FEDERAL STATE BUDGETARY
EDUCATIONAL INSTITUTION OF HIGHER EDUCATION
"AMUR STATE MEDICAL ACADEMY"
MINISTRY OF HEALTH OF THE RUSSIAN FEDERATION

AGREED
Vice-Rector for Academic Affairs,

_____N.V. Loskutova

April17, 2025

Decision of the CCMC
April17, 2025

ProtocolNo. 7

APPROVED
by decision of the Academic Council of the FSBEI HE Amur SMA of the Ministry of Health of the Russian Federation
April 22, 2025

Protocol No. 15

Acting Rector of the FSBEI HEAmur SMA of the Ministry of Health of the Russian Federation

_____I.V. Zhukovets

April 22, 2025

ДОКУМЕНТ ПОДПИСАН
ЭЛЕКТРОННОЙ ПОДПИСЬЮ

Сертификат: 50AB2242604E64520B52614FA420034A
Владелец: Жуковец Ирина Валентиновна
Действителен: с 15.04.2025 до 09.07.2026

EDUCATIONAL PROGRAM

discipline "Oncology, Radiation Therapy"

Specialty: 31.05.01 General Medicine
Course: 6
Semester: 11
Total hours: 108 hrs.
Total credits: 3 credit units
Control form: credit-test, 11semester

Blagoveshchensk, 2025

The educational program of the discipline is designed in accordance with the requirements of the Federal State Educational Standard of Higher Education - specialist in specialty 31.05.01 General Medicine, approved by the order of the Ministry of Education and Science of Russia dated 08.12.2020 No. 988 (registered with the Ministry of Justice of Russia on 08.26.2020 No. 59493), BPEP HE (2021).

Author:
Head of the Departmentof Radiation Diagnostics, Radiation Therapy with a Course in Oncology,Holder of the Advanced Doctorate (Doctor of Sciences) in Medical Sciences, ProfessorV.P. Gordienko
Associate Professor, Ph.D. of Medical Sciences O.V.Lysenko
Reviewers:
Head of the Department of Surgery with a course in Urology, Holder of the Advanced Doctorate (Doctor of Sciences) in Medical Sciences,ProfessorN.P.Volodchenko
Chief oncologist of the Ministry of Health of the Amur Region T.N.Korobkova

APPROVED at the meeting of the Department of Radiation Diagnostics, Radiation Therapy with a Course in Oncology,
Protocol No. 8 dated March 24, 2025

Head of the Department,Holder of an Advanced Doctorate in Medical Sciences, Professor_____V.P. Gordienko

Conclusion of the Expert Commission on the review of the Educational Programs:
Protocol No. 2 dated April 10, 2025

Expert of the expert commission,
Head of the Department of Otolaryngology and Ophthalmology,Holder of the Advanced Doctorate (Doctor of Sciences) in Medical Sciences,Professor_____A.A. Blotskii

APPROVED at the meeting of the CMC No. 4:
Protocol No.2 dated April 15, 2025

Chairman of the CMC No.4
Head of the Department of Traumatology with a course in disaster medicine
Holder of the Advanced Doctorate in Medical Sciences,
Professor_____I.V. Borozda
AGREED: Dean of the Faculty of Medicine,
Ph.D. of Medical Sciences _____ N.G. Brush
April 17, 2025

CONTENT

1. EXPLANATORY NOTE

1. 1. CHARACTERISTICS OF THE DISCIPLINE

Oncology, radiation therapy according to the Federal State Educational Standard of Higher Education is included in the basic part of the professional cycle for graduates of the medical faculty of medical universities. The content of the program covers with maximum completeness the volume of theoretical and practical skills necessary for a doctor for independent treatment and preventive work. The necessary knowledge and skills in the discipline are also provided.

The increased interest in oncology problems in recent decades is determined by the capabilities of modern healthcare for early cancer diagnostics and the development of modern methods of drug treatment. This has become possible thanks to discoveries in the field of molecular biology, genetics, and robotics.

In the Russian Federation, as in most developed countries of the world, the incidence of malignant neoplasms is steadily growing, mortality rates from them remain high, and the percentage of advanced cases among newly diagnosed patients is slowly decreasing. In the structure of mortality of the population of our country, malignant neoplasms occupy the second place - after diseases of the cardiovascular system.

This program involves studying oncology, radiation therapy, taking into account new discoveries in medical science and practice. When presenting the lecture course of the discipline and in practical classes, there is a logical connection between the topics and sections of the program, while ensuring the perception of the discipline as a single, integral science.

Teaching oncology, radiation therapy in the specialty "General Medicine" is carried out in the sixth year, includes 52 hours of practical classes and 20 hours of lectures .The basis of teaching is work at the patient's bedside in order to master practical skills - collecting complaints, studying anamnesis, clinical examination, interpreting the results of additional research methods. Students participate in clinical rounds, consultations, attend advisory receptions of department teachers, clinical and clinical-anatomical conferences, get acquainted with the methods of examination and treatment in the diagnostic and treatment units of the oncology dispensary, study cytomorphological methods of tumor verification, participate as assistants in operations. The educational material is presented to students using modern digital technologies . The forms of control of students' knowledge include traditional and distance technologies. The final control of knowledge is a credit in all sections of the subject at the end of the cycle.

1.2 The purpose and objectives of mastering the discipline.

The purpose of mastering the discipline is to provide students with systematic theoretical and applied knowledge on early diagnostics, principles of treatment and prevention of oncological diseases, as well as to prepare students to implement the task in the field of therapeutic activity with oncological alertness.

When studying the discipline, the following tasks are set:

- to form a system of knowledge about statistics, epidemiology, etiology, clinical studies,
- pathogenesis of background and precancerous diseases, benign and malignant
- tumors;
- to form a system of knowledge about the methodology of clinical thinking, development
- screening programs, diagnostics (clinical, laboratory, instrumental) and
- differential diagnosis of benign and malignant tumors;
- to form a system of knowledge about the doctor's tactics when there is a suspicion of malignant neoplasms;
- develop the skills and competencies necessary for patient rehabilitation during and after the completion of antitumor treatment;
- develop the skills, abilities and competencies necessary to recognize signs of tumor damage, determine the severity of the course, and select optimal methods;
- instrumental examination and development of a differential diagnostic algorithm;
- develop thinking that allows for timely diagnosis of tumor diseases, and develop skills of oncological alertness;
- develop skills to independently carry out a full range of treatment, rehabilitation and preventive measures among patients with various nosological forms of diseases;
- to develop the ability to provide first aid to cancer patients
- assistance in emergency situations;
- develop skills in preparing medical documentation (medical records of inpatients or outpatients, sick leave certificates, statistical coupon, etc.);
- to develop communication skills with the patient taking into account ethics and deontology depending on the identified pathology and characterological features of the patients, as well as communication skills with the team.

1.3. The place of the discipline in the structure of the main professional educational program of higher education

In accordance with the Federal State Educational Standard of Higher Education, a specialist in the specialty 31.05.01 General Medicine (2020), the discipline "Oncology, Radiation Therapy" refers to the basic part of Block 1. It is a compulsory discipline. The total workload of the discipline is 3 credits (108 hours) ,it is taught in the 11th semester of the 6th year. Control form - credit.

To successfully master this discipline , students must master the following disciplines:

- Anatomy;
- Histology, embryology, cytology;
- Pathological anatomy, clinical pathological anatomy;
- Pathophysiology, clinical pathophysiology;
- Microbiology, virology;
- Immunology;
- Pharmacology;
- Radiation diagnostics;
- Epidemiology;
- Propaedeutics of internal diseases;

- General surgery;
- Topographic anatomy and operative surgery;
- Public health and healthcare, health economics;
- Infectious diseases;
- Obstetrics and gynecology
- Dermatovenereology ;
- Traumatology, orthopedics;
- Neurology, medical genetics, neurosurgery;
- Elective therapy, occupational diseases;
- Elective surgery, urology;
- Hospital therapy, endocrinology;
- Hospital surgery, pediatric surgery;
- Outpatient therapy;
- Sectional course on clinical pathological anatomy;
- Industrial practice ("Obtaining primary professional skills and abilities of an outpatient clinic physician, including primary R&D skills", "Physician's assistant", "Assistant to junior medical staff", "Assistant to ward nurse", "Assistant to procedural nurse");
- Educational practice ("Obtaining primary professional skills and abilities of an outpatient clinic physician, including primary R&D skills", "Care for patients with a therapeutic profile", "Care for patients with a surgical profile").
- The knowledge, skills and practical experience acquired in mastering this discipline are necessary for successful mastering of the disciplines "Anesthesiology, resuscitation, intensive care", "Medical rehabilitation", "Clinical pharmacology", "Ophthalmology", "Otolaryngology", "Forensic medicine", "Phthisiology" and successful passing of the state final certification.

1.4. Requirements for students.

Initial level of the student - when starting to study the discipline " Oncology, radiation therapy " the student must have a basic level of knowledge, skills and abilities in the following disciplines:

To study the discipline, knowledge, skills and abilities formed by previous disciplines are necessary:
Histology, embryology, pathological anatomy
Knowledge: morphogenesis and histogenesis of tumors, modern classification of tumors, theories of tumor growth, methods of morphological (cytological, histological) diagnostics of tumors, criteria of malignancy - histological, histochemical, immunomorphological, electron microscopic, types and patterns of metastasis of malignant tumors, pathomorphology of individual malignant tumors. **Skills:** understand the morphological classification of tumors, their histogenesis and cellular basis of antitumor resistance (II - III level) **Skills:** interpretation of cytological and morphological findings
Biology
Knowledge: know the characteristics of tumor distribution in nature, the role of the hereditary factor in the occurrence of tumors **Skills:** be able to understand the mechanisms of tumor development **Skills:** epidemiological assessment of risk factors for malignant neoplasms, formation of high-risk groups
Medical genetics

Knowledge: genetic testing methods. **Skills:** diagnose hereditary forms of cancer. **Skills:** clinical interpretation of tumor morphogenetic studies.
Pharmacology
Knowledge: classification of antitumor drugs, their mechanism of action, complications; methods of treating pain syndrome, nutritional support for cancer patients. **Skills:** Understand the basics of chemotherapy, hormonal therapy and biotherapy of cancer **Skills:** accompanying cancer patients at stages of drug treatment.
Propaedeutics of internal diseases
Knowledge: methods of examining a patient with suspected malignant neoplasm and an established diagnosis. **Skills :**diagnose underlying diseases and cancer . **Skills:** patient examination, interpretation of symptoms and syndromes.
Radiation diagnostics
Knowledge: diagnostic methods (fluoroscopy, radiography, tomography, angiography, ultrasound, CT, MRI, radionuclide studies) of malignant tumors and indications for them . Know the basics of the biological effects of ionizing radiation and methods of radiation therapy for malignant tumors. **Skills:** Interpretation of the results of X-ray examination, ultrasound, CT, MRI, scintigraphy . **Skills:** Determining indications and contraindications for radiation examination methods.
General surgery
Knowledge: Principles of surgical treatment of malignant tumors. Have an understanding of radical, combined, extended and palliative surgeries. Know the general principles of pain relief for cancer patients; surgical treatment of malignant tumors. **Skills:** Work in surgical departments in compliance with aseptic and antiseptic rules. **Skills:** Comply with the principles of oncological ablastics .
Anatomy, topographic anatomy and operative surgery
Knowledge: topographic anatomy of internal organs, zones of regional lymph drainage from them. Know the principles of radical surgical interventions for malignant tumors of internal organs, extremities, mammary glands, head and neck. **Skills:** Assessment of tumor spread taking into account its topographic and anatomical features. **Skills:** adherence to the principles of case and ablastics in oncology.
Public health and healthcare, health economics
Knowledge: features of the organization of oncological services in Russia, principles and methods of timely diagnosis and prevention of malignant tumors. **Skills:** identify various factors that increase the risk of developing cancer. Understand the possibilities of early diagnosis and prevention of cancer, as well as ways to improve treatment methods for patients with malignant tumors. (II - III level) **Skills:** preparation of medical documentation for cancer patients, knowledge of clinical groups.
Hygiene
Knowledge: environmental factors that increase the risk of developing malignant tumors in humans. **Skills:** to form groups of people with an increased risk of developing cancer. To be able to identify early forms of cancer, diagnose precancer and prevent malignant tumors. **Skills:** assessment of environmental factors and their impact on oncogenesis.

Obstetrics and gynecology
Knowledge: clinic and diagnostic methods of cervical and uterine cancer, ovarian cancer. Know the methods of treatment of malignant tumors of the female reproductive system **Skills:** conduct cervical cancer screening. Be able to diagnose and treat background, precancerous diseases and benign tumors of these organs. **Skills:** interpretation of early symptoms of gynecologic oncology diseases.
Dermatovenereology
Knowledge :paraneoplastic syndromes , skin cancer, melanoma. **Skills :**to determine differential diagnostic criteria for skin cancer. **Skills :**examination , survey and collection of material for cytomorphological examination.
Traumatology, orthopedics
Knowledge: algorithm for establishing a clinical diagnosis of malignant tumors of the musculoskeletal system **Skills :** identify visual symptoms of tumors of the musculoskeletal system **Skills:** determine patient routing at the stages of diagnosis and initiation of specific treatment.
Otorhinolaryngology
Knowledge: examination methods and knowledge of the algorithm for early diagnosis of malignant tumors of the paranasal sinuses, nose , mouth and laryngopharynx, larynx. **Skills:** be able to promptly diagnose and treat malignant tumors of the ENT organs. (II - III level) **Skills:** determine patient routing at the stages of diagnosis and initiation of specific treatment.
Faculty surgery, urology
Knowledge: algorithm for clinical diagnosis and treatment of kidney, bladder , prostate and ovarian cancer. **Skills:** early diagnosis and treatment of malignant tumors of the kidneys, urinary tract, male genital organs and retroperitoneal space **Skills:** determine patient routing at the stages of diagnosis and initiation of specific treatment.
Neurology, neurosurgery
Knowledge: algorithm for establishing a clinical diagnosis of brain and spinal cord tumors. **Skills:** Diagnose and treat primary and metastatic tumors of the central nervous system **Skills:** determine patient routing at the stages of diagnosis and initiation of specific treatment.

