

SYLLABUS
ЖҮРЕК-ТАМЫР ЖҮЙЕСІ ПАТОЛОГИЯСЫ,
ПАТОЛОГИЯ СЕРДЕЧНО-СОСУДИСТОЙ СИСТЕМЫ
PATHOLOGY OF THE CARDIOVASCULAR SYSTEM

1.	General information about the discipline		
1.1	Faculty/School: Medicine and Healthcare Department of Internal Medicine	1.6	Credits (ECTS): 6 credits – 180 hours, of which 120 are contact hours (practical training)
1.2	Educational program (EP): 6B10114 Медицина 6B10114 Медицина 6B10114 Medicine	1.7	SIW/SPM/SRD (qty): 30 hours
1.3	Agency and year of accreditation of the EP	1.8	SRSP/SRMP/SRDP (number): 30 hours
1.4	Name of discipline: Жүрек-тамыр жүйесі патологиясы/Патология сердечно-сосудистой системы /Pathology of the cardiovascular system	1.9	Prerequisites: 1. Жалпы патология/Общая патология/General pathology 2. Науқас және дәрігер/Пациент и врач/Patient and doctor Postrequisites: Ішкі аурулар/Внутренние болезни/Internal medicine. Педиатрия және неонатология /Педиатрия и неонатология /Pediatrics and neonatology. Хирургия /Хирургия /Surgery. Клиникалық зертханалық диагностика /Клиническая лабораторная диагностика /Clinical laboratory diagnostics
1.5	Discipline ID: 103325 Discipline code: PSSS3304	1.10	Required - the basic discipline
2.	Description of the discipline		
	During the course of the course to form students' abilities: The discipline includes the study of immunopathogenesis, pathomorphology, clinical presentation of problems (clinical syndromes) and clinically oriented pharmacology of pathology of the cardiovascular system. The main syndromes are: lesions of the valvular apparatus, coronary insufficiency (acute and chronic), arterial hypertension, acute and chronic heart failure. A well-founded syndromic diagnosis and principles of treatment, taking into account the age of the patient.		
3	Purpose of the discipline		
Mastering basic knowledge and skills in the diagnosis and management of patients with pathology of the cardiovascular system			
4.	Learning outcomes (LO) by discipline (3-5)		
	LO disciplines	LO according to the educational program, with which the LO is associated by discipline (LO No. from the EP passport)	
1	1. Apply knowledge on immunopathogenesis of pathology of the cardiovascular system in the process of diagnosis and treatment	Proficiency level -3	1. Apply and integrate in practice knowledge in the field of biomedical, clinical, epidemiological and social-behavioral sciences, including generally accepted, evolving and constantly updated knowledge to solve clinical problems and into the care of individuals and populations.

2	2. Be able to conduct targeted questioning and physical examination of the patient, taking into account age characteristics and determining diagnostic and therapeutic interventions related to common diseases of the cardiovascular system	Proficiency level -3	2. Use interpersonal and communication skills to effectively share information and collaborate with patients, their families and healthcare professionals, including using information technology to provide safe and effective patient care;
3	3. Identify diagnostic and therapeutic interventions related to common diseases affecting the cardiovascular system.	Proficiency level -3	3. Provide effective patient-centered medical care, including appropriate activities aimed at the diagnosis, treatment and prevention of diseases using the principles of evidence-based medicine;
4	4. Interpret the basic data of laboratory and instrumental examination in the pathology of the cardiovascular system	Proficiency level -2	4. Integrate clinical knowledge and skills to ensure an individual approach in the treatment of a particular patient and improve his health in accordance with his needs, based on the analysis of the rationality of diagnosis and treatment, the principles of evidence-based and personalized medicine;
5	5. Integrate knowledge to identify the main syndromes of CVS damage: arterial hypertension, pain in the heart, valvular apparatus syndrome, syndromes of acute and chronic heart failure, cardiac arrhythmias.	Proficiency level -3	5. Timely and effectively provide medical care in emergency and life-threatening conditions, including emergency situations, natural and man-made disasters, pandemics, on the principles of humanity, safety and efficiency;
6	6. Describe the social, economic, ethnic and racial factors that play a role in the development, diagnosis and treatment of cardiac diseases;	Proficiency level -2	6. Demonstrate professionalism and commitment to conscientious performance of professional duties based on high standards of ethics and humanism;
7	7. Apply the classification of drugs for the treatment of cardiac pathology, understand the mechanism of action, pharmacokinetics, analyze side effects, indications and contraindications for the use of drugs: antianginal, antiarrhythmic, hypotensive, hypolipidemic, drugs for the treatment of CHF, drugs acting on peripheral and venous circulation	Proficiency level -3	7. Demonstrate the qualities necessary to maintain continuous personal and professional growth, continuous improvement in the quality of medical care based on continuous self-assessment and lifelong learning;
8	8. Demonstrate the ability to effectively conduct medical interviews, taking into account the rules and norms of the doctor-patient relationship and knowledge of the basic principles of human behavior at different age periods, in normal and abnormal behavior, in different situations;	Proficiency level -2	8. Responsibly carry out their activities within the framework of the existing legal and regulatory framework of the health care system and be guided by them in their practical activities to ensure optimal medical care;
9	9. Demonstrate commitment to the highest standards of professional responsibility and integrity;	Proficiency level -2	9. Analyze the results of the treatment of their patients, critically evaluate and implement the principles of treatment based on scientific evidence;
10	10. To observe ethical principles in all professional interactions;	Proficiency level -3	10. Analyze and maintain the necessary documentation in healthcare organizations using modern information and digital technologies and healthcare information systems to solve professional problems and conduct scientific research;

11	11. To demonstrate the need for continuous professional training and improvement of one's knowledge and skills;	Proficiency level -3	11. Apply knowledge of a complex of factors that determine health and disease in order to prevent, promote health and promote a healthy lifestyle.
12	12. To demonstrate the skills of conducting scientific research, the desire for new knowledge and the transfer of knowledge to others.	Proficiency level -3	12. Work effectively and improve the healthcare system, paying attention to the quality, safety and value of patient care.
5.	Summative assessment methods (mark (yes – no) / specify your own):		
5.1	MCQ testing for understanding and application	5.5	Scientific project SSRW (student's scientific research work)
5.2	Practical skills – Miniclinical exam (MiniCex)	5.6	360 score - behavior and professionalism
5.3	3. SIW- creative task	5.7	Midterm control: Stage 1 - MCQ testing for understanding and application Stage 2 – passing practical skills (miniclinical exam (MiniCex))
5.4	Medical history	5.8	Exam: Stage 1 - Testing on MCQ for understanding and application Stage 2 - OSCE with NP

6.	Detailed information about the discipline				
6.1	Academic year: 2025-2026		6.3	Schedule (days of classes, time): From 8.00 to 14.00	
6.2	Semester: 5 semester		6.4	Place (educational building, office, platform and link to the DOT learning meeting): City Clinical Hospital №1, City Clinical Hospital №7	
7.	Discipline leader				
Position		Full name	Department	Contact information (tel., e-mail)	Consultations before exams
Senior lecturer		Aitkulova M.K.	Internal medicine	8-702-447-46-31	Before the examination session within 60 minutes
8.	The content of the discipline				
	Name of the discipline		Quan tity of hours	Conducting form	
1.	Atherosclerosis. Classification, Etiology. Immunopathogenesis. diagnosis, treatment and prevention		6	Formative assessment: 1. Using active learning methods: TBL 2. Working with a patient for at least 20% of the study time 3. Participation in clinical rounds	
2.	Chest pain. Coronary heart disease. Classification. Etiology. Immunopathogenesis. Angina pectoris of tension. Clinical and diagnostic criteria. Differential diagnosis for pain in the heart area. Treatment.		6	Formative assessment: 1. Using active learning methods: TBL 2. Working with a patient for at least 20% of the study time 3. Work in the department of functional diagnostics	

			4. Training in the simulation center
3.	Acute coronary syndrome. Classification. Clinical diagnostic and differential diagnostic criteria. Treatment.	6	Formative assessment: 1. Using active learning methods: TBL 2. Working with a patient for at least 20% of the study time 3. Training in the simulation center
4.	Myocardial infarction with ST elevation and without elevation. Clinical diagnostic and differential diagnostic criteria. Complications of myocardial infarction. Clinical diagnostic and differential diagnostic criteria. Treatment.	6	Formative assessment: 1. Using active learning methods: TBL 2. Working with a patient for at least 20% of the study time 3. Training in the simulation center
5.	Acute heart failure. Classification. Etiology. Pathogenesis. Clinical diagnostic and differential diagnostic criteria. Treatment.	6	Formative assessment: 1. Using active learning methods: TBL 2. Working with a patient for at least 20% of the study time 3. Training in the simulation center
6.	- Arterial hypertension syndrome. Classification. Etiology. Pathogenesis. Risk factors. - Arterial hypertension. Diagnosis of secondary arterial hypertension. Differential diagnosis. Modern instrumental examination methods examination methods in cardiology (ECG, daily blood pressure monitoring (DMBP). Echocardiography). Laboratory methods.	6	Formative assessment: 1. Using active learning methods: TBL 2. Working with a patient for at least 20% of the study time 3. Training in the simulation center 4. Role-playing game
7.	Arterial hypertension. A complication. Hypertensive crisis. Treatment	6	Formative assessment: 1. Using active learning methods: TBL 2. Working with a patient for at least 20% of the study time 3. Training in the simulation center 4. Role-playing game
Midterm control 1		Summative evaluation: 2 stages: 1-stage – MCQ testing for understanding and application - 40% 2-stage – mini clinical exam (MiniCex) - 60%	
8.	Chronic heart failure. Etiology. Pathogenesis. Classification. Clinical diagnostic and differential diagnostic criteria. Treatment. CHF new drugs	6	Formative assessment: 1. Using active learning methods: TBL 2. Working with a patient for at least 20% of the study time 3. Training in the simulation center
9.	Valvular lesion syndrome: acquired heart defects. Classification. Etiology. Hemodynamics. Clinical diagnostic and differential diagnostic criteria. Complications. Treatment	6	Formative assessment: 1. Using active learning methods: TBL 2. Working with a patient for at least 20% of the study time 3. Training in the simulation center
10.	Valvular lesion syndrome: congenital heart defects. ECG in children (norm and pathology). Classification. Etiology. Hemodynamics. Clinical diagnostic and differential diagnostic criteria. Complications. Treatment	6	Formative assessment: 1. Using active learning methods: TBL 2. Working with a patient for at least 20% of the study time 3. Training in the simulation center
11.	Inflammatory heart diseases. Infectious endocarditis. Myocarditis. Pericarditis. Classification. Etiology. Immunopathogenesis. Clinical diagnostic and differential diagnostic criteria. Complications. Treatment.	6	Formative assessment: 1. Using active learning methods: TBL 2. Working with a patient for at least 20% of the study time 3. Participation in clinical rounds
12.	Cardiomyopathy. Classification. Etiology. Immunopathogenesis. Clinical diagnostic and	6	Formative assessment: 1. Using active learning methods: TBL

	differential diagnostic criteria. Complications. Treatment.		2. Working with a patient for at least 20% of the study time 3. Training in the simulation center
13.	The syndrome of impaired function of automatism. The syndrome of impaired excitability. Emergency care for paroxysmal tachycardia	6	Formative assessment: 1. Using active learning methods: TBL 2. Working in groups 3. Decoding the ECG
14.	Syndrome of impaired conduction function.	6	Formative assessment: 1. Using active learning methods: TBL 2. Working in groups 3. Decoding the ECG
15.	The syndrome is a congenital heart rhythm disorder.	6	Formative assessment: 1. Using active learning methods: TBL 2. Working in groups 3. Decoding the ECG
Midterm control 2		Summative evaluation: 2 stages: 1-stage – MCQ testing for understanding and application - 40% 2-stage – mini clinical exam (MiniCex) - 60%	
Final control (Exam)		Summative evaluation: 2 stages: 1-stage – MCQ testing for understanding and application - 40% 2- stage – OSCE with NP - 60%	
Total			100
9.	Methods of teaching in the discipline (briefly describe the approaches to teaching and learning that will be used in teaching) Using active learning methods: TBL		
1	Methods of formative assessment: TBL – Team Based Learning (https://classroom.google.com/w/MzM5OTU5MjU0OTM0/t/all)		
2	Summative assessment methods (from point 5): 1. MCQ testing for understanding and application 2. Passing practical skills – miniclinical exam (MiniCex) for the 3rd year 3. SIW (case, video, simulation OR research thesis, report, article) – assessment of a creative task 4. Medical history 5. Portfolio of scientific papers 6. Curation, clinical skills		
10.	Summative assessment		
№	Forms of control	General % from total %	
1	Curation, clinical skills	20% (estimated by the checklist)	
2	SIW (case, video, simulation OR research thesis, report, article) – assessment of a creative task	10% (estimated by the checklist)	
3	Border control	70% (1-stage – MCQ testing for understanding and application - 40%; 2-stage – mini clinical exam (MiniCex) - 60%)	
Final mark- 1		20%+10% +70% = 100%	
1	Patient history defence	20% (estimated by the checklist)	
2	SIW (case, video, simulation OR research thesis, report, article) – assessment of a creative task	10% (estimated by the checklist)	
5	Border control	70% (1-stage – MCQ testing for understanding and application - 40%; 2- stage – mini clinical exam (MiniCex) - 60%)	
Final mark- 2		20+10+ 70 = 100%	
9	Exam	2 stages: 1st stage - testing on MCQ for understanding and application - 40% 2nd stage - OSCE with NP - 60%	

