



CD 8.5.1 CURRICULUM DISCIPLINĂ

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FACULTY OF MEDICINE

STUDY PROGRAM 0912.1 MEDICINE 2

DEPARTAMENT OF ONCOLOGIE

APPROVED

At the meeting of the Quality Assurance
Committee and curricular Evaluation Faculty of
Medicine

Proceedings No. 2 from 19.11.20

President, PhD, associate professor

Suman Serghei

APPROVED

At the meeting of Medical Faculty No.1
Council

Proceedings No. ___ from ___

Dean of Faculty of Medicine No.1, PhD,
associate professor

Plăcintă

APPROVED

at the meeting of the Oncology Dept.

Proceedings No. 14 from 03.07.2020

Head of the Oncology Department PhD, associate professor

Dumitru Sofroni

SYLLABUS

DISCIPLINE OF ONCOLOGY

Integrated studies

Course type: **Mandatory discipline**

Chișinău, 2020



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I. PRELIMINARIES

- **General presentation of the discipline: place and role of discipline in formation of specific competences of professional training program / specialties**

The discipline of Oncology is an indispensable pillar in the clinical training of the medical student. Currently, both nationally and internationally, the incidence of malignant neoplasms is constantly increasing, being predicted to rank first in the general structure of mortality by 2030. It is well known that the success of effective management in patients diagnosed with malignant tumors it is directly correlated with the detection of cancer in the early stages and the application of a personalized treatment. However, despite technical progress, modernization of diagnostic and treatment methods, the advanced stages of the tumor process, represent a rate of 30 - 40%. Thus, among the basic premises of this discipline are: achieving primary prophylaxis by promoting a healthy lifestyle, diagnosis and treatment of precancerous conditions, studying the evolutionary features and locoregional and distant extension by lymph and hematogenous metastasis of cancer, clinical features and paraclinical, establishing the principles of early diagnosis, treatment of cancer at various stages of the malignant process and estimation of prognostic and survival factors.

- **The purpose of the discipline**

Development of cognitive skills and functional application skills aimed at theories and notions specific to the discipline of Oncology, in terms of acquiring the peculiarities of precancerous conditions, benign and malignant tumors, assessment of diagnostic behavior and therapeutic tactics focused on the patient.

- **Teaching languages:** Romanian, Russian, English, French;
- **Beneficiaries:** students of the first year, Medicine Faculty No. 1 and No. 2, Medicine specialty

II. ADMINISTRATION OF THE DISCIPLINE

Code of discipline	S.08.O.079		
Name of the discipline	Oncology		
Responsible for discipline	University profesor Dumitru Sofroni		
Year	IV	Semester	VII, VIII
Total hours, including:	90		
Contact direct	56		
Cours	16	Practical work	20
Seminars	20	Individual work	4
Evaluation form	E	Number of credits	3

III. THE OBJECTIVES OF TRAINING IN THE DISCIPLINE

At the end of the course, the student will be able to:

At the level of knowledge and understanding:

- to understand the basics of oncology, oncogenesis, notions and specific features: precancerous condition, benign and malignant tumor;
- to know notions of early and late stage of cancer. The process of tumor expansion and metastasis (lymphogenic, hematogenous). Staging TNM, AJCC, 8th edition, 2017;
- to identify the epidemiological and etiopathogenetic peculiarities of the oncological disease depending on the location. Cancer and the environment. Carcinogenic factors (physical, chemical, biological, etc.) Evolutionary features according to the age and gender of the affected person;
- to know the role of early detection. Principles of malignant tumor prophylaxis. Peculiarities and importance of population screening;



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- to learn the basic principles in the organization and structure of oncology care in the Republic of Moldova. The role of the Oncology Department and the Oncology Institute in organizing oncology care. The activity of district oncology offices, their role in detecting precancerous conditions and malignant neoplasms in the early stages;
- to understand the main tasks and guidelines of oncology care. Division of patients according to clinical groups (Ia, Ib, II, IIa, III, IV). Dispensary and record of cancer patients;
- to know the clinical-paraclinical, imaging and therapeutic aspects of oncological disease, depending on the particularities of the tumor.

Practical level:

- Knowledge of anamnestic data, anamnesis of disease and of life.
- Performing general skin inspection to exclude cutaneous tumors (basaliom, cancer, melanoma, sarcomas of the soft parts of the body, etc.).
- Performing the inspection of the oral cavity and thyroid gland.
- Inspection and palpation of mammary glands, peripheral lymph nodes (to exclude regional glandular metastases and haemo-lymphoblastomas).
- Knowledge of the principle of metastasis Virchow, Blummer-Schnitzler, Krukenberg, Soeur Marie-Josephe node in gastric cancer.
- Performing the thorax palpation and percussion in lung cancer and mediastinum tumors.
- Performing the abdominal palpation, percussion and auscultation in order to exclude primary visceral tumors (gastric cancer, tumors of the pancreato-duodenal area, liver, colon, internal genitals, etc.) as well as liver metastases, peritoneal cancer and ascites. for exclusion visceral tumors (gastric, ZPD, hepatic, colon, etc.), hepatic metastases, parietal canceromatosis and ascites.
- Knowledge of the Courvoisier-Terrier sign in pancreatic cancer.
- Performing rectal touch examination to exclude rectal, prostate and metastatic cancer Blummer-Schnitzler (pararectal) in gastric cancer.
- To read laboratory data (haemoleukogram, biochemical data). Notions about cancer markers and their applicability.
- To read radiogram in lung, gastric, esophageal, colorectal, urinary, cancer.
- To read mammograms, urograms, angiograms, polycystograms, pneumocistograms.
- To read MRI/ PET-CT.
- To read the radioisotope scintigraphy of the liver, spleen, kidney, thyroid, skeletal bone.
- To read ultrasonography (USG).
- To assist in performing punctures of tumors considered visual (thyroid gland, mammary gland, peripheral ganglions).
- To colect a smears slides for examination – and to take a wound print in visual tumors (skin, lips, cancer of oral cavity mucosa).
- To know general notions in the treatment of malignant tumors:
 - a. surgical treatment
 - b. radiotherapy
 - c. cryotherapy
 - d. laser treatment
 - e. chemotherapy
 - f. hormonal treatment
 - g. combinate treatment (adjuvant and neo-adjuvant)
 - h. complex treatment



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i. palliative and symptomatic treatment.