1.5. Interdisciplinary links with subsequent disciplines.

No. p. n .	Name of subsequent disciplines	Oncology, radiation therapy		
1	Hospital therapy	General oncology	Radiation therapy	Private oncology
		+	+	+
2	Outpatient therapy	+	+	+
3	Phthisiology	+	+	+
4	Infectious diseases	+	+	+
5	Hospital surgery, pediatric surgery	+ +	+ +	+ +

6	Anesthesiology, resuscitation, intensive care	+	+	+

1.6 . Requirements for the results of mastering the discipline

The process of studying the discipline "Oncology, radiation therapy" is aimed at developing the following competencies :U K-1, 6, OPK-1, 5, 8, 11, PC-2, 3, 5, 6, 7, 8, 9, 10

No. p /p	Code and name of competence	Code and the name of the indicator of achievement of competence	As a result of studying the academic discipline, the student must:		
			Know	Be able to	To own
Universal competencies					
1	**UK-1** Capable realize critical analysis of problematic situations based on a systems approach, to develop strategy of action	**ID UK-1.1.** Analyzes a problem situation as a system, identifying its components and the connections between them. **ID UK-1.2.** Identifies gaps in information needed to solve problem situations and designs processes to eliminate them . **ID UK-1.3.** Applies systems analysis to resolve problematic situations in the professional sphere.	Concepts, principles and methods of self-development, self-realization, self-education, use of creative potential	Use the principles and methods of self-development, self-realization, self-education, and use of creative potential	Methods of self-development, self-realization, self-education, use of creative potential
2	**UK-6** Capable to define and implement priorities for one's own activities and ways to improve them based on self-assessment and lifelong learning	**ID UK-6.1.** Assesses his personal, situational and temporary resources and uses them optimally to complete the assigned task. **ID UK-6.3.** Carries out critical self-analysis of the results of one's own activities.	Principles of using information, bibliographic resources, information and communication technologies, taking into account the basic requirements of information security, medical and biological terminology	Use information, bibliographic resources, information and communication technologies taking into account the basic requirements of information security	Methods for solving standard tasks of professional activity using information, bibliographic resources, medical and biological terminology, information and communication technologies and taking into account the basic requirements of information security

General professional competencies					
3	**OPK-1.** Able to implement moral and legal norms, ethical and deontological principles in professional activities	**ID OPK-1.1.** Provides professional services activities in accordance with ethical standards and moral principles. **ID OPK-1.2.** Organizes professional activities guided by legislation in the field of health care, knowledge of medical ethics and deontology. **ID OPK-1.3.** Has presentation skills independent point of view, analysis and logical thinking, public speaking, moral and ethical argumentation, conducting discussions and round tables, principles of medical deontology and medical ethics.	Principles of using information, bibliographic resources, information and communication technologies, taking into account the basic requirements of information security, medical and biological terminology	Use information, bibliographic resources, information and communication technologies taking into account the basic requirements of information security	Methods for solving standard tasks of professional activity using information, bibliographic resources, medical and biological terminology, information and communication technologies and taking into account the basic requirements of information security
4	**OPK-5.** Capable of assessing morphofunctional, physiological states and pathological processes in the human body to solve professional problems	**ID OPK-5.1.** Knows the functional systems of the human body, their regulation and self-regulation when interacting with the external environment in normal conditions and during pathological processes. **ID OPK-5.2.** Knows the etiology, pathogenesis, morphogenesis, pathomorphosis of disease development, and the basic concepts of nosology. **ID OPK-5.3.**	Methods of analyzing the results of one's own activities. Concept and types professional mistakes	Analyze the results of your own activities to prevent professional mistakes	Methods of analyzing the results of one's own activities to prevent professional mistakes

		Knows the indicators morphofunctional, physiological state of a healthy person and is able to measure/determine them. **ID OPK-5.4.** Applies indicators morphofunctional, physiological state and pathological process for examination of the human body for the purpose of establishing a diagnosis, appointment treatment and monitoring its effectiveness and security. **ID OPK-5.5.** Analyzes and interprets macroscopic and microscopic changes in normal and pathologically altered tissues and organs. **ID OPK-5.6.** Interprets the results of biopsy and surgical material studies to solve professional problems and formulate a diagnosis in accordance with the ICD.			
5	**OPK-8.** Capable of implementing and monitoring the effectiveness of medical rehabilitation of the patient, including the implementation of individual rehabilitation and habilitation programs	**ID OPK-8.1.** Assesses functional reserves and adaptive abilities of a person, reduced in the process adverse effects of environmental factors and activities or as a result of illness. **ID OPK-8.2.** Identifies risk groups with the aim of	Nomenclature of medicinal products, pharmacodynamics , pharmacokinetics , indications and contraindications for use, main mechanisms of action, clinical effects. Treatment	Use medicinal preparations and other substances and their combinations when solving professional problems	Methods of using medicinal preparations and other substances and their combinations in solving professional problems

	for the disabled, and assessing the patient's ability to perform work activities	recovery and determination of rehabilitation potential for subsequent restorative treatment and rehabilitation of patients. **ID OPK-8.3.** Develops and organizes a plan medical events rehabilitation of patients, including non-drug methods treatment (natural healing factors, physiotherapy and reflexology, therapeutic exercise). **ID OPK-8.4.** Interprets the results clinical, laboratory and instrumental diagnostic methods to monitor the effectiveness of medical rehabilitation programs and assess the patient's ability to perform work activities.	regimens		
6	**OPK-11** Capable prepare and apply scientific, scientific-production, design, organizational-managerial and regulatory documentation in the healthcare system	**ID OPK 11.1.** Apply modern methods of collecting and processing information, conduct statistical analysis of the obtained data in a professional manner areas and interprets results for solving professional problems. **ID OPK-11.2.** Identifies and analyzes problem situations, carries out search and selection of scientific, regulatory and legal organizational and administrative	Types and methods of application of medical devices provided for by the procedures for the provision of medical care	Use medical products provided for by the procedures for providing medical care	Methods of using medical products provided for by the procedures for providing medical care

		documentation in accordance with given goals. **ID OPK-11.4.** Conducts scientific and practical research, analyzes information using the historical method and prepares publications based on the research results. **ID OPK-11.5.** Analyzes and compiles accounting and reporting medical documentation and calculates qualitative and quantitative indicators used in professional activities.			
Professional competencies					
7	**PC-2.** Ability to conduct a physical examination of a patient, analyze the results of additional examination methods in order to establish a diagnosis and (or) condition in the "therapy" profile	ID PC-2 .1. Conduct a physical examination of the patient (inspection, palpation, percussion, auscultation) and interpret its results ID PC-2 .4. Interpret the results of laboratory and instrumental examinations of patients ID PC-2.5 . Justify the referral of a patient with a disease and (or) condition in the "therapy" profile to specialist doctors in the presence of medical indications, taking into account contraindications in accordance with the Procedures for the provision of medical	Methods of collecting and analyzing patient complaints, anamnesis data, examination results, laboratory, instrumental, pathological - anatomical and other studies for the purpose of recognizing a condition or establishing the presence or absence of a disease	Collect and analyze patient complaints, medical history data, examination results, laboratory, instrumental, pathological and other studies in order to recognize the condition or establish the presence or absence of a disease	Methods of collecting and analyzing patient complaints, data from his anamnesis, results of examination, laboratory, instrumental, pathological - anatomical and other studies in order to recognize the condition, or establish the fact of the presence or absence

		care, clinical recommendations, taking into account the standards of medical care ID PC-2 .6. Interpret the conclusions received from medical specialists ID PC- 2.9. Conduct differential diagnostics of diseases and (or) conditions in the “therapy” profile, using diagnostic algorithms (primary, concomitant and complications) taking into account the ICD			of a disease
8	**PC-3** . Ability to determine medical indications for hospitalization, indications for providing emergency, including emergency specialized, medical care	ID PC- 3.1. Determine medical indications for providing emergency, including emergency specialized, medical care	The procedure and principles for providing primary health care to the population in case of sudden, acute diseases, conditions, exacerbation of chronic diseases that are not accompanied by a threat to the patient's life and do not require emergency medical care	Provide primary health care to the population in case of sudden, acute illnesses, conditions, exacerbation of chronic diseases that are not accompanied by a threat to the patient's life and do not require emergency medical care	Methods of providing primary health care to the population in case of sudden, acute illnesses, conditions, exacerbation of chronic diseases that are not accompanied by a threat to the patient's life and do not require emergency medical care
9	**PC-5.** Ability to monitor the effectiveness and safety of the therapy being administered	ID PC- 5.3. Refer the patient in case of difficulty in choosing a treatment tactic, as well as in case of complicated course of the disease and (or) condition in the	Main pathological conditions, symptoms, syndromes of malignant	Diagnose the main pathological conditions, symptoms, malignant	Methods of diagnosing the main pathological conditions, symptoms,

		profile "therapy" for the provision of specialized medical care in a hospital setting or in a day hospital setting, if there are medical indications in accordance with the procedures for the provision of medical care, clinical recommendations, taking into account the standards of medical care ID PC-5 .4. Provide medical care using telemedicine technologies	neoplasms, nosological forms in accordance with the International Statistical Classification of Diseases and Related Health Problems in accordance with ICD-10	neoplasms, nosological forms in accordance with ICD-10	disease syndromes, nosological forms in accordance with ICD-10
10	**PC-6.** Readiness for implementation and control of medical rehabilitation activities for patients with diseases and (or) conditions in the "therapy" profile, including during the implementation of an individual rehabilitation or habilitation program for disabled persons in accordance with the procedure for organizing medical rehabilitation and the procedure for organizing spa treatment	ID PC-6 .5. Participate in the organization of medical rehabilitation measures taking into account the diagnosis in accordance with the procedure for organizing medical rehabilitation and spa treatment	Principles of management and treatment of patients with various nosological forms in outpatient and day hospital settings	Treat patients with various nosological forms in outpatient and day hospital settings	Methods of management and treatment of patients with various nosological forms in outpatient and day hospital settings

11	**PC-7.** Readiness to conduct medical examinations of patients with diseases and (or) conditions in the "therapy" profile	ID PC- 7.1. Determine the signs of temporary disability, the need for a family member to care for a patient with diseases in the “therapy” profile, signs of persistent impairment of life activity of patients with diseases and (or) conditions in the “therapy” profile	Principles and methods of conducting medical examinations of patients with diseases and (or) conditions in the "therapy" profile , methods for determining signs of temporary disability, persistent impairment of vital functions of patients with diseases and (or) conditions in the "therapy" profile	Conduct medical examinations of patients with diseases and (or) conditions in the "therapy" profile, determine signs of temporary disability, persistent impairment of patients' vital functions	Methods of conducting medical examinations of patients, determining signs of temporary disability, persistent impairment of patients' vital functions
1 2	**PC-8.** Readiness to conduct preventive medical examinations, medical check-ups and implementation of medical observation of healthy and chronic patients	ID PC- 8.4. Conduct and monitor preventive medical examinations of the population and medical check-ups taking into account age, health status, profession in accordance with regulatory legal acts for the purpose of early detection of chronic non-communicable diseases and (or) conditions in the “therapy” profile, the main risk factors for their development.	Principles and methods of early diagnosis of chronic non-communicable diseases, identification of causes and conditions of their occurrence and development, as well as dispensary observation of healthy and chronic patients	Implement a set of measures aimed at early detection of chronic non-communicable diseases, identification of the causes and conditions of their occurrence and development, and dispensary monitoring of healthy and chronic patients	Readiness to implement a set of measures aimed at early detection of chronic non-communicable diseases, identifying the causes and conditions of their occurrence and development, and implementing dispensary monitoring of healthy and chronic patients

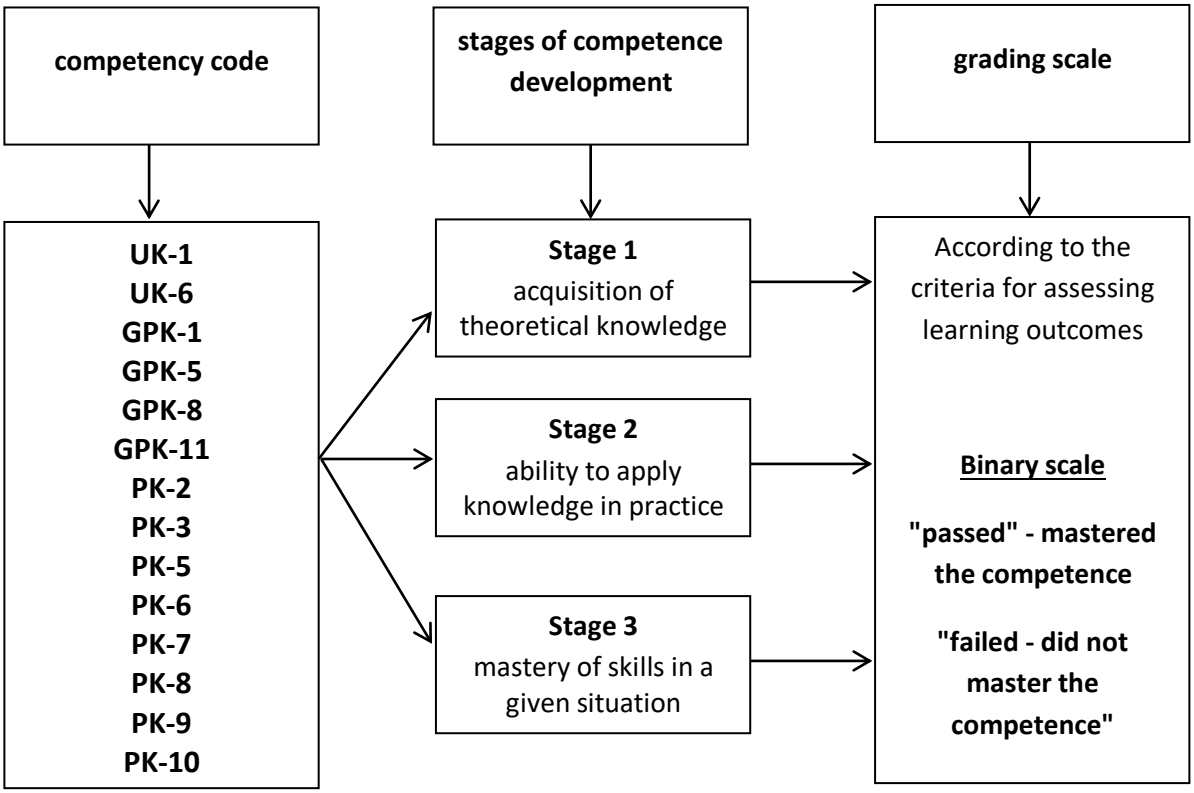
1 3	**PC-9** . Readiness for implementation activities for prevention and formation of a healthy lifestyle and sanitary and hygienic education of the population	ID PC-9 .2. Determine medical indications for referral to a specialist doctor ID PC- 9.4. Develop and implement programs for the formation of a healthy lifestyle, including programs for reducing alcohol and tobacco consumption, preventing and combating non-medical use of narcotic drugs and psychotropic substances, optimizing physical activity, rational nutrition, and normalizing body mass index	Principles and methods of maintaining and strengthening the health of the population, including the formation of a healthy lifestyle, prevention of the occurrence and (or) spread of diseases, their early diagnosis, identification of the causes and conditions of their occurrence and development, as well as aimed at eliminating the harmful effects of environmental factors on the health of the population	To implement a set of measures aimed at maintaining and strengthening the health of the population and including the formation of a healthy lifestyle, prevention of the occurrence and (or) spread of diseases, their early diagnosis, identification of the causes and conditions of their occurrence and development, as well as aimed at eliminating the harmful effects of environmental factors on the health of the population	Readiness to carry out a set of measures aimed at maintaining and strengthening the health of the population and including the formation of a healthy lifestyle, prevention of the occurrence and (or) spread of diseases, their early diagnosis, identification of the causes and conditions of their occurrence and development, as well as aimed at eliminating the harmful effects of environmental factors on the health of the population
1 4	**PC-10.** Readiness to conduct an analysis of medical and statistical indicators of morbidity, disability of patients with diseases and (or) conditions in the profile "therapy" to assess the	ID PC-10. 2. Conduct an analysis of medical and statistical indicators of morbidity, disability of patients with diseases and (or) conditions in the profile "therapy" to assess the health of the assigned population	Methodology of analysis of medical and statistical indicators of morbidity, disability of patients, maintenance of medical records	Analyze medical and statistical indicators of morbidity, disability of patients, prepare medical documentation	Methods of analysis of medical and statistical indicators of morbidity, disability of patients, maintenance of medical records

	health of the assigned population				

Modules of the discipline and the code of the competence being formed

№ p /p	Section name	Code of the competence being formed
	Oncology, Radiation therapy	UK-1, UK-6 OPK-1, 5, 8, 11 PC -2, 3, 5, 6, 7, 8, 9, 10