10	Final score:	ORD 60% + Exam 40%		
10.	Score			
Rating by letter system		Digital equivalent	Points (% content)	Assessment Description (changes should be made only at the level of the decision of the Academic Committee on the quality of the faculty)
A		4,0	95-100	Excellent. Exceeds the highest job standards.
A-		3,67	90-94	Excellent. Meets the highest job standards.
B+		3,33	85-89	Good. Very good. Meets high job standards.
B		3,0	80-84	Good. Meets most of the job standards.
B-		2,67	75-79	Good. More than enough. Shows some reasonable ownership of the material.
C+		2,33	70-74	Good. Acceptable. Meets the basic standards of the task.
C		2,0	65-69	Satisfactory. Acceptable. Meets some basic job standards.
C-		1,67	60-64	Satisfactory. Acceptable. Meets some basic job standards.
D+		1,33	55-59	Satisfactory. Minimally acceptable.
D		1,0	50-54	Satisfactory. Minimally acceptable. The lowest level of knowledge and completion of the task.
FX		0,5	25-49	Unsatisfactory. Minimally acceptable.
F		0	0-24	Unsatisfactory. Very low productivity.
11.	Educational resources (use the full link and specify where you can access the texts/materials)			
Literature	Main Available in the library			
	Author		Name of the book, publisher	Year of publication
	Nicholas J Talley, Brad Frankum & David Currow. Essentials of Internal medicine		Elsevier. 3d edition, Chapter 8,9 p 153-228 – 1 экзemplяр	2014
	Rau, Ramesh R		Rau, Ramesh R. Clinical Cardiology : Made Easy® / R. R. Rau, 2015. - 257 p. - Текст : непосредственный.	2015
	С. К. Жауғашева, С. Б. Жәутікова, М. Т. Алиякпаров, М. М. Түсіпбекова		Тірек-қимыл жүйесі модулі : оқулық / С. К. Жауғашева, С. Б. Жәутікова, М. Т. Алиякпаров, М. М. Түсіпбекова ; жауапты ред.: С. Б. Жәутікова, С. Б. Нұрсұлтанова ; серия ред. Р. С. Досмағамбетова, 2014. - 237, [3] б. - Текст : непосредственный.	2014
	Р. С. Досмағамбетова		Ішкі аурулар : оқулық : 2 томдық / жалпы ред. басқ. Р. С. Досмағамбетова ; жауапты ред. Л. Г. Тургунова ; ред. басқ.: В. С. Моисеев [және т.б.] ; қазақ тіл. ауд.: Ә. Р. Алина, Г. Ғ. Оспанова. 1-том, 2015. - 760, [1] б. - Текст : непосредственный.	2015

Р. С. Досмағамбетова	Ішкі аурулар : оқулық : 2 томдық / жалпы ред. басқ. Р. С. Досмағамбетова ; жауапты ред. Л. Г. Тургунова ; ред. басқ.: В. С. Моисеев [және т.б.] ; қазақ тіл. ауд.: Ә. Р. Алина, Г. Ғ. Оспанова. 1-том, 2015. - 760, [1] б. - Текст : непосредственный.	2015
Ахметов, Қайырғали Жәлелұлы	Ахметов, Қайырғали Жәлелұлы. Ішкі аурулар пропедевтикасы пәнінің клиникалық дәрістері : оқу құралы / Қ. Ж. Ахметов, 2018. - 265 б. - Текст : непосредственный.	2018
П. П. Огурцов, В. Е. Дворников	Неотложная кардиология : учеб. пособие / под ред.: П. П. Огурцов, В. Е. Дворников, 2020. - 262, [2] с. - Текст : непосредственный.	2020
Байдурын, Серик Амангельдинович	Байдурын, Серик Амангельдинович. Принципы диагностики заболеваний внутренних органов : учеб. пособие / С. А. Байдурын, Ф. К. Бекенова, 2015. - 207 с. - Текст : непосредственный.	2015

**Additional
Available in the library**

Author	Name of the book, publisher	Year of publication
Cardiac Drugs : [monograph] / The Carver College of Medicine, University of Iowa, USA, 2015. - 536 p. - Текст : непосредственный.		2015
Katritsis, Demosthenes. Clinical Cardiology : Current Practice Guidelines / D. G. Katritsis, B. J. Gersh, A. J. Camm, 2016. - 970 p. - Текст : непосредственный.		2016
Muzdubayeva, Zhanna Ergalievna. Diagnosis and Principles of Treatment of Hematological Diseases : methodical guidance / Zh. E. Muzdubayeva, 2016. - 117, [1] p. - Текст : непосредственный.		2016
Ішкі аурулар кардиология модулі : оқулық / Л. К. Бадина, Н. Г. Малюченко, Ф. У. Нильдибаева, Г. Г. Оспанова ; серия ред. Р. С. Досмағамбетова ; [жауапты ред.: Л. Г. Тургунова, Е. М. Ларюшина], 2016. - 239, [1] б. - Текст :		2016
Ішкі аурулар Гематология модулі : оқулық / Л. Г. Тургунова, Е. М. Ларюшина, Н. С. Умбеталина [және т.б.] ; серия ред. Р. С. Досмағамбетова ; [жауапты ред.: Л. Г. Тургунова, Е. М. Ларюшина], 2016. - 239, [1] б. - Текст : непосредственный.		2016
Кишкун, Алексей Алексеевич. Клиникалық лабораториялық диагностика : оқу құралы / А. А. Кишкун ; қазақ тіл., жауапты ред. А. Ж. Сейтеметбетова, 2017. - 957, [2] б. - Текст : непосредственный.		2017
Кишкун, Алексей Алексеевич. Клиническая лабораторная диагностика : учеб. пособие / А. А. Кишкун, 2019. - 996, [2] с. - Текст : непосредственный		2019
Дуйсебаева, Алия Таттибаевна. Ультразвуковая диагностика в кардиологии : учеб. пособие / А. Т. Дуйсебаева, 2018. - 470 с. - Текст : непосредственный.		2018
Дифференциальная диагностика внутренних болезней / Российское научное медицинское общество терапевтов, 2018. - 927, [1] с. - Текст : непосредственный.		2018

Косарев, Владислав Васильевич. Клиническая фармакология и рациональная фармакотерапия : учеб. пособие / В. В. Косарев, С. А. Бабанов, 2019. - 235, [1] с. - Текст : непосредственный.	2019
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Available at the department (link to Classroom)

Author	Name of the book, publisher	Year of publication
Pierre Thérout, MD	Acute coronary syndromes : a companion to Braunwald's heart disease, SECOND EDITION	2011
Brent G. Petty	Basic Electrocardiography Second Edition	2020
Joseph Loscalzo, MD, PhD	HARRISON'S Cardiovascular Medicine	2010
James C. Reed, MD	CHEST RADIOLOGY: PATTERNS AND DIFFERENTIAL DIAGNOSES ISBN: 978-0-323-49831-9 SEVENTH EDITION	2018
Douglas L. Mann, MD, FACC	HEART FAILURE: A COMPANION TO BRAUNWALD'S HEART DISEASE, SECOND EDITION	2011
Henry R. Black, William J. Elliott	Hypertension A Companion to Braunwald's Heart Disease SECOND EDITION	2013
M Gabriel Khan	Practical Cardiology First Edition	2018
Punit Ramrakha	Oxford Handbook of Cardiology SECOND EDITION	2013
Alan Noble, Alan Thomas	The Cardiovascular System BASIC SCIENCE AND CLINICAL CONDITIONS/ SECOND EDITION	2010
А.И. Дядыка, А.Э. Багрия	Сердечно-сосудистые заболевания у пожилых /	2013
Элисдейр Райдинг	Эхокардиография. Практическое руководство/ Элисдейр Райдинг: пер. с англ. - М.: МЕДпресс-информ	2010
Ю. Н. Беленкова, Р. Г. Оганова	Кардиология. Национальное руководство : краткое издание / под ред. Ю. Н. Беленкова, Р. Г. Оганова. — М. : ГЭОТАР-Медиа	2012
Джордж А. Стаффер	Кардиология с иллюстрациями Неттера	2021
Струтынский А.В.	Электрокардиограмма – 14-е изд. М: Медпресс-информ	2012
Dacie and Lewis	Practical Haematology	2017
A. Victor Hoffbrand	Hoffbrand's Essential Haematology	2011
Сараева Н. О.	Гематология : учебное пособие	2015
Shauna C. Anderson Young	ANDERSON'S Atlas of Hematology THIRD EDITION	2021

	Nicholas J Talley, Brad Frankum & David Currow.	Essentials of Internal medicine Elsevier. 3d edition	2015
		Harrison's Manual of Medicine/ 20th Edition	2020
	Jonathan Gleadle	History and Clinical Examination at a Glance	2012
Electronic resources	Internet resources: 1. Medscape.com - https://www.medscape.com/familymedicine 2. Oxfordmedicine.com - https://oxfordmedicine.com/ 3. Uptodate.com - https://www.wolterskluwer.com/en/solutions/uptodate 4. Osmosis - https://www.youtube.com/c/osmosis 5. Ninja Nerd - https://www.youtube.com/c/NinjaNerdScience/videos 6. CorMedicale - https://www.youtube.com/c/CorMedicale - medical video animations in Russian language. 7. Lecturio Medical - https://www.youtube.com/channel/UCbYmF43dpGHZ8gi2ugiXr0Q 8. SciDrugs - https://www.youtube.com/c/SciDrugs/videos - video lectures on pharmacology in Russian language. 9. https://geekymedics.com/category/osce/clinical-examination/cardio/		
Simulators in the simulation center	1. SAM (Student auscultation manikin) – student mannequin for the auscultation of the pathology of organs and systems (respiratory system) 2. Dummy simulator for teaching percussion skills, palpation of the chest organs.		
Special software	1. Google classroom - available in the public domain. 2. Medical calculators: Medscape, Physician's Handbook, MD+Calc - freely available. 3. Directory of diagnostic and treatment protocols for medical workers from the RCHD, the Ministry of Health of the Republic of Kazakhstan: Dariger - available in the public domain.		
12.	Tutor Requirements and Bonus System		
A student in accordance with an individual internship plan: 1) supervises patients in organizations providing pre-medical medical care, emergency medical care, specialized medical care (including high-tech), primary health care, palliative care and medical rehabilitation; 2) participates in the appointment and implementation of diagnostic, therapeutic and preventive measures; 3) conducts documentation and sanitary and educational work among the population; 4) participates in preventive examinations, medical examinations, is present at consultations; 5) participates in clinical rounds, clinical reviews; 6) participates in duty at least four times a month in medical organizations (duty is not taken into account when calculating the workload of an internship student); 7) participates in clinical and clinical-anatomical conferences; 8) is present at pathoanatomical autopsies, participates in the research of autopsy, biopsy and surgical materials; 9) under the supervision of a scientific supervisor, collects material and analyzes data for a scientific project.			
Bonus system: For extraordinary achievements in the field of future professional activity (clinical, scientific, organizational, etc.), additional points up to 10% of the final assessment can be added to the student (by the decision of the department)			
13.	Discipline policy (части, выделенные зеленым, пожалуйста, не изменяйте)		
	Discipline policy is determined by the University's Academic Policy and the University's Academic Integrity Policy. If the links do not open, then you can find the relevant documents in IS Univer		
	Rules of Professional Conduct: 1) Appearance: ✓ office style of clothing (shorts, short skirts, open T-shirts are not allowed to attend university, jeans are not allowed in the clinic)		