At the integration level:

- be able to assess the place and role of oncology in the clinical training of the student;
- be competent to use the knowledge and methodology of oncology in the ability to explain the nature of pathological processes;
- be able to link the oncological process → at the molecular level → at the cellular level → at the tissue level → at the body level;
- be able to deduce the possible causes of blocking the basic molecular processes and their consequences on the cell, tissue and body in general;
- be able to implement the knowledge gained in the research activity;
- be competent to use critically and with confidence the scientific information obtained using the new information and communication technologies;
- be able to use multimedia technology to receive, evaluate, store, produce, present and exchange information, and communicate and participate in networks via the Internet;
- be able to learn to learn and explain, which will contribute to the management of the professional activity.

IV. PREVIOUS CONDITIONS AND REQUIREMENTS

Student of IV year requires the following:

- knowledge of the rendition language;
- confirmed skills in sciences at the preclinical level (genetics, anatomy, histology, pathophysiology, morphopathology, pharmacology, semiology surgery, semiology therapy);
- digital competences (use of the Internet, document processing, electronic tables and presentations, use of graphics programs);
- ability to communicate and work in team;
- qualities - tolerance, compassion, autonomy.

V. ORIENTAL TIMETABLE AND ORIENTAL DISTRIBUTION OF HOURS

A. lectures

Nr. d/o	Topic	Hours
1.	History of oncology. Organization of oncological assistance in Moldova. Deontology. Tumors classification.	2
2.	Tumors of the reproductive female organs. Breast cancer. Etiology. Precancerous conditions. Clinical and histological forms, molecular classification of breast cancer. TNM Classification, AJCC, 8th edition, 2017. Screening. Diagnostic and treatment methods. Forecast. Cervical cancer. Etiopathogenesis and precancerous conditions. Early Detection and Screening. Symptoms. Histopathological classification and TNM, AJCC, 8th edition, 2017. Staging (FIGO). Diagnostic and treatment methods. Prophylaxis. Prognosis. Endometrial cancer. Etiopathogenesis ("pathognomonic" triad). Histopathological and molecular classification. TNM Classification, AJCC, 8th edition, 2017. Staging (FIGO). Diagnostic methods. Therapeutic indication, main combinations of chemotherapy, post-therapeutic follow-up. Evolution and	2

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	<p>Prognosis.</p> <p>Ovarian cancer. Etiopathogenesis. Risk factors. TNM Classification, AJCC, 8th edition, 2017. Staging (FIGO). WHO histopathological classification of ovarian tumors. Ovarian cancer prophylaxis. Diagnostic methods. Tumor markers in ovarian cancer (antigenic, enzymatic, hormonal). Treatment methods. Secondary surgical procedures (resection of residual mass, secondlook surgery).</p>	
3.	<p>Lung cancer. Etiopathogenesis and precancerous conditions. Clinical - anatomical and histological forms. TNM Classification, AJCC, 8th edition, 2017. Evolution and clinic of lung cancer. Methods of diagnosis and treatment of central and peripheral cancer. Treatment of lung cancer according to the histological stage and form. Forecast. Peculiarities of bronchopulmonary microcellular cancer treatment.</p> <p>Esophageal cancer. Carcinogenic factors and precancerous conditions. TNM Classification, AJCC, 8th edition, 2017. Diagnostic methods (radiological, endoscopic, CT). Treatment methods. Classical radical operations: Torec, Garlock, Lewis. Palliative operations: bypass, gastrostomy type Vitzel, Kader, Toprover. Chemo-radiotherapy treatment. Complex treatment. Forecast.</p>	2
4.	<p>Gastric cancer. Carcinogenic factors and precancerous conditions. TNM Classification, AJCC, 8th edition, 2017. Histopathological classification of gastric cancer. Pathways of extension and metastasis. Remote lymphatic metastases Virchow-Troisier, Blummer-Schnitzler, Krukenberg, etc. Hematogenous metastases. Diagnostic methods (radiological, endoscopic, etc.). Treatment methods. Forecast.</p>	2
5.	<p>Pancreato-duodenal cancer (ZPD). Etiopathogenesis. Staging TNM, AJCC, 8th edition, 2017. Morphological classification of ZPD cancer. Tumors of the endocrine system of the pancreas. Diagnostic and treatment methods. Palliative surgery. Biliodigestive derivations. Forecast. Wermer syndrome, Verner - Morisson syndrome.</p> <p>Liver cancer. Etiopathogenesis. TNM Classification, AJCC, 8th edition, 2017. Morphological classification of liver cancer. Diagnostic methods (USG, CT, isotope scintigraphy, biopsy laparoscopy). Treatment methods. Notion of total hepatectomy with liver transplantation. Palliative treatment. Forecast.</p>	2
6.	<p>Colorectal cancer. Carcinogenic factors and precancerous conditions. Family polyposis. TNM Classification, AJCC, 8th edition, 2017. Histological forms of colorectal cancer. Clinical forms of colon cancer. Diagnostic and treatment methods. Typical operations: right, left hemicolonectomy; segmental colon resection; operation Dixon, Babcock - Chiricuță; extirpation of the rectum type Quenus - Miles. Combination treatment.</p>	2
7	<p>Cancer of the reno-urinary system. Etiopathogenesis of renal cancer. Primary extension and metastasis of renal cancer. Staging TNM. Clinical and histological forms. Diagnostic methods (i / v urography, USG, CT, angiography). Methods of treatment (surgical, radiotherapy, hormonal, chemotherapeutic). Forecast.</p> <p>Bladder cancer. Etiopathogenesis. Clinical and histological forms. Staging TNM, AJCC, 8th edition, 2017. Diagnostic and treatment methods. Types of operations: cystectomy, bladder resection, bladder hemirection. Palliative operations: epicystotomy, uretero - cutaneostomy. Prognosis.</p>	2
8.	<p>Skin cancer. Mandatory and optional precancerous conditions of the skin. Clinical and histological forms. TNM Classification, AJCC, 8th edition, 2017.</p>	2

