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Khanty-Mansiysk Autonomous Okrug-Ugra
 "Surgut State University"

Approved by
 Deputy Rector for Academic Aff:

_____ E.V. Konovalova

“ 13 ” June 2024, Record No. 5

Professional Diagnostic Practice

Syllabus

Department	Cardiology		
Curriculum	s310501-ЛечДело-ИИ-24-1.pli.xml Specialty 31.05.01 General Medicine		
Qualification	General Practitioner		
Form of education	Full-time		
Total (in credits)	6		
Total academic hours	216	Control:	
including:		Credit, 6 th term	
Classes	96		
Self-study	120		
Control hours	0		

Course outline in terms

Academic year (Term)	3 (3.6)		Total	
	11,3			
Weeks	Cur	Syl	Cur	Syl
Types of classes				
Lectures	-	-	-	-
Practical	96	96	96	96
Self-study	120	120	120	120
Control hours	-	-	-	-
Total	216	216	216	216

The Syllabus is compiled by:

*PhD in Medical Sciences, Associate Professor, Omelchenko N.V.*_____

*PhD in Medical Sciences, Associate Professor, Vorobyov A.S.*_____

The Syllabus

Professional Diagnostic Practice

Developed in accordance with Federal State Educational Standard:

Federal State Educational Standard of higher education in the specialty 31.05.01 General medicine (Order of the Ministry of Education and Science of the Russian Federation on August, 12, 2020 №988)

Based on the Curriculum:

31.05.01 GENERAL MEDICINE

Specialization: General Medicine

Approved by the Academic Council of Surgut State University, “ 13 ” june 2024, Record №5

The Syllabus was approved by the department

Cardiology

Head of Department, PhD in Medical Sciences , Associate Professor, Urvantseva I.A.

Chairman of Academic and Scientific Council, PhD in Medical Sciences (Medicine), Senior Lecturer Vasilyeva E.A.

1. AIM OF THE PRACTICE

The **aim** of the practice is to develop basic functions of the professional activity of a doctor in a therapeutic hospital, the formation and development of professional competence, significant personality traits. Professional practice is an integral part of the Main Educational Program of Higher Education and an essential part of qualified specialists training.

2. OBJECTIVES OF THE PRACTICE

1. To form the ability and willingness to implement the ethical and deontological aspects of medical practice in communication with colleagues, nurses, nurses, adults and adolescents.
2. To form the ability and readiness to analyze medical information, relying on the comprehensive principles of evidence-based medicine, based on finding solutions using theoretical knowledge and practical skills in order to improve professional efficiency.
3. To form the ability and willingness to analyze the results of their own activities to prevent medical errors, while being aware of disciplinary, administrative, civil, criminal responsibility.
4. To form the ability and willingness to analyze and interpret the data of anamnesis, results of physical examination, clinical examination, data of modern laboratory and instrumental studies, morphological analysis of biopsy, surgical and sectional material, and the ability to fill out primary medical documentation.
5. To form the ability and readiness to make pathophysiological analysis of clinical syndromes, to substantiate pathogenetically justified methods (principles) of diagnosis, treatment, rehabilitation and prevention among adults and adolescents.

3. COURSE OVERVIEW

Course code (in	B2.O.02.03(II)
Assumed background (courses and practices):	
Introduction to Speciality. Ethics and Deontology (Bioethics)	
Topographic Anatomy, Operative Surgery	
Microbiology, Virology	
Pharmacology	
Pathophysiology	
Hygiene	
Physics, mathematics	
Biochemistry	
Neurology, medical genetics, neurosurgery	
Infectious diseases	
Internal Diseases Propaedeutics	
X-Ray Diagnostics	
Otorhinolaryngology	
Faculty therapy	
Hominal physiology	
Human anatomy	
Clinical Pathologic Anatomy	
Human genetics	
Immunology and Allergology	
Post-requisite courses and practice:	
Obstetrics	
Gynaecology	
Hospital Therapy (5, 6 years)	
Endocrinology	
Outpatient Therapy	
Faculty Surgery	
Clinical Surgery	
Educational Practice in Research (primary research skills)	
Professional Practice, General Practitioner Assistant	