- ✓ Clean and ironed coat
- ✓ medical mask
- ✓ medical cap (or a neat hijab without hanging ends)
- ✓ medical gloves
- ✓ changeable shoes
- ✓ neat hairstyle, long hair should be gathered in a ponytail, or a bun, for both girls and guys. Neatly short cut nails. Bright, dark manicure is prohibited. It is permissible to cover the nails with transparent varnish.
- ✓ badge with full name (full name)

2) Mandatory presence of a phonendoscope, tonometer, centimeter tape, (you can also have a pulse oximeter)

3) Properly executed sanitary (medical) book (before the start of classes and must be updated on time)

4) * Possession of a vaccination passport or other document confirming a fully completed course of vaccination against COVID-19 and influenza

5) Mandatory observance of the rules of personal hygiene and safety

6) Systematic preparation for the educational process.

7) Accurate and timely maintenance of reporting documentation.

8) Active participation in medical-diagnostic and public events of the departments.

A student without a medical book and vaccination will not be allowed to see patients.

A student who does not meet the requirements for appearance and / or from whom a strong / pungent odor emanates, since such a smell can provoke an undesirable reaction in the patient (obstruction, etc.) - is not allowed to the patients!

Преподаватель в праве принять решение о допуске к занятиям студентов, которые не выполняют требования профессионального поведения, включая требования клинической базы!

Study discipline:

1. Being late for classes or the morning conference is not allowed. In case of being late, the decision on admission to the lesson is made by the teacher leading the lesson. If there is a good reason, inform the teacher about the delay and the reason by message or by phone. After the third delay, the student writes an explanatory note addressed to the head of the department indicating the reasons for being late and is sent to the dean's office to obtain admission to the lesson. If you are late without a valid reason, the teacher has the right to deduct points from the current grade (1 point for each minute of delay)
2. Religious events, holidays, etc. are not a valid reason for skipping, being late and distracting the teacher and the group from work during classes.
3. If you are late for a good reason - do not distract the group and the teacher from the lesson and quietly go to your place.
4. Leaving the class ahead of time, being outside the workplace during school hours is regarded as absenteeism.
5. Additional work of students during study hours (during practical classes and shifts) is not allowed.
6. For students who have more than 3 passes without notifying the curator and a good reason, a report is issued with a recommendation for expulsion.
7. Missed classes are not made up.
8. The internal regulations of the clinical bases of the department are fully applicable to students
9. Greet the teacher and any senior by standing up (in class)
10. Smoking (including the use of vapes, electronic cigarettes) is strictly prohibited on the territory of medical facilities (out-doors) and the university. Punishment - up to the annulment of boundary control, in case of repeated violation - the decision on

	admission to classes is made by the head of the department 11. Respectful attitude towards colleagues regardless of gender, age, nationality, religion, sexual orientation. 12. Have a laptop / laptop / tab / tablet with you for studying and passing MCQ tests for TBL, boundary and final controls. 13. Taking MCQ tests on phones and smartphones is strictly prohibited.. The behavior of the student at the exams is regulated by the "Rules for the final control", "Instructions for the final control of the autumn/spring semester of the current academic year" (the current documents are uploaded to the Univer IS and are updated before the start of the session); "Regulations on checking text documents of students for the presence of borrowings." Decision of the Department of Clinical Disciplines (protocol No. 2 of September 5, 2023): In addition to the requirements for the academic discipline: If you miss a class without a good reason, the teacher has the right to deduct points from the current control - 1) for each missed lesson in the disciplines of 10 points for 4-5 courses 2) for each missed lesson in the disciplines, 5 points for 2-3 courses
14	1. Constantly preparing for classes: For example, backs up statements with relevant references, makes brief summaries Demonstrates effective teaching skills, assists in teaching others 2. Take responsibility for your learning: For example, manages their learning plan, actively tries to improve, critically evaluates information resources 3. Actively participate in group learning: For example, actively participates in discussions, willingly takes tasks 4. Demonstrate effective group skills For example, takes the initiative, shows respect and correctness towards others, helps to resolve misunderstandings and conflicts. 5. Skillful communication skills with peers: For example, he listens actively, is receptive to nonverbal and emotional signals Respectful attitude 6. Highly developed professional skills: Eager to complete tasks, seek opportunities for more learning, confident and skilled Compliance with ethics and deontology in relation to patients and medical staff Observance of subordination. 7. High introspection: For example, recognizes the limitations of his knowledge or abilities, without becoming defensive or reproaching others 8. Highly developed critical thinking: For example, accordingly demonstrates skills in performing key tasks, such as generating hypotheses, applying knowledge to cases from practice, critically evaluating information, making conclusions aloud, explaining the process of reflection 9. Fully complies with the rules of academic behavior with understanding, offers improvements in order to increase efficiency. Observes the ethics of communication – both oral and written (in chats and appeals) 10. Fully follows the rules with full understanding of them, encourages other members of the group to adhere to the rules Strictly adheres to the principles of medical ethics and PRIMUM NON NOCERE
15.	Distance/Online Learning – Prohibited in Clinical Discipline (части, выделенные зеленым, пожалуйста, не изменяйте)
	1. According to the order of the Ministry of Education and Science of the Republic of Kazakhstan No. 17513 dated October 9, 2018 "On approval of the List of areas of training with higher and postgraduate education, training in which in the form of external studies and online education is not allowed". According to the above regulatory document, specialties with the discipline code of health care: bachelor's degree (6B101), master's degree (7M101),

residency (7R101), doctoral studies, (8D101) - training in the form of external study and online education - is not allowed.

Thus, students are prohibited from distance learning in any form. It is only allowed to work out a lesson in a discipline due to the absence of a student for reasons beyond his control and the presence of a timely confirming document (example: a health problem and presenting a confirming document - a medical certificate, a signal sheet of the PHC, an extract from a consultative appointment with a medical specialist - a doctor)

16.	Approval and review	
Department head		Sadykova Sh.S.
Committee on the Quality of Teaching and Learning of the Faculty		Kurmanova G.M.

Topic plan and content of classes

№	Topic	Content	Literature	Conduct form
	2	3	4	5
1	Atherosclerosis. Classification, Etiology. Immunopathogenesis. diagnosis, treatment and prevention	Learning outcomes: - identify symptoms and syndromes of cardiovascular disease when interviewing a patient; - conduct targeted questioning and physical examination of the patient, taking into account age-related characteristics with cardiovascular pathology; - highlight the main symptoms and syndromes of atherosclerosis; - explain the pathogenesis, pathomorphology, and development of atherosclerosis - explain the causes, main clinical manifestations, and symptoms of atherosclerosis; - know the methods for diagnosing a patient's problem with atherosclerosis; - can prescribe and interpret laboratory tests (lipogram, lipoprotein, Apoproteins, homocysteine) - can prescribe and interpret instrumental tests: ECG (norm and pathology), ultrasound of arteries (norm, pathology: endothelial dysfunction, thickening of the intima-media complex, atherosclerotic plaque, ankle-brachial pressure index), CT angiography of the coronary arteries, MRI in the diagnosis of atherosclerosis of the carotid arteries - can prescribe treatment for a patient with atherosclerosis, taking into account the individual characteristics of the patient and the characteristics of the prescribed drugs (lipid-lowering drugs, statins (HMG-CoA reductase inhibitors), an inhibitor of cholesterol absorption in the intestine (ezetimibe)).	1. Мухин Н.А., Моисеев В.С. Пропедевтика внутренних болезней: учебник. — 2-е изд., доп. и перераб. М.: ГЭОТАР – 2020г, глава-6. 2. Трухан Д.И., Филимонов С.Н. Болезни сердечно-сосудистой системы: клиника, диагностика и лечение. 47-56 ст 3. Ішкі аурулар пропедевтикасы: оқулық — М.: ГЭОТАР-Медиа, 2015, Тарау-6: ил. Н.А. Мухин, В.С. Моисеев; 4. Harrison's Principles of Internal Medicine 20th Edition 2018. Disorders of the Cardiovascular System PART 6. 5. Oxford Handbook of General Practice 4th Edition. Chapter 10. 232-252 6. Essentials_of_Internal_Medicine_Talley_3_ed_2015/168-171 7. Practical Cardiology 1st Edition 2018/ 214-2212. 8. Nicholas J Talley, Brad Frankum & David Currow. Essentials of Internal medicine Elsevier. 3d edition, Chapter 9, p 217-228 (Электронный ресурс). 9. 2023 AHA/ACC/ACCP/ASPC/NLA/PCNA Guideline for the Management of Patients With Chronic Coronary Disease https://geekymedics.com/category/osce/clinical-examination/cardio/	1. TBL 2. Working with a patient for at least 20% of the study time 3. Participation in clinical rounds
2	Chest pain. Coronary heart	Learning outcomes: - identify symptoms and syndromes of cardiovascular disease when interviewing a patient (characteristics of pain syndrome);	1. Мухин Н.А., Моисеев В.С. Пропедевтика внутренних болезней: учебник. — 2-е изд., доп. и перераб. М.: ГЭОТАР – 2020г, глава-6.	1. TBL 2. Working with a patient for at least 20% of the study time

	disease. Classification. Etiology. Immunopathogenesis. Angina pectoris of tension. Clinical and diagnostic criteria. Differential diagnosis for pain in the heart area. Treatment.	- conduct targeted questioning and physical examination of a patient taking into account age characteristics with cardiovascular pathology; - highlight the main symptoms and syndromes in coronary heart disease, and heart failure; - explain the etiology, development of the disease, and classification - explain immunopathogenesis, pathomorphology, and development of ischemia. - explain the causes, main clinical manifestations, and symptoms of coronary heart disease, heart failure, and differential diagnosis; - know the methods of diagnosing a patient's problem in coronary heart disease, heart failure; - can prescribe and interpret laboratory tests (troponin, complete blood count, lipid profile, fasting glucose, creatinine clearance, liver function tests, BNP/NT-proBNP) - can prescribe and interpret instrumental tests: ECG (normal and abnormal), 24-hour ECG monitoring, radiography, non-invasive stress tests, electrocardiogram with physical activity (treadmill/cycle ergometer), coronary angiography - can prescribe treatment for a patient with coronary artery disease, or heart failure, taking into account the individual characteristics of the patient and the characteristics of the prescribed drugs (lipid-lowering drugs, statins (HMG-CoA reductase inhibitors), cholesterol absorption inhibitor in the intestine, short- and long-acting nitrates, β-blockers, CCBs that reduce heart rate, ACE inhibitors). Revascularization. Percutaneous coronary intervention (PCI)	2. Трухан Д.И., Филимонов С.Н. Болезни сердечно-сосудистой системы: клиника, диагностика и лечение. 47-56 ст 3. Роберт Струтинский – Внутренние болезни: сердечно-сосудистая система. 2013.Глава 4-5 4. Ішкі аурулар пропедевтикасы: оқулық — М.: ГЭОТАР-Медиа,2015, Тарау-6: ил. Н.А. Мухин, В.С. Моисеев; 5.«Кардиология» модулі модуль «Сердечно-сосудистой системы»: Интеграцияланған оқулық: қазақ және орыс тілдерінде / — М.: Литтерра, 2014. —376 б.: ил 6. Harrison's Principles of Internal Medicine 20th Edition 2018. Disorders of the Cardiovascular System PART 6. 7. Oxford Handbook of General Practice 4th Edition. Chapter 10. 240-244,256 8.Essentials_of_Internal_Medicine_Talley_3_ed_2015/172-176 9. Practical Cardiology 1st Edition 2018/ 214-221. 10.Nicholas J Talley, Brad Frankum & David Currow. Essentials of Internal medicine Elsevier. 3d edition, Chapter 9, p 217-228 11. 2023 AHA/ACC/ACCP/ASPC/NLA/PCNA Guideline for the Management of Patients With Chronic Coronary Disease 12. Cardiology Procedures A Clinical Primer (Hendel) 1 ed (2017) 60-67 https://geekymedics.com/category/osce/clinical-examination/cardio/	3. Work in the department of functional diagnostics 4. Training in the simulation center
3	Acute coronary syndrome	Learning outcomes: - identify symptoms and syndromes of cardiovascular system damage when interviewing a patient	1. Мухин Н.А., Моисеев В.С. Пропедевтика внутренних болезней: учебник. — 2-е изд., доп. и перераб. М.: ГЭОТАР – 2020г, глава-6.	1. TBL 2. Working with a patient for at least 20% of the study time

