)	2	2			7	
		Principles of treatment for acute and chronic renal failure in children.			3			
4.		Differential diagnosis of lymphoproliferative syndrome in children. Lymphogranulomatosis in children. Differential diagnosis of lymphadenopathies in children.	3	1			7	

		Principles of treatment of leukaemia in children at the			3			
Credit 4								
1.		Differential diagnosis of haemorrhagic syndrome in children. Thrombocytopathies. Thrombocytopenia. Haemophilia. Haemorrhagic vasculitis.	3	2			8	Preparing the topic of the session, supervising children, solving situation tasks, tests, compiling differential diagnostic tables (DDS).
		Principles of treatment of thrombocytopenia in children.			3			
2.		Differential diagnosis of hyperglycaemia syndrome. Diabetes mellitus. Differential diagnosis of increased and decreased thyroid function syndrome. Hypothyroidism. Hyperthyroidism.	2	1			6	
		Principles of treatment of diabetes mellitus in children at the present stage.			3			
3.		Differential diagnosis of abdominal pain syndrome in childhood. Gastritis. Gastroduodenitis. Chronic cholecystitis, pancreatitis.	2	1			6	
		Principles of treatment for peptic ulcer disease of the stomach and duodenum.			3			
4.		Differential diagnosis of malabsorption syndrome in children. Celiac disease. Cystic fibrosis. Disaccharidase deficiency. Lactase, isomaltase deficiency.	2	2			7	
		Principles of			3			
		Diagnosis of malabsorption syndrome in						
		Intermediate assessment					12	
		Total	36	24	48	12	120	
Childhood infectious diseases module								
Credit 1								
1.		Introduction to Infectious diseases in children. IVBDV.	1	2	2	5	10	Lectures, case studies, tests, differential

		Differential Diagnosis of acute respiratory infections. Influenza. Parainfluenza. Adenovirus infection.							diagnostic worksheets (DDS), watching TDFE videos
2.		Illnesses occurring with angina syndrome.	1	2	2	5		10	
		Differential diagnosis of the syndrome Angina in infectious diseases in children. Diphtheria. Infectious mononucleosis. Tonsillomycosis .							
3.		True and false croup in children. IVDBV in acute		3	2	2		7	
Credit 2									
1.		Diseases presenting with rash syndrome.	1	2	2	6		11	Lectures, case studies, tests, compilation of differential diagnostic tables, watching videos
		Differential diagnosis of exanthema syndrome in infectious diseases. Measles. Rubella. Scarlet fever. Chickenpox.							
2.		Meningococcal infection.		3	2	3		8	
3.		Differential diagnosis of droplet infections in children. Whooping cough. Paracocclusis. Epidemic mumps.		3	2	3		8	
Credit 3									
1		Diseases with diarrhoea syndrome.	1	2	2	6		11	Lectures, preparation of presentations, Problem solving, watching a video of the WACI
		Differential Diagnosis of acute diarrhoeal syndrome in children. Viral diarrhoea.							
2		Hospital-acquired infections.	1	3	2	3		9	
		Invasive diarrhoea (salmonellosis, shigellosis)							
3.		IVBDV for UCI		2	2	3		7	
Credit 4									
1.		Viral hepatitis in children.	1	3	2	6		12	Lectures, case

	Differential Diagnosis of infectious diseases with jaundice syndrome in children. Viral hepatitis A and E, B and C. Jaundice in infectious diseases: Infectious mononucleosis, leptospirosis, parasitic diseases, etc.							studies, tests, presentations, essay writing
2.	Enterovirus infection.	3	2	3			8	
3.	Polio	2	1	3			9	
4.	Rubric control			1			1	Rubric control 1
	Intermediate assessment						12	
	Total	6	30	24	48	12	120	
TOTAL:		6	102	72	144	36	360	

SYLLABUS

Module: “Surgical Conditions Interventions”, Discipline: “Differential diagnosis of major pathological syndromes in surgery”

Educational program:

6B08601 “General Medicine”

Total credits

ECTS: 4

Course: 4

Discipline description

<u>Discipline description</u>		<u>The code</u>	<u>Educational program</u>
Differential diagnosis of major pathological syndromes in surgery		<i>DDPZSKIS</i>	6B10102-General Medicine
<u>Teachers</u>		<u>Structural subdivision</u>	
Responsible: Darmenov E.N. Butyugina M.N.		Department of Surgical Diseases (Clinical base of RCT&O named after Professor Makazhanov K.Zh. Mukanov St. 5, clinical base MBN№1 St. 22 Biryuzova, Clinical base of the RCCH Yerzhanov 8.	
<u>Level of study</u>	<u>View</u>	<u>Module (s)</u>	
undergraduate		—Adult Health / Surgical Conditions and Interventions	
<u>Forms of conducting classes</u>			<u>Period of study</u>
TBL, oral interview, seminar, test tasks, situational tasks, discussion, presentations			VII-VIII semester
Mandatory prerequisites:		Additional prerequisites:	

Select the main clinical signs and symptoms of surgical diseases requiring surgical care, describe and classify surgical diseases, make a clinical diagnosis and develop an algorithm for examining and treating the patient.		Able to evaluate and critically analyze evidence-based material			
ECTS	Hour	Practical classes, h	SIW	SI	
	s		T, h.	W, h.	
4	120	21	24	48	12
Discipline goal					
Create an understanding among students about surgical conditions, methods for diagnosing diseases, conduct differential diagnosis, as well as conduct preventive measures to prevent the above diseases.					
The formation of knowledge and skills in the diagnosis, differential diagnosis and principles of treatment of common diseases of the surgical profile.					

Learning outcomes

RO from the educational program (code)	RO discipline	Teaching methods	Assessment methods
<ul style="list-style-type: none"> - To analyze the laws of the structure and functioning of individual organs and systems of a person in normal and pathological conditions - To improve and develop the acquired knowledge and skills throughout the course of professional activity for continuous professional development - To provide psycho-emotional support to patients with various conditions and diseases 	<ul style="list-style-type: none"> - demonstrate knowledge and understanding in the field of study, including elements of the most advanced knowledge in this field - presents the results of the study to a wide range; - evaluates and critically analyzes evidence-based material be able to work in a team; • establish the most trusting relationships with patients, their relatives, colleagues, students; • interact with other professionals 	<p>Practical classes - oral interview, discussion, work in pairs, work with textbooks, work in small groups, consultations with a teacher on all emerging issues, role-playing games, active teaching methods.</p> <p>SIWT: solving situational problems, performing test tasks, consulting with a teacher on all emerging issues, conducting midterm control</p> <p>SIW – work with literature and electronic media, presentations, test tasks</p>	<ul style="list-style-type: none"> - written testing, oral interview - discussion, - work in pairs, work with textbooks, solving situational tasks, performance of test tasks, work in small groups, consultations with a teacher on all emerging issues, - active teaching methods <p>SIW: presentations, tests</p> <p>Milestone control: written testing</p> <p>(1- test items - 10 questions; 2 - theoretical questions)</p> <p>The final control on discipline: comprehensive exam</p>