1.7 Stages of competencies formation and description of assessment scales



1.8 Forms of training organization and types of control

Form of organization of students' training	Brief characteristic
Lectures	The lecture material contains key and most problematic issues of the discipline, which are most significant in the training of a specialist.
Practical classes	They are intended for the analysis (reinforcement) of theoretical principles and monitoring their assimilation with subsequent application of the acquired knowledge during the study of the topic.
Interactive forms of education	- solving situational problems and exercises with subsequent discussion, - interactive survey; - performing creative tasks,

	- small group method, - discussions, - online course of the discipline in the Moodle system , - testing in the Moodle system .
Participation in the department's research work, student circle and conferences	- preparation of oral presentations and poster reports for presentation at a student club or scientific conference; - writing theses and abstracts on the chosen scientific field; - preparation of a literature review using educational, scientific, reference literature and Internet sources.
Types of control	**Brief description**
Incoming inspection	Testing theoretical knowledge and practical skills developed by the physics program in secondary (complete) general education institutions. The entrance knowledge control includes: - testing in the Moodle system (test of incoming knowledge control), - solving situational problems and exercises. The results of the incoming inspection are systematized, analyzed and used by the teaching staff of the department to develop measures to improve and update the teaching methods of the discipline.
Current control	Current knowledge control includes: - checking the solution of situational problems and exercises completed independently (extracurricular independent work); - assessment of the assimilation of theoretical material (oral survey and computer testing); - control over the technique of performing the experiment during practical classes and drawing up the protocol; - testing in the Moodle system on all topics of the discipline (tests include questions of a theoretical and practical nature); - individual assignments (practical and theoretical) for each topic of the discipline being studied.
Intermediate certification	The midterm assessment is represented by a test that students take at the end of the first semester. The test includes the following stages: - assessment of knowledge of theoretical material (oral survey and interview); - testing in the Moodle system (interim assessment test); - testing the acquisition of practical skills and abilities; - solving situational problems and exercises on each topic of the discipline studied.

Explanation.

Students receive theoretical knowledge of the discipline at lectures, practical classes, taking part in the research work of the department, work in the oncology dispensary . During practical classes, the learned material is consolidated and monitored. Interactive forms of training are used in the training process : interactive surveys, discussions, computer simulations,

etc. Practical application of theoretical material in everyday work is logical in the process of cognition, helps to acquire and consolidate practical skills and abilities. In the process of patient supervision , training duty, students consolidate and improve the basics of patient examination, clinical diagnosis based on all the data obtained, drawing up a plan for further patient examination, knowledge of medical deontology and medical ethics.

Entrance control: is carried out at the first lesson and includes an assessment of the students' initial knowledge using testing on the main issues of the above-mentioned disciplines preceding the study of Oncology, Radiation Therapy, necessary for understanding and mastering all the provisions (topics) of this program.

Current monitoring is used for prompt and regular management of students' educational activities, including independent ones. Current monitoring of academic performance is carried out at each lesson and includes initial and final monitoring on one topic of a section/module of a discipline/practice. Its purpose is to stimulate students' desire for systematic independent work on studying an academic discipline, mastering professional and general competencies. Under the conditions of a rating control system, the results of a student's current assessment are used as an indicator of their current rating. Initial monitoring is used to record the initial level of students' preparedness and to build individual learning trajectories. Final monitoring is used to record the assessment of the degree of achievement of the planned learning outcomes upon completion of studying a specific topic of a discipline/practice.

In a student-centered educational environment, the results of the **initial** assessment of the student are used as initial values in the individual profile of the student's academic success. Initial control can be carried out in the form of self-assessment.

The midterm assessment (credit) is intended to assess the degree of achievement of the planned learning outcomes upon completion of the discipline and allows to assess the level and quality of its mastering by students. It includes the credit in the 11th semester and consists of an assessment of the theoretical knowledge and practical skills developed by students during the course of the discipline and includes a final test control, solving situational problems.

2. STRUCTURE AND CONTENT OF THE DISCIPLINE

2.1 Scope of the discipline and types of educational activities

No. p /p	Types of educational work	Total hours	Semester 11
1	Lectures	20	20
2	Practical classes	52	52
3	Independent work of students	36	36
	Total labor intensity in hours	**108**	**108**
	Total workload in credit units	**3**	**3**

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2.2 Thematic plan of lectures and their brief content

№ p / p	Topics and content of lectures	Codes being formed competencies	Labor intensity (hours)
1	**Current state, diagnostic problems and development prospects of oncology** Morbidity and mortality from malignant neoplasms. Age and gender characteristics. Dynamics and structure of morbidity. Regional features of the spread of malignant neoplasms. Factors contributing to the occurrence of tumors. Modern achievements in oncology. **Organization of oncological care.** Structure of the oncology service. Oncology dispensary, oncology room. Division of cancer patients into clinical groups. Rules and terms of medical examination. Accounting documentation. Analysis of the causes of neglect of malignant tumors. Palliative care for patients with advanced forms of malignant neoplasms. Hospices. **Pathogenesis of clinical symptoms.** Precancerous diseases. Optional and obligate precancer . Dysplasia. The course of cancer. The concept of carcinoma in situ and early cancer. Forms of growth of malignant tumors. Assessment of the prevalence of the process by stages and the TNM system . Preclinical and clinical periods of cancer development. Pathogenesis of symptoms of malignant neoplasms. **Methods of diagnosing malignant tumors.**	UK-1, 6, OPK-1, 5, 8, 11, PC-2, 3, 5, 6, 7, 8, 9, 10	2
2	**Skin tumors. Cancer and melanoma** **Skin cancer.** Incidence. Contributing factors. Optional and obligate precancer of the skin. Cancer prevention measures. Histological varieties (basalioma , squamous cell carcinoma). Skin cancer stages. Clinical variants of basalioma and squamous cell carcinoma. Patient examination methods (examination, palpation, biopsy). Skin cancer treatment (radiation, cryogenic, surgical, medicinal, etc.) immediate and remote results. **Melanoma.** Epidemiology of melanomas. Factors contributing to malignization of pigmented nevi , measures to prevent their malignancy . Features of growth and metastasis .Stages . Clinical characteristics. Signs of malignizationnevi . Methods of	UK-1, 6, OPK-1, 5, 8, 11, PC-2, 3, 5, 6, 7, 8, 9, 10	2

	special examination (radioisotope diagnostics, thermography). Treatment. Results.		
3	**Precancerous lesions and breast cancer** Morbidity. Role of hormonal disorders. Other risk factors: burdened anamnesis, poor nutrition. Mastopathies. Etiopathogenesis . Classification. Localized and diffuse forms. Clinical picture. Tactics for localized forms. Sectoral resection technique. Principles of non-hormonal and hormonal therapy of diffuse mastopathies. Dispensary observation. Clinical forms of breast cancer. Clinical picture of typical (nodular) form. Differential diagnosis with localized mastopathy and fibroadenoma. Special forms of cancer: mastitis-like ,erysipiloidand shell-like, Paget's carcinoma . Methods of patient examination. Principles of breast cancer treatment. Remote results. System of medical examination, rehabilitation and examination of temporary disability.	UK-1, 6, OPK-1, 5, 8, 11, PC-2, 3, 5, 6, 7, 8, 9, 10	2
4	**Lung cancer** Morbidity. Age and sex characteristics. Contributing factors. Prevention. Pathological characteristics. Growth forms. The concept of central and peripheral cancer. Histological structure. Patterns of metastasis. Division into stages. Clinical picture. Preclinical and clinical periods. Semiotics of lung cancer. Clinical variants of central and peripheral cancer. Differential diagnosis. Diagnostics. Alarm signals. Evaluation of anamnesis and physical examination data. Cytological examination of sputum. Main radiological symptoms. Importance of tomography and bronchoscopy. Computed tomography. Bronchography. Transthoracic puncture and bronchial catheterization. Early detection of lung cancer, the importance of fluorography. Organization of screening. High-risk groups. General principles of treatment: surgical, radiation, chemotherapeutic. Choice of treatment methods depending on tumor location, stage and histological structure. Combined and complex treatment.	UK-1, 6, OPK-1, 5, 8, 11, PC-2, 3, 5, 6, 7, 8, 9, 10	2
5	**Stomach cancer. Clinic, diagnostics, treatment** Epidemiology. Morbidity. Contributing factors. The importance of exogenous and	UK-1, 6, OPK-1, 5, 8, 11, PC-2, 3, 5, 6, 7, 8,	2

	endogenous carcinogens. The role of nitrosamines . Precancerous diseases of the stomach. Risk groups. Prevention of stomach cancer. The importance of dispensary observation of patients with precancerous diseases of the stomach. Pathomorphology . The concept of early stomach cancer. Macroscopic forms of early cancer. Tumor localization in the stomach. Growth forms. Dysplasia and stomach cancer. Diffuse and intensive tumor types. Metastasis. Stages of stomach cancer. Complications. Clinical picture. Symptoms. Syndrome of minor signs of stomach cancer. Clinical picture of stomach cancer depending on the period of tumor development, localization of the lesion and growth form. Differential diagnosis in syndromes of gastric discomfort, dysphagia and pyloric stenosis. Peculiarities of the cancer clinic against the background of chronic diseases of the stomach. Diagnostics. Patient interview. "Alarm signals". Objective and laboratory studies. X-ray and complex endoscopic examination. Basic X-ray symptoms. Early detection system. Treatment. Radical and palliative surgeries. Indications for gastrectomy and subtotal resection. Palliative surgeries, indications and technique. Evaluation of radiation therapy and chemotherapy for gastric cancer. Remote treatment results. Rehabilitation and assessment of working capacity.	9, 10	
6	**Lymphomas** Morbidity. Current concepts of etiology and pathogenesis. Histological classification of lymphogranulomatosis. Classification by stages, signs of intoxication, their prognostic value. Clinical picture in case of damage to peripheral, mediastinal, retroperitoneal lymph nodes and internal organs; differential diagnosis. The value of morphological examination. Puncture and surgical biopsy. Technique. The scope of studies to assess the prevalence of the process. The value of diagnostic laparotomy. Splenectomy . The choice of treatment depending on the clinical features of the disease. Treatment results, prognosis. Disability assessment. Social significance of rehabilitation of patients with lymphogranulomatosis.	UK-1, 6, OPK-1, 5, 8, 11, PC-2, 3, 5, 6, 7, 8, 9, 10	2
7	**Principles of drug and radiation treatment of cancer.** Classification of medicinal antitumor drugs. Mechanism of action, sensitivity,	UK-1, 6, OPK-1, 5, 8, 11,	2

	indications. Methods of administration. Side effects of drugs. Methods of radiation therapy. Doses and modes of irradiation. Method of increasing radiosensitivity.	PC-2, 3, 5, 6, 7, 8, 9, 10	
8	**Tumors of the digestive tract** **Esophageal cancer.** Epidemiology. Features of distribution. Contributing factors. Preventive measures. Growth forms. Histological structure. Metastasis. Stages. Clinical picture. Pathogenesis of clinical symptoms. » Alarm signals » .d and differential diagnostics. X-ray examination. Esophagoscopy. Treatment. The role of domestic scientists in esophageal cancer surgery. Radical and palliative surgical treatment. Radiation therapy. Remote treatment results. **Colon cancer, tumors of the hepatopancreatoduodenal zone.** Incidence. The importance of nutrition. Precancerous diseases. Prevention. Pathological characteristics. Forms of tumor growth and localization. Patterns of metastasis. Division into stages. Complications. Clinical picture. Symptoms of cancer of the right and left halves of the colon. Main clinical variants. Differential diagnosis. Diagnostics. "Alarm signal". The importance of radiographic and endoscopic examination. Early recognition. Hemoculttest. Radical and palliative treatment. The scope of surgical intervention depending on the tumor location. Tactics for cancer complicated by acute intestinal obstruction. Palliative operations. Indications for drug and combination treatment. Remote results.	UK-1, 6, OPK-1, 5, 8, 11, PC-2, 3, 5, 6, 7, 8, 9, 10	2
9	**Physical and biological foundations of nuclear medicine** Fundamentals of Nuclear Physics. Radiation Sources. Ionizing Radiation Dosimetry. Dosimeters. Atomic Structure. Corpuscular and Photon Radiation. Radioactivity, Activity Units. Half-lives. Ionizing Radiation Properties. Characteristics of Radiation Energy Absorbed in an Object. Dose Rate. Dosimetry Methods. Organization of Dosimetric Monitoring in the Department of Radiation Diagnostics and Therapy. Organization of Work with Ionizing Radiation Sources. Principle of the Radiological Department. Radiodiagnostic Research Methods. Radiation Protection during	UK-1, 6, OPK-1, 5, 8, 11, PC-2, 3, 5, 6, 7, 8, 9, 10	2

	Examination and Treatment of Children. Radiometric Equipment. Organization of a Radionuclide Diagnostic Laboratory. Radiometers, Principles of Their Design and Purpose. Visit to the Ultrasound Diagnostics Room. Radiation Detection of Tumors.		
10	**Principles and methods of radiation therapy** The basic principle of radiation therapy for malignant neoplasms is to deliver the optimal possible dose to the tumor with minimal impact on surrounding healthy tissues; timely initiation of treatment; selection of the most optimal irradiation technique. Pre-radiation , radiation and post-radiation periods. Indications and contraindications. The main methods of radiation therapy: external (remote and contact) and internal (treatment by the selective accumulation method). Remote X - ray and gamma therapy (static and dynamic). Bremsstrahlung and electron beam therapy. Short-range X-ray therapy. Contact methods: application ,intracavitary, interstitial. Radiosurgical method. Combined radiation therapy. Combined treatment method, comprehensive method of tumor treatment. Complications of radiation therapy, their prevention and treatment. Complications of radiation therapy. General radiation reaction to exposure to ionizing radiation during radiation therapy, its manifestations, means of prevention and treatment. Work in the radiology department of the regional hospital. Determination of the total focal dose depending on the histological structure and growth characteristics of the tumor.	UK-1, 6, OPK-1, 5, 8, 11, PC-2, 3, 5, 6, 7, 8, 9, 10	2
Total hours			**20**

2.3 Thematic plan of practical classes and their content

No. topics	Name topics of clinical practical classes	Contents of the topics of practical classes of the discipline	Codes generated competencies	Forms of control	Labor intensity (hours)