Classification. Clinical diagnostic and differential diagnosis criteria. Treatment.	- conduct targeted questioning and physical examination of a patient taking into account age characteristics with cardiovascular pathology; - identify the main symptoms and syndromes - ACS with and without ST elevation, myocardial infarction, all clinical forms of angina, - interpret laboratory and instrumental research data for ACS - confirm the suspected diagnosis of ACS with and without ST elevation using laboratory and instrumental methods. - conduct differential diagnostics between ACS without and with ST elevation, myocardial infarction, various clinical forms of angina - know and use the classification, mechanism of action, and pharmacokinetics of drugs, and prescribe them taking into account side effects, indications, and contraindications for the use of anticoagulant, antianginal, antiarrhythmic, hypotensive drugs in the treatment of ACS - have basic skills in maintaining current accounting and reporting medical documentation, including in information systems; - integrates knowledge and skills to ensure an individual approach to the treatment of a specific patient; - demonstrate communication skills, teamwork skills, organization, and management of the diagnostic and treatment process; - apply knowledge of the principles and methods of forming a healthy lifestyle for an individual and family; - demonstrate commitment to professional values such as altruism, compassion, empathy, responsibility, honesty, and compliance with the principles of confidentiality; - demonstrate the ability and need for continuous professional training and improvement of their knowledge and skills in professional activities; - demonstrate basic skills in scientific research work. ISW 1. Modern principles of ACS treatment, latest data (article review, case, video, simulation OR research work – thesis, report, article) 2. Nutrition in coronary syndrome (article review, case, video, simulation OR research work of students – thesis, report, article)	2. Трухан Д.И., Филимонов С.Н. Болезни сердечно-сосудистой системы: клиника, диагностика и лечение. 85-105 ст 3. Роберт Струтынский – Внутренние болезни: сердечно-сосудистая система. 2013.Глава 4-5 4. Ішкі аурулар пропедевтикасы: оқулық — М.: ГЭОТАР-Медиа,2015, Тарау-6: ил. Н.А. Мухин, В.С. Моисеев; 5.«Кардиология» модулі модуль «Сердечно-сосудистой системы»: Интеграцияланған оқулық: қазақ және орыс тілдерінде / — М.: Литтерра, 2014. —376 б.: ил 6. Harrison's Principles of Internal Medicine 20th Edition 2018. Disorders of the Cardiovascular System PART 6. 7. Oxford Handbook of General Practice 4th Edition. Chapter 10. 256-260 8.Essentials_of_Internal_Medicine_Talley_3_ed_2015/177-181 9. Practical Cardiology 1st Edition 2018/ 214-221. 10.Nicholas J Talley, Brad Frankum & David Currow. Essentials of Internal medicine Elsevier. 3d edition, Chapter 9, p 217-228 11. 2023 AHA/ACC/ACCP/ASPC/NLA/PCNA Guideline for the Management of Patients With Acute Coronary Disease 12. Cardiology Procedures A Clinical Primer (Hendel) 1 ed (2017) 60-67 13. Harrison's Manual of Medicine/ 20th Edition, Section 8, p. 684-689, p.2220-2244. 14. Brent G. Petty. Basic Electrocardiography Second Edition – 2020, 49-65 p https://geekymedics.com/category/osce/clinical-examination/cardio/	3. Training in the simulation center
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4	Myocardial infarction with a Q wave. Clinical diagnostic and differential diagnosis criteria. Complications of myocardial infarction. Clinical diagnostic and differential diagnosis criteria. Treatment .	Learning outcomes: - identify symptoms and syndromes of cardiovascular disease when interviewing a patient - conduct targeted questioning and physical examination of a patient taking into account age-related characteristics with cardiovascular pathology; - identify the main symptoms and syndromes of myocardial infarction, all clinical acute forms of angina, - interpret laboratory and instrumental research data for MI - confirm the suspected diagnosis of MI using laboratory and instrumental methods. - conduct differential diagnostics between ACS without and with ST elevation, myocardial infarction, various clinical forms of angina pectoris - know and use the classification, mechanism of action, pharmacokinetics of drugs, and prescribe them taking into account side effects, indications, and contraindications for the use of anticoagulant, antianginal, antiarrhythmic, hypotensive, antianginal drugs in the treatment of MI - have basic skills in maintaining current accounting and reporting medical documentation, including in information systems; - integrates knowledge and skills to ensure an individual approach to the treatment of a specific patient; - demonstrate communication skills, teamwork skills, organization, and management of the diagnostic and treatment process; - apply knowledge of the principles and methods of forming a healthy lifestyle for an individual and family; - demonstrate commitment to professional values such as altruism, compassion, empathy, responsibility, honesty, and compliance with the principles of confidentiality; - demonstrate the ability and need for continuous professional training and improvement of their knowledge and skills in professional activities; - demonstrate basic skills in scientific research work.	1. Мухин Н.А., Моисеев В.С. Пропедевтика внутренних болезней: учебник. — 2-е изд., доп. и перераб. М.: ГЭОТАР – 2020г, глава-6. 2. Трухан Д.И., Филимонов С.Н. Болезни сердечно-сосудистой системы: клиника, диагностика и лечение. 85-105-137 ст 3. Роберт Струтынский – Внутренние болезни: сердечно-сосудистая система. 2013.Глава 6 4. Ішкі аурулар пропедевтикасы: оқулық — М.: ГЭОТАР-Медиа,2015, Тарау-6: ил. Н.А. Мухин, В.С. Моисеев; 5.«Кардиология» модулі модуль «Сердечно-сосудистой системы»: Интеграцияланған оқулық: қазақ және орыс тілдерінде / — М.: Литтерра, 2014. —376 б.: ил 6. Harrison's Principles of Internal Medicine 20th Edition 2018. Disorders of the Cardiovascular System PART 6. 7. Oxford Handbook of General Practice 4th Edition. Chapter 10. 256-260 8.Essentials_of_Internal_Medicine_Talley_3_ed_2015/177-181 9. Practical Cardiology 1st Edition 2018/ 214-221. 10.Nicholas J Talley, Brad Frankum & David Currow. Essentials of Internal medicine Elsevier. 3d edition, Chapter 9, p 217-228 11. 2023 AHA/ACC/ACCP/ASPC/NLA/PCNA Guideline for the Management of Patients With Acute Coronary Disease 12. Cardiology Procedures A Clinical Primer (Hendel) 1 ed (2017) 60-67 13. Harrisson’s Manual of Medicine/ 20th Edition, Section 8, p. 684-689, p.2220-2244.	1. TBL 2. Working with a patient for at least 20% of the study time 3. Training in the simulation center
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			14. Brent G. Petty. Basic Electrocardiography Second Edition – 2020, 49-65 p https://geekymedics.com/category/osce/clinical-examination/cardio/	
5	Acute heart failure. Classification. Etiology. Pathogenesis. Clinical diagnostic and differential diagnosis. Treatment.	Learning outcomes: - conducts targeted questioning and physical examination to identify symptoms of acute heart failure based on the application of knowledge of pathogenesis - identify symptoms and syndromes of acute heart failure: hypertensive heart failure, pulmonary edema, cardiogenic shock (Acute coronary syndrome recurrence, myocardial infarction, endocarditis, myocarditis, pericarditis, Dressler syndrome, cardiac tamponade, pulmonary embolism, Syndrome X, Takotsubo cardiomyopathy) - interpret data from laboratory and instrumental studies in acute heart failure syndrome; - confirm the suspected diagnosis of cardiovascular damage using laboratory and instrumental methods (ECG, EchoCG, Doppler ultrasound, MRI, angiography, DMBP, Holter ECG) - can conduct differential diagnostics between acute and chronic heart failure - prescribe and use drug classification, mechanism of action, pharmacokinetics, side effects, indications, and contraindications for use in the treatment of acute heart failure - have basic skills in maintaining current medical records, including in information systems; - demonstrate communication skills, teamwork skills, organization, and management of the diagnostic and treatment process; - apply knowledge of the principles and methods of forming a healthy lifestyle for an individual and family; - demonstrate commitment to professional values such as altruism, compassion, empathy, responsibility, honesty, and compliance with the principles of confidentiality; - demonstrate the ability and need for continuous professional training and improvement of their knowledge and skills in professional activities; - demonstrate basic skills in scientific research work.	1. Мухин Н.А., Моисеев В.С. Пропедевтика внутренних болезней: учебник. — 2-е изд., доп. и перераб. М.: ГЭОТАР – 2020г, глава-6. 2. Трухан Д.И., Филимонов С.Н. Болезни сердечно-сосудистой системы: клиника, диагностика и лечение. 244-271 ст 3. Роберт Струтынский – Внутренние болезни: сердечно-сосудистая система. 2013. 4. Ішкі аурулар пропедевтикасы: оқулық — М.: ГЭОТАР-Медиа, 2015, Тарау-6: ил. Н.А. Мухин, В.С. Моисеев; 5.«Кардиология» модулі модуль «Сердечно-сосудистой системы»: Интеграцияланған оқулық: қазақ және орыс тілдерінде / — М.: Литтерра, 2014. —376 б.: ил 6. Harrison's Principles of Internal Medicine 20th Edition 2018. Disorders of the Cardiovascular System PART 6. 7. Oxford Handbook of General Practice 4th Edition. Chapter 10. 262-264 8.Essentials_of_Internal_Medicine_Talley_3_ed_2015/203-207 9. Harrison's Manual of Medicine/ 20th Edition, Section 8, p.689-691. 10. Brent G. Petty. Basic Electrocardiography Second Edition – 2020, 11. Practical Cardiology First Edition: 2018, 164-177, 183-197 p 12. Heart Failure- A Companion to Braunwald's Heart diseases Second Edition- 2010	1. TBL 2. Working with a patient for at least 20% of the study time 3. Training in the simulation center