Thematic plan

№	Section	Topic	training hours:					Tasks (can combine several topics, but not less than 1 and not more than 3 current tasks for a loan; the total number of
			Lectures	PL/ Lec	SIWT	SIW	IA	
Credit 1.								
1 D a y	Differential diagnosis and principles of therapy for gastrointestinal bleeding syndrome	Gastric ulcer and duodenal ulcer. Esophageal bleeding from varicose veins Mallory Weiss Syndrom	1, 30	2, 30	2	3		Task number 1 (solving test tasks / situational tasks on 3 topics, checking the design of completed tasks. presentations (work with electronic databases and computer training
	Differential diagnosis and principles of treatment for acute abdominal	Acute appendicitis. Perforated ulcer of the stomach and duodenum. Acute cholecystitis. Acute	1, 30	2, 30	2	3		
3 D a y	Differential diagnosis and principles of treatment for dysuric syndrome	Renal colic (obstruction, inflection and stenosis of the ureter) Acute urinary retention	1, 30	2, 30	2	3		clinical analysis of the patient / solution of clinical situational problems
4 D a y	Differential diagnosis and treatment principles in acute vascular	Ileofemoral phlebothrombosis and ascending thrombophlebitis.	1, 30	2, 30	2	3		development of a diagnostic search algorithm
5 D a y	Differential diagnosis and principles of therapy for	Purulent-inflammatory diseases of the soft tissues.	1, 30	2, 30	2	3		
1 D a y	Differential diagnosis and principles of treatment for	Acute appendicitis. Perforated ulcer of the stomach	1, 30	2, 30	2	3		

2	Differential diagnosis and principles of therapy for stool	Congenital intestinal obstruction.	1, 30	2, 30	2	3			
3	Differential diagnosis and principles of therapy for	Atresia of the esophagus. Diaphragmatic hernia.	1, 30	2, 30	2	3			
4	Differential diagnosis and principles of therapy for	Pyloric stenosis.	1, 30	2, 30	2	3			
5	Differential diagnosis and principles of therapy for surgical infection.	Purulent-inflammatory diseases of the soft tissues. Destructive pneumonia. Osteomyelitis in children	1, 30	2, 30	2	3			

SYLLABUS

Module: “Surgical Conditions Interventions”, Discipline: “Ear, Nose and Throat. Differential Diagnosis in presence of Basic Pathological Syndromes in Otolaryngology”

Educational program:

6B08601 “General Medicine”

Total credits

ECTS: 3

Course: 4

Description of discipline

Name of discipline	Code	Educational program
Ear, Nose and Throat. Differential Diagnosis in presence of Basic Pathological Syndromes in Otolaryngology	OOftiOt4309	6B10102 General Medicine
Teachers	Structural subdivision	
Teachers:6	Department of surgical diseases	
Level of training	Type	Module(s)
Bachelor	BD UC	Surgical conditions and interventions. Differential diagnosis in basic pathological syndromes in surgery. Ear, Nose and Throat. Differential Diagnosis in presence of Basic Pathological Syndromes in Otolaryngology.

Forms of learning activity			Training period		
Practical classes, supervised student work (SSW), Unsupervised student work (USW)					
Compulsory prerequisites :		Additional prerequisites:			
Basic competences (BC)1, BC 2, BC 3		Professional competences (PC)1, PC2,PC 3			
ECTS	Hours	Practical training	SWIT	SIW	IA
3	90	27	18	36	9
The purpose of the discipline					
Comprehension of interrelation between affection of ENT organs and general diseases of the organism. Developments of knowledge and skills on fundamentals of diagnostics of ENT organs, general principles of diagnostics, differential diagnosis and treatment of ENT pathologies.					

Learning outcomes

LO from the educational program (code)	LO of discipline	Methods of training	Assessment methods
LO8, LO 9, LO 10	PC 1 PC 2 PC 3 PC 4	Practical classes, SSW	Current grade: integrated grade for sections 1,2,3- practical classes, SSW (clinical skills, student- patient work, filling in follow-up sheets), USW (presentations, research papers, case studies) Summative grade: final grade + test

Thematic plan

№	Section	Theme	Number of training hours :					Tasks (it may combine some themes but not less than 1 and not more than 3 current tasks per credit; total number of tasks on discipline, including RK, not less than 5)
			Lectures PL/ Lec	SIWT	SIW	IA	Total hours	
Credit 1. «Propaedeutic of ENT organs. Differential diagnosis in diseases of nose and paranasal sinuses.»								
1.		Clinical anatomy and physiology of ENT organs. Methodology	4	2	5		11	

		and technique of endoscopic examination of ENT organs. Methods of examination of auditory and vestibular functions. Making auditory and vestibular passport.						
2.		Differential diagnosis in presence of pain syndrome of ENW organs.	4	2	5		11	
3.		Differential diagnosis in presence of labored nose breathing and rhinophonia.	4	2	5		12	
Credit 2. « Differential diagnosis in pathologies of pharynx and larynx»								
4.		Differential diagnosis in presence of exudate in oropharynx	4	2	5		11	
5.		Differential diagnosis in presence of dysphonia syndrome	4	2	5		11	
Credit 3. « Differential diagnosis in diseases of ear »								
6.		Differential diagnosis of discharge from the external auditory canal and perforation of eardrum	4	3	5		12	
7.		Differential diagnosis of deafness and hearing loss.	3	4	6		13	
Total:			27	18	36	9	90	

SYLLABUS

Module: “Surgical Conditions Interventions”, Discipline: “Ophthalmology. Differential diagnosis and principles therapy for visual diseases”

Educational program:

6B08601 “General Medicine”

Total credits

ECTS: 3

Course: 4

Description of the discipline

Name of the discipline	Code	Educational program
Ophthalmology. Differential diagnosis and principles therapy for visual diseases		"6B 10102-General medicine"

Teachers			Structural unit		
Teachers: 6			Department of Ophthalmology and Otorhinolaryngology		
Level of study	Type		Module(s)		
Bachelor	DB UC		Surgical Conditions and Interventions: Differential diagnosis of major pathological syndromes in surgery. Ears, nose and throat. Differential diagnosis of major pathological syndromes in otolaryngology. Ophthalmology. Differential diagnosis in diseases of the visual organs.		
Forms of conducting classes			Training period		
PZ, SROP, SRS					
Mandatory prerequisites:			Additional prerequisites:		
BK1 BK2 BC 3			BK3 PC 1 PC 2 PC 3		
ECTS	Hours	Practical training	SWIT	SIW	IA
3	90	27	18	36	9
The purpose of the discipline					
is to form students ' understanding of the relationship of eye lesions with general diseases of the body; knowledge and skills on the basics of examination of the visual organ; general principles of diagnosis, differential diagnosis diagnosis and treatment of ophthalmopathology.					

