Khanty-Mansiysk Autonomous Okrug-Ugra

"Surgut State University"

Approved by Deputy Rector for Academic Affairs

_____E.V. Konovalova

11 June 2025, Record No.5

X-Ray Diagnostics

Syllabus

Department **Multidisciplinary clinical training**

Curriculum s310501-ЛечДелоИн-25-3.plx

Specialty 31.05.01 General Medicine

Qualification **Specialist**

Form of education **Full-time**

Total (in credits) **3**

Total academic hours 108 Control:

Including: Credit/ Mark, 6th term

Contact 64

Self-study 44

Control hours 64

Course outline in terms

Academic year (Term)	**6 (3.2)**		Total	
Weeks	17,3			
Types of classes	Cur	Syl	Cur	Syl
Lectures	16	16	16	16
Practical	48	48	48	48
Contact	64	64	64	64
Self-study	44	44	44	44
Total	108	108	108	108

The Syllabus is compiled by:

PhD in Medical Sciences, Senior lecturer, Kuznetsov A. A.

The Syllabus
X-Ray Diagnostics

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, 11.06.2025, Record № 5.

The Syllabus was approved by the Department,
Multidisciplinary clinical training

Head of Department, Doctor of Medicine, Professor Klimova N. V.

1. COURSE OBJECTIVES	
1.1	**The aim of the course** is to form culture universal, general professional and professional competencies in the field of knowledge in X-Ray Diagnostics.

2. COURSE OVERVIEW	
Course code (in curriculum)	Б1.О.04.23
2.1	**Assumed background:**
2.1.1	Chemistry
2.1.2	Physics mathematics
2.1.3	Medical informatics
2.1.4	Educational practice in research work (obtaining primary skills in research work)
2.2	**Post-requisite courses and practice:**
2.2.1	Propaedeutics of Internal Medicine
2.2.2	Faculty surgery
2.2.3	Industrial practice of a diagnostic profile
2.2.4	Topographic anatomy, operative surgery

3. COMPETENCES UPON COMPLETION OF THE COURSE (MODULE)

PC-8.2 - Keeps medical records, including the electronic format

GPC-5.1 - Demonstrates knowledge and understanding in the sections of fundamental medicine - anatomical, histological structures (anatomy of human body, structure of organ tissues and their microscopic differentiation), physiological processes (human physiology, homeostasis regulation mechanisms, normal functional systems of the body)

GPC-4.1 - Demonstrates general knowledge of instrumental diagnostic methods, understanding of physical principles of operation of equipment for practical use - the diagnosis and differential diagnosis of human diseases and their application in professional activities

GPC-4.2 - Demonstrates knowledge of instrumental and morphological criteria for diagnosing diseases, owns the methodology for interpreting the results of instrumental research methods

By the end of the course students must:

Know:
radiation anatomical-physiological, age-sex and individual structural features of a healthy body, as well as changes in organs in various diseases: x-ray, ultrasound and other radiation symptoms of certain diseases, taking into account the stage of development of the pathological process
how to use imaging techniques for research
medical equipment for radiation diagnostics usage
how to analyze knowledge of the humanities and natural sciences for making a diagnosis using methods of radiation diagnostics
how to keep medical records and report

Be able to:
identify independently images of all human organs and indicate their main anatomical structures on radiographs, angiograms, computed x-ray and magnetic resonance imaging. identify pathological symptoms
use imaging techniques for research
use medical equipment for radiation diagnostics
analyze and systematize knowledge of the humanities and natural sciences for diagnosis, using methods of radiation diagnostics
how to keep and report medical records

