

## ANNOTATION

### work program of the discipline "RADIO DIAGNOSTICS"

Speciality	05/31/01 General medicine
Number of credits	In accordance with the RUP
Interim certification form (pass/pass with assessment/exam)	test

**1. The purpose of studying the discipline** "Radiation diagnostics" consists of mastering knowledge about the nature, properties and biological effects of ionizing, non-ionizing radiation and the clinical application of electromagnetic, ultrasonic, magnetic and corpuscular fields in for diagnostic purposes.

#### 2. Summary of the discipline

**Section 1.** Organization of the radiology service in the healthcare system of the Russian Federation: Structure and organization of the radiology service in the healthcare system of the Russian Federation. Organization of an X-ray room, departments in a hospital, clinic, medical unit, dispensary. Organization of a photo laboratory and archive. Accounting and reporting of x-ray departments and rooms. The role and place of fluorography in healthcare. Issues of ethics and deontology in prof. activities of a radiologist.

**Section 2.** General issues in radiology: History of radiology. Radiology as a clinical discipline. Methods of X-ray and X-ray CT examinations. Radiation diagnostic methods not related to x-ray radiation. Fluorography and its capabilities in preventive medicine and clinical radiology. Formation of X-ray images. Construction of an x-ray report. Psychological aspects in radiology.

**Section 3.** Physical and technical sections of radiology and other methods of radiation diagnostics: Physics of X-rays. The principle of obtaining x-rays. Properties of X-rays. X-ray diagnostics, devices and complexes. Methods for obtaining X-ray images.

**Section 4.** Radiation protection in radiology: Biological effects of ionizing radiation. Dosimetry. Measures to protect medical staff, patients and the population. Purpose and principles of radiation safety. Radiation safety standards, dose limits.

**Section 5.** Diseases of the musculoskeletal system: X-ray anatomy of the osteoarticular system. Traumatic bone injuries. Skeletal development disorders. Inflammatory bone diseases. Bone tumors. Joint diseases. Soft tissue diseases. Diseases of the spine and spinal cord.

**Section 6.** X-ray diagnostics (radiological diagnostics) of diseases of the respiratory organs and mediastinum: X-ray anatomy and X-ray CT - anatomy of the thoracic cavity organs. Anomalies and malformations. Diseases

trachea. Acute inflammatory diseases of the bronchi and lungs. Chronic inflammatory and suppurative diseases of the bronchi and lungs. Emphysema. Changes in the lungs in occupational diseases. Pulmonary tuberculosis. Malignant lung tumors. Benign tumors of the bronchi and lungs. Parasitic and fungal diseases of the lungs. Changes in the lungs in systemic diseases. Diseases of the mediastinum. Thoracic cavity after surgery and radiation therapy. Emergency X-ray diagnosis of injuries to the thoracic cavity.

**Section 7.**X-ray diagnosis of diseases of the cardiovascular system: X-ray anatomy and X-ray physiology. Changes in the pulmonary pattern in heart diseases. Acquired heart defects. Congenital heart defects and anomalies. Myocardial diseases. Pericardial diseases. Heart tumors. Diseases of the blood vessels. X-ray surgery.

**Section 8.**X-ray diagnosis of diseases of the digestive tract: X-ray anatomy and X-ray physiology. Anomalies and malformations. Diseases of the pharynx and esophagus. Stomach diseases. Diseases of the small intestine. Colon diseases. Diseases of the pancreas. Diseases of the liver and biliary tract. Diseases of the spleen. Diseases of the diaphragm. Non-organ diseases of the abdominal organs. Emergency radiodiagnosis for acute conditions in the abdominal cavity. X-ray diagnosis of fistulas.

**Section 9.**X-ray diagnostics (radiological diagnostics) of diseases of the head and neck: Diseases of the skull. Brain diseases. Diseases of the nose, nasopharynx, and paranasal sinuses. Diseases of the larynx. Diseases of the thyroid and parathyroid glands. Inorganic formations of the neck.

**Section 10.**X-ray diagnosis of kidney and urinary tract diseases: X-ray anatomy and malformations. Inflammatory diseases of the kidneys and upper urinary tract. Urolithiasis, complications. Kidney cysts. Kidney tumors. Bladder diseases. Inorganic formations of the retroperitoneum and pelvis.