			13. 2023 Focused Update of the 2021 ESC Guidelines for the diagnosis and treatment of acute and chronic heart failure https://geekymedics.com/category/osce/clinical-examination/cardio/	
6-7	Arterial hypertension syndrome	- Arterial hypertension syndrome. Classification. Etiology. Pathogenesis. Risk factors. - Arterial hypertension. Diagnosis of secondary arterial hypertension. Differential diagnosis. Modern instrumental examination methods examination methods in cardiology (ECG, daily blood pressure monitoring (DMBP). Echocardiography). Laboratory methods. Learning outcomes: - identify symptoms and syndromes of cardiovascular system damage when interviewing a patient - conduct targeted questioning and physical examination of a patient taking into account age-related characteristics with cardiovascular system pathology; - highlight the main symptoms and syndromes of arterial hypertension (Primary and secondary arterial hypertension: renal, renovascular, endocrine, cardiovascular, neurogenic) - explain the pathogenesis of primary and secondary arterial hypertension - confirm the suspected diagnosis of arterial hypertension - can conduct differential diagnostics between hypertension syndrome in endocrine, renal, and vascular diseases - can prescribe treatment to a patient with arterial hypertension, taking into account the individual characteristics of the patient and the characteristics of the prescribed drugs (ACE inhibitors, beta-blockers, diuretics, calcium channel blockers - calcium antagonists, angiotensin II receptor blockers, alpha-blockers, combined drugs from different groups). ISW: 1. Modern principles of hypertension treatment, latest data (article review, case, video, simulation OR research paper – thesis, report, article)	1. Мухин Н.А., Моисеев В.С. Пропедевтика внутренних болезней: учебник. — 2-е изд., доп. и перераб. М.: ГЭОТАР – 2020г, глава-6. 2. Трухан Д.И., Филимонов С.Н. Болезни сердечно-сосудистой системы: клиника, диагностика и лечение. 10-47 ст 3. Роберт Струтынский – Внутренние болезни: сердечно-сосудистая система. 2013.Глава 7 4. Ішкі аурулар пропедевтикасы: оқулық — М.: ГЭОТАР-Медиа,2015, Тарау-6: ил. Н.А. Мухин, В.С. Моисеев; 5.«Кардиология» модулі модуль «Сердечно-сосудистой системы»: Интеграцияланған оқулық: қазақ және орыс тілдерінде / — М.: Литтерра, 2014. —376 б.: ил 6. Harrison's Principles of Internal Medicine 20th Edition 2018. Disorders of the Cardiovascular System PART 6. 7. Oxford Handbook of General Practice 4th Edition. Chapter 10. 248 8.Essentials_of_Internal_Medicine_Talley_3_ed_2015/Chapter-9 9. Practical Cardiology 1st Edition 2018/ 28-44, 71 10. 2020 International Society of Hypertension Global Hypertension Practice Guidelines 11. Harrisson’s Manual of Medicine/ 20th Edition, Section 8, p. 676-682. 12. Brent G. Petty. Basic Electrocardiography Second Edition – 2020	1. TBL 2. Working with a patient for at least 20% of the study time 3. Training in the simulation center

		2. Nutrition in arterial hypertension (article review, case, video, simulation OR research work of students – thesis, report, article)	13. Hypertension A Case-based Approach 2020 14. Hypertension THIRD EDITION Edited by Sunil K. Nadar-2023 15. Eurasian clinical guidelines for the diagnosis and treatment of secondary (symptomatic) forms of arterial hypertension (2022) 16. Евразийские клинические рекомендации по диагностике и лечению вторичных форм артериальной гипертензии (2020) https://geekymedics.com/category/osce/clinical-examination/cardio/	
8	Chronic heart failure. Etiology. Pathogenesis. Classification. Clinical diagnostic and differential diagnosis. Treatment. CHF new drugs	Learning outcomes: - conducts targeted questioning and physical examination to identify symptoms of CHF based on the application of knowledge of pathogenesis - identify symptoms and syndromes of chronic heart failure: left and right ventricular failure (coronary heart disease, arterial hypertension, hypertrophic cardiomyopathy, dilated cardiomyopathy, restrictive cardiomyopathy, sudden cardiac death syndrome) - interpret data from laboratory and instrumental studies in heart failure syndrome; - confirm the suspected diagnosis of cardiovascular damage using laboratory and instrumental methods (ECG, EchoCG, Doppler ultrasound, MRI, angiography, DMBP, Holter ECG) - can conduct differential diagnostics between acute and chronic heart failure - prescribe and use drug classification, mechanism of action, pharmacokinetics, side effects, indications, and contraindications for use in the treatment of acute and chronic heart failure - have basic skills in maintaining current medical records, including in information systems; - demonstrate communication skills, teamwork skills, organization, and management of the diagnostic and treatment process; - apply knowledge of the principles and methods of forming a healthy lifestyle for an individual and family;	1. Мухин Н.А., Моисеев В.С. Пропедевтика внутренних болезней: учебник. — 2-е изд., доп. и перераб. М.: ГЭОТАР – 2020г, глава-6. 2. Трухан Д.И., Филимонов С.Н. Болезни сердечно-сосудистой системы: клиника, диагностика и лечение. 271 ст 3. Роберт Струтинский – Внутренние болезни: сердечно-сосудистая система. 2013. 4. Ішкі аурулар пропедевтикасы: оқулық — М.: ГЭОТАР-Медиа, 2015, Тарау-6: ил. Н.А. Мухин, В.С. Моисеев; 5. «Кардиология» модулі модуль «Серечно-сосудистой системы»: Интеграцияланған оқулық: қазақ және орыс тілдерінде / — М.: Литтерра, 2014. —376 б.: ил 6. Harrison's Principles of Internal Medicine 20th Edition 2018. Disorders of the Cardiovascular System PART 6. 7. Oxford Handbook of General Practice 4th Edition. Chapter 10. 262-264 8. Essentials of Internal Medicine Talley 3 ed 2015/203-207 10. Harrison's Manual of Medicine/ 20th Edition, Section 8, Chapter 126.	1. TBL 2. Working with a patient for at least 20% of the study time 3. Training in the simulation center

		- demonstrate commitment to professional values such as altruism, compassion, empathy, responsibility, honesty, and compliance with the principles of confidentiality; - demonstrate the ability and need for continuous professional training and improvement of their knowledge and skills in professional activities; - demonstrate basic skills in scientific research work. SRS: Modern principles of treatment of CHF, latest data (article review). 2. Nutrition in CHF (article review, case, video, simulation OR research work of students - thesis, report, article)	11. Brent G. Petty. Basic Electrocardiography Second Edition – 2020, 12. Practical Cardiology First Edition: 2018, 164-177, 164-177, 278-296 p 13. Heart Failure- A Companion to Braunwald's Heart diseases Second Edition-2010 14. 2023AHA/ACC/ACCP/ASPC/NLA/PCNA Guideline for the Management of Patients With Chronic Coronary Disease 15. 2022 AHA/ACC/HFSA Guideline for the Management of Heart Failure 16. Cardiology in a Heartbeat Edited by: Amar Vaswani. SECOND EDITION, chapter 10.14 17. 2023 Focused Update of the 2021 ESC Guidelines for the diagnosis and treatment of acute and chronic heart failure https://geekymedics.com/category/osce/clinical-examination/cardio/	
9	Valvular lesion syndrome : acquired heart defects. Classification. Etiology. Hemodynamics. Clinical diagnostic and differential diagnostic	Learning outcomes: - to identify the symptoms and syndromes of damage to the valvular apparatus when interviewing the patient; - to carry out targeted questioning and physical examination of the patient, taking into account age-related characteristics with valvular apparatus lesion syndrome; - identify the main symptoms and syndromes – valvular heart disease (CHD: open ductus arteriosus, atrial and ventricular septal defect, Tetrad of Fallot); - interpret the data of laboratory and instrumental studies in case of valvular apparatus lesion syndrome; -to confirm the alleged diagnosis of damage to the valve apparatus using laboratory and instrumental methods; - can make a differential diagnosis between noises in case of valvular apparatus damage (CHD, acquired heart defects)	1. Мухин Н.А., Моисеев В.С. Пропедевтика внутренних болезней: учебник. — 2-е изд., доп. и перераб. М.: ГЭОТАР – 2020г, глава-6. 2. Трухан Д.И., Филимонов С.Н. Болезни сердечно-сосудистой системы: клиника, диагностика и лечение. 137-174 ст 3. Ішкі аурулар пропедевтикасы: оқулық — М.: ГЭОТАР-Медиа,2015, Тарау-6: ил. Н.А. Мухин, В.С. Моисеев; 4.«Кардиология» модулі модуль «Сердечно-сосудистой системы»: Интеграцияланған оқулық: қазақ және орыс тілдерінде / — М.: Литтерра, 2014. —376 б.: ил 5.Essentials_of_Internal_Medicine_Talley_3_ed_2015/203-207 6. Harrison's Manual of Medicine/ 20th Edition, Section 8, 115-116	1. TBL 2. Working with a patient for at least 20% of the study time 3. Training in the simulation center

	criteria. Complications. Treatment	- prescribe and use the classification of drugs, mechanism of action, pharmacokinetics, side effects, indications, and contraindications for the treatment of valvular apparatus damage - possess basic skills in maintaining current accounting and reporting medical records, including in information systems; - demonstrate communication skills, teamwork skills, organization, and management of the diagnostic and treatment process; - apply knowledge of the principles and methods of forming a healthy lifestyle for a person and family; - demonstrate commitment to professional values such as altruism, compassion, empathy, responsibility, honesty, and respect for the principles of confidentiality; - demonstrate the abilities and needs for continuous professional training and improvement of their knowledge and skills of professional activity; - demonstrate the initial skills of research work. SRS: 1. Modern principles of treatment of heart defects, the latest data (review of the article, case, video, simulation OR students' research work (SRW), report, article	7. Brent G. Petty. Basic Electrocardiography Second Edition – 2020, 8. Practical Cardiology First Edition: 2018, 164-177, 164-177, 278-296 p 9. Heart Failure- A Companion to Braunwald's Heart diseases Second Edition-2010 10. 2022 AHA/ACC/HFSA Guideline for the Management of Heart Failure 11. Cardiology in a Heartbeat Edited by: Amar Vaswani. SECOND EDITION, chapter 16 https://geekymedics.com/category/osce/clinical-examination/cardio/	
10	Valvular lesion syndrome : congenital heart defects. ECG in children (norm and pathology). Classification. Etiology. Hemodyn	Learning outcomes: - identify symptoms and syndromes of valvular apparatus damage when interviewing a patient; - conduct targeted questioning and physical examination of a patient taking into account age characteristics with valvular apparatus damage syndrome; - highlight the main symptoms and syndromes of valvular heart disease (acquired heart defects: mitral insufficiency and stenosis, aortic insufficiency and stenosis, tricuspid insufficiency, rheumatic and non-rheumatic valvular apparatus damage); - interpret laboratory and instrumental research data for valvular apparatus damage syndrome; - confirm the suspected diagnosis of valvular apparatus damage using laboratory and instrumental methods;	1. Мухин Н.А., Моисеев В.С. Пропедевтика внутренних болезней: учебник. — 2-е изд., доп. и перераб. М.: ГЭОТАР – 2020г, глава-6. 2. Трухан Д.И., Филимонов С.Н. Болезни сердечно-сосудистой системы: клиника, диагностика и лечение. 137-174 ст 3. Ішкі аурулар пропедевтикасы: оқулық — М.: ГЭОТАР-Медиа, 2015, Тарау-6: ил. Н.А. Мухин, В.С. Моисеев; 4.«Кардиология» модулі модуль «Сердечно-сосудистой системы»: Интеграцияланған оқулық: қазақ және орыс тілдерінде / — М.: Литтерра, 2014. —376 б.: ил 5.Essentials_of_Internal_Medicine_Talley_3_ed_2015/203-207	1. TBL 2. Working with a patient for at least 20% of the study time 3. Training in the simulation center