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	<p>Diagnostic methods. Treatment of skin cancer (surgical, radiotherapy, cryotherapy, laser therapy, chemotherapy, combined, complex). Late results and prognosis.</p> <p>Malignant melanoma. Predisposing factors and signs of nevi malignancy (Miller-Evans system). Peculiarities of melanoma growth and metastasis. TNM Classification, AJCC, 8th edition, 2017. Clark-Breslow staging. Methods of diagnosis and treatment of malignant melanoma. Forecast.</p> <p>Lip cancer, incidence. Predisposing factors, mandatory and optional precancerous conditions. TNM Classification, AJCC, 8th edition, 2017. Diagnostic and treatment methods. Forecast.</p> <p>Cancer of the lining of the mouth and tongue. Predisposing factors. TNM Classification, AJCC, 8th edition, 2017. Diagnostic and treatment methods. Forecast.</p> <p>Thyroid cancer, incidence. Carcinogenic factors. Clinical and histological forms. TNM Classification, AJCC, 8th edition, 2017. Diagnostic and treatment methods. Peculiarities of MEN I-II syndrome. Cowden syndrome. Sipple syndrome.</p>	
	Total	16

B. The practical work

Nr. d/o	Topic	Hours	
		Practical work	Individual work
1	<p>Skin cancer. Mandatory and optional precancerous conditions of the skin. Clinical and histological forms. TNM Classification, AJCC, 8th edition, 2017. Diagnostic methods. Treatment of skin cancer (surgical, radiotherapy, cryotherapy, laser therapy, chemotherapy, combined, complex). Late results and prognosis.</p> <p>Malignant melanoma. Predisposing factors and signs of nevi malignancy (Miller-Evans system). Peculiarities of melanoma growth and metastasis. TNM Classification, AJCC, 8th edition, 2017. Clark-Breslow staging. Methods of diagnosis and treatment of malignant melanoma. Forecast.</p>	5	5
2	<p>Lip cancer, incidence. Predisposing factors, mandatory and optional precancerous conditions. TNM Classification, AJCC, 8th edition, 2017. Diagnostic and treatment methods. Forecast.</p> <p>Cancer of the lining of the mouth and tongue. Predisposing factors. TNM Classification, AJCC, 8th edition, 2017. Diagnostic and treatment methods. Forecast.</p> <p>Thyroid cancer, incidence. Carcinogenic factors. Clinical and histological forms. TNM Classification, AJCC, 8th edition, 2017. Diagnostic and treatment methods. Peculiarities of MEN I-II syndrome. Cowden syndrome. Sipple syndrome.</p>	5	4
3	<p>Tumors of the reproductive female organs. Breast cancer. Etiology. Precancerous conditions. Clinical and histological forms, molecular classification of breast cancer. TNM Classification, AJCC, 8th edition, 2017. Screening. Diagnostic and treatment methods. Forecast.</p>	5	5

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	<p>Cervical cancer. Etiopathogenesis and precancerous conditions. Early Detection and Screening. Symptoms. Histopathological classification and TNM, AJCC, 8th edition, 2017. Staging (FIGO). Diagnostic and treatment methods. Prophylaxis. Prognosis.</p> <p>Endometrial cancer. Etiopathogenesis ("pathognomonic" triad). Histopathological and molecular classification. TNM Classification, AJCC, 8th edition, 2017. Staging (FIGO). Diagnostic methods. Therapeutic indication, main combinations of chemotherapy, post-therapeutic follow-up. Evolution and Prognosis.</p> <p>Ovarian cancer. Etiopathogenesis. Risk factors. TNM Classification, AJCC, 8th edition, 2017. Staging (FIGO). WHO histopathological classification of ovarian tumors. Ovarian cancer prophylaxis. Diagnostic methods. Tumor markers in ovarian cancer (antigenic, enzymatic, hormonal). Treatment methods. Secondary surgical procedures (resection of residual mass, secondlook surgery).</p>		
4	<p>Lung cancer. Etiopathogenesis and precancerous conditions. Clinical - anatomical and histological forms. TNM Classification, AJCC, 8th edition, 2017. Evolution and clinic of lung cancer. Methods of diagnosis and treatment of central and peripheral cancer. Treatment of lung cancer according to the histological stage and form. Forecast. Peculiarities of bronchopulmonary microcellular cancer treatment.</p> <p>Esophageal cancer. Carcinogenic factors and precancerous conditions. TNM Classification, AJCC, 8th edition, 2017. Diagnostic methods (radiological, endoscopic, CT). Treatment methods. Classical radical operations: Torec, Garlock, Lewis. Palliative operations: bypass, gastrostomy type Vitzel, Kader, Toprover. Chemo-radiotherapy treatment. Complex treatment. Forecast.</p>	5	4
5	<p>Gastric cancer. Carcinogenic factors and precancerous conditions. TNM Classification, AJCC, 8th edition, 2017. Histopathological classification of gastric cancer. Pathways of extension and metastasis. Remote lymphatic metastases Virchow-Troisier, Blummer-Schnitzler, Krukenberg, etc. Hematogenous metastases. Diagnostic methods (radiological, endoscopic, etc.). Treatment methods. Forecast.</p>	5	4
6	<p>Pancreato-duodenal cancer (ZPD). Etiopathogenesis. Staging TNM, AJCC, 8th edition, 2017. Morphological classification of ZPD cancer. Tumors of the endocrine system of the pancreas. Diagnostic and treatment methods. Palliative surgery. Biliodigestive derivations. Forecast. Wermer syndrome, Verner - Morisson syndrome.</p> <p>Liver cancer. Etiopathogenesis. TNM Classification, AJCC, 8th edition, 2017. Morphological classification of liver cancer. Diagnostic methods (USG, CT, isotope scintigraphy, biopsy laparoscopy). Treatment methods. Notion of total hepatectomy with liver transplantation. Palliative treatment. Forecast.</p>	5	4
7	<p>Colorectal cancer. Carcinogenic factors and precancerous conditions. Family polyposis. TNM Classification, AJCC, 8th edition, 2017. Histological forms of colorectal cancer. Clinical forms of colon cancer. Diagnostic and treatment methods. Typical operations: right,</p>	5	4