Learning outcomes

LO from the educational program (code)	LO of discipline	Methods of training	Assessment methods
RO 8, RO 9, RO 10	BC1 BC 2 BC 3 PC 1 PC 2	PZ, SRSP	Formative (current) assessment (FO): integrated assessment for sections 1,2,3-PZ (written testing, oral survey, CBL), SRSP (development of clinical skills, patient supervision X-ray localization of intraocular foreign bodies), SRS (presentations, abstracts, preparation of test tasks based on a clinical case developed by the student)

			Summative assessment: FO +exam
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Thematic plan

№	Section	Topic	Number of study hours:						Tasks (can combine several topics, but not less than 1 and not more than 3 current tasks per credit; the total number of tasks in the discipline, including RC, is not less than 5)
			Lectures	PL/ Lec	SIWT	SIW	IA	Total hours	
Credit 1. " Propaedeutics in ophthalmology.									
Differential diagnosis of red eye syndrome without visual impairment"									
1.		Anatomy of the visual organ. Methods of visual organ research Visual functions and age dynamics of their development		4	2			6	
2.		Physiological optics, refraction, accommodation and their age-related features, features of correction of refractive errors. Clinic, diagnosis, and treatment of pathology of the eyelids, conjunctiva, and lacrimal organs. Differential diagnosis of red eye syndrome without visual impairment		4	2	6		12	
Credit 2. "Red eye.									
Differential diagnosis of white eye syndrome with slow visual decline"									

3.		Clinic, diagnosis, treatment of keratitis Clinic, diagnosis, treatment of uveitis Differential diagnosis in red eye syndrome with reduced visual function		4 CBL	3	6		13	
4.		Clinic, diagnosis, treatment of Cataract glaucoma, treatment tactics Differential diagnosis in white eye syndrome with slow visual decline		4 CBL	2	6		12	
Credit 3. "Urgent conditions in ophthalmology"									
5.		Clinic, diagnosis, treatment of retinal and optic nerve diseases Differential diagnosis in white eye syndrome with rapid visual decline		4	2	6		12	
6.		Clinic, diagnosis, and treatment of oculomotor and orbital pathologies		4	3	6		13	
7.		Clinic, diagnosis, treatment of eye injuries		3	4	6		13	
Total:				27	18	36	9	90	

SYLLABUS

Module: "Differential diagnosis and principles of therapy in major diseases in psychiatry and neurology", Discipline: "Neurology", "Mental health and addiction"

Educational program:

6B08601 "General Medicine"

Total credits

ECTS: 5

Course: 4

Description of discipline

Name of discipline	Code	Educational program
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Differential diagnosis and principles of therapy in major diseases in psychiatry and neurology			General medicine		
Teachers		Structural subdivision			
Responsible person: Stupina T.A., Semenikhina P.S.		Neurology, neurosurgery, psychiatry and rehabilitation department			
Teachers: Stupina T.A. Semenikhina P.S. Smagulov A.M. Kim E.D. Abysheva G.A. Tuleuov R.O. Belyaev R.A.					
Level of training	Type	Module(s)			
Bachelor	BD OC				
Forms of learning activity				Training period	
Lectures, PT, IWSUGT, IWS					
Compulsory prerequisites :		Additional prerequisites:			
the student should have general knowledge of the anatomy, histology and physiology of the NS, have an idea of the main pathological processes of the NS, their pathophysiology and pathology; know the functioning of higher nervous activity. Own the skills of interviewing and examining patients, propaedeutics of neurological and mental illnesses. To possess the skills of clinical examination of a patient with diseases of the internal organs.		The student is able to correctly determine the psychopathological, neurological syndromes, to highlight the leader, to designate the circle of differential diagnosis. Defines diagnostic criteria, formulates and justifies the clinical diagnosis of the most common mental disorders and neurological diseases according to ICD 10. Demonstrates knowledge of the regulatory documentation. He studies independently and improves his knowledge, skills throughout the entire period of study.			
ECTS	Hours	Practical training	SWIT	SIW	IA
5	150	45	30	60	15
Discipline point					
Formation of knowledge and skills on the General principles of topical, clinical diagnosis and differential diagnosis, as well as treatment of major neurological and mental diseases.					

Learning outcomes

LO from the educational program (code)	LO of discipline	Methods of training	Assessment methods
<p>PO 11: To provide psycho-emotional support to patients and their relatives in various conditions and diseases.</p>	<p>Demonstrates knowledge of the physiology and anatomy of the nervous system, the features of its functioning, as well as the pathogenesis of neurological disorders in diseases of the nervous system;</p> <p>Communicates effectively with patients, their families and the public, depending on the circumstances, taking into account socio-economic and cultural traditions, provides information regarding diseases of the nervous system to patients and their relatives;</p> <p>Promotes a healthy lifestyle, provides information on methods for the prevention of neurological diseases to patients and their relatives;</p> <p>Detects the symptoms and syndromes of the nervous system in a patient;</p> <p>Establishes a level of lesion in the brain and / or spinal cord and / or peripheral nervous system, i.e. makes topical diagnosis;</p> <p>Can perform a neurological examination of patients;</p> <p>Demonstrates a commitment to ethical principles regarding patient care, confidentiality, informed consent and business practices, including compliance with relevant laws, policies and regulations;</p>	<p>PE: Discussion; Lecture; Clinical analysis; Solving clinical tasks; Active learning methods (CBL, work in small groups); Mastering skills in CPN;</p> <p>IWSUGT: Supervision of patients, work with the student's medical history; Mastering practical skills;</p> <p>IWS: Work with literature in the library, electronic databases; Preparation of reports, presentation in front of fellow students; Clinical cases preparation; Practicing skills in CPN; Performing tasks on MOODLE platform;</p> <p>Participation in scientific practical conferences.</p>	<p>Current control: - oral survey; - written assignments; - solving of clinical tasks; - written tests; - performing MOODLE platform tasks, - assessment of practical skills; - performing tasks in Platonus, google.forms, google.classrom; - online evaluation in webex/zoom roms;</p>

	<p>Develops the ability to self-esteem one's own knowledge, skills and limitations for seeking help from colleagues, sets goals for further training and self-improvement, bridges the gaps in knowledge, skills and approaches through training;</p>		
	<p>Provide psycho-emotional support to patients with various conditions and diseases. He has special terminology used to conduct research and treatment of psychiatric patients and the preparation of medical documentation.</p> <p>Demonstrates knowledge on the organization of psychiatric services, its types and characteristics.</p> <p>Demonstrates knowledge of the pathogenetic basis and mechanisms of the emergence of mental pathology</p>		

Thematic plan

№	Section	Theme	Number of training hours:					Tasks (it may combine some themes but not less than 1 and not more than 3 current tasks per credit; total number of tasks on discipline, including RK, not less than 5)
			Lectures	PL/ Lec	SIWT	SIW	IA	
NEUROLOGY								
Credit 1								