	amics. Clinical diagnostic and differential diagnostic criteria. Complicat ions. Treatment	- can conduct differential diagnostics between murmurs in case of valvular apparatus damage (acquired heart defects, rheumatic and non-rheumatic valvular apparatus damage) - prescribe and use drug classification, mechanism of action, pharmacokinetics, side effects, indications, and contraindications for use in the treatment of valvular apparatus damage - have basic skills in maintaining current medical records, including in information systems; - demonstrate communication skills, teamwork skills, organization, and management of the diagnostic and treatment process; - apply knowledge of the principles and methods of forming a healthy lifestyle for an individual and family; - demonstrate commitment to professional values such as altruism, compassion, empathy, responsibility, honesty, and compliance with the principles of confidentiality; - demonstrate the ability and need for continuous professional training and improvement of their knowledge and skills in professional activities; - demonstrate basic skills in scientific research.	6. Harrison's Manual of Medicine/ 20th Edition, Section 8, Chapter 115-116. 7. Brent G. Petty. Basic Electrocardiography Second Edition – 2020, 8. Practical Cardiology First Edition: 2018, 164-177, 164-177, 278-296 p 9. Heart Failure- A Companion to Braunwald's Heart diseases Second Edition- 2010 10. 2022 AHA/ACC/HFSA Guideline for the Management of Heart Failure 11. Cardiology in a Heartbeat Edited by: Amar Vaswani. SECOND EDITION, chapter 16 https://geekymedics.com/category/osce/clinical-examination/cardio/	
11	Inflammat ory heart diseases. Infectious endocardi tis. Myocardit is. Pericarditi s. Classifica tion. Etiology. Immunop athogenes is. Clinical	Learning outcomes: - identify symptoms and syndromes of inflammatory heart disease when interviewing a patient; - conduct targeted questioning and physical examination of a patient taking into account age-related characteristics with inflammatory heart disease; - highlight the main symptoms and syndromes of inflammatory heart disease (infectious: virus, bacteria, rickettsia, allergic, toxic, autoimmune, uremic); - interpret laboratory and instrumental research data for inflammatory heart disease syndrome; - confirm the suspected diagnosis of inflammatory heart disease using laboratory and instrumental methods; - can conduct differential diagnostics between clinical manifestations of inflammatory heart disease	1. Мухин Н.А., Моисеев В.С. Пропедевтика внутренних болезней: учебник. — 2-е изд., доп. и перераб. М.: ГЭОТАР – 2020г, глава-6. 2. Трухан Д.И., Филимонов С.Н. Болезни сердечно-сосудистой системы: клиника, диагностика и лечение. 105-137, 190-213 ст 3. Роберт Струтынский – Внутренние болезни: сердечно-сосудистая система. 2013 4. Ішкі аурулар пропедевтикасы: оқулық — М.: ГЭОТАР-Медиа, 2015, Тарау-6: ил. Н.А. Мухин, В.С. Моисеев; 5.«Кардиология» модулі модуль «Сердечно-сосудистой системы»: Интеграцияланған оқулық: қазақ және орыс тілдерінде / — М.: Литтерра, 2014. —376 б.: ил	1. TBL 2. Working with a patient for at least 20% of the study time 3. Training in the simulation center

	diagnostic and differential diagnosis. Complications. Treatment.	- prescribe and use drug classification, mechanism of action, pharmacokinetics, side effects, indications, and contraindications for use in the treatment of inflammatory heart disease - have basic skills in maintaining current medical records, including in information systems; - demonstrate communication skills, teamwork skills, organization, and management of the diagnostic and treatment process; - apply knowledge of the principles and methods of forming a healthy lifestyle for an individual and family; - demonstrate commitment to professional values such as altruism, compassion, empathy, responsibility, honesty, and compliance with the principles of confidentiality; - demonstrate the ability and need for continuous professional training and improvement of their knowledge and skills in professional activities; - demonstrate basic skills in scientific research.	6. Harrison's Principles of Internal Medicine 20th Edition 2018. Disorders of the Cardiovascular System PART 6. 7. Oxford Handbook of General Practice 4th Edition. Chapter 10. 274-276 8. Essentials of Internal Medicine Talley 3rd ed 2015/203-207 9. Harrison's Manual of Medicine/ 20th Edition, Section 8, chapter 117-118. 10. Brent G. Petty. Basic Electrocardiography Second Edition – 2020, 11. Practical Cardiology First Edition: 2018, 164-177, 164-177, 278-296 p 12. Heart Failure- A Companion to Braunwald's Heart diseases Second Edition- 2010 13. 2022 AHA/ACC/HFSA Guideline for the Management of Heart Failure 14. 2023 Focused Update of the 2021 ESC Guidelines for the diagnosis and treatment of acute and chronic heart failure https://geekymedics.com/category/osce/clinical-examination/cardio/	
12	Cardiomyopathy. Classification. Etiology. Immunopathogenesis. Clinical diagnostic and differential diagnosis.	Learning outcomes: - identify symptoms and syndromes of cardiomyopathy when interviewing a patient; - conduct targeted questioning and physical examination of the patient taking into account age-related characteristics of cardiomyopathy; - highlight the main symptoms and syndromes of cardiomyopathy (hypertrophic, dilated, restrictive); - interpret data from laboratory and instrumental studies of cardiomyopathy; - confirm the suspected diagnosis of cardiomyopathy using laboratory and instrumental methods; - can conduct differential diagnostics between clinical manifestations of cardiomyopathy	1. Мухин Н.А., Моисеев В.С. Пропедевтика внутренних болезней: учебник. — 2-е изд., доп. и перераб. М.: ГЭОТАР – 2020г, глава-6. 2. Трухан Д.И., Филимонов С.Н. Болезни сердечно-сосудистой системы: клиника, диагностика и лечение. 105-137, 190-213 ст 3. Ішкі аурулар пропедевтикасы: оқулық — М.: ГЭОТАР-Медиа, 2015, Тарау-6: ил. Н.А. Мухин, В.С. Моисеев; 4. Роберт Струтынский – Внутренние болезни: сердечно-сосудистая система. Глава 10. 2013	1. TBL 2. Working with a patient for at least 20% of the study time 3. Training in the simulation center

	diagnostic criteria. Complications. Treatment .	- prescribe and use drug classification, mechanism of action, pharmacokinetics, side effects, indications, and contraindications for use in the treatment of cardiomyopathy - have basic skills in maintaining current medical records, including in information systems; - demonstrate communication skills, teamwork skills, organization, and management of the diagnostic and treatment process; - apply knowledge of the principles and methods of forming a healthy lifestyle for an individual and family; - demonstrate commitment to professional values such as altruism, compassion, empathy, responsibility, honesty, and compliance with the principles of confidentiality; - demonstrate the ability and need for continuous professional training and improvement of their knowledge and skills in professional activities; - demonstrate basic skills in scientific research.	5.«Кардиология» модулі модуль «Сердечно-сосудистой системы»: Интеграцияланған оқулық: қазақ және орыс тілдерінде / — М.: Литтерра, 2014. —376 б.: ил 6. Harrison's Principles of Internal Medicine 20th Edition 2018. Disorders of the Cardiovascular System PART 6. 6. Oxford Handbook of General Practice 4th Edition. Chapter 10. 278 p 7.Essentials_of_Internal_Medicine_Talley_3_ed_2015/190-194 8. Harrison's Manual of Medicine/ 20th Edition, Section 8, chapter 117 9. Brent G. Petty. Basic Electrocardiography Second Edition – 2020, 10. Practical Cardiology First Edition: 2018, 164-177, 164-177, 278-296 p 11. Heart Failure- A Companion to Braunwald's Heart diseases Second Edition-2010 12. 2022 AHA/ACC/HFSA Guideline for the Management of Heart Failure 17. 2023 Focused Update of the 2021 ESC Guidelines for the diagnosis and treatment of acute and chronic heart failure https://geekymedics.com/category/osce/clinical-examination/cardio/	
13	The syndrome of impaired function of automatic m. The syndrome	Learning outcomes: - conducts targeted questioning and physical examination to identify symptoms of heart rhythm disturbances based on the application of knowledge of pathogenesis - identify symptoms and syndromes of heart rhythm disturbances: arrhythmias associated with impaired cardiac automatism: sinus bradycardia, tachycardia, arrhythmia, respiratory arrhythmia, atrioventricular rhythm. Arrhythmias associated with impaired cardiac	1. Мухин Н.А., Моисеев В.С. Пропедевтика внутренних болезней: учебник. — 2-е изд., доп. и перераб. М.: ГЭОТАР – 2020г, глава-6. 2. Трухан Д.И., Филимонов С.Н. Болезни сердечно-сосудистой системы: клиника, диагностика и лечение. 213-244 ст 3. Ішкі аурулар пропедевтикасы: оқулық — М.: ГЭОТАР-Медиа,2015, Тарау-6: ил. Н.А. Мухин, В.С. Моисеев;	1. TBL 2. Working in groups 3. Decoding the ECG

	of impaired excitability. Emergency care for paroxysmal tachycardia	excitation: extrasystoles, paroxysmal tachycardia, atrial fibrillation, ventricular fibrillation. - interpret data from laboratory and instrumental (ECG, EchoCG, Doppler ultrasound, MRI, angiography, DMBP, Holter ECG) studies in the syndrome of heart rhythm disturbances; - can conduct differential diagnostics between cardiac arrhythmia and excitability - prescribe and use drug classification, mechanism of action, pharmacokinetics, side effects, indications, and contraindications for use in the treatment of cardiac arrhythmia (antiarrhythmic drugs) - provide emergency care for paroxysmal tachycardia - have basic skills in maintaining current medical records, including in information systems; - demonstrate communication skills, teamwork skills, organization, and management of the diagnostic and treatment process; - apply knowledge of the principles and methods of forming a healthy lifestyle for an individual and family; - demonstrate commitment to professional values such as altruism, compassion, empathy, responsibility, honesty and adherence to confidentiality principles; - demonstrate abilities and needs for continuous professional training and improvement of their knowledge and skills in professional activities; - demonstrate basic skills in scientific research. ISW: Modern principles of arrhythmia treatment, latest data ((article review, case, video, simulation OR students' research work (SRW) – thesis, report, article)	4. Роберт Струтынский – Внутренние болезни: сердечно-сосудистая система. Глава 3. 2013 5. Роберт Струтынский – Электрокардиограмма: анализ и интерпретация/ 14-у изд. – М:МедПресс-информ.2012 6.«Кардиология» модулі модуль «Сердечно-сосудистой системы»: Интеграцияланған оқулық: қазақ және орыс тілдерінде / — М.: Литтерра, 2014. —376 б.: ил 7. Harrison's Principles of Internal Medicine 20th Edition 2018. Disorders of the Cardiovascular System PART 6. 8. Oxford Handbook of General Practice 4th Edition. 268-272 p 9.Essentials_of_Internal_Medicine_Talley_3_ed_2015/194-200 10. Harrison's Manual of Medicine/ 20th Edition, Section 8, chapter 124-125 11. Brent G. Petty. Basic Electrocardiography Second Edition – 2020, 12. Practical Cardiology First Edition: 2018, 164-177, 164-177, 13. Marriott's practical electrocardiography. — Twelfth edition / Galen S. Wagner, David G. Strauss. https://geekymedics.com/category/osce/clinical-examination/cardio/	
14	Syndrome of impaired conduction function.	Learning outcomes: - conducts targeted questioning and physical examination to identify symptoms of cardiac arrhythmia based on the application of knowledge of pathogenesis - identify symptoms and syndromes of cardiac arrhythmia: arrhythmias associated with conduction disorders: AV block, Hiss block.	1. Мухин Н.А., Моисеев В.С. Пропедевтика внутренних болезней: учебник. — 2-е изд., доп. и перераб. М.: ГЭОТАР – 2020г, глава-6. 2. Трухан Д.И., Филимонов С.Н. Болезни сердечно-сосудистой системы: клиника, диагностика и лечение. 213-244 ст	1.TBL 2. Working in groups 3. Decoding the ECG