1	Current state, problems and prospects for the development of oncology	Theoretical part: Purpose, content and place of oncology in the system of physician training. Morbidity and mortality from malignant neoplasms. Dynamics and structure of morbidity. Regional features of the spread of malignant neoplasms . Factors contributing to the occurrence of tumors. The importance of nutrition, smoking, endocrine disorders, viruses, radioactive and ultraviolet radiation, heredity, secondary immunodeficiency states. The concept of primary and secondary cancer prevention. The fight against smoking. Nutritional hygiene. The most important scientific directions and modern technologies in oncology. Dynamics of indicators of cancer patients. Organization of oncological care. Principles of oncology service in Russia. Clinical groups. State registration system. Accounting documentation. Analysis of the causes of neglect of malignant tumors. Palliative care for patients with advanced forms of malignant neoplasms. The concept of the quality of life of cancer patients.	UK-1: ID 1.1., 1.2., 1.3 UK-6: ID 6.1., 6.3. OPK-1: ID 1.1, 1.2, 1.3 OPK-5: ID 5.1, 5.2, 5.3, 5.4, 5.5, 5.6 OPK-8: ID 8.1, 8.2, 8.3, 8.4 OPK-11: ID 11.1., 11.2., 11.4, 11.5. PC-2: ID 2.1, 2.4, 2.5, 2.6, 2.9 PC- 3: ID 3.1 PC-5: ID 5.3, 5.4 PC-6: ID 6.5 PC-7: ID 7.1 PC-8: ID 8.4 PC-9: ID 9.2, 9.4 PC-10: ID 10.2	Solution clinical and situational tasks and exercises, testing in the Moodle system .	5.2

		Deontology in oncology. Doctor's tactics in relation to cancer patients. Rules of conduct for students in an oncology clinic. Supervision of patients. Reports on rounds. Precancerous diseases. Optional and obligate precancer . Dysplasia. Pathogenesis and patterns of tumor growth. The concept of cancer in situ and early cancer. Forms of growth of malignant tumors. Assessment of the prevalence of the process by stages and the TNM system. Preclinical and clinical periods of cancer development (the concept of carcinogenesis ,neoangiogenesis, biological characteristics and minimal remaining disease). Pathogenesis of malignant neoplasm symptoms. The main clinical symptoms of cancer: obstructions , destructions, compressions, intoxications and tumor-like formations. Additional symptoms: impairment of specific organ functions, paraneoplastic syndromes. The influence of previous diseases and additional infections on the clinical picture of cancer. Methods of diagnostics of malignant			

		tumors . Collection and evaluation of complaints and anamnesis of cancer patients. "Alarm signals" - as signs requiring in-depth examination. Features of objective examination in case of suspected malignant tumor. Endoscopic examinations. Radiation (X-ray, ultrasound, CT) and MRI methods of examination. Biochemical and immunological tests. Tumor markers. The role of morphological studies in diagnostics of malignant neoplasms. Possibilities of DNA diagnostics. Practical part: working with handouts, educational, scientific, medical and reference literature, the standard of specialized medical care. Mandatory clinical minimum examination in outpatient settings. Detection of cancer in the preclinical period. Formation of high-risk groups. The importance of screening studies for detection of cancer in the preclinical and early clinical stages.			
2	Skin tumors. Cancer and melanoma	Theoretical part: 2.1. Skin cancer. Morbidity. Risk factors. Optional and obligatory pre- d- skin cancer. Cancer prevention measures.	UK-1: ID 1.1., 1.2., 1.3 UK-6: ID 6.1., 6.3. OPK-1: ID 1.1, 1.2, 1.3 OPK-5: ID 5.1, 5.2, 5.3, 5.4, 5.5, 5.6	Frontal survey, solving clinical and situational problems.	5.2

		Histological varieties (basalioma , squamous cell carcinoma). Clinical variants of basalioma and squamous cell carcinoma. Methods of patient examination (inspection, palpation, sampling for morphological examination). Stages. Treatment of skin cancer (radiation, cryogenic , surgical, medicinal, etc.). Immediate and remote results. Rehabilitation. Melanomas . Epidemiology of melanomas. Factors contributing to malignancy of pigmented nevi , clinical manifestations, preventive measures. Peculiarities of growth and metastasis of melanomas. Clinical characteristics. Staging . Possibilities of cytological and histological studies. Treatment. Results. Practical part: analysis of a thematic patient or medical history, supervision of patients, solving situational problems, preparing a workbook, educational medical history, working with handouts, educational, scientific, medical literature, the standard of specialized medical care, the procedure for providing medical care, participation in the work of the ultrasound room, clinical and biochemical laboratory,	OPK-8: ID 8.1, 8.2, 8.3, 8.4 OPK-11: ID 11.1., 11.2., 11.4, 11.5. PC-2: ID 2.1, 2.4, 2.5, 2.6, 2.9 PC-3: ID 3.1 PC-5: ID 5.3, 5.4 PC-6: ID 6.5 PC-7: ID 7.1 PC-8: ID 8.4 PC-9: ID 9.2, 9.4 PC-10: ID 10.2		

		completing assignments according to the model.			
3	Precancerous conditions and breast cancer.	Theoretical part: Morbidity. The role of hormonal disorders. Other risk factors: burdened medical history, poor nutrition. 3.1. Mastopathy Etiopathogenesis . Classification. Localized and diffuse forms. Clinical picture. Tactics for localized forms. Principles of conservative therapy for diffuse forms of mastopathy. Outpatient observation. Breast cancer prevention. 3.2. Breast cancer Clinical and pathomorphological features, biological prognostic factors. Metastasis routes. Classification by stages. Clinic of typical (nodular) form. Differential diagnosis with localized mastopathy and fibroadenoma. Special forms of cancer: edematous-infiltrative, mastitis-like , erysipelas-like and shell-like, Paget's cancer . Features of the course. Differential diagnosis. Practical part: Examination of patients	UK-1: ID 1.1., 1.2., 1.3 UK-6: ID 6.1., 6.3. OPK-1: ID 1.1, 1.2, 1.3 OPK-5: ID 5.1, 5.2, 5.3, 5.4, 5.5, 5.6 OPK-8: ID 8.1, 8.2, 8.3, 8.4 OPK-11: ID 11.1., 11.2., 11.4, 11.5. PC-2: ID 2.1, 2.4, 2.5, 2.6, 2.9 PC-3: ID 3.1 PC-5: ID 5.3, 5.4 PC-6: ID 6.5 PC-7: ID 7.1 PC-8: ID 8.4 PC-9: ID 9.2, 9.4 PC-1 0: ID 10.2	Frontal survey, solving clinical and situational problems.	5.2

		Methods of palpation of mammary glands, lymph nodes. Methods of social research (mammography, ductography , ultrasound, MRI, puncture, trephine biopsy , sector resection). Early detection. Methods of self-examination . Screening for breast cancer. The role of examination rooms. Preventive examinations. Principles of breast cancer treatment . Choice of method depending on the stage and form of the tumor. Types of radical operations. Indications for combined and complex treatment. The importance of adjuvant and neoadjuvant chemotherapy. Remote results of treatment. Dependence on the stage of the disease. Medical examination system. Rehabilitation			
4	Lung cancer.	Theoretical part: Incidence. Age and gender characteristics. Risk factors. Prevention. Preclinical and clinical periods of cancer. Growth forms and clinical variants of central and peripheral cancer. Differential diagnosis. Histological structure. Patterns of metastasis. Stages. Diagnostics. Evaluation of anamnesis and physical examination data. Cytological examination of sputum.	UK-1: ID 1.1., 1.2., 1.3 UK-6: ID 6.1., 6.3. OPK-1: ID 1.1, 1.2, 1.3 OPK-5: ID 5.1, 5.2, 5.3, 5.4, 5.5, 5.6 OPK-8: ID 8.1, 8.2, 8.3, 8.4 OPK-11: ID 11.1., 11.2., 11.4, 11.5. PC-2: ID 2.1, 2.4, 2.5, 2.6, 2.9 PC-3: ID 3.1 PC-5: ID 5.3, 5.4 PC-6: ID 6.5 PC-7: ID 7.1	Frontal survey, solving clinical and situational problems.	5.2

		Main radiographic symptoms. Signs of atelectasis. Scheme of additional examination in case of suspected central and peripheral cancer. Importance of X-ray, computed tomography , magnetic resonance imaging and bronchoscopy. Transthoracic puncture and bronchial catheterization. Early detection of lung cancer. Organization of screening. The importance of large-frame fluorography in high-risk groups. Professional cancers. General principles of treatment: surgical, radiation, drug . Choice of treatment method depending on the localization, stage and histological structure of cancer. Combined and complex treatment. Practical part: analysis of a subject patient or medical history, supervision of patients, solving situational problems, preparing a workbook, educational medical history, working with handouts, educational, scientific, medical literature, the standard of specialized medical care, the procedure for providing medical care, participation in the work of the ultrasound room, clinical and biochemical laboratory, completing	PC-8: ID 8.4 PC-9: ID 9.2, 9.4 PC-10: ID 10.2		

		assignments according to the model.			
5	Stomach cancer	Theoretical part: Epidemiology. Morbidity. Risk factors. The importance of exogenous and endogenous carcinogens. Precancerous diseases of the stomach. Risk groups. Prevention of stomach cancer. The importance of dispensary observation of patients with precancerous diseases of the stomach.Pathomorphology . The concept of early stomach cancer. Macroscopic forms of early cancer. Localization of the tumor in the stomach. Growth forms. Dysplasia and stomach cancer. Diffuse and intestinal tumor types. Metastasis. Stages of stomach cancer. Clinical picture of gastric cancer depending on the period of tumor development, localization of the lesion and growth form. Differential diagnosis of gastric discomfort syndromes. Peculiarities of cancer clinical picture against the background of chronic gastric diseases. Diagnostics. Patient interview. X-ray and endoscopic examination. Main X-ray and endoscopic symptoms. Possibilities of early cancer detection. Treatment. Radical and palliative	UK-1: ID 1.1., 1.2., 1.3 UK-6: ID 6.1., 6.3. OPK-1: ID 1.1, 1.2, 1.3 OPK-5: ID 5.1, 5.2, 5.3, 5.4, 5.5, 5.6 OPK-8: ID 8.1, 8.2, 8.3, 8.4 OPK-11: ID 11.1., 11.2., 11.4, 11.5. PC-2: ID 2.1, 2.4, 2.5, 2.6, 2.9 PC-3: ID 3.1 PC-5: ID 5.3, 5.4 PC-6: ID 6.5 PC-7: ID 7.1 PC-8: ID 8.4 PC-9: ID 9.2, 9.4 PC-10: ID 10.2	Frontal survey, solving clinical and situational problems.	5.2

		surgeries. Indications for gastrectomy and subtotal resection. Palliative surgeries, indications and technique. The role of radiation therapy and chemotherapy in gastric cancer. Remote results of treatment. Rehabilitation. Practical part: analysis of a subject patient or medical history, supervision of patients, solving situational problems, preparing a workbook, educational medical history, working with handouts, educational, scientific, medical literature, the standard of specialized medical care, the procedure for providing medical care, participation in the work of the ultrasound room, clinical and biochemical laboratory, completing assignments according to the model.			
6	Lymphomas .	Theoretical part: Lymphogranulomatosis. Morbidity. Modern concepts of etiology and pathogenesis. Histological classification of lymphogranulomatosis. Classification by stages, signs of intoxication, their prognostic value. Clinical picture of lesions of peripheral,	UK-1: ID 1.1., 1.2., 1.3 UK-6: ID 6.1., 6.3. OPK-1: ID 1.1, 1.2, 1.3 OPK-5: ID 5.1, 5.2, 5.3, 5.4, 5.5, 5.6 OPK-8: ID 8.1, 8.2, 8.3, 8.4 OPK-11: ID 11.1., 11.2., 11.4, 11.5. PC-2: ID 2.1, 2.4, 2.5, 2.6, 2.9 PC-3: ID 3.1 PC-5: ID 5.3, 5.4 PC-6: ID 6.5	Frontal survey, solving clinical and situational problems.	5.2

		mediastinal , retroperitoneal lymph nodes and internal organs; differential diagnosis. Practical part: The importance of morphological examination, puncture and surgical biopsy. The choice of treatment method depending on the clinical features of the disease, the stage of the disease and the initial prognostic signs. Treatment. Results. Prognosis Social significance of rehabilitation of patients with lymphogranulomatosis. Non-Hodgkin's lymphomas (lymphosarcoma). Incidence. Modern classifications. The importance of immunophenotypic characteristics of tumors (lymphomas from B- and T-cell precursors and with the phenotype of peripheral organs of the immune system). Clinical picture. Symptoms of intoxication. Paths of metastasis . Bone marrow damage. Diagnostic methods. Principles of treatment . analysis of a thematic patient or medical history, supervision of patients, solving situational problems, preparing a workbook, educational medical history, working with handouts, educational, scientific, medical	PC-7: ID 7.1 PC-8: ID 8.4 PC-9: ID 9.2, 9.4 PC-10: ID 10.2		

		literature, the standard of specialized medical care, the procedure for providing medical care, participation in the work of the ultrasound room, clinical and biochemical laboratory, completing assignments according to the model.			
7	Drug treatment of malignant neoplasms	Theoretical part: Classification of treatment methods (surgical, radiation, drug, combined, complex treatment). Principles of radical surgical interventions. The concept of "anatomical zone", the principle of case . The concept of operability and resectability . Standard, extended, combined, extended-combined and palliative operations. Methods of radiation therapy of malignant tumors. Radiosensitive and radioresistant tumors. Doses and irradiation regimens. Methods of increasing the radiosensitivity of tumors. Classification of antitumor drugs. Mechanism of action. Indications for chemotherapy. Methods of drug administration. Side effects and complications. Adjuvant and neoadjuvant chemotherapy. Standard and high-dose	UK-1: ID 1.1., 1.2., 1.3 UK-6: ID 6.1., 6.3. OPK-1: ID 1.1, 1.2, 1.3 OPK-5: ID 5.1, 5.2, 5.3, 5.4, 5.5, 5.6 OPK-8: ID 8.1, 8.2, 8.3, 8.4 OPK-11: ID 11.1., 11.2., 11.4, 11.5. PC-2: ID 2.1, 2.4, 2.5, 2.6, 2.9 PC-3: ID 3.1 PC-5: ID 5.3, 5.4 PC-6: ID 6.5 PC-7: ID 7.1 PC-8: ID 8.4 PC-9: ID 9.2, 9.4 PC-10: ID 10.2	Frontal survey , solving clinical and situational problems.	5.2