1.	Introduction to clinical neurology. Sensory nervous system: somatosensory system, I, II, VII, VIII, IX cranial nerves. The methodology for the examination of somatosensory system, smell, vision, hearing and taste functions. Syndromes and symptoms of damage to the sensory nervous system. Topical diagnosis of sensory impairment. Differential diagnosis for syndromes of the lesions of the sensory nervous system.	5	3	6	3	30	Task 1 - oral survey; - written assignments; - solution of clinical problems; - solution of test tasks; - solving tasks on the MOODLE platform - conducting an assignment on the webex, platonus, zoom platforms (demonstration of neurological examination, oral questioning, written assignments) - examination of the neurological status at the patient's bedside (1 time per cycle for the period of distance learning)
2.	Peripheral nervous system. Methods of researching the functions of the peripheral nervous system. Symptoms and syndromes of damage to the peripheral nervous system: mononeuritis, polyneuritis, plexitis, radiculopathy. Differential diagnosis for syndromes of damage to the peripheral nervous system.	4	3	6			
Credit 2							
	Pyramidal system: corticospinal and corticonuclear pathways. Methodology for the examination of motor functions. Symptoms and syndromes of the lesions of the pyramidal system: peripheral and central paralysis, alternating syndromes. Topical diagnosis of motor disorders. Differential diagnosis for pyramidal system lesions.	3	2	4	3	30	Task 2 - oral survey; - written assignments; - solution of clinical problems; - solution of test tasks;

3.	<p>Extrapyramidal system. Cerebellum. The methodology for examination of the extrapyramidal system and cerebellum. Symptoms and syndromes of the lesion of the extrapyramidal system (hyperkinetic and akinetic-rigid syndromes), cerebellum (cerebellar ataxia). Topical diagnosis of lesions of the extrapyramidal system and cerebellum. Differential diagnosis for extrapyramidal system and cerebellum syndromes.</p>		3	2	4			<p>- solving tasks on the MOODLE platform</p> <p>- conducting an assignment on the webex, platonus, zoom platforms (demonstration of neurological examination, oral questioning, written assignments)</p> <p>- examination of the neurological status at the patient's bedside (1 time per cycle for the period of distance learning)</p>
4.	<p>Higher cortical functions. Examination of higher cortical functions, determination of qualitative and quantitative disturbances of consciousness. The autonomic nervous system, segmental and suprasegmental apparatus of the autonomic NS. Symptoms and syndromes of damage to the cerebral cortex, autonomic NS. General brain damage syndrome. Topical diagnosis of lesions of the cerebral cortex. Differential diagnosis for syndromes of damage to the cerebral cortex and impaired consciousness</p>		3	2	4			
Credit 3								

		<p>Meninges of the brain and cerebrospinal fluid. Symptoms and syndromes of the lesion: meningeal syndrome, hypertension-hydrocephalic syndrome, cerebrospinal fluid syndrome.</p> <p>Lumbar puncture: methodology, indications and contraindications. Differential diagnosis for the meningeal syndromes.</p>		4, 5	3	6	1, 5	15	<p>Task 3</p> <ul style="list-style-type: none"> - oral survey; - written assignments; - solution of clinical problems; - solution of test tasks; - solving tasks on the MOODLE platform - conducting an assignment on the webex, platonus, zoom platforms (demonstration of neurological examination, oral questioning, written assignments) - examination of the neurological status at the patient's bedside (1 time per cycle for the period of distance learning)
Total for “Neurology”				22 ,5	15	30	7, 5	75	
MENTAL HEALTH									
Credit 4.									
7.	General psychopathology	<p>Organization of psychiatric care. Features of the study and methods for diagnosing mental illness. The structure of psychiatric care. Types of expertise. Classification of mental disorders.</p>	1	2	2	4			<p>Task 4</p> <ul style="list-style-type: none"> - oral survey; - written assignments; - solution of clinical problems; - solution of test tasks;
8.		<p>Clinical characteristics of disorders of consciousness. Clinical characteristics of perceptual disorders.</p>	1	2	2	4			

9.		Clinical characteristics of thinking disorders. Clinical characteristics of memory and attention disorders	1	2	2	4			- performance of tasks on the MOODLE platform
Credit 5.									
9.	General psychopathology	Clinical characteristics of thinking disorders. Clinical characteristics of memory and attention disorders		1	2	4			Task 5 - oral survey; - written assignments; - solution of clinical problems; - solution of test tasks; - performance of tasks on the MOODLE platform,
10.		Clinical characteristics of intellectual disorders. Clinical characteristics of emotional and motor-volitional disorders.	1	3	2	4			
11.		The main psychopathological syndromes. Prevention of mental disorders.	2	2	2	4			
Total for "Mental Health"				25,5	15	30		75	
Midterm examination							15		Written exam
Total:				45	30	60	15	150	

SYLLABUS

Discipline: "Simulation course on emergency conditions"

Educational program:

B086 "General Medicine"

Total credits

ECTS: 3

Course: 5

Description of discipline

Name of discipline		Code	Education program
«Simulation course on emergency conditions»		B086	General Medicine
Trainers		Structural subdivision	
Responsible person: Isataeva J.S.		CSET	
Trainers			
Aubakirova D. N.		CSET	
Evloeva R. M.		CSET	

Eshetova A. A.		CSET			
Idrisova G. K.		CSET			
Mukhametzhanova R. A.		CSET			
Nurekesheva R. J.		CSET			
Saparova A. A.		CSET			
Timakhovich M. V.		CSET			
Rahimberlina Z.I.		CSET			
Shmakov A. S.		CSET			
<i>Bachelor</i>		12			
Level of training		Type		Module (s)	
Bachelor		PD UC			
Forms of learning activity				Training period	
Practice classes, IWSUGT, IWS				9-10 semesters	
Compulsory prerequisites:			Additional prerequisites:		
<ul style="list-style-type: none"> Evidence-based medicine (knowledge of the basics of evidence-based medicine) Fundamentals of pharmacology (indications and contraindications of vital groups of drugs, dosage, pharmacodynamics and pharmacokinetics) Fundamentals of internal diseases (to be able to perform auscultation of the heart and lungs, diagnosis and differential diagnosis of internal diseases) Fundamentals of surgery (diagnosis and differential diagnosis of major surgical diseases) Basics of Pediatrics (to be able to perform auscultation of the heart and lungs in children, diagnosis and differential diagnosis of childhood diseases) Basics of obstetrics and gynecology (to be able to perform an examination in mirrors, taking a smear, to know the biomechanism of childbirth) Therapy of critical conditions (diagnosis and emergency care in critical conditions) Basic medical manipulations (be able to perform all types of injections) 			<ul style="list-style-type: none"> Clinical electrocardiography (to be able to remove and decode the ECG) Neurology (know and be able to perform lumbar puncture technique) Basics of surgical (know and perform the technique of desmurgy, splints, sutures, PHO, bladder catheterization) Fundamentals of ultrasound and functional diagnostics (know the principles of ultrasound, CT, MRI) 		
ECTS	Hours	Practical training, hours	IWSUGT, hours	IWS, hours	MA, hours

	90	27	18	39	6
Discipline point					
upon completion of this discipline students should be able to independently perform basic medical manipulations and provide medical care for critical conditions under control					

Learning outcomes

LO from the educational program (code)	LO of discipline	Methods of training	Assessment methods
B086	Simulation course on emergency conditions	Active methods of training: work in small groups, role-playing games, standardized patient.	Check list, Formative evaluation, Group clinical examination