4. PLACE AND PERIOD OF PRACTICE

Term VI	Place	Department	Period
	Surgut District Clinical Hospital	Hospital/ Dispensary departments	June-July
	Surgut District Cardiology Dispensary		
	Divisional Clinical Hospital (station Surgut, Russian railways)		
	Clinical City Hospital # 1		June-July

	Surgut Clinical Traumatology Hospital	June-July
	Outside Surgut (based on agreements and letters of guarantee)	June-August
5. Mode of practice – stationary and outside		
6. Form of practice – discrete		
7. RESULTS UPON COMPLETION OF THE PRACTICE		
7.1 Competences upon completion of the practice		
GPC-4.1 - Knows the physical principles of instrumental methods and equipment for diagnosing human diseases aimed at effective and differentiated application in professional activities		
GPC-4.2 - Knows instrumental and morphological criteria for diagnosing diseases and conducting clinical interpretation of the results of instrumental examination methods		
GPC-4.3 Able to apply knowledge and skills in conducting a diagnostic search for diseases using medical equipment (products) to establish a diagnosis		
GPC-8.1 - Evaluates the patient's ability to work, the patient's disability at all stages of medical care and conducts a medical and social expertise with an assessment of temporary or permanent disability		
Professional Competences:		
PC-2.1 Assesses the condition of a patient requiring emergency or urgent medical care, E950, including a state of clinical death		
PC-10.1 - Participates in applying new methods and techniques aimed at protecting the public health		
7.2 By the end of the course students must:		
	Know:	
	Main modern instrumental diagnostic methods, indications, contraindications, complications during a diagnostic test;	
	Physical and technical foundations of the ultrasonic diagnostic method, ultrasonic diagnostic equipment	
	Methods for diagnostics of the cardiovascular system disorders in adults: electrocardiography, Holter ECG monitoring, exercise tests, veloergometry, cardiorythmography, phonocardiography, echocardiography, 24-hour blood pressure monitoring;	
	Registration technique, features of ECG in adults; the main parameters of a normal ECG: P, Q, R, S, T waves, P, PQ, QRS, QT, RR, PP intervals, signs of sinus rhythm, the electrical axis of the heart, methods of its determination;	
	A structure of the conducting system of the heart;	
	Methods for examining the respiratory system in adults: spirometry, spirometry, bodyplethysmography, pulse	
	Modern methods of clinical instrumental examination of patients (including endoscopic, radiological methods);	
	A clinical picture, characteristics of the course and possible complications of the most common diseases occurring in a typical form in different age groups of patients.	
	Be able to:	
	determine the main indications and contraindications for conducting a test;	
	conduct an ECG;	
	perform functional (stress and medicinal) tests;	
	conduct and evaluate the basic data of Holter ECG monitoring;	
	conduct studies of daily monitoring of blood pressure, EEG, REG;	
	conduct spirometric examination;	
	assess the patient's state and make the decision of medical care;	
	determine the volume of additional studies in accordance with the prognosis of the disease, to clarify the diagnosis and obtain a sufficient result;	
	interpret the results of the main instrumental diagnostic methods;	
	provide first aid in case of emergency, first medical aid to victims in lesions in emergency situations;	
	perform resuscitation measures	
	Have skills of:	
	ECG registration technique;	
	measurement of normal ECG parameters: P, Q, R, S, T waves, P, PQ, QRS, QT, RR, PP intervals;	
	determining the electrical axis of the heart;	

	taking an ECG for various disturbances in the rhythm and conduction of the heart;
	calculating the duration of electrical systole;
	using diagnostic methods of the central and autonomic nervous system: electroencephalography, rheoencephalography, echoencephalography, cardiointervalography;
	making diagnosis of respiratory system disorders;
	using the main medical diagnostic and therapeutic measures for the provision of first aid in urgent and life-threatening conditions
	using methods of general clinical examination

8. STRUCTURE AND CONTENTS OF PRACTICE

The academic load of the Professional Practice, Physician Assistant is 72 hours, 2 credits.