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	left hemicolonectomy; segmental colon resection; operation Dixon, Babcock - Chiricuță; extirpation of the rectum type Quenus - Miles. Combination treatment.		
8	Cancer of the reno-urinary system. Etiopathogenesis of renal cancer. Primary extension and metastasis of renal cancer. Staging TNM. Clinical and histological forms. Diagnostic methods (i / v urography, USG, CT, angiography). Methods of treatment (surgical, radiotherapy, hormonal, chemotherapeutic). Forecast. Bladder cancer. Etiopathogenesis. Clinical and histological forms. Staging TNM, AJCC, 8th edition, 2017. Diagnostic and treatment methods. Types of operations: cystectomy, bladder resection, bladder hemirection. Palliative operations: epicystotomy, uretero - cutaneostomy. Prognosis.	5	4
	Total	40	34

VI. REFERENCE OBJECTIVES AND CONTENTS UNITS

Objectives	Contents Units
<p>Topic 1. The topic: 1. Skin cancer. Mandatory and optional precancerous conditions of the skin. Clinical and histological forms. TNM Classification, AJCC, 8th edition, 2017. Diagnostic methods. Treatment of skin cancer (surgical, radiotherapy, cryotherapy, laser therapy, chemotherapy, combined, complex). Late results and prognosis. Malignant melanoma. Predisposing factors and signs of nevi malignancy (Miller-Evans system). Peculiarities of melanoma growth and metastasis. TNM Classification, AJCC, 8th edition, 2017. Clark-Breslow staging. Methods of diagnosis and treatment of malignant melanoma. Forecast.</p>	
<ul style="list-style-type: none"> • To define the basic concepts of oncology. • To know the structure of the skin tissue and the factors favoring the appearance of cutaneous cancer. • To know the pre-cancerous states of the skin and their treatment. • To demonstrate ability to analyze and systematize knowledge. • To apply knowledge in methods of clinical examination, cytology and histology. • To integrate and to apply the knowledge daily to avoid favorable factors in skin disorders. 	1 The methods of investigation in oncology
	2 The structure (epidermis, dermis, and hypodermis) and skin functions.
	3. Melanocytes – the pigmented system of epidermis having function of releasing of melanin.
	4. Pretumoral states – Bowen diseases, erythroplasia Quyerat, Paget disease, xeroderma pigmentosum.
	5. Macroscopical forms of skin cancer – nodular, ulcerative, ulcer-infiltrative.
	6. Development particularities of melanomas and pigmented nevus from melanocytes cells.
	7. The malignization sings of nevus.
<p>Topic 2. Lip cancer, incidence. Predisposing factors, mandatory and optional precancerous conditions. TNM Classification, AJCC, 8th edition, 2017. Diagnostic and treatment methods. Forecast. Cancer of the lining of the mouth and tongue. Predisposing factors. TNM Classification, AJCC, 8th edition, 2017. Diagnostic and treatment methods. Forecast. Thyroid cancer, incidence. Carcinogenic factors. Clinical and histological forms. TNM Classification, AJCC, 8th edition, 2017. Diagnostic and treatment methods. Peculiarities of MEN I-II syndrome. Cowden syndrome. Sipple syndrome.</p>	
<ul style="list-style-type: none"> • To define the notion of HPV, ultraviolet, ionizing radiation, and others. 	1. Inferior lip precancers> facultative with productive forms (diffuse hipocheratosis)



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- To know the pre-cancerous factors and states of the lips, buccal mucosa, thyroid and thyroid gland.
- To demonstrate clinical and laboratory examination capabilities.
- To apply modern diagnostic methods (cytological, histological, imagistic - radiographic, TC, MRI).
- To integrate the knowledge gained in medical practice.