Thematic plan

№	Section	Theme	Number of training hours:						Tasks
			Lectures	PL/ Lec	SIWT	SIW	IA	Total hours	
Credit 1. «Emergency medical assistance»									
1.		The provision of emergency treatment for obstruction of the upper respiratory tract	-	3	1.5			4.5	Preparation of a clinical task to perform in simulation training
2.		Urgent care with a foreign body in the upper respiratory tract (especially in children). Reception of Heimlich	-			6		6	
3.		Comas.	-	2.5	2			4.5	
4.		Prehospital emergency care for hypoglycemic coma	-			6		6	
5.		Advanced cardiopulmonary resuscitation	-	2.5	2			4.5	
Credit 2. «Prehospital emergency care»									
6.		ACS.	-	2.5	2			4.5	Preparation of a

8.		Arrhythmias.		3	1.5			4.5	clinical task to perform in simulation training
9..		Diagnostics and emergency care at the prehospital stage with paroxysmal tachycardia	-			6		6	
10.		Diagnostics and emergency care at the prehospital stage for bradyarrhythmia	-			6		6	
11.		Hypertensive crisis. (Standardized patient)	-	3	1.5			4.5	
12.		prehospital patient counseling skills				6		6	
Credit 3. «Urgent care»									
13.		Wounds. PST.	-	2.5	2	1		4.5	Preparation of a clinical task to perform in simulation training
14.		Fractures of the extremities.		3	1.5			4.5	
15.		Hemorrhagic shock.	-			6		6	
16.		Out-of-hospital births.	-	2.5	2	1		4.5	
17.		Anaphylactic shock.	-	2.5	2	1		4.5	
		Final control					6	6	
Total:				27	18	39	6	90	

SYLLABUS

Discipline: “Mental health and neurology in the general physician’s practice”

Educational program:

6B10102 “General Medicine”

Total credits

ECTS: 10

Course: 5

Description of discipline

Name of discipline		Code	Educational program
Mental health and neurology in the general physician’s practice			General Medicine
Teachers		Structural subdivision	
Responsible person: Semenikhina P.S., Stupina T.A.		Neurology, psychiatry and rehabilitation department	

Teaching staff: annexure 3					
Level of training		Type		Module(s)	
Bachelor		PD OC		-	
Forms of learning activity				Training period	
Lectures, PT, IWSUGT, IWS					
Compulsory prerequisites :			Additional prerequisites:		
<p>the student should have general knowledge of the anatomy, histology and physiology of the NS, have an idea of the main pathological processes of the NS, their pathophysiology and pathology</p> <p>The student knows the structure and physiology of the nervous system, the functioning of higher nervous activity. He has the skills to interview and examine patients, propaedeutics of neurological and mental diseases. He owns the skills of clinical examination of a patient with diseases of the internal organs.</p>			<p>The student knows how to correctly determine psychopathological syndromes, to identify the leader, to designate the circle of differential diagnosis. Defines diagnostic criteria, formulates and substantiates the clinical diagnosis of the most common mental disorders according to ICD 10. Demonstrates knowledge of the regulatory documentation of the Republic of Kazakhstan. He studies independently and improves his knowledge, skills throughout the entire period of study.</p>		
ECTS	Hours	Practical training	SWIT	SIW	IA
10	300	90	60	120	30
Discipline point					
<p>To form knowledge and skills according to the general principles of diagnosis and treatment of major neurological diseases, emergency care in case of urgent conditions, as well as prevention and rehabilitation issues.</p> <p>To form knowledge and skills according to the general principles of diagnosing basic mental illnesses, to apply them in general medical practice.</p>					

Learning outcomes

LO from the educational program (code)	LO of discipline	Methods of training	Assessment methods
<p>PO 8</p> <p>To consult patients (to take their anamnesis, conduct an examination, evaluate clinical analysis, conduct differential diagnosis, draw up a</p>	<p>Demonstrates knowledge of the physiology and anatomy of the nervous system, the features of its functions, as well as the pathogenesis of disorders in diseases of the nervous system;</p> <p>Identifies the symptoms and syndromes of damage to the nervous system in the patient, collects an anamnesis, knows the</p>	<p>The training is conducted on credit technology and with the allocation of the total number of loans for the discipline and the final form of control in the form of an exam</p> <p>PT: lectures, practical</p>	<p>Grades are given according to the point-letter-rating system on the basis of the "Model Rules for Conducting Current</p>

<p>treatment plan)</p>	<p>technique of conducting a neurological examination;</p> <p>Carries out interpretation, diagnostic assessment of patients' data of morphological and biochemical studies of blood and cerebrospinal fluid; ophthalmologic research (optic fundus and visual fields), otoneurological research; X-ray methods for the study of the skull and spine; cerebral angiography; computed and magnetic resonance imaging of the brain and spinal cord; electrophysiological research methods (muscle electroexcitability, electromyography, electroencephalography); ultrasound diagnostics (echoencephalography, dopplerographic studies of the main arteries in the neck).</p> <p>Compiles the information obtained from the patient's medical history and neurological examination, establishes the focus of lesion in the brain and / or spinal cord, and / or peripheral nervous system, i.e. formulates topical diagnosis, makes a clinical diagnosis;</p> <p>Formulates its own conclusions on the principles of treatment, psychotherapy and prevention of neurological disorders, the formation of a healthy lifestyle;</p> <p>Draws up a treatment plan and rehabilitation measures based on the diagnosis and treatment protocols of the Ministry of Health of the Republic of Kazakhstan in accordance with the clinical diagnosis;</p>	<p>exercises, work in small groups, problem-orientation lectures, scenario-based training, training in the center of practical skills, standardized patient, practical skills training in CPS;</p> <p>IWSUGT: supervision of patients, writing a student medical history, participation in rounds, clinical trials, consultations, medical conferences, study of clinical protocols for diagnosis and treatment of the Ministry of Health of the Republic of Kazakhstan;</p> <p>IWS: work with literature, electronic databases, consolidation of practical skills in the CPS, assignments on the MOODLE, Microsoft Teams, Platonus Webex platforms.</p>	<p>Performance Control, Interim and Final State Certification of Students in Higher Education Institutions", approved by order of the Ministry of Education and Science of the Republic of Kazakhstan dated March 18, 2008 No. 125.</p> <p>Oral survey, written testing, clinical examination at the patient's bedside, assignments in the Microsoft Teams, Platonus Webex, reporting and discussing supervised patients, creation and presentation of a report to fellow students.</p>
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<p>PO 9</p> <p>Provide emergency medical care, including first aid and resuscitation</p>	<p>Provides assistance to patients, which contributes to the acquisition of relevant experience in working with members of the public and in teams with other categories of doctors (interprofessional communication).</p> <p>Diagnoses the main neurological symptom complexes and life-threatening conditions;</p> <p>Provides first aid for urgent conditions in neurology (stroke, TIA, radiculopathy with severe pain, epilepsy and convulsive syndrome) and other neurological disorders, including the simplest resuscitation measures, including CPR;</p>		
<p>PO 10</p> <p>Carry out preventive and rehabilitation measures among the population</p>	<p>Carries out activities to promote health and prevent diseases.</p> <p>Demonstrates clinical responsibility: promotes a healthy lifestyle, provides information on methods of promoting health and ways of primary and secondary prevention of neurological diseases to patients and their relatives;</p>		
<p>PO 11</p> <p>Provide psycho-emotional support to patients and their relatives in various conditions and with various diseases.</p>	<p>Forms interpersonal and professional experience of interaction with people around, which is necessary for an individual to successfully function in the neurological field and society.</p> <p>Builds the most trusting relationships with the patient, his relatives, colleagues and other medical professionals.</p>		