Class Code	Topics /Class type	Term / Academic year	Academic hours	Competences	Literature	Interactive	Notes
1	Organization of practice. Safety instruction / SS	6	2	GPC-4.1 GPC-4.2 GPC-4.3 GPC-8.1		0	practice diary
2	Pre-practice instruction / SS	6	2			0	
3	Professional Diagnostic Practice /	6	96	PC-2.1 PC-10.1		0	practice diary
4	Processing and analysis of practice	6	110			0	practice diary
5	Credit / Practice test / SS	6	6	GPC-4.1 GPC-4.2 GPC-4.3 GPC-8.1 PC-2.1 PC-10.1		0	practice diary, report of the practice, oral quiz
Total			216			0	

11. COURSE (MODULE) RESOURCES

11.1. Recommended Literature

6.1.1. Core

	Authors	Title	Publish., year	Quantity
L 1.1	Maeva I.V., Shestakova V.A.	Propedeutics of Internal Diseases [Text]: a textbook for students of institutions of higher professional education studying in the specialty "General Medicine": in 2 volumes.	Moscow: Academy, 2012. 350, [1] p., [12] l.	20

6.1.2. Supplementary

L 2.1	V. N. Osloпов, O. V. Bogoyavlenskaya, Yu. V. Osloпова et al	Case history of therapeutic patient [Электронный ресурс]: manual https://www.studentlibrary.ru/book/ISBN9785970433836.html	М. : ГЭОТАР-Медиа, 2014.	1
L 2.2	Patrick Davey	Visual ECG [Text] = ECG at a glance: [study guide for students of medical schools and schools]	Moscow: GEOTAR-Media, 2011. — 167 p.	3
L 2.3	Strutynsky A.V.	Electrocardiogram: analysis and interpretation [Text]	Moscow: MEDpress-inform, 2013. — 222 p.	2

L 2.4	Yudin S.M. and others.	Fundamentals of electrocardiographic diagnostics [Text]: textbook for students; State budgetary educational institution of higher professional education "Omsk State Medical Academy", Ministry of Health and Social Development of the Russian Federation	Omsk: Publishing house OmGMA, 2012. - 114 p.	1
L 2.5	Lyusov V.A., Volov N.A., Gordeev I.G.	ECG in myocardial infarction: atlas [Electronic resource]	M.: GEOTAR-Media, 2009. - http://www.studmedlib.ru/book/ISBN9785970412640.html	
6.2. Internet resources				
StudentConsultan, http://www.studmedlib.ru , «Guarantor», «Consultant Plus», «Consultant-region», FreeMedicalJournals				
Russian medical journal http://www.rmj.ru				
Journal "Consilium medicum" http://www.consilium-medicum.com/media/consilium				
Standards of medical care: http://www.rspor.ru/index.php?mod1=standarts3&mod2=db				
Protocols for the management of patients:: http://www.rspor.ru/index.php?mod1=protocols3&mod2=db				
6.3. Software				
	Operational system Microsoft, applied programs pack Microsoft Office			
	Internet access (Wi-Fi)			

9. Form of attestation (based on the results of clinical practice)

During the working day, the control of the work of students is carried out by the head of the department. The head of the practice monitors the compliance of the student's work assignment with the aims and objectives of the work experience and the quality of mastering skills and abilities. Formative assessment is carried out daily by monitoring the implementation of practical skills. The student keeps a diary of the work performed, certified by the head nurse of the department.

Attestation (credit) is held on the last day of practice according to the diary entries certified by the head nurse, characteristics, table of practical skills and self-analysis of the student's work.

At the final meeting the weak points of the practice are discussed, as well as recommendations for the improving them.

Summative assessment for the practice is credit

The results are assessed in a two-grading scale:

- passed
- failed

METHODOLOGICAL GUIDELINES FOR PRACTICE OUTCOMES ASSESSMENT

Stage I: Formative assessment.

List of questions for attestation:

Sample test points for attestation

1. Normative base in functional diagnostics. Professional features.
2. Complete set of first aid kits. Emergency equipment in the department.
3. Anatomy of the cardiovascular system. Physiology of blood circulation.
4. Methods of electrocardiography. Principles of applying electrodes. ECG recording. The main waves and intervals on the ECG.
5. Investigation of the function of external respiration (FER). Research methods, conditions.
6. Electronic pneumotachometry with flow-volume loop registration. Methodology of registration. Diagnostic parameters.
7. Spiroergometry. Criteria for norm and pathology.
8. Bodyplethysmography. Determination of residual lung capacity and total lung volume.
9. Pharmacological tests in the study of FER. Indications and contraindications.
10. Holter ECG monitoring. Methodology of registration. Patient requirements. ECG analysis. Interpretation of the registered data.
11. Daily monitoring of blood pressure. Indications and contraindications. Methodology of registration. Analysis of the obtained data. Modern scope of the method.
12. Blind Doppler techniques. USDG. TCDG. General understanding of the techniques. Application area. Advantages and disadvantages of the method.
13. Color Doppler mapping. Indications for the method. Methodology of registration. Advantages.
14. Echocardiography. The purpose of the method. The principle of operation of the equipment. Sensor device. The history of the development of the method.
15. Echocardiography. Basic positions and accesses. Modes of operation of the device. Measured parameters.

At the end of the practice each student gets the records with a rating on a 4-point system:

- “Excellent – the student performs independently 90-100% of practical skills;
- “good” – the student can perform 80-89% of practical skills under control and prompting;
- “satisfactory” – performs 50-79% of practical skills;
- “unsatisfactory” - performs less than 50% of practical skills.

The reasons for the failure of the task are pointed out:

- low student activity,
- insufficient number of working places,
- skills are appropriate to the work of medical institution.

Type of the task	Assessed competences	Assessment criteria	Grade
Oral quiz	GPC-4.1 GPC-4.2 GPC-4.3 GPC-8.1 PC-2.1 PC-10.1	Deep knowledge of the program material, as well as the main content and innovations of the lecture course in comparison with the educational literature; knowledge of the conceptual and conceptual apparatus of the entire course; knowledge of monographic literature on the course, the ability to independently critically evaluate the main provisions of the course; link theory with practice.	Excellent
	GPC-4.1 GPC-4.2 GPC-4.3 GPC-8.1 PC-2.1 PC-10.1	Complete knowledge of the program material; knowledge of the recommended literature, as well as generally correct, but not always accurate and reasoned presentation of the material.	Good
	GPC-4.1 GPC-4.2 GPC-4.3 GPC-8.1 PC-2.1 PC-10.1	Superficial knowledge of the most important sections of the program and the content of the lecture course; difficulties with using the scientific and conceptual apparatus and terminology of the course; there is a desire to logically clearly construct the answer, and also indicates the possibility of further training.	Satisfactory
	GPC-4.1 GPC-4.2 GPC-4.3 GPC-8.1 PC-2.1 PC-10.1	There are significant gaps in the knowledge of the main material on the program, as well as fundamental errors in the presentation of the material	Unsatisfactory

Sample Practice diary for attestation

Date	Completed work
(daily)	
9.00-9.20	Morning conference.
9.20-11.00	Work in the department of electrophysiological research methods together with the doctor of the department of functional diagnostics
	1. Patient I., 42 years old.
	Diagnosis: Test:..
	Conclusion:... Diary entry
11.00-13.00	Work in the department of ultrasound research methods together with the doctor of the department of functional diagnostics 1. Patient A., 62 years old. Diagnosis: Test:.. Conclusion:...

	Diary entry
13.00-14.00	Helped conduct classes for patients and their relatives.
	Topic of the lesson: "Risk factors of myocardial infarction"

The diary should describe the clinical symptoms of 3-4 patients with the interpretation of laboratory and instrumental data and medical appointments with the indication of the Latin names of drugs, dosages, multiplicity, method of possession. The diary should reflect sanitary and educational work, including participation in conducting classes in schools for patients with chronic non-communicable diseases.

Sample Report of the practice for the attestation

Khanty-Mansiysk Autonomous Okrug-Ugra

"Surgut State University"

REPORT OF THE PRACTICE

«Professional Diagnostic Practice»

(FULL NAME) _____

Student _____ group, specialty _____

Place _____

Terms of practice _____ Number of hours:216 / Total (in credits) 6

Safety instruction « ____ » _____ 20__

Head of the practice from the department (full name, position):

Head of the practice from a medical organization (full name, position):