		chemotherapy, use of colony-stimulating factors. Practical part analysis of a thematic patient or an archival medical history, supervision of patients, solving situational problems, designing a workbook, educational medical history. Cancer biotherapy (cytokines, monoclonal antibodies, antitumor vaccines, gene therapy , hormone therapy, hematopoiesis-stimulating factors). Combined and complex treatment methods. The concept of randomized trials in oncology.			
8	Tumors of the digestive tract	Theoretical part: Esophageal cancer. Epidemiology. Risk factors. Preventive measures. Clinical picture. Pathogenesis of clinical symptoms depending on the form of tumor growth. Histological structure. Metastasis. Stages. Diagnostic methods. X-ray examination. Esophagog a - stroscopy . Biopsy. Principles of treatment. The role of domestic scientists in esophageal cancer surgery . Radical and palliative surgical treatment. Radiation therapy . Remote	UK-1: ID 1.1., 1.2., 1.3 UK-6: ID 6.1., 6.3. OPK-1: ID 1.1, 1.2, 1.3 OPK-5: ID 5.1, 5.2, 5.3, 5.4, 5.5, 5.6 OPK-8: ID 8.1, 8.2, 8.3, 8.4 OPK-11: ID 11.1., 11.2., 11.4, 11.5. PC-2: ID 2.1, 2.4, 2.5, 2.6, 2.9 PC-3: ID 3.1 PC-5: ID 5.3, 5.4 PC-6: ID 6.5 PC-7: ID 7.1 PC-8: ID 8.4 PC-9: ID 9.2, 9.4	Frontal survey, solving clinical and situational problems.	5.2

		treatment results. Colon cancer. Incidence. The importance of nutrition. Precancerous diseases . Prevention. Pathological characteristics. Forms of growth and localization of the tumor. Patterns of metastasis. Division into stages. Clinical picture. Symptoms of cancer of the right and left halves of the colon. Main clinical variants. Differential diagnosis. Diagnostics. Importance of X-ray and endoscopic examination. Early recognition. Hemocult test. Radical and palliative treatment. The scope of surgical intervention depending on the tumor location. Tactics for cancer complicated by acute intestinal obstruction. Palliative surgeries. Indications for drug and combination therapy. Remote results . Tactics for cancer metastases to the liver. Rectal cancer. Incidence. Risk factors. Precancerous diseases. Growth forms and histological structure of the tumor. Division into stages. Patterns of metastasis. Clinical picture. Symptoms of rectal cancer. Clinical picture depending on localization and growth form. Differential	PC-10: ID 10.2		

		diagnosis in case of rectal bleeding (hemorrhoids, polyps, dysentery , anal fissure). Diagnostics. Clinical minimum examination of patients. Digital rectal examination, rectoscopy .Hemocult test as a screening method. Treatment. Surgical and combined. Radical and palliative operations. Management of patients with an abnormal anus. The importance of radiation therapy and chemotherapy. Remote results of treatment. Outpatient observation. Rehabilitation. 8.4. Liver cancer Primary and metastatic liver cancer. Incidence and mortality from primary liver cancer. Growth forms and histological structure. Etiopathogenesis of hepatocellular carcinoma . The importance of hepatitis B and C viruses. The role of opisgorchiasis in the development of cholangiocellular carcinoma. Preventive measures. Liver cancer clinic. Diagnostic methods: Abelev- Tatar - Nova reaction . Ultrasound, computed tomography and MRI, scintigraphy , angiography, liver			

		puncture. Laparoscopy. Principles of treatment. 8.5 Tumors hepatobiliarypancreatoduodenal zone Morbidity and mortality. Risk factors. Preventive measures. Pathomorphology : localization, macroscopic forms, histological structure, metastasis. Symptoms of pancreatic cancer. Clinical picture depending on the tumor location (head, body, tail of the pancreas, duodenum, large duodenal papilla, extrahepatic bile ducts. Diagnostics. Minimum clinical examination. Importance of anamnesis , objective examination and laboratory data. Differential diagnosis of mechanical jaundice. Examination methods: ultrasound, computed tomography and MRI, relaxation duodenography , retrograde endoscopic cholangiography , angiography. Tumor puncture. Principles of surgical treatment. Results. Practical part: analysis of a subject patient or medical history, supervision of patients, solving			

		situational problems, preparing a workbook, educational medical history, working with handouts, educational, scientific, medical literature, the standard of specialized medical care, the procedure for providing medical care, participation in the work of the ultrasound room, clinical and biochemical laboratory, completing assignments according to the model. Diagnostics. Minimum clinical examination. Importance of anamnesis , objective examination and laboratory data. Differential diagnosis of mechanical jaundice. Examination methods: ultrasound, computed tomography and MRI, relaxation duodenography , retrograde endoscopic cholangiography , angiography. Tumor puncture. Principles of surgical treatment. Results.			
9	Physical and biological foundations of nuclear medicine	Theoretical part: Fundamentals of Nuclear Physics. Radiation Sources. Ionizing Radiation Dosimetry. Dosimeters. Atomic Structure. Corpuscular and Photon Radiation. Radioactivity, Activity Units. Half-lives. Ionizing Radiation Properties. Characteristics of Radiation Energy	UK-1: ID 1.1., 1.2., 1.3 UK-6: ID 6.1., 6.3. OPK-1: ID 1.1, 1.2, 1.3 OPK-5: ID 5.1, 5.2, 5.3, 5.4, 5.5, 5.6 OPK-8: ID 8.1, 8.2, 8.3, 8.4 OPK-11: ID 11.1., 11.2., 11.4, 11.5. PC-2: ID 2.1, 2.4, 2.5, 2.6, 2.9 PC-3: ID 3.1 PC-5: ID 5.3, 5.4	Frontal survey, solving clinical and situational problems.	5.2

		Absorbed in an Object. Dose Rate. Dosimetry Methods. Organization of Dosimetric Monitoring in the Department of Radiation Diagnostics and Therapy. Organization of Work with Ionizing Radiation Sources. Principle of the Radiological Department. Radiodiagnostic Research Methods. Radiation Protection during Examination and Treatment. Radiometric Equipment. Organization of a Radionuclide Diagnostic Laboratory. Radiometers, Principles of Their Design and Purpose. Visit to the Ultrasound Diagnostics Room. Radiation Detection of Tumors. Practical part: analysis of a subject patient or medical history, supervision of patients, solving situational problems, designing a workbook, educational medical history, working with handouts, educational, scientific, medical literature, the standard of specialized medical care, the procedure for providing medical care, participation in the work of the ultrasound room, clinical and biochemical laboratory, completing tasks according to the model	PC-6: ID 6.5 PC-7: ID 7.1 PC-8: ID 8.4 PC-9: ID 9.2, 9.4 PC-10: ID 10.2		
10	Principles and	Theoretical part:	UK-1: ID 1.1., 1.2., 1.3	Interview	

	methods of radiation therapy	The main principle of radiation therapy of malignant tumors is to deliver the optimal possible dose to the tumor with minimal impact on surrounding healthy tissues; timely initiation of treatment; selection of the most optimal irradiation technique. Pre-radiation , radiation and post-radiation periods. Indications and contraindications. Practical part: Determination of the total focal dose depending on the histological structure and growth characteristics of the tumor. Assessment of the tolerance of neighboring organs and tissues. Selection of the radiation dose fractionation mode. Analysis of a subject patient or medical history, supervision of patients, solving situational problems, preparing a workbook, educational medical history, working with handouts, educational, scientific, medical literature, the standard of specialized medical care, the procedure for providing medical care, participation in the work of the ultrasound room, clinical and biochemical laboratory. Final lesson: testing, answering questions for the test, solving situational problems on the topics studied.	UK-6: ID 6.1., 6.3. OPK-1: ID 1.1, 1.2, 1.3 OPK-5: ID 5.1, 5.2, 5.3, 5.4, 5.5, 5.6 OPK-8: ID 8.1, 8.2, 8.3, 8.4 OPK-11: ID 11.1., 11.2., 11.4, 11.5. PC-2: ID 2.1, 2.4, 2.5, 2.6, 2.9 PC-3: ID 3.1 PC-5: ID 5.3, 5.4 PC-6: ID 6.5 PC-7: ID 7.1 PC-8: ID 8.4 PC-9: ID 9.2, 9.4 PC-10: ID 10.2	(assessment of knowledge of theoretical material), testing in the Moodle system .	5.2

Total hours					**52**

2. 4. Interactive forms of learning.

In order to activate students' cognitive activity, **interactive teaching methods** (discussions, interactive surveys, computer simulations, discussions, analysis of educational medical history, etc.), participation in the work of the immunology laboratory, educational and research and scientific research work of the department are widely used in practical classes.

No. p/p	The topic of practical classes	Labor intensity in hours	Interactive form of learning	Labor intensity in hours , in % of the lesson
1	Current state, problems and prospects for the development of oncology	5.2	Computer simulations Brainstorming Small group method	45 minutes (0.75 hours) 14.7%
2	Skin tumors. Cancer and melanoma	5.2	Interactive survey. Small group method Business game	45 minutes (0.75 hours) / 14.7%
3	Precancerous lesions and breast cancer	5.2	Business game Peer review of notes	45 minutes (0.75 hours) / 14.7%
4	Lung cancer	5.2	Interactive survey. Mutual reviews writing abstracts	45 minutes (0.75 hours) / 14.7%
5	Stomach cancer. Clinic, diagnostics	5.2	Multimedia presentation	45 minutes (0.75 hours) / 14.7%
6	Lymphomas	5.2	Interactive survey. Computer simulations Business game	45 minutes (0.75 hours) / 14.7%
7	Drug treatment of malignant neoplasms	5.2	Small group method Business game	45 minutes (0.75 hours) / 14.7%
8	Tumors of the digestive tract	5.2	Practicing practical skills in patient resuscitation	45 minutes (0.75 hours) / 14.7%
9	Physical and biological foundations of nuclear medicine	5.2	Interactive survey using multimedia presentation	45 minutes (0.75 hours) / 14.7%
10	Principles and methods of radiation therapy	5.2	Multimedia presentation Small group method	45 minutes/ (0.75 hours) 14.7%

2.5. Criteria for assessing students' knowledge.

The basis for determining the level of knowledge, skills and abilities are the assessment criteria - completeness and correctness:

- correct exact answer
- correct but incomplete or imprecise answer
- wrong answer
- no answer

When assigning marks, it is necessary to take into account the classification of errors and their quality:

- gross errors
- similar errors
- minor errors
- shortcomings

Distribution of grades in practical classes semester

№ p /p	Topic of the practical lesson	Theoretical part	Practical part	Overall rating
1	Current state, problems and prospects for the development of oncology	2-5	2-5	2-5
2	Skin tumors. Cancer and melanoma	2-5	2-5	2-5
3	Precancerous lesions and breast cancer	2-5	2-5	2-5
4	Lung cancer	2-5	2-5	2-5
5	Stomach cancer. Clinic, diagnostics	2-5	2-5	2-5
6	Lymphomas	2-5	2-5	2-5
7	Medicinal value of ZNO	2-5	2-5	2-5
8	Tumors of the digestive tract	2-5	2-5	2-5
9	Physical and biological foundations of nuclear medicine	2-5	2-5	2-5
10	Principles and methods of radiation therapy	2-5	2-5	2-5

Rating scales for ongoing knowledge control

The success of students in mastering the discipline of practical skills and abilities is characterized by a qualitative assessment and is assessed on a 5-point scale: "5" - excellent, "4" - good, "3" - satisfactory, "2" - unsatisfactory. The conversion of the mark into a point scale is carried out according to the following scheme:

Quality of development	Mark on a 5-point scale
90-100%	"5"
80-89%	"4"
70-79%	"3"
less than 70%	"2"

Incoming inspection

Conducted at the first lesson, includes: solving problems and exercises; testing in the Moodle system https://educ-amursma.ru/local/crw/course.php?id=455

Current control

Current control includes initial and final control of knowledge.

Initial control **is** carried out by the teacher at the beginning of each lesson in the form of a frontal survey, solving problems and exercises.

Final control – includes control over the technique of performing the experiment and drawing up the protocol , written work on the options, testing in the Moodle system (https://educ-amursma.ru/local/crw/course.php?id=455).

The final grade during the current knowledge assessment is given on the day of the lesson, as the arithmetic mean result for all types of activities provided for in the given lesson of the discipline's work program.

Criteria for assessing the oral response

- **"5" (excellent)** – the student demonstrates deep and complete knowledge of the educational material, does not allow inaccuracies or distortions of facts when presenting, presents the material in a logical sequence, is well oriented in the presented material, and can provide justification for the judgments expressed.
- **"4" (good)** - the student has mastered the educational material in full, is well oriented in the educational material, presents the material in a logical sequence, but makes inaccuracies when answering.
- **"3" (satisfactory)** – the student has mastered the basic principles of the topic of the practical lesson, but when presenting the educational material, he/she makes inaccuracies, presents it incompletely and inconsistently, requires leading questions from the teacher to present it, and has difficulty substantiating the judgments expressed.
- **"2" (unsatisfactory)** – the student has fragmented and unsystematic knowledge of the educational material, is unable to distinguish between the main and the secondary, makes mistakes in defining basic concepts, distorts their meaning, and cannot independently present the material.

Assessment criteria for the practical part

- **"5" (excellent)** – the student has fully mastered the practical skills and abilities provided for by the course work program.

- **“4” (good)** – the student has fully mastered the practical skills and abilities provided for in the course program, but makes some inaccuracies.
- **“3” (satisfactory)** – the student has only some practical skills and abilities.
- **“2” (unsatisfactory)** – the student demonstrates the performance of practical skills and abilities with gross errors.

Criteria for assessing independent extracurricular work:

- the level of student mastery of the educational material;
- the completeness and depth of general educational concepts, knowledge and skills on the topic being studied, to which this independent work relates;
- formation universal , general professional and professional competencies (the ability to apply theoretical knowledge in practice).
- the problems were solved correctly, the exercises were completed, and the test assignments were answered accurately – “passed”.
- Problems were not solved correctly, exercises were not completed correctly, test questions were not answered accurately – “failed”.

Essay evaluation criteria:

- **“5” (excellent) –** awarded to a student if he has prepared a complete, detailed, and formatted according to requirements, abstract on the chosen topic, presented his work in the form of a report with a computer presentation, and answered questions on the topic of the report;
- **“4” (good) –** awarded to a student for a complete, detailed essay that is formatted according to requirements, but poorly presented;
- **“3” (satisfactory) –** the abstract does not contain information on the issue being studied in full, is formatted with errors, and is poorly presented;
- **“2” (unsatisfactory)** – given to a student if the abstract is not written, or is written with gross errors, the report and computer presentation are not prepared, or their content does not correspond to the topic of the abstract.

Working off disciplinary debts.

1. If a student misses a class for a valid reason, he/she has the right to make it up and receive the maximum grade provided for by the course work program for that class. A valid reason must be documented.
2. If a student misses a class for an unjustified reason or receives a "2" mark for all activities in the class, he/she is required to make it up. In this case, the mark received for all activities is multiplied by 0.8.
3. If a student is excused from a class at the request of the dean's office (participation in sports, cultural and other events), then he is given a grade of "5" for this class, provided that he submits a report on the completion of mandatory extracurricular independent work on the topic of the missed class.

Assessment criteria for midterm assessment.

Midterm assessment (credit) is designed to assess the degree of achievement of planned learning outcomes upon completion of the study of a discipline and allows for an assessment of the level and quality of its mastery by students .

The students’ success in mastering the discipline is assessed on a 5-point scale: “5” – excellent, “4” – good, “3” – satisfactory, “2” – unsatisfactory.

"Excellent" - for the depth and completeness of mastery of the content of the educational material, in which the student easily navigates, for the ability to combine theoretical questions with practical ones , express and justify their judgments, correctly and logically present the answer; when testing, allows up to 10% of erroneous answers. Practical skills and abilities provided for by the working program of the discipline are fully mastered.