4. STRUCTURE AND CONTENTS OF THE COURSE (MODULE)

Class Code	Topics /Class type	Term / Academic	Academic hours	Competences	Literature	Notes
	Unit 1.					
1.1	Prospects for the development of radiation diagnostics **/lecture/**	6	1	GPC -4.1 GPC -4.2 GPC -4.3 GPC -5.1 PC-8.2	1.1 2.1 E1	
1.2	General questions of radiation diagnostics **/lecture/**	6	1	GPC -4.1 GPC -4.2 GPC -4.3 GPC -5.1 PC-8.2	1.1 E 1	
1.3	Particular questions of radiation diagnostics **/lecture/**	6	2	GPC -4.1 GPC -4.2 GPC -4.3 GPC -5.1 PC-8.2	1.1 E 1	
1.4	Radiation diagnostics of traumatic injuries and diseases of the osteoarticular system **/lecture/**	6	2	GPC -4.1 GPC -4.2 GPC -4.3 GPC -5.1 PC-8.2	1.1	
1.5	Lungs and heart in ray image **/lecture/**	6	2	GPC -4.1 GPC -4.2 GPC -4.3 GPC -5.1 PC-8.2	1.1	
1.6	Radiation diagnostics of diseases of the heart and lungs **/lecture/**	6	2	GPC -4.1 GPC -4.2 GPC -4.3 GPC -5.1 PC-8.2	1.1 E 1	
1.7	Radiation diagnosis of pulmonary lesion syndromes **/lecture/**	6	1	GPC -4.1 GPC -4.2 GPC -4.3 GPC -5.1 PC-8.2	1.1 E 1	
1.8	Radiation diagnosis of diseases of the esophagus, stomach, intestines **/lecture/**	6	2	GPC -4.1 GPC -4.2 GPC -4.3 GPC -5.1 PC-8.2	1.1 E 1	

1.9	Radiological methods of heart research /**lecture**/	6	2	GPC -4.1 GPC -4.2 GPC -4.3 GPC -5.1 PC-8.2	1.1 E 1	
1.10	Complex radiation diagnostics of kidney and urinary tract diseases /**lecture**/	6	1	GPC -4.1 GPC -4.2 GPC -4.3 GPC -5.1 PC-8.2	1.1 E 1	
	Unit 2.					
2.1	Prospects for the development of radiation diagnostics /**pr**/	6	4	GPC -4.1 GPC -4.2 GPC -4.3 GPC -5.1 PC-8.2	1.1 3.1 E 1	
2.2	General questions of radiation diagnostics /**pr**/	6	3	GPC -4.1 GPC -4.2 GPC -4.3 GPC -5.1 PC-8.2	1.1 3.1 E 1	
2.3	Particular questions of radiation diagnostics /**pr**/	6	4	GPC -4.1 GPC -4.2 GPC -4.3 GPC -5.1 PC-8.2	1.1 3.1 E 1	
2.4	Lungs and heart in ray image /**pr**/	6	4	GPC -4.1 GPC -4.2 GPC -4.3 GPC -5.1 PC-8.2	1.1 3.1 E 1	
2.5	Radiological diagnostic methods for heart examination /**pr**/	6	3	GPC -4.1 GPC -4.2 GPC -4.3 GPC -5.1 PC-8.2	1.1 3.1 E 1	
2.6	Radiation syndromes of lung damage /**pr**/	6	4	GPC -4.1 GPC -4.2 GPC -4.3 GPC -5.1 PC-8.2	1.1 3.1 E 1	
2.7	Radiation diagnostics of lung diseases /**pr**/	6	4	GPC -4.1 GPC -4.2 GPC -4.3 GPC -5.1 PC-8.2	1.1 3.1	
2.8	Osteoarticular system in the ray image /**pr**/	6	6	GPC -4.1 GPC -4.2 GPC -4.3 GPC -5.1 PC-8.2	1.1 3.1 E 1	
2.9	Radiation diagnosis of diseases gastrointestinal tract /**pr**/	6	4	GPC -4.1 GPC -4.2 GPC -4.3 GPC -5.1 PC-8.2	1.1 3.1 E 1	
2.10	Complex radiation diagnostics of diseases of hepatobiliary and pancreatoduodenal zone /**pr**/	6	4	GPC -4.1 GPC -4.2 GPC -4.3 GPC -5.1 PC-8.2	1.1 3.1 E1	