	<p>Assesses and explains the condition of the patient, gives recommendations for the examination and treatment of patients, including their relatives, provides a prognosis of the disease.</p> <p>Knowledge of special terminology that is used to conduct research and treatment of psychiatric patients and the preparation of medical documentation.</p> <p>The student demonstrates knowledge on the organization of the psychiatric service, its types and characteristics.</p> <p>The student demonstrates knowledge of the pathogenetic foundations and mechanisms of the occurrence of mental pathology.</p>		
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Thematic plan

№	Section	Theme	Number of training hours :						Total hours	Tasks (it may combine some themes but not less than 1 and not more than 3 current tasks per credit; total number of tasks on discipline, including RK, not less than 5)
			Lectures	PL/ Lec	SIWT	SIW	IA			
NEUROLOGY										
Credit 1.										
1.		Inflammatory diseases of the central nervous system. Meningitis: bacterial, viral and mixed. Tuberculosis.		2	1	6	3	30	Task 1 Oral survey, written testing, mini-clinical exam in front of the patient's bed, assignments in the Platonus, Webex, Microsoft Teams,, reporting and	
2		Inflammatory diseases of the central nervous system. Tick-borne viral encephalitis. Economo epidemic encephalitis. Poliomyelitis. Myelitis.		3	2	6				

		NeuroAIDS								discussion about patients in the department under students' supervision, practicing clinical skills in CPS.
3		Lumbar puncture: methodology, indications and contraindications.		4	3					
Credit 2.										
4		Episodic and paroxysmal disorders of consciousness. Epilepsy. Classification. The clinical picture depending on the type of seizure.		5	3	6	3	30		Task 2 Oral survey, assignments in the Platonus, Webex, Microsoft Teams, reporting and discussion about patients in the department under students' supervision, creating and presenting a report to fellow students.
5		Status epilepticus. Migraine. Syncopal conditions and other paroxysmal disorders.		4	3	6				
Credit 3.										
6		Demyelinating diseases of the nervous system. Multiple sclerosis. Acute disseminated encephalomyelitis. Leukoencephalitis. Degenerative cerebral atrophy.		3	2	4	3	30		Task 3 Oral survey, assignments in the Platonus, Webex, Microsoft Teams,, reporting and discussion about patients in the department under students' supervision, creating and presenting a report to fellow students.
7		Diseases of the peripheral nervous system. Lesions of individual nerves, plexuses (mononeuropathies, plexitis, polyneuritis)		3	2	4				
8		Diseases of the peripheral nervous system. Radiculopathies, dosopathies.		3	2	4				
Credit 4.										
9		Cerebrovascular diseases. Classification. Risk factors. Transient ischemic attacks. Ischemia stroke. Clinical picture. Diagnostics, differential diagnostics, treatment.		3	2	4	3	30		Task 4 Oral survey in Webex or Microsoft Teams, written testing, PBL, scenario based learning. Solving

									clinical cases in Platonus, google.classroom, google.forms.
10		Cerebrovascular diseases. Intracerebral hemorrhage. Subarachnoid hemorrhage. Subarachnoid hemorrhage. Clinical picture, diagnosis, differential diagnosis, treatment.		3	2	4			
11		Cerebrovascular diseases. Chronic cerebral ischemia. Fundamentals of rehabilitation of neurological patients. Diagnostics, differential diagnostics, treatment.		3	2	4			
Credit 5									
12.		Traumatic injuries of the central and peripheral nervous system. Tumors of the brain and spinal cord.		4	3	6	3	30	Task 5 Oral survey in Webex, Microsoft Teams, mini-clinical exam in front of the patient's bed (via video-conferencing for the duration of distance learning), reporting and discussion about clinical cases.
13.		Pre- and perinatal disorders of the nervous system. Cerebral palsy. Congenital malformations, deformations and chromosomal abnormalities.		5	3	6			
Total for Neurology section				45	30	60	15	150	
MENTAL HEALTH AND NARCOLOGY									
Credit 6.									
15		Classification of mental disorders. Psychopharmacology. Main psychopathological syndromes, nosological affiliation		5	3	6	1	30	Task 6 - oral questioning; - written assignments; - solving clinical problems; - solving test tasks; - completing tasks on the MOODLE, Platon platform, - supervision of
16		Exogenous-organic disorders. Classification. Clinical characteristics. Goals and tactics of treatment (including emergency conditions). Prevention and rehabilitation. Mental retardation. Dementia.		6	1	6	2		

									patients
Credit 7.									
17		Schizophrenia and delusional disorders. Classification. Clinical characteristics. Goals and tactics of treatment (including emergency conditions). Prevention and rehabilitation		4	4	6	1	30	Task 7 - oral questioning; - written assignments; - solving clinical problems; - solving test tasks; - completing tasks on the MOODLE, Platon platform, - supervision of patients
18		Affective disorders. Classification. Clinical characteristics. Goals and tactics of treatment (including emergency conditions). Prevention and rehabilitation		4	4	6	1		
Credit 8.									
19		Reactions to stress and adaptation disorders. Mental disorders in emergency situations. Clinical characteristics. Goals and tactics of treatment (including emergency conditions). Prevention and rehabilitation		4	3	6	2	30	Task 8 - oral questioning; - written assignments; - solving clinical problems; - solving test tasks; - completing tasks on the MOODLE, Platon platform, - supervision of patients
20		Mental disorders specific to childhood (autism, ADHD, childhood type of schizophrenia). Clinical characteristics. Goals and tactics of treatment (including emergency conditions). Prevention and rehabilitation.		4	3	6	2		
Credit 9.									
21		Features of research and methods of diagnosis of narcological diseases. The structure of narcological care. Types of examinations. Classification of psychoactive substances. Big drug addiction syndrome.		4	2	4	1	30	Task 9 - oral questioning; - written assignments; - solving clinical problems; - solving test tasks; - completing tasks on the MOODLE, Platon platform,
22		Mental and behavioral disorders as a result of alcohol consumption. Clinical characteristics. Goals and tactics of treatment (including		3	2	4	1		

	emergency conditions). Prevention and rehabilitation. Alcoholic psychoses. Clinical characteristics. Goals and tactics of treatment (including emergency conditions). Prevention and rehabilitation.								- supervision of patients
23	Mental and behavioral disorders as a result of opioid use. Clinical characteristics. Goals and tactics of treatment (including emergency conditions). Prevention and rehabilitation. Mental and behavioral disorders resulting from the use of cannabinoids Clinical characteristics. Goals and tactics of treatment (including emergency conditions). Prevention and rehabilitation.		3	2	4	1			
Credit 10.									
24	Mental and behavioral disorders as a result of the use of psychostimulants. Clinical characteristics. Goals and tactics of treatment (including emergency conditions). Prevention and rehabilitation. Mental and behavioral disorders as a result of the use of sedatives and hypnotics. Clinical characteristics. Goals and tactics of treatment (including emergency conditions). Prevention and rehabilitation.		4	3	6	2	30	Task 10	<ul style="list-style-type: none"> - oral questioning; - written assignments; - solving clinical problems; - solving test tasks; - completing tasks on the MOODLE, Platon platform, - supervision of patients
25	Mental and behavioral disorders as a result of nicotine use. Clinical characteristics. Goals and tactics of treatment (including emergency conditions). Prevention and rehabilitation. Mental and behavioral disorders as a result of the use of volatile, aromatic substances. Clinical characteristics. Goals and tactics of treatment (including		4	3	6	2			

	emergency conditions). Prevention and rehabilitation.						
MIDTERM EXAMINATION						15	Written exam
Total in psychiatry:				45	30	60	15 15 0
Total:				90	60	12 0	30 30 0