"Good" - the student has fully mastered the educational material, is oriented in it, correctly states the answer, but the content and form have some inaccuracies; during testing allows up to 20% of erroneous answers. Completely practical skills and abilities provided by the working program of the discipline, but allows some inaccuracies

"Satisfactory" - the student has mastered the knowledge and understanding of the main provisions of the educational material, but presents it incompletely, inconsistently, does not know how to express and justify his/her judgments; during testing, allows up to 30% of erroneous answers. Has only some practical skills and abilities.

"Unsatisfactory" - the student has fragmented and unsystematic knowledge of the educational material, is unable to distinguish between the main and secondary, makes mistakes in defining concepts, distorts their meaning, presents the material in a disorderly and uncertain manner, and makes more than 30% of erroneous answers during testing. Performs practical skills and abilities with gross errors.

A student can claim to receive an "excellent" grade automatically if he/she has won a prize in disciplinary or interdisciplinary Olympiads (university, regional) and has an average grade for the current academic performance of at least 4.8 points **.**A student can refuse the "automatic" grade and take the test together with the group on a general basis.

Interim assessment is carried out through a system of passing a test in 3 stages:

1. Testing in the Moodle system (https://educ-amursma.ru/local/crw/course.php?id=455 .).
2. Completion of the practical part of the discipline in full: involves attending all practical classes, performing experiments with the execution of a protocol. Based on the assessments of the current control of knowledge, skills, and abilities in practical classes, the average score of current academic performance is calculated, which is recorded in the educational (electronic) journal. The average score of the current knowledge control is taken into account during the midterm assessment.
3. Interview on topics covered.

Assessment criteria for midterm assessment

Stages	**Mark out of 5 point scale**	**Binary scale**
Test control in the system " Moodle "	3-5	**passed**
Complete completion of the practical part of the course	3-5	
Delivery of practical skills (control of the formation of competencies)	3-5	
Test control in the system " Moodle "	2	**not credited**
Complete completion of the practical part of the course	2	

Delivery of practical skills (control of the formation of competencies)	2	

2.6. Independent work of students: in-class, out-of-class.

The organization of independent classroom work of students is carried out with the help of methodological instructions for students, which contain educational goals, a list of the main theoretical questions for study, a list of practical work and the methodology for conducting it, instructions for the presentation of the results obtained, their discussion and conclusions, assignments for self-control with standard answers, a list of recommended literature.

From 1/4 to 1/2 of the practical lesson time is allocated for independent work of students: conducting research, recording results, discussing them, formulating conclusions, completing individual assignments. The preparatory stage, or the formation of an approximate basis for actions, begins for students outside of class time when preparing for the practical lesson, and ends in class.

All subsequent stages are carried out in class. The stage of materialized actions (solving problems using an algorithm or without an algorithm, with an unknown answer in advance) is carried out independently. The teacher, if necessary, provides consultation, provides assistance and simultaneously monitors the quality of students' knowledge and their ability to apply existing knowledge to solve assigned problems.

Extracurricular independent work of students

No. p /p	Topic practical lesson	Time for student preparation for the lesson	Forms of extracurricular activities independent work of the student	
			Mandatory and the same for all students	By choice student
1	Current state, problems and prospects for the development of oncology	3 hours	- preparation for practical classes (lectures, basic and additional literature); - drawing up a plan to answer questions; - completing a practical task to monitor the assimilation of the topic - solving situational problems.	message abstract presentation
2	Skin tumors. Cancer and melanoma	3 hours	- preparation for practical classes (lectures, basic and additional literature); - drawing up a plan to answer questions; - completing a practical task to monitor the	message abstract presentation

			assimilation of the topic - solving situational problems.	
3	Precancerous conditions and breast cancer.	3 hours	- preparation for practical classes (lectures, basic and additional literature); - drawing up a plan to answer questions; - completing a practical task to monitor the assimilation of the topic - solving situational problems.	message abstract presentation
4	Lung cancer.	3 hours	- preparation for practical classes (lectures, basic and additional literature); - drawing up a plan to answer questions; - completing a practical task to monitor the assimilation of the topic - solving situational problems.	message abstract presentation
5	Stomach cancer	3 hours	- preparation for practical classes (lectures, basic and additional literature); - drawing up a plan to answer questions; - completing a practical task to monitor the assimilation of the topic - solving situational problems.	message abstract presentation
6	Lymphomas .	3 hours	- preparation for practical classes (lectures, basic and additional literature); - drawing up a plan to answer questions; - completing a practical task to monitor the	message abstract presentation

			assimilation of the topic - solving situational problems.	
7	Drug treatment of malignant neoplasms	3 hours	- preparation for practical classes (lectures, basic and additional literature); - drawing up a plan to answer questions; - completing a practical task to monitor the assimilation of the topic - solving situational problems.	message abstract presentation
8	Tumors of the digestive tract	3 hours	- preparation for practical classes (lectures, basic and additional literature); - drawing up a plan to answer questions; - completing a practical task to monitor the assimilation of the topic - solving situational problems.	message abstract presentation
9	Physical and biological foundations of nuclear medicine	3 hours	- preparation for practical classes (lectures, basic and additional literature); - drawing up a plan to answer questions; - completing a practical task to monitor the assimilation of the topic - solving situational problems.	message abstract presentation
10	Principles and methods of radiation therapy	3 hours	- preparation for practical classes (lectures, basic and additional literature); - drawing up a plan to answer questions; - completing a practical task to monitor the	message abstract presentation

			assimilation of the topic - solving situational problems.	
Labor intensity in hours		**30 hours**	**30 hours**	**6 hours**
Total labor intensity in hours		**36 hours**		

2.7 Research (project) work

Research (project) work of students is a mandatory section of the discipline and is aimed at the comprehensive formation of universal and general professional competencies of students. Research (project) work involves the study of specialized literature and other scientific and technical information on the achievements of domestic and foreign science and technology in the relevant field of knowledge, participation in scientific research, etc. The topics are determined by students independently or in consultation with the teacher.

List of recommended topics for research (project) work:

1. Methods of diagnostics of oncological diseases.
2. Diagnosis of spinal cord tumors at early stages.
3. Palliative and symptomatic treatment.
4. Markers of malignant neoplasms.
5. Lymphoma Hodgkin's .
6. The Place of Radiation Therapy in the Treatment of Lymphoma Hodgkin's .
7. Non-Hodgkin's lymphoma .
8. The place of radiation therapy in treatment.
9. Screening for gastrointestinal cancer.
10. The role of nutrition in the development of malignant neoplasms.
11. Methods of treatment of gastrointestinal oncopathology .
12. Liver cancer.
13. Pancreatic cancer.
14. Reconstructive plastic surgery in oncology.
15. Epidemiology of malignant neoplasms in the Amur region.
16. Borderline nevi .
17. Kaposi's sarcoma .
18. Atypical forms of lung cancer (Pancoast cancer).
19. Metastatic lung cancer.
20. The role of smoking in the etiology of lung cancer.
21. Breast cancer associated with pregnancy and lactation.

22. Radiation diagnostics of breast cancer.
23. Breast cancer in men .
24. PET in cancer diagnostics.
25. The problem of phantom pain after amputations.
26. Tongue cancer.
27. Laryngeal cancer.
28. Metastases without a primary site.

Criteria for assessing students' research (project) work:

- the material on the results of the research in the report is presented in detail, the specialized literature is well-developed, scientific and technical information on the achievements of domestic and foreign science and technology in the relevant field of knowledge is studied - "passed".
- the material on the results of the research in the report is not presented accurately enough, the special literature is poorly studied, the scientific and technical information on the achievements of domestic and foreign science and technology in the relevant field of knowledge is not studied - "failed".

3. EDUCATIONAL, METHODOLOGICAL, MATERIAL, TECHNICAL AND INFORMATION SUPPORT OF THE DISCIPLINE

3.1 Main literature:

1. Oncology 2.0 : textbook / K. Sh. Gancev, Sh. R. Kzyrgalin , F. V. Moiseenko, R. S. Yamidanov ; edited by Sh. Kh. Gancev . - Moscow : GEOTAR-Media, 2024. - 360 p. - ISBN 978-5-9704-8203-2, DOI: 10.33029/9704-8203-2-ONC-2024-1-360. - Electronic version is available on the website of the electronic library system "Student Consultant" : [site]. URL: https://www.studentlibrary.ru/book/ISBN9785970482032.html (date of access: 02.11.2024). - Access mode: by subscription. - Text: electronic
2. Trufanov, G. E. Radiation therapy (radiotherapy) / G. E. Trufanov [et al.] ; edited by G. E. Trufanov - Moscow: GEOTAR-Media, 2018. - 208 p. - ISBN 978-5-9704-4420-7. - Text : electronic // Electronic Library System "Student Consultant": [website]. - URL :https://www.studentlibrary.ru/book/ISBN9785970444207.html (date of access: 12.11.2024). - Access mode : by subscription.
3. Cherenkov, V. G. Oncology: textbook / V. G. Cherenkov. - 4th ed. , rev . and additional - Moscow: GEOTAR-Media, 2020. - 512 p. : ill. - 512 s. - ISBN 978-5-9704-5553-1. - Text : electronic // EBS "Student Consultant": [website]. - URL :https://www.studentlibrary.ru/book/ISBN9785970455531.html (date of access: 12.11.2024). - Access mode : by subscription.
4. Oncology: textbook / ed. O. O. Yanushevich , L. Z. Welsher , G. P. Gens , A. Yu. Drobysheva. - 2nd ed. , rev . and additional - Moscow: GEOTAR-Media, 2023. - 592 p. - ISBN 978-5-9704-7436-5. - Text : electronic // EBS "Student Consultant": [website]. - URL :https://www.studentlibrary.ru/book/ISBN9785970474365.html (date of access: 20.03.2023). - Access mode : by subscription.
5. Gantsev, K. Sh. Oncourology : a practical guide / Gantsev K. Sh., Izmailov A. A., Khmelevsky A. A. - Moscow: GEOTAR-Media, 2022. - 224 p. (Oncology Series) - ISBN

978-5-9704-6312-3. - Text : electronic // EBS “ Student Consultant”: [website]. - URL :https://www.studentlibrary.ru/book/ISBN9785970463123.html (date of access: 20.03.2023). - Access mode : by subscription.

6. Ganceva , H. H. Clinical examination of the patient : a practical guide / Ganceva H. H., Ishmuratova R. Sh. , Kzyrgalin Sh. R., Gainullin A. Kh. - Moscow: GEOTAR-Media, 2021. - 208 p. (Series "Oncology") - ISBN 978-5-9704-6035-1. - Text : electronic // EBS "Student Consultant": [site]. - URL :https://www.studentlibrary.ru/book/ISBN9785970460351.html (date of access: 20.03.2023). - Access mode : by subscription.

3.2 Further reading:

1. Gorbunova, V. A. Neuroendocrine tumors. General principles of diagnosis and treatment / edited by Gorbunova V. A. - Moscow : GEOTAR-Media, 2021. - 600 p. - ISBN 978-5-9704-5997-3. - Text : electronic // Electronic Library System "Student Consultant": [website]. - URL :https://www.studentlibrary.ru/book/ISBN9785970459973.html (date of access: 11/13/2024). - Access mode : by subscription.
2. Gantsev, Sh. Kh. Skin cancer. Melanoma / Gantsev Sh. Kh., Kzyrgalin Sh. R., Timin K. E. - Moscow : GEOTAR-Media, 2020. - 160 p. (Oncology Series) - ISBN 978-5-9704-5658-3. - Text : electronic // EBS “Student Consultant”: [website]. - URL :https://www.studentlibrary.ru/book/ISBN9785970456583.html (date of access: 13.11.2024). - Access mode : by subscription.
3. Strokova, L. A. Modern aspects of ultrasound diagnostics of malignant neoplasms of the urinary bladder : a tutorial / L. A. Strokova, V. Yu. Startsev, G. V. Kondratyev. - St. Petersburg :SPbSPMU , 2021. - 44 p. - ISBN 978-5-907443-88-4. - Text : electronic // Lan: electronic library system. - URL: https://e.lanbook.com/book/255776 (date of access: 12/14/2022). - Access mode: for authorized users.
4. Aleksandrovich A.S. Radiation diagnostics and radiation therapy: a tutorial / A.S. Aleksandrovich, T.V. Semenyuk , E.S. Zaretskaya. - Grodno: Grodno State Medical University , 2022. - 428 p. - ISBN 9789855956717. - Text: electronic // EBS " Bukap ": [site]. - URL: https://www.books-up.ru/ru/book/luchevaya-diagnostika-i-luchevaya-terapiya-15716625 Access mode: by subscription.

3.3 Educational and methodological support for the discipline prepared by the department staff:

Electronic and digital technologies:

1. Online course on the subject "Oncology, radiation therapy" in the EIS FSBEI HE Amur State Medical Academy (https://educ-amursma.ru/local/crw/course.php?id=455).

Characteristics of modules in the electronic information and educational course

Educational	Controlling
Theoretical (lecture) material, video experiments, scientific and educational films	Methodological recommendations for students on independent extracurricular work.
Methodological recommendations for students for practical classes. Methodological recommendations for solving problems and exercises on the topics of the discipline.	List of recommended topics for abstracts and guidelines for abstract design.
Reference material, tables of standard values.	Tests of entrance, current and final knowledge control.

2. Multimedia presentations (Microsoft PowerPoint 2016), for lecture-type classes (https://educ-amursma.ru/local/crw/course.php?id=455) according to the thematic plan of lectures:

1. "General Oncology Issues. Structure and Organization of Oncology Care in the Russian Federation"
2. "Epithelial tumors of the skin"
3. "Melanoma"
4. "Breast cancer"
5. " Post-radiation mastectomy syndrome"
6. "Lung cancer"
7. " Hodgkin's disease "
8. "Stomach cancer"
9. "Lung cancer"
10. "Emergency conditions in oncology"
11. "Chemotherapy of malignant tumors"
12. "Esophageal cancer"
13. " Colorectal cancer"

Photo and video materials :

Microphotographs (slides):

1. "Malignant neoplasms of the skin and soft tissues"
2. "Breast cancer"
3. "Stomach cancer"

Videos:

1. "Biopsy Techniques"
2. "Mammary gland operations"
3. "Thyroid Cancer Surgeries"
4. "Methods of isotope examination of patients with thyroid cancer"
5. "Endoscopic operations for tumors of the lung and mediastinum"

Electronic teaching aids:

(placed in the Electronic Information System of the Federal State Budgetary Educational Institution of Higher Education Amur State Medical Academy. Access mode: (https://educ-amursma.ru/local/crw/course.php?id=455).