- and destructive (chronic chelitis, chronic fissures) and obligant with productive forms (leucoplasia, different papillomas) and distructive form (trophic ulcers, erithroplasia).
2. Histologic classification (squamous carcinoma).
3. Malignant disease progression - regional metastasis (lymphatic ways) and distant (hematogenic ways).
4. The treatment of skin disease and thyroid gland – surgical treatment, radiotherapy and chemotherapy depending on tumor stage.
5. Ionizing radiation – the main risk factors in DNA alterations of thyrocytes.
6. Histological forms of thyroid gland – histogenetical (cells A, C, B).
7. Modern management in diagnosis of thyroid disorders).
8. Immune cytochemical and immune histological markers
9. The molecular and cellular mechanism of chemo-drugs.

Topic 3. Tumors of the reproductive female organs. Breast cancer. Etiology. Precancerous conditions. Clinical and histological forms, molecular classification of breast cancer. TNM Classification, AJCC, 8th edition, 2017. Screening. Diagnostic and treatment methods. Forecast. Cervical cancer. Etiopathogenesis and precancerous conditions. Early Detection and Screening. Symptoms. Histopathological classification and TNM, AJCC, 8th edition, 2017. Staging (FIGO). Diagnostic and treatment methods. Prophylaxis. Prognosis. Endometrial cancer. Etiopathogenesis ("pathognomonic" triad). Histopathological and molecular classification. TNM Classification, AJCC, 8th edition, 2017. Staging (FIGO). Diagnostic methods. Therapeutic indication, main combinations of chemotherapy, post-therapeutic follow-up. Evolution and Prognosis. Ovarian cancer. Etiopathogenesis. Risk factors. TNM Classification, AJCC, 8th edition, 2017. Staging (FIGO). WHO histopathological classification of ovarian tumors. Ovarian cancer prophylaxis. Diagnostic methods. Tumor markers in ovarian cancer (antigenic, enzymatic, hormonal). Treatment methods. Secondary surgical procedures (resection of residual mass, secondlook surgery).

- To define early detection and screening in the pathology of the mammary glands and cervix.
- To know the predisposing factors and the precancerous states of the reproductive organs.
- To demonstrate skills in clinical examination (palpation of the mammary glands and regional lymph nodes, specular examination of the cervix, bimanual and rectal internal genitals).

1. Anatomy and physiology of the reproductive organs in women.
2. Sex hormones and the change in their secretion depending on the phases of the menstrual cycle.
3. Characteristic of precancerous conditions and benign tumors of the reproductive organs in women.
4. Molecular classification of breast and endometrial cancer.



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- To interpret USG data, radiographic (mammography, scintigraphy, CT, MRI), laboratory (cytological and histopathological).
- To demonstrate knowledge of analysis of treatment principles.
- To apply the cytological and histopathological examination in case of detection of tumors of the reproductive organs.
- To integrate the knowledge about the pathology of the reproductive organs in the medical field and in the society.

5. TNM and histopathological classification of breast, cervical, endometrial and ovarian cancer.
6. Oncological anatomy and ways of disseminating metastases.
7. Clinical evolution. Elements of clinical, paraclinical and imaging diagnosis.
8. Surgical treatment, specifically chemotherapeutic and radiant (teletherapy, brachytherapy) applied in tumors of the reproductive organs in women. Indications for hormonal treatment.
9. Metastatic disease: surgery, radiotherapy, systemic treatment, hormone therapy, chemotherapy: mono-therapy vs. multimodal treatment; treatment with monoclonal antibodies.
10. Supportive treatment (treatment-related toxicities, ascites, ureteral or intestinal obstruction, early menopause).
11. Post-therapeutic monitoring.

Topic 4. Lung cancer. Etiopathogenesis and precancerous conditions. Clinical - anatomical and histological forms. TNM Classification, AJCC, 8th edition, 2017. Evolution and clinic of lung cancer. Methods of diagnosis and treatment of central and peripheral cancer. Treatment of lung cancer according to the histological stage and form. Forecast. Peculiarities of bronchopulmonary microcellular cancer treatment.

Esophageal cancer. Carcinogenic factors and precancerous conditions. TNM Classification, AJCC, 8th edition, 2017. Diagnostic methods (radiological, endoscopic, CT). Treatment methods. Classical radical operations: Torec, Garlock, Lewis. Palliative operations: bypass, gastrostomy type Vitzel, Kader, Toprover. Chemo-radiotherapy treatment. Complex treatment. Forecast.

- To define screening for detection lung pathology.
- To know the clinical methods and examinations (palpation, percussion, auscultation) of patients with lung disease and precancerous states / esophageal cancer
- To demonstrate skills in normal conditions vs. pulmonary or esophageal pathology
- To demonstrate correct reading of radiograms, CT, MRI, cytology, histology in lung and esophageal cancer.
- To apply the knowledge in examining patients, excluding risk factors, treatment precancerous states
- To integrate optimal decisions in the medical activity in order to optimize the therapeutic act at the prophylaxis level.

1. The states of background and precancers of lungs.
2. Evaluation of peculiarities of central and peripheral cancer.
3. Atypical form of lung cancer (mediastinal, bones, hepatic, encephalic and milliary).
4. Imagistic examination of thorax organs – radiology and pulmonary radiography in front and profile, bronchography, CT, angiopneumography, flebography).
5. The characteristic of precancer states - chronic esophagitis, peptic ulcers, diverticulitis, achalasia, genetic factor with Plummer-Vinson syndrome.
6. Radiology semiotic for exophytic, endophytic and ulcerative forms of tumor.
7. Operation – Lewis, Garlock, Gavrilu and Kirschner-Nakayama, palliative.



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8. Radiotherapy in esophageal cancer of cervical region, as a radical method.