Final assessment of the practice: _____

Head of the practice _____

Name of practical skills	Recommended level	Level reached	Actual performance (multiplicity)
The method of preparation and analysis of radiographs for the main diseases of the broncho-pulmonary, cardiovascular systems, gastrointestinal tract, kidneys, biliary tract, joints, spine, skull	2		
ECG recording, interpretation and evaluation	2-3		
Interpretation of instrumental research methods - spirometry.	2-3		
Interpretation of instrumental research methods - ECG, radiographs, ultrasound studies, CT and MRI data, etc.	2-3		
Collection and interpretation of complaints and anamnesis of patients	3		
Physical and systemic examination of the patient with the determination of the symptoms of pathology (objective status)	3		

Interpretation of instrumental research methods - ECG.	2-3		
Differential diagnosis of major ECG symptoms	2-3		
Composition of a plan for examining a patient with major therapeutic diseases	2		
Determination of indications for additional special research methods	2		
Interpretation of instrumental research methods - radiographs.	2-3		
Interpretation of instrumental research methods - ultrasound studies, CT and MRI data, etc.	2-3		
Conducting sanitary and educational work with the patient or relatives	3		
Participation in a medical conference	2-3		

Midterm assessment (credit) is assessed in a two-grading scale

1. «Passed»;
2. «Failed»

Type of the task	Assessed competences	Assessment criteria	Grade
Practice diary. Report on the done practice. Oral quiz.	GPC-4.1 GPC-4.2 GPC-4.3 GPC-8.1 PC-2.1 PC-10.1	The level of knowledge meets the requirements for obtaining excellent, good and satisfactory grades. Reporting documents are provided in full.	Passed
	GPC-4.1 GPC-4.2 GPC-4.3 GPC-8.1 PC-2.1 PC-10.1	There are significant gaps in the knowledge of the main material on the program, as well as fundamental errors in the presentation of the material. Reporting documents were not provided.	Failed

Students who are late for practice or do not show up for it on certain days, after the end of the practice, must work out all the missed hours in their free time under the supervision of the senior nurse of the Department, independently submit a diary and characteristics, a table of skills and self-analysis to the head of practices from the Department and decide whether to pass the final certification.

After conducting a test for local non-resident students, the heads of practices from the Department fill out statements and a report on the practice. The original statements are submitted to the educational and methodological part of the medical Institute, and copies are attached to the report and sent to the practice Department.

12. SPECIAL CONDITIONS OF THE EDUCATIONAL PRACTICE, PRIMARY PROFESSIONAL AND RESEARCH SKILLS PRACTICE FOR INDIVIDUALS WITH DISABILITIES

For persons with disabilities, the procedure for passing the internship takes into account the state of health and the requirements of regulatory documents.

- STO-2.6.16-17 "Organization of the educational process for people with disabilities and people with disabilities."

The heads of the departments ensure the choice of places for passing industrial practice for the disabled and people with disabilities, taking into account the requirements of accessibility for these students. When determining the places of educational and industrial practice, it is necessary to take into account the recommendations, data based on the results of medical and social expertise, contained in the individual rehabilitation program for a disabled person, regarding the recommended conditions and types of work. When sending a disabled person and a student with disabilities to a specialized organization for the internship provided by the curriculum, the University agrees with the organization enterprise) conditions and types of work, taking into account the recommendations of medical and social expertise and an individual rehabilitation program for a disabled person. If necessary, special jobs can be created for the internship in accordance with the nature of the violations, as well as taking into account the professional type of activity and the nature of the work performed by the disabled student of labor functions. For

people with disabilities and people with disabilities, the form and methods of practice are established taking into account the characteristics of their psychophysical development, individual capabilities and health status.

The University creates special conditions for people with disabilities and people with disabilities to receive the opportunity to master the educational program of higher education in full, while creating special conditions. Special conditions are understood as training conditions for disabled people and people with disabilities, including:

- the use of individual curricula of educational programs, methods of teaching and upbringing,
- special textbooks, teaching aids and didactic materials, special technical training aids for collective and individual use,
- provision of the services of an assistant (assistant) who provides students with the necessary technical assistance, group and individual correction classes,
- providing the opportunity to undergo an internship in the building of the University and organizations that have access for disabled people and persons with disabilities to the trainee's workplace and other conditions, without which it is impossible or difficult for people with disabilities and persons with disabilities to undergo an internship.

When determining places of practice for people with disabilities and people with disabilities, the recommendations of the medical and social expertise, reflected in the individual rehabilitation program for a disabled person, regarding the recommended conditions and types of work, should be taken into account.