		- interpret data from laboratory and instrumental (ECG, EchoCG, ultrasound Doppler, MRI, angiography, DMBP, Holter ECG) studies in cardiac arrhythmia syndrome; - can conduct differential diagnostics between cardiac arrhythmia conduction disorders - prescribe and use drug classification, mechanism of action, pharmacokinetics, side effects, indications, and contraindications for use in the treatment of cardiac arrhythmia conduction disorders (antiarrhythmic drugs) - have basic skills in maintaining current medical records, including in information systems; - demonstrate communication skills, teamwork skills, organization, and management of the diagnostic and treatment process; - apply knowledge of the principles and methods of forming a healthy lifestyle for an individual and family; - demonstrate commitment to professional values such as altruism, compassion, empathy, responsibility, honesty, and compliance with the principles of confidentiality; - demonstrate the ability and need for continuous professional training and improvement of their knowledge and skills in professional activities; - demonstrate basic skills in scientific research. ISW: Modern principles of arrhythmia treatment, latest data ((article review, case, video, simulation OR students' research work (SRW) - thesis, report, article)	3. Ішкі аурулар пропедевтикасы: оқулық — М.: ГЭОТАР-Медиа, 2015, Тарау-6: ил. Н.А. Мухин, В.С. Моисеев; 4. Роберт Струтинский — Внутренние болезни: сердечно-сосудистая система. Глава 3. 2013 5. Роберт Струтинский — Электрокардиограмма: анализ и интерпретация/ 14-у изд. — М:МедПресс-информ.2012 6.«Кардиология» модулі модуль «Сердечно-сосудистой системы»: Интеграцияланған оқулық: қазақ және орыс тілдерінде / — М.: Литтерра, 2014. —376 б.: ил 7. Harrison's Principles of Internal Medicine 20th Edition 2018. Disorders of the Cardiovascular System PART 6. 8. Oxford Handbook of General Practice 4th Edition. 268-272 p 9.Essentials_of_Internal_Medicine_Talley_3_ed_2015/194-200 10. Harrison's Manual of Medicine/ 20th Edition, Section 8, chapter 124-125 11. Brent G. Petty. Basic Electrocardiography Second Edition – 2020, 12. Practical Cardiology First Edition: 2018, 164-177, 164-177, 13. Marriott's practical electrocardiography. — Twelfth edition / Galen S. Wagner, David G. Strauss. https://geekymedics.com/category/osce/clinical-examination/cardio/	
15	The syndrome is a congenital	Learning outcomes: - conducts targeted questioning and physical examination to identify symptoms of congenital heart rhythm disorders based on the application of knowledge of pathogenesis	1. Мухин Н.А., Моисеев В.С. Пропедевтика внутренних болезней: учебник. — 2-е изд., доп. и перераб. М.: ГЭОТАР – 2020г, глава-6.	1. TBL 2. Working in groups 3. Decoding the ECG

	heart rhythm disorder.	- identify symptoms and syndromes of congenital heart rhythm disorders: Wolff-Parkinson-White syndrome (WPW), Clerk-Levy-Christesco syndrome (CLC), long QT syndrome, short QT syndrome, Brugada syndrome, sick sinus syndrome. - interpret data from laboratory and instrumental (ECG, EchoCG, Doppler ultrasound, MRI, angiography, DMBP, Holter ECG) studies in congenital heart rhythm disorder syndrome; - can conduct differential diagnostics between cardiac arrhythmia - prescribe and use drug classification, mechanism of action, pharmacokinetics, side effects, indications, and contraindications for use in the treatment of cardiac arrhythmia (antiarrhythmic drugs) - have basic skills in maintaining current medical records, including in information systems; - demonstrate communication skills, teamwork skills, organization and management of the diagnostic and treatment process; - apply knowledge of the principles and methods of forming a healthy lifestyle for an individual and family; - demonstrate commitment to professional values such as altruism, compassion, empathy, responsibility, honesty, and compliance with the principles of confidentiality; - demonstrate the ability and need for continuous professional training and improvement of their knowledge and skills in professional activities; - demonstrate basic skills in scientific research. ISW: Modern principles of arrhythmia treatment, latest data ((article review, case, video, simulation OR students' research work (SRW) – thesis, report, article)	2. Ішкі аурулар пропедевтикасы: окулық — М.: ГЭОТАР-Медиа,2015, Тарау-6: ил. Н.А. Мухин, В.С. Моисеев; 3.«Кардиология» модулі модуль «Сердечно-сосудистой системы»: Интеграцияланған окулық: қазақ және орыс тілдерінде / — М.: Литтерра, 2014. —376 б.: ил 4. Роберт Струтынский – Внутренние болезни: сердечно-сосудистая система. Глава 3. 2013 5. Роберт Струтынский – Электрокардиограмма: анализ и интерпретация/ 14-у изд. – М:МедПресс-информ.2012 6. Harrison's Principles of Internal Medicine 20th Edition 2018. Disorders of the Cardiovascular System PART 6. 7. Oxford Handbook of General Practice 4th Edition. 268-272 p 8.Essentials_of_Internal_Medicine_Talley_3_ed_2015/194-200 9. Harrison's Manual of Medicine/ 20th Edition, Section 8, chapter 124-125 10. Brent G. Petty. Basic Electrocardiography Second Edition – 2020, 11. Practical Cardiology First Edition: 2018, 164-177, 164-177, 12. Marriott's practical electrocardiography. — Twelfth edition / Galen S. Wagner, David G. Strauss. 13. Thaler, Malcolm S., author. The only EKG book you'll ever need / Malcolm S. Thaler. — Eighth edition. https://geekymedics.com/category/osce/clinical-examination/cardio/	
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RUBRICATOR FOR ASSESSING LEARNING OUTCOMES
with summative assessment

Rating calculation formula

For the 4th course as a whole- overall admission rating (OAR)

Curation, clinical skills	20%
SIW (case, video, simulation OR research thesis, report, article) – assessment of a creative task	10%
Border control	70%
Total for BC-1	100%
Medical history	20%
SIW (case, video, simulation OR research thesis, report, article) – assessment of a creative task	10%
Border control 2	70%
Total for BC -2	100%

Final score: OAR 60% + exam 40%

Exam (2 stages) – MSQ testing (40%) + OSKE (60%)

Team based learning – TBL

		%
Individual -- (IRAT)		30
Group -- (GRAT)		20
Appeal		10
Case rating -		30
Companion rating (bonus)		10
		100%
8	Evaluation of effectiveness, prognosis, prevention	10
9	Special problems and questions on the case	10
10	Companion rating (bonus)	10
		100%

Point-rating assessment of practical skills at the bedside (maximum 100 points)

Point Rating assessment of practical skills at the bedside (maximum 100 points)						
№	Criteria (evaluated according to the point system)	10	8	6	4	2
		<i>Excellent</i>	<i>Good</i>	<i>Satisfactory</i>	<i>Need correction</i>	<i>Bad</i>
	INTERVIEWING THE PATIENT					
1	Communication skills in interviewing a patient	Introduced himself to the patient. He asked how to address the patient. He spoke in a friendly tone, his voice was sonorous and clear. Polite wording of the questions. He showed empathy for the patient - the doctor's posture, approving of "fading". I asked open-ended questions.	Introduced himself to the patient. He asked how to address the patient. He spoke in a friendly tone, his voice was sonorous and clear. Polite wording of the questions. He showed empathy for the patient - the doctor's posture, approving of "fading". I asked open-ended questions.	Introduced himself to the patient. He asked how to address the patient. He spoke in a friendly tone, his voice was sonorous and clear. Polite wording of the questions. Few open-ended questions have been asked	He did not fully introduce himself to the patient, did not ask the patient's name, the student's speech was slurred, and his voice was not legible. Open-ended questions are not asked, the patient answers in monosyllables. The student did not pay attention to the convenience of the patient, did not show empathy.	Communication with the patient is negative. The basic requirements for communicating with the patient are not met, there is no manifestation of empathy for the patient.
	Collecting complaints	Identified the main and secondary complaints of the patient. Revealed important details of the disease (for example, is there nausea, vomiting, abdominal pain? What kind of character?). He asked questions about the differential diagnosis.	Identified the main and secondary complaints of the patient. Have you identified important details of the disease (for example, nausea, vomiting, abdominal pain? What kind of character?).	Identified the main complaints of the patient. Revealed important details of the disease.	The student cannot distinguish the main complaints from the secondary ones. Did not reveal important details of the disease. He asks chaotic questions.	He did NOT reveal any details of the disease. The collection of complaints is limited only by the subjective words of the patient himself.

	Collecting anamnesis of the disease	Revealed the chronology of the disease, important details of the disease (for example, when do abdominal pains appear?). I asked about the medications taken for this disease. He asked questions about the differential diagnosis.	Revealed the chronology of the disease, important details of the disease (for example, when do abdominal pains appear?). A student asked about the medications taken for this disease.	Revealed the chronology of the disease development. A student asked about the medications taken for this disease.	The student cannot build a chronology of the development of the disease. He asks chaotic questions.	The stage was skipped by the student. There is only information given by the patient himself.
	Anamnesis of life	The student revealed an allergic anamnesis, chronic diseases, operations, blood transfusions, medication taken on a regular basis, family history, social status of the patient, occupational hazards, and epidemiological history.	Revealed allergic anamnesis, chronic diseases, operations, medications taken regularly, family history, social status of the patient, occupational hazards, epidamnesis	Revealed an allergic anamnesis, chronic diseases, family history.	Revealed an allergic anamnesis, a family history.	The stage was skipped by the student. There is only information given by the patient himself.
2	The quality of the patient survey	The patient's survey was conducted sequentially in order, but depending on the situation and the patient's characteristics, the student changed the order of the survey. In the end, he sums up – summarizes all the questions, and receives feedback from the patient (for example, let's summarize - you	The patient is interviewed sequentially in order. In the end, he summarizes - sums up all the questions and receives feedback from the patient (for example, let's summarize - you got sick a week ago when nausea with repeated vomiting first appeared, then diarrhea appeared, is that correct?). High-quality detailed information is collected,	The survey sequence is broken, but the quality of the information collected allows us to suggest a probable diagnosis. Does not use a problem sheet - does not know how to identify major and minor problems.	The survey sequence is broken. The student repeats the same questions. The information collected is of poor quality and does not allow for a probable diagnosis. Does not use a problem sheet – does not know how to identify major and minor problems.	The survey is not conducted consistently, the student asks random questions that are not related to the patient's case or does not ask questions at all. Does not use a problem sheet - does not know how to

		got sick a week ago when nausea with repeated vomiting first appeared, then diarrhea appeared, is that right?). High-quality detailed information has been collected, leading to a probable diagnosis. Uses a problem sheet – can identify major and minor problems.	leading to a probable diagnosis. Uses a problem sheet - knows how to highlight the main and secondary problems.			identify major and minor problems.
3	Time management of patient interview. Control over the situation.	Minimal time in the group was spent on interviewing the patient. The student is self-confident, fully controls the situation, and manages it. The patient is satisfied.	The survey was conducted fairly quickly. The student is self-confident and in control of the situation. The patient is satisfied.	The time of questioning the patient is prolonged but does not cause discomfort to the patient. The student does not lose his composure. There is no negativity on the part of the patient.	Long survey, the student is wasting his time. The patient expresses discomfort with the drawn-out survey. The student is not confident and is at a loss when communicating with the patient.	The survey is completed without revealing any important information. The survey is taking too long, and the atmosphere of communication is negative. Conflict with the patient is possible.
PHYSICAL EXAMINATION OF THE PATIENT						
		10	8	6	4	2
		<i>Excellent</i>	<i>Good</i>	<i>Satisfactory</i>	<i>Need correction</i>	<i>Bad</i>
4	Communication skills during physical examination of a patient	Asked the patient (or relatives, parents, or guardians) for consent to conduct a physical examination. Explained to the patient what and how he will check (for example, I will listen to your lungs with a stethoscope, check	Asked the patient (or relatives, parents, or guardians) for consent to conduct a physical examination. Explained to the patient what and how he will check (for example, I will listen to your lungs with a stethoscope, check your abdomen with my hand)	Asked the patient (or relatives, parents, or guardians) for consent to conduct a physical examination. Explained to the patient what and how he will check (for example, I will listen to your lungs with a	Asked the patient (or relatives, parents, or guardians) for consent to conduct a physical examination.	Contact with the patient's body without prior consent.