Topic 5. Gastric cancer. Carcinogenic factors and precancerous conditions. TNM Classification, AJCC, 8th edition, 2017. Histopathological classification of gastric cancer. Pathways of extension and metastasis. Remote lymphatic metastases Virchow-Troisier, Blummer-Schnitzler, Krukenberg, etc. Hematogenous metastases. Diagnostic methods (radiological, endoscopic, etc.). Treatment methods. Forecast.

- To define the clinical aspects and methods of diagnosis in gastric examination.
- To know the predisposing factors and the precancerous states of the stomach.
- To demonstrate the interpretation of radiographies, CT, MRI, histological examinations, endoscopic methods in gastric cancer.
- To apply the knowledge in the examination of patients (palpation of the lymphatic ggl), the establishment of precancerous conditions, the principle of diagnosis and treatment.
- To integrate knowledge in the professional activity for the exclusion of risk factors and the treatment of precancerous conditions.

1. The main factors in carcinogenesis –diet rich in hydrates, preparing and preserving of food, nitrosamines action, nitrates in water, alcohol, genetic disorders, immunologic affections.
2. Preneoplastic disease as a chronic gastritis, ulcers, polyps and polyposis, Menetrie disease and pernicious anemia.
3. The lymphnodes stations according to the Lambert and Melnicov classification.
4. Metastasis Virhow, krukenberg, Blummer – Schnitzler.
5. Radiologic and laparoscopic detection in gastric cancer.

Topic 6. Pancreato-duodenal cancer (ZPD). Etiopathogenesis. Staging TNM, AJCC, 8th edition, 2017. Morphological classification of ZPD cancer. Tumors of the endocrine system of the pancreas. Diagnostic and treatment methods. Palliative surgery. Biliodigestive derivations. Forecast. Wermer syndrome, Verner - Morisson syndrome.
Liver cancer. Etiopathogenesis. TNM Classification, AJCC, 8th edition, 2017. Morphological classification of liver cancer. Diagnostic methods (USG, CT, isotope scintigraphy, biopsy laparoscopy). Treatment methods. Notion of total hepatectomy with liver transplantation. Palliative treatment. Forecast.

- To define anatomical structure of that area, clinic and methods of diagnosis of PDZ.
- To know the evolutionary peculiarities and methods of diagnosis of ZPD pathologies.
- To know the epidemiology of ZPD tumors.
- To demonstrate the knowledge in clinic and paraclinic investigation (laboratory, imagistic and endoscopic).
- To apply the knowledge in clinical examination (liver palpation, abdominal), reading the laboratory examination (biochemical,

1. PDZ – is composed of pancreas, duodenum, water region (papilla and Water ampula) and extrahepatic billiar tract.
2. Prejaundice and jaundice phase in clinic of PDZ.
3. Clinical, radiological and endoscopical methods of diagnosis.
4. Epithelial benign tumors – hepatocellular adenoma, holangiocellular, cystadenoma and papilloma with biliary cells; mezenchimatosis – angioma, cavernous hemangioma, infantile hemangioendothelioma.
5. Primary malignant hepatic tumors and secondary (metastatic).



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immunological), imaging and endoscopic results in correct application of principal of treatment of PDZ. To integrate the optimal decision in therapeutic act.

Topic 7. Colorectal cancer. Carcinogenic factors and precancerous conditions. Family polyposis. TNM Classification, AJCC, 8th edition, 2017. Histological forms of colorectal cancer. Clinical forms of colon cancer. Diagnostic and treatment methods. Typical operations: right, left hemicolonectomy; segmental colon resection; operation Dixon, Babcock - Chiricuță; extirpation of the rectum type Quenus - Miles. Combination treatment.

- To define the physiological and pathological process of the colon and rectum.
- To know precancerous states and principals of examination of colon and rectum (imaging, endoscopic).
- To demonstrate the knowledge in clinical evolution of colon and rectum pathology, to read the irigogramms in different states of colon pathology.
- To apply the knowledge acquired in the diagnosis of precancerous conditions and the principle of treatment of early and advanced cancers.
- To integrate the knowledge daily for promotion of healthy way of life.

1. Alimentary regime – animal fats and cholesterol excess and deficiency celluloses fibers.
2. Precancer states – inflammatory disorders, polyps adenomatosis, genetic factor, Gardner syndrome, Peutz-Jeghers syndrome.
3. Clinical forms of colon cancer.
4. Method of diagnosis and treatment
5. Radical and palliative surgical treatment.
6. Postsurgery complications and treatment of it.

Topic 8.

Cancer of the reno-urinary system. Etiopathogenesis of renal cancer. Primary extension and metastasis of renal cancer. Staging TNM. Clinical and histological forms. Diagnostic methods (i / v urography, USG, CT, angiography). Methods of treatment (surgical, radiotherapy, hormonal, chemotherapeutic). Forecast.

Bladder cancer. Etiopathogenesis. Clinical and histological forms. Staging TNM, AJCC, 8th edition, 2017. Diagnostic and treatment methods. Types of operations: cystectomy, bladder resection, bladder hemirection. Palliative operations: epicystotomy, uretero - cutaneostomy. Prognosis.

- To define the role of noxious factors on reno-urinary system.
- To know the etiology in malignant and benign tumors of reno-urinary system.
- To demonstrate the knowledge to analyze the principals of diagnosis and treatment of renal and urinary bladder pathology.
- To apply the modern radiological and laparoscopic methods of diagnosis of pathology of reno-urinary system. To integrate the knowledge about modern technics of diagnosis and treatment of reno-urinary system in

1. Peoples included in the risk groups of renal cancer (people suffering from chronic kidney disease, kidney development abnormalities, pelvic mucosa leukoplakia, nephrolithiasis, renal cystic degeneration, contact with chemicals).
2. Benign and malignant tumors of parenchimas and renal pyramid.
3. Triad of kidney and bladder cancer symptoms. Triad symptoms of renal and urinary cancer.