3.4 Equipment used for the educational process

Names of classroom equipment	Square (sq.m.)	Number of seats	Address of classrooms

2 training rooms for oncology and radiation therapy. **Basic equipment:** - marker board, - tables - chairs - bookcase - wall screen - multimedia projector - laptop - visual aids - stands	48	24	675006, Amur region, Blagoveshchensk, Oktyabrskayast., 110, 1st floor, room No. 53

Department equipment used for teaching students		
1	ACER laptop and EpsonEMP-X5 video projector	1
2	X-ray television complex KRT "OKO"	1
3	Mammograph "Elektronika"; mammograph " Mammodiagnost"	2
4	Philips BigBore16 slice CT scanner	1
5	Single Photon Emission Computed TomographMedisco101043	1
6	Expert Class Ultrasound Scanner MindrayDC8	1
7	Negatoscope	3

3.5. Professional databases, information and reference systems, electronic educational resources.

Name resource	Resource Description	Access	Resource address
Electronic library systems			
"Student Consultant" Electronic Library medical school.	For students and teachers of medical and pharmaceutical universities. Provides access to electronic versions of textbooks, teaching aids and periodicals.	library, individual access	http:// www . studentlibrary. ru/
Reference and information system " MedBaseGeotar "	The materials posted in the library have been developed by leading Russian specialists based on modern scientific knowledge (evidence-based medicine). The information has been prepared taking into account the position of the scientific and practical medical society (world, European and Russian) in the relevant specialty. All materials have undergone mandatory independent review.	library , individual access	http://www. mbasegeotar.ru/ pages / index . html
PubMed	Free search engine in the largest medical bibliographic database MedLine . Documents medical and biological articles from the specialized literature, and also provides links to full-text articles.	b library, free access	http:// www . ncbi. nlm. nih. gov/ pubmed/
OxfordMedicine Online .	A collection of Oxford Press medical publications, bringing together over 350 titles into a single, cross-searchable resource. Publications include The Oxford Handbook of Clinical Medicine and The Oxford Textbook of Medicine , with electronic versions continually updated.	library, free access	http://www.oxfordmedicine.com
Biology Knowledge Base human	Reference information on physiology , cell biology , genetics , biochemistry , immunology , pathology . (Resource of the Institute of Molecular Genetics of the Russian Academy of Sciences .)	library, free access	http://humbio.ru/
Medical online library	Free reference books, encyclopedias, books, monographs, abstracts, English-language literature, tests.	library, free access	http://med-lib.ru/
Information systems			
Russian medical association	Professional Internet resource. Objective: to facilitate the implementation of effective	library, free access	http://www.rmass.ru/

	professional activities of medical personnel. Contains the charter, personnel, structure, rules of entry, information about the Russian Medical Union.		
Web -medicine	The site presents a catalog of professional medical resources, including links to the most authoritative subject sites, journals, societies, as well as useful documents and programs. The site is intended for doctors, students, employees of medical universities and scientific institutions.	library, free access	http: //webmed.irkutsk.ru/
Databases			
Worldwide health care organization	The site contains news, statistics on countries that are members of the World Health Organization, fact sheets, reports, WHO publications and much more.	library, free access	http://www.who.int/ru/
Ministries of Science and higher of the Russian Federation	The website of the Ministry of Science and Higher Education of the Russian Federation contains news, newsletters, reports, publications and more.	library, free access	http://www.minobrnauki.gov.ru
Ministry of Education of the Russian Federation.	The website of the Ministry of Education of the Russian Federation contains news, newsletters, reports, publications and much more.	library, free access	https://edu.gov.ru/
Federal portal "Russian education"	A single window for access to educational resources. This portal provides access to textbooks on all branches of medicine and health care.	b library, free access	http: //www .edu.ru/ http://window.edu.ru/catalog/?p rubr=2.2.81.1
Bibliographic databases			
BD "Russian Medicine"	It is created in the Central Scientific and Methodological Library and covers the entire collection, starting from 1988. The database contains bibliographic descriptions of articles from domestic journals and collections, dissertations and their abstracts, as well as domestic and foreign books, collections of institute proceedings, conference materials, etc. Thematically, the database covers all areas of medicine and related areas of biology, biophysics, biochemistry, psychology, etc.	library, free access	http://www.scsml.rssi.ru/
eLIBRARY.RU	Russian information portal in the field of science, technology, medicine and	library, free access	http://elibrary.ru/defaultx.asp

	education, containing abstracts and full texts of more than 13 million scientific articles and publications. The eLIBRARY.RU platform provides electronic versions of more than 2,000 Russian scientific and technical journals, including more than 1,000 open access journals.		
Portal Electronic library of dissertations	Currently, the Electronic Library of Dissertations of the Russian State Library contains more than 919,000 full texts of dissertations and abstracts.	library, free access	http://diss.rsl.ru/?menu=disscatalog/
Medline .r u	Medical and biological portal for specialists. Biomedical journal. Last updated February 7, 2021.	library, free access	http://www.medline.ru

3.6 . Licensed and freely distributed software used in the educational process.

List of software (commercial software products)

No. p /p	List of software (commercial software products)	Details of supporting documents
1	Operating system MSWindows7 Pro	License number 48381779
2	Operating system MSWindows10 Pro	AGREEMENT No. UT-368 dated 09.21.2021
3	MS Office	License number: 43234783, 67810502, 67580703, 64399692, 62795141, 61350919
4	Kaspersky Endpoint Security for Business – Standard Russian Edition. 50-99 Node 2 year Educational Renewal License	Agreement 165A dated November 25, 2022
5	1C Accounting and 1C Salary	LICENSE AGREEMENT 612/L dated 02.02.2022
6	PROF University	LICENSE AGREEMENT No. ЦБ-1151 dated 01.14.2022
7	PROF Library	LICENSE AGREEMENT No. 2281 dated 11.11.2020
8	Consultant Plus	Agreement No. 37 /C dated 02/25/2022
9	Contour .Tolk	Agreement No. K007556/22 dated September 19, 2022
10	E-learning environment 3KL(Russian Moodle)	Agreement No. 1362.3 dated November 21, 2022
11	AstraLinuxCommonEdition	Agreement No. 142 A dated September 21, 2021
12	Information system "Plans"	Agreement No. 9463 dated May 25, 2022
13	1C: Document Management	Agreement No. 2191 dated 10/15/2020
14	R7-Office	Agreement No. 2 KS dated 12/18/2020

List of freely distributed software

No. p /p	List of freely distributed software	Links to license agreement
1	Yandex Browser	Freely distributed License agreement for the use of Yandex Browser programs https://yandex.ru/legal/browser_agreement/

2	Yandex.Telemost	Freely distributed License Agreement for the Use of Programs https://yandex.ru/legal/telemost_mobile_agreement/
3	Dr.WebCureIt !	Freely distributed License Agreement: https://st.drweb.com/static/new-www/files/license_CureIt_ru.pdf
4	OpenOffice	Freely distributed License: http://www.gnu.org/copyleft/lesser.html
5	LibreOffice	Freely distributed License: https://ru.libreoffice.org/about-us/license/
6	VK Calls	Freely distributed https://vk.com/license

3.7. Resources of the information and telecommunications network "Internet".

- Library of Amur State Medical Academy. Access mode: https://amursma.ru/obuchenie/biblioteki/biblioteka-amurskoy-gma/
- Electronic library system "Student consultant". Access mode: http://www.studmedlib.ru/cgi-bin/mb4x
- Electronic library of medical literature. Access mode: https://www.books-up.ru/ru/entrance/97977feab00ecfbf9e15ca660ec129c0/
- https:// www.rosminzdrav.ru/ministry/61/22/stranitsa-979/stranitsa-983/1-standarty-pervichnoy-medic o - sanitarnoy -pomoschi
- https: // www.rosminzdrav.ru/ministry/61/22/stranitsa-979/stranitsa-983/2standarty-spetsialirovannoy-meditsinskoy-pomoschi
- https: // www.rosminzdrav.ru/ministry/61/4/stranitsa857/poryadki-okazaniya-meditsinskoy-pomoschi-naseleniyu-rossiyskoy-federatsii
- http:// www . femb. ruClinical guidelines)

4. ASSESSMENT TOOLS FUND

4.1. Current test control.

4.1.1 Examples of entrance control test tasks (with standard answers)

Test assignments are located in the Moodle system .
Access mode: https://educ-amursma.ru/local/crw/course.php?id=455
Total number of tests – 100.

BENIGN TUMORS ARE CHARACTERIZED

а) the ability to metastasize ;
б) uncontrolled infiltrative growth;
в) high cell differentiation;
г) the presence of a capsule.

Answer: in, g

MALIGNANT TUMORS ARE CHARACTERIZED

а) the presence of a capsule;
б) infiltrative growth into surrounding organs and tissues;
в) high cell differentiation;
г) by squeezing out the surrounding tissues.

Answer: b, c

ARE PATIENTS WITH GASTRIC ULCERS SUBJECT TO DYNAMIC MONITORING?

а) No;
б) Always;
в) for long-standing ulcers

Answer: b

4.1.2 Examples of test tasks for initial control (with standard answers)

Test assignments are located in the Moodle system .
Access mode: https://educ-amursma.ru/local/crw/course.php?id=455
Total number of tests – 200.

TYPES OF RADIATION RELATED TO BRACHYTERANIA

а) remote;
б) intracavitary;
в) interstitial;
г) application.

Answer: b, c, d

COMBINATION TREATMENT

а) palliative surgery in combination with pre- or postoperative radiation therapy;
б) radical surgery in combination with pre- or postoperative radiation therapy;
в) radiation therapy. Surgery in 3 months due to continued tumor growth;
г) surgery, radiation therapy after 8 months for relapse.

Answer: b

RADICAL TREATMENT FOR GENERALIZED TUMOR PROCESSES

а) SCLC with brain metastases;
б) gastric cancer with metastases to the brain;
в) thyroid cancer with metastases to the lungs and bones;
г) resectable gastric cancer with metastases to the ovary.

Answer: in, g

4.1.3 Examples of test tasks for final control (with standard answers)

Test assignments are located in the Moodle system .
Access mode: https://educ-amursma.ru/local/crw/course.php?id=455
Total number of tests – 200.

THE LEADING METHOD OF MELANOMA DIAGNOSTICS IS

а) radiophosphorus test
б) radiation melanuria (Yaksha test)
в) thermography
г) morphological method

Answer: g

CLINICALLY, THE PRESENCE OF SKIN MELANOMA CAN BE SUSPICIOUS BY THE FOLLOWING SIGNS

а) hyperpigmentation
б) asymmetry of non-aqueous formation
в) rapid tumor growth rate
г) all of the above

Answer: g

INTRADERMAL CANCERS IN SITU INCLUDE

а) Bowen's disease
б) basalioma
в) erythroplakiaKeira
г) protruding fibrosarcomaDarier- Ferrani

Answer: a, b

4.1.4 Examples of test tasks for the final assessment (with standard answers)

Test assignments are located in the Moodle system .
Access mode: https://educ-amursma.ru/local/crw/course.php?id=455
Total number of tests – 200.

ARE PATIENTS WITH GASTRIC ULCERS SUBJECT TO DYNAMIC MONITORING?

а) No;
б) Always;
в) for long-standing ulcers.

CHARACTERISTIC MANIFESTATIONS OF INITIAL FORMS OF ESOPHAGEAL CANCER

а) a feeling of scratching behind the breastbone or sticking when swallowing;
б) hoarseness of voice;
в) hypersalivation ;
г) dysphagiaI - II degrees.

TREATMENT OF LOCALISED FORMS OF SOFT TISSUE SARCOMAS

а) physiotherapy (including resorption);
б) economical excision of the tumor;
в) combination treatment;
г) chemotherapy.

Answer samples: 1-b, 2-a, 3-c

4.2. Clinical situational tasks

Situational task No. 1.

Patient N., 15, complains of redness of the left nipple, its thickening and itching. She repeatedly consulted a dermatologist. The diagnosis was: "Eczema of the nipple skin" and the appropriate treatment was prescribed. During the treatment, minor negative dynamics were noted. She was referred to an oncology dispensary.

On examination, the nipple and part of the areola are covered with a crust and scab for 5 cm, there is hyperkeratosis of the nipple-areolar zone and maceration. When the crust is peeled off, a moist, granular surface is found. The nipple is thickened and firm to the touch. In the left axillary region, a dense, painless, enlarged lymph node up to 2.5 cm is palpated .

QUESTIONS:

1. What is your diagnosis?
2. Diagnostic algorithm?
3. Cytomorphological verification method?
4. Types and methods of mammographic examination. Indications and contraindications for ductography .
5. Differential series?
6. Rationale for the diagnosis?
7. What are the characteristics of metastasis?
8. Special treatment plan?
9. What methods of radical surgical treatment are used?
10. What stage of the operation is considered “key”?
11. What is the prognosis of the disease?

ANSWERS:

1. Paget's disease is a clinical variant of diffuse breast cancer.
2. Cytomorphological verification, ultrasound of the mammary glands, non-contrast mammography.
3. Smear - an imprint from a tumor, fine-needle aspiration biopsy of the mammary gland and axillary lymph node, incisional biopsy of the nipple - areolar complex
4. Contrast and non-contrast mammography.
5. Nipple eczema, tuberculosis, syphilis or actinomycosis of the mammary gland.
6. Peculiarities of local status, lack of effect from conservative treatment.
7. Metastasis to the parasternal and axillary lymph nodes is characteristic.
8. Preoperative radiation therapy, RME according to Patey on the left, adjuvant polychemotherapy .
9. Radical mastectomy according to Patey or Madden .
10. Subclavian - axillary - subscapular lymph node dissection .
11. Relatively favorable.

Situational task No. 2.

M, 17 years old, has been ill for 6 months, when he first noticed difficulty swallowing solid food, dysphagia gradually increased, he lost 7 kg. In the anamnesis of the disease at the age of 3, he notes a burn of the esophagus with an alkaline solution. On examination: the general condition is satisfactory, somatically compensated . The skin is of normal color, turgor is slightly reduced, subcutaneous fat is poorly expressed. Blood pressure is 110 and 70 mm Hg , heart rate is 88 beats per minute. Regional lymph nodes are not palpable. The liver is of normal size on examination.

X-ray examination of the esophagus in the mid-thoracic region shows a circular narrowing of the lumen over a length of 3.5 cm, its displacement relative to the vertebral bodies during swallowing and body changes is limited. Esophagoscopy at a distance of 31 cm from the incisors shows a circular narrowing of its lumen to 0.5 cm. Biopsy shows squamous cell carcinoma of the esophagus without keratinization. No distant metastases were detected.

QUESTIONS:

1. What is your diagnosis?
2. What are the optional and obligatory background conditions for esophageal cancer?
3. Differential diagnostic series?
4. What types of examinations are mandatory before starting special treatment?
5. What type of esophageal cancer growth was detected in the patient?
6. What are the characteristics of metastasis in esophageal cancer?
7. Determine the degree of dysphagia in the patient?
8. Special treatment plan?
9. What type of surgery is indicated for this patient?
10. What is the determining factor in predicting long-term treatment results?
11. What are the most common postoperative complications?

ANSWERS:

1. Cancer of the middle third of the thoracic esophagus.
2. Post-burn strictures, diverticulitis , polyps, esophagitis, leukoplakia of the esophagus, Plummer - Vinson syndrome .
3. Congenital stenosis of the esophagus, specific ulcer, post-burn stricture.
4. X-ray and CT scan of the chest and abdominal organs, ultrasound of the abdominal cavity, spirography.
5. Predominantly endophytic form.
6. Metastasis along the submucosa, then into the deep cervical, paraesophageal , tracheobronchial, posterior mediastinal, paraesophageal , paracardiac and lymph nodes located along the left gastric artery.
7. 11th degree.
8. Preoperative radiotherapy, surgical stage, adjuvant polychemotherapy .
9. Esophageal resection with simultaneous intrapleural plastic surgery (Lewis type).
10. Presence of distant metastases.
11. Bleeding, anastomotic leak, pneumonia, pulmonary heart failure.