		your abdomen with my hand)		stethoscope, check your abdomen with my hand)		
5	Assessment of the patient's level of consciousness using the Glasgow scale.	Calculated the points on the scale correctly. Correctly uses medical terminology to indicate the level of consciousness.	Calculate the points on the scale correctly. Correctly uses medical terminology to indicate the level of consciousness.	The error in the assessment on the scale is no more than 2 points. Knows the terminology for indicating the level of consciousness.	The error in the assessment on the scale is more than 3 points. Confused in medical terminology.	Does not know the Glasgow scale criteria. Does not know how to use it. Does not know how to differentiate the level of consciousness.
	Assessment of the patient's vital signs - heart rate, respiratory rate, blood pressure, body temperature, body mass index.	Measured vital signs technically correctly. Correctly uses medical terminology when assessing vital signs (e.g., tachypnea, tachycardia, hypoxia, etc.)	Measured vital signs technically correctly. Correctly uses medical terminology when assessing vital signs (e.g., tachypnea, tachycardia, hypoxia, etc.)	Minor errors in the technique of measuring vital signs. The results of the measurements are not distorted. The student can correct the errors in the use of medical terminology himself.	Gross errors in the technique of measuring vital signs, distortion of results. Cannot independently correct errors in medical terminology.	Does not have the technique for measuring vital signs. Does not know the standard data for assessing blood pressure, pulse, respiratory rate, saturation, and body temperature.
6	Technique for conducting a physical examination of a patient.	Conducted a physical examination of the patient by systems, in the established order, the technique of palpation, auscultation, and percussion is correct. Explain to the patient what changes were detected and what the norm should be. All important physical data (both pathological and normal) for making a probable diagnosis were identified.	The physical examination of the patient was carried out systematically in order, the technique of palpation, auscultation and percussion is correct. Explain to the patient what changes were detected and what the norm should be. All important physical data (both pathological and normal) were identified to establish a probable diagnosis. Details the symptoms identified (for example, have you noticed swelling in your	The physical examination of the patient was conducted in violation of the systemic order, but without causing inconvenience to the patient. The technique of palpation, auscultation, and percussion is satisfactory but requires minor corrections from the teacher. The main violations were identified, sufficient for making a probable diagnosis.	Physical examination was not performed systematically, the patient stood up, lay down, changed position several times, and experienced discomfort. Only individual systems were covered, The technique of performing palpation, percussion, auscultation - required significant correction by the teacher.	Gross violations during physical examination - does not know the procedure and technique for conducting a physical examination of a patient. Does not know the norm and pathology of physical data. Cannot identify any violations.

		The student knows how to change the order of examination depending on the symptoms identified. Details the symptoms identified (for example, have you noticed swelling in your legs? How long have you noticed this? Does the swelling increase in the evening or in the morning?) At the end, summarizes - the correspondence of the changes identified during the physical examination to the complaints and anamnesis of the patient.	legs? How long have you noticed this? Does the swelling increase in the evening or the morning?)		Confused in determining normal and pathological changes. The main disorders were NOT identified. Insufficient data to make a probable diagnosis.	
7	Making a preliminary syndromic diagnosis	The most complete justification and formulation of a preliminary diagnosis with the justification of complaints and physical examination data, conducted differential diagnostics for the main syndromes based on complaints data, disease development and detected physical abnormalities. Understand the problem as a whole, link it to the patient's characteristics.	The most complete justification and formulation of the preliminary diagnosis with the justification of the complaints and physical examination data Correct and justified in terms of the underlying pathology. Conducted differential diagnostics for the main syndromes. Correctly named the necessary laboratory and instrumental examination for diagnosis, named the expected changes. Explained to the patient	Justification of the preliminary diagnosis based on complaints and physical examination in terms of the underlying pathology. Determined the main examination for diagnosis.	A template or intuitive formulation of a preliminary diagnosis cannot justify (i.e., link complaints, chronology of symptom development, and physical data). The prescribed examination does not allow to confirm the diagnosis.	Formulation of diagnosis at random does not understand and does not see the connection between the complaints and the patient's medical history. The prescribed examination does not allow to confirm the diagnosis. The prescribed examination can harm the patient's health.
	Laboratory and visual examination plan (BT, UT, biochemical test, pathological fluids, visualization methods)					

		Correctly prescribed laboratory and instrumental examination, taking into account the differential diagnosis (that is, named what he prescribes, for what, and expected changes). Explained to the patient important points in preparation for the examination (for example, if the glucose test is on an empty stomach, then do not drink, do not eat, do not brush your teeth, etc.)	important points in preparation for the examination.			
8	Interpretation of laboratory and instrumental examination results (BT, UT, biochemical test, biopsy, visualization methods FGDS, X-ray, CT, MRI, Elastometry, PET, ultrasound, etc.)	Accurate and complete interpretation using medical terminology, understands the relationship/or discrepancy of the detected deviations with the preliminary diagnosis	Accurate and complete interpretation using medical terminology	Identifying major deviations in tests, correct use of medical terminology	Incomplete or not entirely correct interpretation, lack of knowledge of normative data, errors in the use of medical terminology	Does not use medical terminology, does not know regulatory data
9	Formulation of the final syndromic diagnosis, with justification based on the	The student formulates the underlying disease. When formulating the underlying disease, use the clinical classification of the disease. Assesses the severity of the disease. Names the	The student formulates the underlying disease. When formulating the underlying disease, use the clinical classification of the disease. Assesses the severity of the disease. Names the	The student formulates the main disease. The clinical classification is not complete. The student substantiates his opinion on objective data (anamnesis, examination	The student can formulate only the main disease. Cannot fully explain the rationale for the diagnosis. For example: pneumonia (or such answers as lung	The student cannot formulate a diagnosis. Or cannot explain the rationale for the diagnosis (name the diagnosis at random following

	examination results	complications of the underlying disease. The student substantiates his/her opinion on objective data (anamnesis, examination results). For example: Community-acquired lobar pneumonia, is typical. Moderate course. (or severe course, complication - pleural empyema)	complications of the underlying disease. The student substantiates his/her opinion on objective data (anamnesis, examination results). For example: Community-acquired lobar pneumonia, is typical. Moderate course. (or severe course, complication - pleural empyema)	results). For example: Community-acquired pneumonia, is typical.	tissue compaction syndrome, obstructive syndrome, acute respiratory failure syndrome, etc. are perceived as equivalent).	the topic of the lesson)
10	Treatment principles	Knows the groups of main, i.e. the main drugs for the treatment of a given disease, their mechanism of action, and the classification of these drugs. Makes a reasonable choice of drugs: taking into account the indications and contraindications for a given patient. Informs the patient about the most important side effects of the prescribed drugs. Informs the patient about the features of taking the drug (for example, after meals, with plenty of water, etc.) Determined the criteria for the effectiveness of treatment, and the expected time frame for	Knows the groups of main, i.e. the main drugs for the treatment of a given disease, their mechanism of action, and the classification of these drugs. Determines the indications and contraindications for a given patient. Informs the patient about the most important side effects of the prescribed drugs. Informs the patient about the features of taking the drug (for example, after meals, with plenty of water, etc.) Determined the criteria for the effectiveness of treatment.	Knows only the basic principles of treatment. Names only a group of basic drugs for the treatment of a given disease (for example, broad-spectrum antibiotics). Knows the mechanism of action of basic drugs.	Knows only the basic principles of treatment. Can only name the class of drugs (for example, antibiotics or bronchodilators). Does not know the classification of drugs. Explains the mechanism of action in general terms at the layman's level (for example, antibiotics kill bacteria, etc.)	

		improvement of the patient's condition. Named the terms and methods of monitoring treatment, subjective and objective data, laboratory and visualized data on monitoring treatment.				
	ИТОГО	100	80	60	40	20

Point-rating assessment (check-list) of medical history management (maximum 100 points)

№	Criteria (evaluated according to the point system)	10	8	6	4	2
		<i>Excellent</i>	<i>Good</i>	<i>Satisfactory</i>	<i>Need correction</i>	<i>Bad</i>
1	Patient complaints: primary and secondary	Complete and systematic, with an understanding of important details	Accurate and complete	Basic information	Incomplete or inaccurate, some details are missing	Misses the important thing
2	Collection of anamnesis of the disease					
3	Anamnesis of life					
4	Objective status - general examination	Complete, efficient, organized, with an understanding of important details	Consistently and correctly	Identifying key data	Incomplete or not quite correct, not attentive to the patient's comfort	Inconsistent data
5	Respiratory system	Complete, effective, technically correct application of all skills of inspection, palpation, percussion and auscultation	Complete, effective, technically correct application of all examination skills, physical examination	Basic data identified Physical examination skills learned	Incomplete or inaccurate Physical examination skills require improvement	Missing Important Data Inappropriate Physical Examination Skills
6	Cardiovascular system					
7	Digestive system					

8	Urogenital system	Complete, effective, technically correct application of all special examination skills	with minor errors, or corrected during performance			
9	Musculoskeletal system	Complete, effective, technically correct application of all special examination skills				
10	Presentation of medical history	The most complete description and presentation Understood the problem as a whole, connects it with the patient's characteristics	precise, focused; choice of facts shows understanding	The entry form includes all the basic information;	Many important omissions, often includes false or unimportant facts	Lack of control over the situation, many important omissions, many clarifying questions

Point-rating assessment (check-list) of the ISW (independent student's work) - creative task (maximum 90 points) + bonuses for English and time management

		10	8	4	2
1	Problem solving	The organized concentrated, allocates all questions which are falling into to the main revealed problem with a comprehension of a concrete clinical situation	Organized, the concentrated, allocates all questions which are falling into to the main revealed problem, but there is no comprehension of a concrete clinical situation	Not the concentrated, Derivation on the questions which are not falling into to the main revealed problem	Inaccurate, misses the main thing, disharmonious data.
2	Information	All necessary information on a subject in the free, serial, logical manner is completely conveyed The product form is adequately chosen	All necessary information in a logical manner, but with shallow inaccuracies is conveyed	All necessary information on a subject is explained chaotically, with not gross errors	Important information on a subject, gross errors is not reflected
3	Significance	Material is chosen on the basis of authentically established facts. Manifestation of a comprehension on the level or quality of proofs	Some conclusions and the conclusions are formulated on the basis of assumptions or the incorrect facts. There is no complete comprehension of level or quality of proofs	Not the sufficient comprehension of a problem, some conclusions and the conclusions are based on the inexact and not proved data – doubtful resources are used	Conclusions and the conclusions are not proved or irregular

4	Logic	logical and well reasoning, has internal unity, provisions in a product follow one of another and are logically interdependent between themselves	Has internal unity, provisions of a product one of another follows, but there are inaccuracies	There is no sequence and logicity in statement, but it is possible to keep track of the main idea	Jumps from one on another, it is difficult to catch the main idea
5	Recourses	Literary data are submitted in logical interrelation, show deep study of the main and padding informational resources	Literary data show study of the main literature	Only ordinary recourses	Inconsistency and randomness in statement of data, an inconsistency There is no knowledge of the main textbook Using of Google
6	Practical application	High	Good	moderate	no
7	Patient focusing	High	Good	moderate	no
8	Applicability in future practice	High	Good	moderate	no
9	Presenation	Correctly, to the place all opportunities of Power Point or other e-softs, the free possession of material, a sure manner of statement are used	It is overloaded or are insufficiently used visual materials, inexact possession of material	Visual materials are not informative	Does not own material, is not able to explain it
b o n u s	Time management*	10 For before deadline	In time	Good quality but a little late Minus 2-4	After deadline more than 24 hours Minus 10
b o n u s	Rating**	10 points additional	Outstanding work, for example: The best work in group Creative approach Innovative approach to realization of a task According to the proposal of group		
	* The deadline is determined by the teacher, as a rule - the day of the boundary control ** thus, you can get 90 points as much as possible, to get above 90-you need to show a result higher than expected				