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professional activity.

4. Clinical forms of renal cancer (hematuric, tumoral, mixt, fever, metastatic).
5. Method of diagnosis and treatment of urinary tract.
6. Tumor differentiation between renal tumors and retroperitoneal extraorganic tumors.

VII. PROFESSIONAL COMPETENCES (SPECIFIC (CS) AND TRANSVERSAL (CT)) AND FINAL STUDIES

✓ PROFESSIONAL COMPETENCES:

- CP 1. Knowledge, understanding and use of language specific to oncology;
- CP 2. Identification and use of concepts, principles and theories of oncology in professional activity.
- CP 3. Knowledge and understanding of cellular metamorphosis in different organs, oncogenes, explanation of the principles of metastasis.
- CP 4. Explaining and interpreting the progression of the tumor process.
- CP 5. Knowledge of background and precancerous conditions in the prophylaxis of oncological tumors.
- CP 6. Knowledge of TNM classification and establishing the stage of the tumor process.
- CP 7. Acquiring the cytohistopathological classification of tumors.
- CP 8. Learning the methods of surgical treatment of cancer patients.
- CP 9. Knowledge of the principles of chemotherapeutic treatment.
- CP 10. Knowledge of the principles of radiotherapy treatment.
- CP 11. Learning the methods of prophylaxis in oncology.

✓ TRANSFERRAL COMPETENCES:

- CT 1. Improving the capacity for decision-making autonomy.
- CT 2. Formation of personal attitude.
- CT 3. Ability to social interaction, group activity with different roles.
- CT 4. Framing in interdisciplinary projects, extracurricular activities.
- CT 5. Improving digital skills.
- CT 6. Development of different learning techniques.
- CT 7. Selection of digital materials, critical analysis and formulation of conclusions.
- CT 8. Presentation of individual scientific projects.

• THE PURPOSES OF THE DISCIPLINE

- to know the particularities of organization and the components of a successful therapeutic act;
- understand the clinical methods and procedures for examining cancer patients;
- to know the predisposing factors and precancerous conditions in oncology;
- understand changes at the cell level and changes at the tissue level (oncogenesis, oncogenes and antioncogenes, apoptosis);
- be competent to understand the macroscopic forms of oncological diseases;
- be able to deduce the peculiarities of the progression of the malignant process in different locations;
- to know the paraclinical (laboratory) methods - hematological, biochemical, biological markers) in the examination of oncological patients;
- to apply paraclinical (imaging) methods - radiological, tomography, mammography, urography, etc.) in the examination of oncological patients;
- to know the paraclinical (endolaparoscopic) methods in the examination of oncological patients;
- to learn the treatment methods - surgical, chemotherapeutic and radiotherapy in oncological



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pathology;

- to apply the knowledge gained in the prevention of oncological diseases;
- be able to evaluate the place and role of oncology in the clinical training of the medical student;
- be competent to use the knowledge and methodology of oncology in the ability to explain the nature of physiological or pathological processes;
- be able to deduce the possible causes of the blockage of oncological processes on the cell, tissue, organism as a whole;
- be able to implement the knowledge gained in the research activity;
- be competent to use critically and confidently the scientific information obtained, using new information and communication technologies.

VIII. THE STUDENT'S INDIVIDUAL WORK

Nr.	The expected product	Strategy of achievement	Evaluation criteria	Period of realization
1.	Work with the book	Systemic work and mediate	Quality, logical thought, flexibility	During the module
2.	Report	Analysis of relevant sources on the topic of the paper. Analysis, systematization and synthesis of information on the proposed topic. Compilation of the report in accordance with the requirements in force and its presentation to the department / group.	1. The quality of the systematization and analysis of the informational material obtained through own activity. 2. The concordance of the information with the proposed topic.	During the module
3.	Work with informational sources	Read the lecture or textbook material on the topic carefully. Reading the questions on the topic, which require reflection on the topic. To be acquainted with the list of additional information sources on the respective topic. Select additional sources of information on the topic. Read the whole text carefully and write the essential content.	1. Ability to extract the essential; 2. Interpretive skills; workload	During the module

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		Formulation of generalizations and conclusions regarding the importance of the topic / subject..		
4.	Homework	Work in writing in the workbook depending on the question or problem posed.	The correct solution to the problem proposed for solving.	During the module
5.	Work with online materials	Online self-assessment, studying online materials on the department's SITE, expressing one's opinions through the forum and chat.	Number and duration of entries on the SITE, results of self-assessments	During the module
6.	Preparing and support of presentations	Selecting the research topic, establishing the research plan, establishing the deadlines. Establishing the components of the PowerPoint project / presentation - theme, purpose, results, conclusions, practical applications, bibliography. Colleague reviews. Teacher reviews.	The volume of work, the degree of penetration in the essence of the project theme, the level of scientific argumentation, the quality of the conclusions, elements of creativity, attitude formation.	During the module
7.	Analysis of one case	Selection and description of the case study. Analysis of the causes of the problems in the case study. Prediction of the expected outcome of the case.	1. 2. 1. Analysis, synthesis, generalization of data obtained through own investigation. 3. 2. Formation of a knowledge algorithm based on the conclusions obtained.	During the module

IX. METHODOLOGICAL SUGGESTION OF SURRENDER – TEACHING – EVALUATION**• Teaching and learning methods used**

When teaching the discipline Oncology, different didactic methods and procedures are used, oriented towards the efficient acquisition and achievement of the objectives of the didactic process. In the theoretical lessons, along with the traditional methods (lesson-exposition, lesson-conversation, synthesis lesson) modern methods are also used (lesson-debate, lesson-conference,



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problematic lesson). In the practical works are used forms of individual activity, patient care, participation in operating rooms, involvement in clinical investigations (palpation and puncture of peripheral ggl, percussion and palpation of the chest and abdomen, performing rectal palpation) and paraclinical.