4.3. List of practical skills that a student should have after mastering the discipline.

In the section general oncology:

1. Collect anamnesis, analyze the nature of complaints (organ dysfunction, pain syndrome, pathological discharge, changes in general condition).

2. Conduct a physical and general clinical examination of an oncology patient, analyze the data of the general clinical examination.
3. Conduct a physical examination of the primary tumor site, areas of regional and distant metastasis.
4. Establish a preliminary diagnosis of oncological disease.

In the section radiation therapy:

1. 1. Formulate a preliminary diagnosis (with subsequent referral to a specialist doctor).
2. To draw up a plan for clinical and instrumental examination of a patient with suspected malignant tumor.
3. Evaluate the results of instrumental research methods:
4. X-ray, endoscopic, radioisotope, ultrasound, CT and MRI, cytological and histological.
5. 4. Preparation of topographic and dosimetric maps of radiation therapy.
6. Skills in operating devices for remote and contact y-therapy , short-range , orthovoltage X-ray therapy, and a linear electron accelerator.
7. Providing emergency care for life-threatening complications associated with radiation therapy (acute respiratory distress, vascular collapse

In the section private oncology:

1. To form groups of people at increased risk of developing malignant tumors.
2. Perform the most common medical procedures (performing a diagnostic puncture and taking smears for cytological examination, etc.).
3. Complete the necessary documentation upon initial identification of a patient with a malignant neoplasm.
4. Conduct a clinical examination of a patient with suspected malignant neoplasm.

4.4 List of questions for the test.

1. Definition of the concepts "tumor" and "cancer". The main properties of tumors (infinite growth, relative autonomy, cellular atypia , metastasis).
2. Etiology of tumors. External and genetic factors. Causes of induced tumors.
3. Paths of tumor metastasis, stages.
4. Organization of oncology service . Dispensary registration groups.
5. Registration documents for cancer patients , deadlines for their preparation.
6. Morbidity and mortality from malignant neoplasms. Morbidity structure.
7. High-risk groups for oncopathology .
8. Principles of deontology in oncology.
9. Diagnostic algorithm in oncology. The main goal of diagnostic stages. Types of biopsies.
10. Peculiarities of tumor diagnostics. Principles of oncological alertness.
11. TNM classification . Stages.
12. Treatment of malignant neoplasms. Peculiarities of tumor treatment.
13. General principles of surgical treatment of cancer patients: ablastics ,antiblastics , case-based . Types of surgical interventions. Features of surgical interventions in tumor pathology.
14. Etiology of thyroid cancer in the Republic of Belarus. Dynamics and incidence rates after the Chernobyl accident.
15. Morphological classification of thyroid neoplasms.
16. Papillary and follicular thyroid cancer. Origin, regional metastasis, main target organs.

17. Medullary thyroid cancer. Origin, etiology. Basic biological properties, metabolic activity, features of the course.
18. Clinical manifestations of thyroid cancer. Primary signs of neoplasm. Symptoms of locally advanced cancer.
19. Diagnostics of thyroid nodular neoplasms. Differential diagnostics. Treatment tactics.
20. Treatment of thyroid cancer.
21. Optional and obligatory precancers of the skin.
22. Basalioma and squamous cell skin cancer. Features of growth and spread. Diagnostics and treatment.
23. Classification of nevi . Melanoma-dangerous and non-dangerous nevi . Nevus activation syndrome .
24. Melanoma: origin, clinical features.
25. Melanoma: diagnosis, treatment, prognosis.
26. Classification of soft tissue tumors. Metastasis.
27. Clinic and diagnostics of soft tissue tumors, malignant soft tissue tumors.
28. Principles of treatment of soft tissue tumors.
29. Classification of bone tumors. Etiology.
30. Clinic of Ewing's sarcoma ,osteogenic sarcoma.
31. Methods of diagnostics of bone tumors, staging .
32. Principles of treatment of osteogenic sarcoma, Ewing's sarcoma .
33. Classification of mediastinal tumors and their topography.
34. Clinical manifestations of mediastinal tumors. General principles of diagnosis and treatment.
35. Clinic and diagnostics of lung tumors.
36. Histological forms of LGM, frequency of occurrence.
37. Clinical manifestations of lymphogranulomatosis - local, general. Classification.
38. Diagnostic methods for non-Hodgkin's lymphomas and lymphogranulomatosis.
39. The order of methods.
40. Histological forms of non-Hodgkin's lymphomas . Features of the course.
41. Non-Hodgkin's Disease Clinic lymphomas .
42. Principles of treatment of lymphogranulomatosis and non-Hodgkin's lymphomas .
43. Differential diagnosis of lymphadenopathies .
44. Wilms tumor clinic , features of the disease course.
45. Methods of diagnostics of kidney tumors.
46. Wilms tumor treatment , prognosis.
47. Classification of retroperitoneal tumors. Diagnostics.
48. Clinic of retroperitoneal neuroblastoma . Diagnostics.
49. Clinic of adrenal tumors. Diagnostics.
50. Classification of breast tumors.
51. Fibroadenoma - clinic, diagnosis, treatment.
52. Diffuse and focal mastopathy - etiology, clinical features, diagnostics, treatment.
53. Clinical forms of breast cancer. Skin symptoms.
54. Methods of diagnostics of mammary gland tumors.
55. Treatment of breast cancer.
56. Classification of germ cell tumors. Histogenesis.
57. Clinical picture, dependence on localization and histological form.
58. Diagnostics. Staging .
59. Treatment methods for germ cell tumors.
60. 59. Liver tumors in children. Histological classification.
61. Clinical picture of liver tumors.
62. Methods for diagnosing liver tumors.

63. Principles of treatment of liver tumors.
64. Stomach tumors - benign and malignant.
65. Clinic, diagnostics, methods of treatment of stomach tumors.
66. Colon tumors - benign and malignant neoplasms

APPROVED
at a department meeting
of Radiation Diagnostics, Radiation Therapy with a
Course in Oncology
Protocol No. 9 dated May 11, 2026

_____
Head of Department

Professor V.P. Gordienko

ADDITIONS AND CHANGES TO THE WORK PROGRAM

IN THE DISCIPLINE «ONCOLOGY, RADIATION THERAPY»

SPECIALTY 31.05.01 GENERAL MEDICINE

FOR THE 2026-2027 ACADEMIC YEAR

Make an addition and change to the table in section 3.5. «Professional databases, information and reference systems, electronic educational resources» to read as follows:

Name resource	Resource Description	Access	Resource address
Electronic library systems			
"Student Consultant" Electronic library medical university.	For students and faculty of medical and pharmaceutical universities. Provides access to electronic versions of textbooks, teaching aids, and periodicals.	Remote access after registration under the university profile	https://www.studentlibrary.ru/
Reference and information system " MedBaseGeotar ".	The MedBaseGeotar reference and information system is designed for practicing medical specialists, researchers, teachers, postgraduate students, residents, senior students, and healthcare managers to quickly search, select, and read the medical literature they need for their work in a single data source.	Remote access after registration under the university profile	https://mbasegeotar.ru/pages/index.html
Electronic Library System " Bookup "	A large medical library is an information and educational platform for the shared use of electronic educational and methodological publications from medical universities in	Remote access after registration under the university profile	https://www.books-up.ru/

	Russia and the CIS countries.		
Electronic Block System "Lan"	The Network Electronic Library of Medical Universities is an electronic database of educational and scientific works on medical topics, created for the purpose of implementing network forms of professional educational programs, open access to educational materials for partner universities.	Remote access after registration under the university profile	https://e.lanbook.com/
Scientific electronic library " CyberLeninka "	CyberLeninka is a scientific electronic library built on the paradigm of open science (Open Science), whose main goals are the popularization of science and scientific activity, public oversight of the quality of scientific publications, the development of interdisciplinary research, a modern institution of scientific review, increasing the citation rate of Russian science, and building a knowledge infrastructure. It contains over 2.3 million scientific articles.	free access	https://cyberleninka.ru/
Human Biology Knowledge Base	Reference information on physiology , cell biology , genetics , biochemistry , immunology , pathology . (Resource of the Institute of Molecular Genetics of the Russian Academy of Sciences .)	free access	http://humbio.ru/
State register of medicines	The State Register of Medicines website contains information about medications: indications, contraindications, mechanism of action, side effects, dosages, and methods of administration.	free access	https://grls.rosminzdrav.ru/GRLS.aspx
Information systems			
Clinical	A resource of the Russian	Link to	https://cr.minzdrav.gov.ru/#!/

Guidelines Index	Ministry of Health that contains clinical guidelines developed and approved by medical professional non-profit organizations of the Russian Federation, as well as methodological manuals, nomenclatures, and other reference materials.	download the application	
Federal Electronic Medical Library (FEMB)	The Federal Electronic Medical Library is part of the unified state information system in the field of healthcare as a reference system.The FEMB was created based on the collections of the I.M. Sechenov Central Scientific Medical Library.	free access	https://femb.ru/
Russian State Library (RSL)	Collection size: approximately 3 million titles. Coverage period:From the 11th century to the present day. The Russian State Library's Digital Library is a collection of electronic copies of valuable and frequently requested publications from the Russian State Library's collections, external sources, and documents originally created in electronic form.	Registration on the website	https://www.rsl.ru/
Russian Medical Association	A professional online resource. Purpose: to promote effective professional activity among medical personnel. Contains the charter, personnel, structure, membership rules, and information about the Russian Medical Union.	free access	http://www.rmass.ru/
Web medicine	The website provides a directory of professional medical resources, including links to the most authoritative specialized websites, journals, societies, as well as useful documents and programs. It is	free access	http: //webmed.irkutsk.ru/

	intended for physicians, students, and staff of medical universities and research institutions.		
Databases			
Worldwide healthcare organization	The site contains news, statistics on countries that are members of the World Health Organization, fact sheets, reports, WHO publications, and much more.	library, free access	http://www.who.int/ru/
Ministry of Science and higher Education of the Russian Federation	The website of the Ministry of Science and Higher Education of the Russian Federation contains news, newsletters, reports, publications, and much more.	free access	http://www.minobrnauki.gov.ru
Ministry of Education of the Russian Federation.	The website of the Ministry of Education of the Russian Federation contains news, newsletters, reports, publications, and much more.	free access	https://edu.gov.ru/
Polpred.com	Electronic Library System Business Media. Media Review	free access	https://polpred.com/news
Bibliographic databases			
BD Russian Medicine	Created at the Central Scientific and Methodological Library, it covers the entire collection since 1988. The database contains bibliographic descriptions of articles from Russian journals and collections, dissertations and their abstracts, as well as Russian and foreign books, institute proceedings, conference materials, etc. Thematically, the database covers all areas of medicine and related fields of biology, biophysics, biochemistry, psychology, etc.	free access	https://rucml.ru/
PubMed	A text database of medical and biological publications in English. PubMed is an electronic search engine with	free access	https :// pubmed. ncbi. nlm. nih. gov /

	free access to 30 million publications from 4,800 indexed medical journals. The database contains articles published from 1960 to the present, including information from MEDLINE, PreMEDLINE ,and NLM. Each year, the portal is updated with more than 500,000 new papers.		
eLIBRARY.RU	A Russian information portal in science, technology, medicine, and education, containing abstracts and full texts of over 13 million scientific articles and publications. The eLIBRARY.RU platform offers electronic versions of over 2,000 Russian scientific and technical journals, including over 1,000 open-access journals.	Full functionality of the site is available after registration.	http://elibrary.ru/defaultx.asp
Electronic library of dissertations (RSL)	Currently, the Electronic Library of Dissertations of the Russian State Library contains more than 919,000 full texts of dissertations and abstracts.	free access	http://diss.rsl.ru/?menu=disscatalog/
Medline.ru	Medical and biological portal for specialists. Biomedical journal.	free access	https://journal.scbmt.ru/jour/index
Official Internet portal of legal information	The single official state information and legal resource in Russia	free access	http://pravo.gov.ru/

1. **Add and amend the table in section 3.6. «Licensed and freely distributed software used in the educational process» to read as follows:**

List of software (commercial software products)

№ p/p	List of software (commercial software products)	Details of supporting documents
1.	MS operating system Windows 7 Pro	License number 48381779
2.	MS operating system Windows 10 Pro	CONTRACT No.UT-368 from September 21, 2021
3.	MS Office	License numbers: 43234783, 67810502, 67580703, 64399692, 62795141, 61350919

4.	Kaspersky Endpoint Security for Business – Standard Russian Edition. 50-99 Node 1-year Educational Renewal License	Agreement No. 7 AA dated 02/07/2025
5.	1C Accounting and 1C Salary	LICENSE AGREEMENT 612/L dated 02.02.2022 (additional licenses)
6.	1C: PROF University	LICENSE AGREEMENT No. KrTsB-004537 dated December 19, 2023
7.	1C: PROF Library	LICENSE AGREEMENT No. 2281 dated November 11, 2020
8.	Consultant Plus	Contract No. 41AA dated December 27, 2024
9.	Kontur.Tolk	Agreement No. K213753/24 dated August 13, 2024
10.	3KL e-learning environment (Russian Moodle)	Agreement No. 1362.5 dated November 20, 2024
11.	Astra Linux Common Edition	Agreement No. 142 A dated September 21, 2021
12.	Information system "Plans"	Agreement No. 2873-24 dated June 28, 2024
13.	1C: Document Management	Agreement No. 2191 dated 10/15/2020
14.	R7-Office	Agreement No. 2 KS dated 12/18/2020
15.	License for the "ROSA CHROME OS Workstation"	Agreement No. 88A dated 08/22/2024
16.	Alt Virtualization Server 10 (for secondary and higher vocational education)	Agreement No. 14AK dated September 27, 2024
17.	Dr.Web Desktop Security Suite Comprehensive Protection + Control Center for 12 months.	Agreement No. 8 dated October 21, 2024
18.	Software "Schedule for educational institutions"	Agreement No. 82A dated July 30, 2024

List of freely distributed software

№ p/p	Scroll freely distributed software	Links to the license agreement
1.	Yandex Browser	Freely distributed License Agreement for the use of Yandex Browser programs https://yandex.ru/legal/browser_agreement/
2.	Yandex.Telemost	Freely distributed License Agreement for the use of programs https://yandex.ru/legal/telemost_mobile_agreement/
3.	Dr.WebCureIt !	Freely distributed License Agreement: https://st.drweb.com/static/new-www/files/license_CureIt_ru.pdf
4.	OpenOffice	Freely distributed License: http://www.gnu.org/copyleft/lesser.html
5.	LibreOffice	Freely distributed License: https://ru.libreoffice.org/about-us/license/
6.	VK Calls	Freely distributed https://vk.com/licence
7.	Kaspersky Free Antivirus	Freely distributed https://products.s.kaspersky-

		labs.com/homeuser/Kaspersky4Win2021/21.16.6.467/english-0.207.0/3830343439337c44454c7c4e554c4c/kis_eula_en-in.txt