2.11	Complex radiation diagnostics in urology /**pr**/	6	4	GPC -4.1 GPC -4.2 GPC -4.3 GPC -5.1 PC-8.2	1.1 3.1 E1	
2.12	Participation in the examination of patients in the radiation diagnostics rooms /**pr**/	6	4	GPC -4.1 GPC -4.2 GPC -4.3 GPC -5.1 PC-8.2	1.1 3.1 E1	offset
	Unit 3.					
3.1	Prospects for the development of radiation diagnostics **/Self-study/**	6	3	GPC -4.1 GPC -4.2 GPC -4.3 GPC -5.1 PC-8.2	1.1 2.1 E1	
3.2	General issues of radiation diagnostics **/Self-study/**	6	3	GPC -4.1 GPC -4.2 GPC -4.3 GPC -5.1 PC-8.2	1.1 2.1 E1	
3.3	Particular questions of radiation diagnostics **/Self-study/**	6	3	GPC -4.1 GPC -4.2 GPC -4.3 GPC -5.1 PC-8.2	1.1 2.1 E1	
3.4	Lungs and heart in ray image **/Self-study/**	6	4	GPC -4.1 GPC -4.2 GPC -4.3 GPC -5.1 PC-8.2	1.1 2.1 E1	
3.5	Radiological diagnostic methods for heart examination **/Self-study/**	6	4	GPC -4.1 GPC -4.2 GPC -4.3 GPC -5.1 PC-8.2	1.1 2.1 E1	
3.6	Radiation syndromes of lung damage **/Self-study/**	6	4	GPC -4.1 GPC -4.2 GPC -4.3 GPC -5.1 PC-8.2	1.1 2.1	
3.7	Radiation diagnostics of lung diseases **/Self-study/**	6	4	GPC -4.1 GPC -4.2 GPC -4.3 GPC -5.1 PC-8.2	1.1 2.1 E1	
3.8	Osteoarticular system in the ray image **/Self-study/**	6	4	GPC -4.1 GPC -4.2 GPC -4.3 GPC -5.1 PC-8.2	1.1 2.1 E1	
3.9	Radiation diagnosis of diseases gastrointestinal tract **/Self-study/**	6	4	GPC -4.1 GPC -4.2 GPC -4.3 GPC -5.1 PC-8.2	1.1 2.1 E1	
3.10	Complex radiation diagnostics of diseases of hepatobiliary and pancreatoduodenal zone **/Self-study/**	6	4	GPC -4.1 GPC -4.2 GPC -4.3 GPC -5.1 PC-8.2	1.1 2.1 E1	

3.11	Complex radiation diagnostics in urology **/Self-study/**	6	4	GPC -4.1 GPC -4.2 GPC -4.3 GPC -5.1 PC-8.2	1.1 2.1 E1	
3.12	Participation in the examination of patients in the radiation diagnostics rooms **/Self-study/**	6	3	GPC -4.1 GPC -4.2 GPC -4.3 GPC -5.1 PC-8.2	1.1 2.1 E1	control bot

5. ASSESSMENT TOOLS

5.1. Assessment tools for midterm assessment

Presented by a single document

5.2. Assessment tools for diagnostic testing

Presented by a single document

6. COURSE (MODULE) RESOURCES

6.1. Recommended Literature

6.1.1. Core

	Authors	Title	Publish., year	Quantity
1.1	M J Darby-D Barron-R E Hyland	Oxford Handbook of Medical Imaging	MEDICAL / Radiology, Radiotherapy & Nuclear Medicine 2012, 2012, electronic resources	0

6.1.2. Supplementary

	Authors	Title	Publish., year	Quantity
2.1	N. M. Ermolitskiy	RADIOLOGY Teaching workbook for 3rd year students of the Faculty of preparation of experts for foreign countries of medical higher educational institutions In two parts	electronic resources	0

6.1.3. Guidance paper

	Authors	Title	Publish., year	Quantity
3.1	Richard B. Gunderman	Essential Radiology	Diagnostic imaging -- Handbooks.,Radiography, Medical-- Handbooks. 2014, electronic resources	0

6.2. Internet resources

E1	https://moodle.surgu.ru/course/view.php?id=1555
E2	https://dlib.eastview.com/
E3	https://speclit.profy-lib.ru

6.3.1 Software

	Operational system Microsoft, applied programs pack Microsoft Office

7. MATERIAL AND TECHNICAL SUPPORT OF DISCIPLINE (MODULE)

7.1	Classrooms for practical classes, group and individual consultations, monitoring and intermediate

7.2	Workshop (28.8 sq. M.) For 16 seats, equipped with a classroom board-1, negatoscope-1, wardrobe-1, model lung-1, study table-8, writing table (teacher) -1, chairs, stools -25
7.3	Classrooms for lectures are equipped with a multimedia projector, screen, laptop, stationary chalk board, typical educational furniture: tables, chairs