SYLLABUS

Discipline: “Skin manifestations of somatic pathology”

Educational program:

6B10102 “General Medicine”

Total credits

ECTS: 4

Course: 5

Name of the discipline		The code		Educational program		
Skin manifestations of somatic pathology		KPSP 113242		6B10102-General medicine		
Teachers		Structural subdivision				
Responsible: Dedova O.Yu.		Department of Internal Medicine, Regional Allergy Center, he is Tereshkova 29				
Teachers: Dedova O.Yu., Tashkenbayeva V.B.						
Level of study		Kind		Module(s)		
Bachelor's degree		PD KV		-		
Forms of conducting classes				Training period		
Seminar, oral survey, discussion, TBL, CBL, presentations on the topic						
Mandatory prerequisites:			Additional prerequisites:			
To know about the structure and functions of the immune system at the organ, cellular and molecular levels.			Know the basics of evidence-based medicine; Know development and outcome of pathological processes; features and nature of dynamic changes in physiological functions in various pathological conditions of the body.			
ECTS	Times	Practical lessons, h.		SYROP, ch.	SRO, ch.	PA, ch.
4	120	36		24	48	12
Purpose of the discipline						
To train students in clinical, laboratory and instrumental diagnostics of skin manifestations in various diseases with a differential diagnosis in the aspect by specialists of different profiles.						
Brief summary of the discipline (up to 300 characters)						
The discipline studies the most common manifestations of various somatic diseases on the skin and its appendages.						
Academic Integrity Policy						
Academic integrity is the basis of the organization of the educational process and is ensured by clear, fair and objective standards defined by the Academic Policy of the University and this syllabus. The promotion and protection of academic integrity is the result of a collaborative effort between students						

and faculty. Within the discipline, all written works, regardless of their nature, content and length, will be checked for originality through automated plagiarism check systems. In case of detection of plagiarism, violation of the rules adopted by the university for citing other people's and own works, as well as other violations of academic integrity provided for by the Code of Academic Integrity, appropriate measures will be taken.

Discipline policy (up to 300 characters)

In the discipline "Skin manifestations of somatic pathology", in total - 4 credits / 120 hours; of which practical training -36 hours; SROP - 24 hours; SRO -48 hours; Intermediate certification -12. During the period of discipline training, it is necessary to complete 4 tasks; each task consists of 3-4 questions; All questions of the task are provided according to thematic plans. For each credit inserted - 1 score. Final control - a written exam in the form of solving clinical problems on the platform <http://session.kgmu.kz> The student is obliged to regularly attend seminars in accordance with the schedule and systematically prepare for them (if a student misses classes for a good reason (illness) - the topic being studied must be worked out in a timely manner, in case of missing for an unexcused reason (lack of supporting documents) - the rating is reduced in the moment of assessing the current control, in case of unworked missed classes - the student is not allowed to take the exam). The student must complete oral and written assignments in full, within the time period set by the teacher in accordance with the methodological recommendations and requirements.

Learning Outcomes

RO from the educational program (code)	RO disciplines	Teaching methods	Assessment Methods
ON 1 ON 4 ON 7	<p>- to interpret the results of laboratory, instrumental diagnostic methods in patients with skin allergy manifestations</p> <p>-classify and differentiate skin manifestations in allergic diseases, -to use in practice knowledge in substantiating the diagnosis, prescribing therapeutic and preventive measures using the standards existing in medical practice</p> <p>-present the basic principles of teamwork</p>	<p><i>Practical lesson:</i></p> <ul style="list-style-type: none"> - Seminar; - Discussion; - Work in small groups; - Work with protocols for the diagnosis and treatment of RK; - Consultations with the teacher on all emerging issues; <p><i>SROP offline mode:</i></p> <ul style="list-style-type: none"> - Solution of situational problems; - Fulfillment of test tasks; -Consultations with the teacher on all emerging issues; <p><i>SRO:</i></p> <ul style="list-style-type: none"> - work with literature and electronic media; - Preparing a presentation on the topic under study according to the requirements. 	<ul style="list-style-type: none"> -Oral questioning; - Written testing; - Work in small groups; - Work with the protocols of the Republic of Kazakhstan; - Consultations with the teacher on all emerging issues; - Presentations; - Final control

Thematic plan

No	Section	Topic	Number of teaching hours:					Total hours	Tasks (they can combine several topics, but not less than 1 and not more than 3 current assignments for credit; the total number of assignments in the discipline, including the RC, is at least 5)
			Lectures	SIW	SIWT	SRO	PA		
Credit 1									
1.		Allergens and infectious agents, their origin, species, role in formation of reactions hypersensitivity		3		4		9	Task number 1 1. The concept of "allergen". Kinds allergens. Allergens vegetable and animal origin, household allergens, allergens medicines 2. Describe the primary and secondary morphological elements of skin rashes. 3. Allergological history, his structure, features of the collection of allergological medical history. 4. Indications for and skin testing capabilities allergology 5. Preparation of a presentation on the topics of the SROP. Presentation schedule 5-7 min.
		Anatomy and physiology of the skin. Primary and secondary elements of the rash. Methods of examination of patients with allergic pathology.			2				
2.		Principles of diagnosis of skin diseases. Laboratory diagnosis of allergic diseases.		3	2	4		9	
3.		Examination methods patients with skin diseases.			2			9	
		Skin provocative tests in allergology. Indications and contraindications for this type of research		3		4			
Credit 2									
4.		Clinical and pharmacological characteristics of drugs used in dermatology.		5	2	6		13	
5.		Dermatitis. etiological factors. Pathogenesis. diagnostic criteria. Clinical manifestations. Principles of treatment and prevention.		5	3	6		14	

									3. Prescribe a phased treatment. 4. Prepare a presentation on SRTP topics Presentation schedule 5-7 min.	
Credit 3										
6.		Modern ideas about urticaria, angioedema. etiological factors. Pathogenesis. diagnostic criteria. Clinical manifestations. Principles of treatment and prevention.		4	3	6		13	Task number 3 1. Emergency care algorithm for acute urticaria, angioedema 2. Solving clinical situational problems	
7.		Features of skin symptoms in insect allergy. etiological factors. Pathogenesis. diagnostic criteria. Clinical manifestations. Principles of treatment and prevention.		4	4	6		14		
Credit 4.										
8		food allergy. etiological factors. Pathogenesis. diagnostic criteria. Clinical manifestations. Principles of treatment and prevention.		3	2	4		9	Task number 4 1. Food allergies and food intolerances. The most common food allergens and their antigenic properties. 2. Solving clinical situational problems 3. Prepare a presentation based on the Protocol of the Republic of Kazakhstan on Drug Allergy "Clinical Manifestations of Drug Allergy" Presentation schedule 5-7 min.	
9.		latex allergy. etiological factors. Pathogenesis. diagnostic criteria. Clinical manifestations. Principles of treatment and prevention.		3	2	4		9		
10		drug allergy. Predictable and unpredictable side effects of drugs. Classification of complications of drug therapy. Risk factors for drug allergy.		3	2	4		9		
Total:					36	24	48	12	120	
Intermediate certification -12										