For the deeper acquisition of the material, different semiotic systems (scientific language, graphic and computerized language) and didactic materials (tables, diagrams, X-rays, computed tomography, MRI, scintigraphy, mammography, endoscopic, laparoscopic and cytohistopathological data) are used. In the extracurricular lessons and activities are used Information Technology Communication - PowerPoint presentations, online lessons.

Teaching and learning methods used

- Course
 - introduction
 - current
 - summary
 - theoretical and practical
 - debate
- Practical lessons
 - synthesis
 - repetitiv
 - debate
- Traditional methods
 - Case Study
 - role-playing games
 - interactive
 - control work
- **Applied teaching strategies / technologies (specific to the discipline)**
Presentation, interactive lecture, demonstration, problematization, group work, individual study, work with textbook and scientific text, learning through didactic film and audiovisual recordings, debate, carrying out laboratory tasks, problem solving, group interview, clinical case study, creative controversy, focus-group technique, Venn diagram, brainstorming, the tree of ideas, Sapiro's tree, bunches.
- **Methods of evaluation** (*calculating and including of final mark*).
 - ✓ **Current.** frontal and / or individual control through
 - (a) applying the tests to the studied subject
 - (b) solving the problems of the situation
 - (c) analysis of clinical case studies
 - (d) performing role-plays on the topics discussed
 - (e) interpretation of clinical, laboratory, imaging and endo laparoscopy data.
- ✓ **The final:** exam

How to round up the grades of the evaluation steps

Intermediate note (annual average, marks from the exam stages)	National system marks	Equivalent ECTS
1,00-3,00	2	F
3,01-4,99	4	FX
5,00	5	E
5,01-5,50	5,5	
5,51-6,0	6	
6,01-6,50	6,5	D

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6,51-7,00	7	C
7,01-7,50	7,5	
7,51-8,00	8	
8,01-8,50	8,5	B
8,51-8,00	9	
9,01-9,50	9,5	A
9,51-10,0	10	

The final mark will consist of the average score from four totalizations (quota part 0.3), practical skills-patient file (quota part 0.2), final test (quota part 0.2), oral answer (quota part 0.3) and the final score obtained will be expressed in two decimals, which will be entered in the notes book.

Failure to attend the examination without reason is recorded as "absent" and is equivalent to 0 (zero) rating. The student is entitled to 2 repeated claims of the unsuccessful exam.

X. RECOMMENDED BIBLIOGRAPHY:**A. Obligatory:**

1. Lectures
2. Harrison's hematology and oncology / ed. : D. L. longo. - New York : McGraw-Hill Medical, 2013.
3. SOFRONI, D., GHIDIRIM, N., MIRON, L., MARTALOG, V., ROTARU, T. Tratat de oncologie. Chișinău, I.S. FE-P "Tipografia Centrală", 2020, 1035 pag. . ISBN 978-9975-151-53-5.
4. Oncologie clinică. Chișinău, 1998. Ghidirim N.
5. Ghid clinic de oncologie. Ghid. Chișinău, 2003, 828 p. Țâbârnă Gh., Coșciug I., Sofroni D.
6. ATLAS TNM (ghid ilustrat de clasificare TNM/p TNM a tumorilor maligne). Traducere din limba franceză în română. Ghid. Chișinău, 2000, 380 p. Ghidirim N., Țâbârnă Gh., Sofroni D., Mereuță I.
7. Dicționar explicativ de oncologie. N. Ghidirim. Chișinău, 2005, 543 p.

B. Supplementary

1. Semne, sindroame și personalități notorii în oncologie, hematologie și medicina universală (definiții și tălmăciri în limba română). Îndrumar clinico-didactic. Ghidirm N., Corcimaru I., Mereuță I., Bacalim I., Martalog V., Corobcean N., Rotaru T. Chișinău, 2015. – 186p.
2. Cancerul glandei tiroide. Chișinău, 2017, 320p. Țîbîrnă A.
3. Клиническая онкология. Учебник для студентов. Кишинев, 2005, 830 с. Цыбырнэ Г., Корчмару И., Софрони Д. и др.
4. Feiler A.A., Ungureanu A.M . Manual de radiologie și imagistică medicală. Volumul I, Toracele. Editura Victor Babe, Timișoara, 2012. ISBN 9786068054834.
5. Cancérologie (Guide pratique). Paris 1992. Laurent Zelek.
6. Cancérologie. Paris 1996. Vincent Levy.
7. Cancerul bronhopulmonar. București, Cluj-Napoca, 1986, 553p.
8. Cancer. Principles end Practic of Oncology. Zinent T., D. Vita. 1982.
9. Cancerul bronhopulmonar. Martalog V., Cernat V., Ghidirim N. Chișinău, 2009, 48 p.
10. Tratat de oncologie digestivă. Vol. 1 / M. Grigorescu, A. Irimie, M. Beuran. - Bucuresti : Editura Academiei Romane, 2013
11. Cancerul bronhopulmonar : indicații metodice pentru studenți, rezidenți, medici de familie, oncologi, ftiziopneumologi / V. Martalog, V. Cernat, N. Ghidirim [et al.] ; Universitatea de Stat de Medicină și Farmacie "Nicolae Testemițanu" ; IMSP Institutul Oncologic din Republica Moldova. - Chișinău : Continental-Grup, 2009.