SYLLABUS

Discipline: “Clinical Biochemistry”

Educational program:

6B10102 “General Medicine”

Total credits

ECTS: 4

Course: 5

Name of discipline		Code	Educational Program		
Clinical Biochemistry		6B10102	General Medicine		
Teachers		Structural subdivision			
Responsible persons:		Department of biochemical chemistry			
University lecturers : 2		Muravlyova L.E., Kolessnikova Ye.A.			
Level of training	Type	Module(s)			
Undergraduate	specialized disciplines, optional component				
Forms of learning activity			Training period		
Practical lessons, laboratory practicum, case study solution			9,10 semesters		
Compulsory activity:		Additional activity:			
Internal diseases, surgical diseases		Biological chemistry, pathological physiology, pathological anatomy.			
ECTS	Hours	Practical training, hours	IWSUGT, hours	IWS, hours	MA, hours
4	120	36	24	48	12
Discipline purpose					
The purpose of studying the discipline is to combine the fundamental information in human biochemistry with the possibility to use it in practice and to create a holistic view of the strategy for selecting biochemical indicators for diagnosing from the position of evidence-based medicine.					
Discipline summary (<300 symbols)					
The clinical biochemistry includes the following directions: the understanding of a pre – analytical patient preparing for laboratory testing, studying the clinical and diagnostic values of the parameters of the metabolism of carbohydrates, lipids, proteins, vitamins and trace elements. The number of topics are devoted to the diagnosis of the pathology of the hemostasis, the acid-base balance disorders. Algorithms of laboratory diagnostics of diseases of liver, pancreas, cardiovascular system, anemia are studied. The main focus is on the analysis of clinical cases and situational problems in association with the history, laboratory and other research methods					
Academic honesty policy security					
Academic honesty is the base of educational process and it is provided by the well- managed justified and objective standards, which are determined by the Academic policy of the university and the present syllabus. Promotion and security of the academic honesty are the results of joined efforts of students and teachers. Within the discipline, all written works, regardless of their nature, content and volume, will be checked for originality through automated plagiarism verification systems. If the plagiarism, violations of the university’s rules for quoting others and their own works, as well as other violations of academic honesty provided for in the Code of Academic Honesty are detected, appropriate measures will be taken.					
Policy of Discipline					

The student must fully comply with the curriculum corresponding to the work program for the discipline "Clinical Biochemistry". The student should be prepared for each lesson. It is necessary to study didactic material using the main and additional literature. The tasks are based on the material described in the main and additional literature, and are allowed to evaluate both the knowledge of the material and the skills of its use and the relationship with other knowledge in this section.

The student can consult on issues of interest during the consultation hours set by the department.

The structure of the lesson consists of a discussion of the questions of the lesson, solving case studies, checking the acquired skills and mastering the questions studied. 100% of the **IWS** tasks are carried out on the MOODLE platform. In the case of non-fulfillment of tasks on **IWSUGT** and **IWS**, they are assessed as "0" in the total volume of task.

If a student has a valid pass, he/she has the opportunity to work out the missed lesson according to the schedule of the department. If a student misses a class without acceptable reason, he/she has not the opportunity to work out the missed training. If the number of hours of absences without acceptable reason is more than 50% of the total number of practical training hours related to this assignment, the student will not allowed to take the assignment; "0" will be rated in an electronic journal.

In case of missing classes, admission is granted to the department no later than the second lesson after the resumption of studies. Missed classes must be worked out within two weeks after admission obtaining. If the student has not been worked out the missed lesson during the two weeks, the lesson will be assessed as "0".

Training results

TR from educational program (code)	TR of discipline	Methods of training	Measure for assessment
PO 5	To know the reference values, the clinical and diagnostic value and the main methods of determining the parameters characterizing the exchange of proteins, lipids, carbohydrates, pigment, mineral and water-salt exchanges in the biological fluids, the pathology of hemostasis and the acid-base state; To explain the choice and mechanisms for changing biochemical indicators for diagnosis, prognosis, monitoring, screening and	Practical lessons: discussion of questions with the teacher, working in pairs ISWT : case study solutions. IWS : solution of case studies on the MOODLE platform	

	<p>monitoring the effectiveness of treatment.</p> <p>To develop an algorithm for biochemical diagnosis of specific types of pathology, explain the correctness of the appointment of biochemical analyzes, correlate the results of biochemical analyzes with clinical manifestations of the disease</p> <p>To interpret the results of biochemical analysis</p> <p>To compose an algorithm for biochemical diagnostics of specific types of pathology</p>		
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Course schedule

№ п/п	Branch	Theme	Amount of training hours						Tasks
			Lectures	Practical training	IWSUGT	IWS	MA	Total amount	
Credit 1									
1.	Urine analysis	Kidney Function Testing		2	1	2		5	Task 1
2.		Interpretation of renal biochemistry		2	1	2		5	
3.		Urine analysis: laboratory practicum		2	2	2		6	Task 2
4.	Blood analysis	Common Laboratory Tests		2	1	2		5	
5.		Case studies		1	1	4		6	
6.	Total			9	6	12	3	30	
Credit 2.									

7.	Clinical biochemistry of blood	Common laboratory tests		2	1	2		5	Task 3
8.		Plasma proteins		2	1	2		5	
9.	Biochemical investigation of liver and heart functions	Liver Function Tests		2	1	2		5	
10.		Cardiac markers		2	1	2		5	
11.		Case studies		1	2	4		7	
12.	Total			9	6	12	3	30	

Credit 3

13.	Anemia and its laboratory diagnosis	Laboratory Diagnosis of Iron and Red Blood Cell Disorders		2	1	2		5	Task 4	
14.		Markers of Haemostasis disorders		2	1	2		5		
15.		Clinical syndromes and suggested diagnostic tests			2	1	2			5
16.			Case studies		2	1	2			5
17.		Case studies		1	2	4		7	Task 5	
18.				9	6	12	3	30		

Credit 4

19.	Disorders of Acid-Base Balance	Metabolic and respiratory acidosis and alkalosis		2	1	2		5	Task 6		
20.											
21.			Abnormalities of Metabolism	Laboratory Diagnosis of Dyslipidemia		2	1	2			5
22.				Laboratory Diagnosis of Diabetes Mellitus		2	1	2			5
23.				Laboratory Diagnosis of Pancreatic Disorders		2	1	2			5
24.	Case studies			1	2	4		7			
25.	Total			9	6	12	3	30			
Bcero:				30	30	48	12	120			

