[Medicinski fakultet u Rijeci]

Curriculum
2024/2025

[Za kolegij]

Clinical Oncology

Study program:	**Medical Studies in English (R)** [Sveučilišni integrirani prijediplomski i diplomski studij]
Department:	**[Katedra za onkologiju i radioterapiju]**
Course coordinator:	**doc. dr. sc. Trivanović Dragan, dr. med.**
Year of study:	**4**
ECTS:	**2**
Incentive ECTS:	**0 (0.00%)**
Foreign language:	**Possibility of teaching in a foreign language**

Course information:

The course of Clinical Oncology is a mandatory course at the fourth year of Medical school, which consists of 15 lectures as well as 15 practical teachings, 30 in total (2.0 ECTS). Lectures will be held in a lecture hall at the Clinic in the Hospital of Rijeka,while the practical part will be demonstrated at the Department of Oncology and Radiotherapy, Hospital of Rijeka.

The aim of this course is to introduce the medical students to the basics of origin of malignant diseases, main factors that cause it, cures and treatment as well as side effects.Another aim of this course is to incorporate knowledge on how to care about a terminally ill patient, and basic palliative care. Introducing the students to the measures of preventive treatments.

Syllabus: Students are taught about the biology of tumor growth and risk factors that can lead to malignant diseases.We shall be discussing the most common tumors and we will talk about each one as well as the basic therapy for a specific tumor. We shall be looking into the cytostatic treatment, radiotherapy (radical and palliative), biological therapy and hormonal therapy.Side effects of both oncological therapy,chemotherapy as well as radiotherapy will be looked into. We will also talk about palliative care and things that are done regarding palliative care. Prevention programmes in Croatia are also on the agenda.

Expected learning outcomes:

- Explain the molecular genetic basis of cancer

- Explain the way the immune system recognizes and fight malignant cells

- Explain findings on metastasis and angiogenesis

- Indicate the incidence and mortality of cancer in the country and the world

- List the basic risk factors for cancer

- Explain ways to prevent disease

- List and explain the basic therapy metods in oncology : radiotherapy, chemotherapy , biological therapy, immunotherapy, hormone therapy, and less applayed forms of treatments

- List the incidence of the disease and factor of risks , therapy possibilities , prognostic parameteres, prevention methods

Lectures will consist of both, theoretical and practical classes. Estimated course duration is 4 weeks time. After taking the final exam the student will be awarded with 2.0 ECTS points.

List of assigned reading:

DeVita H. et al.: Principles and Practice of Oncology, 11th Edition, Lippincott, Williams & Wilkins, 2018

List of optional reading:

Curriculum:

[Predavanja] list (with titles and explanation):

L1. INTRODUCTORY LECTURE: FUNDAMENTALS OF ONCOLOGY AND MULTIDISCIPLINARY OF ONCOLOGY

Understanding the basics of the scope of oncology multidisciplinary science as well as ways of recognizing and evaluating an oncology patient and the basics of treatment in oncology. Basic concepts in diagnostics, treatment and epidemiology.

L2. BIOLOGY OF CANCER: HALLMARKS OF CANCER

Basics of tumor biology, carcinogenesis, angiogenesis and metastasis. Getting to know the molecular-genetic basis of cancer and what knowledge we use for the targeted treatment of malignant tumors. Basic knowledge of cell division and cell metabolism that we use in current and future ways of treating malignant diseases. Mechanisms of immunological recognition of malignant cells, tumor microcysts and the relationship with the host, the way of evolution, heterogeneity, metastases, angiogenesis and other mechanisms in tumor treatment and the fight against tumors. Through all these mechanisms, modern technologies, which are partly already applied and will follow in the further development of diagnostics and treatment of malignant diseases.

L3. THERAPEUTIC METHODS IN ONCOLOGY I: SURGICAL AND SYSTEMIC TREATMENT OF MALIGNANT TUMORS

Principles of cytostatic therapy, hormone therapy, biotherapy and other types of therapy)

Acquaintance of students with multimodal methods of tumor treatment, surgery, cytostatics, hormone therapy and other methods.

L4. THERAPEUTIC METHODS IN ONCOLOGY II: IMMUNOTHERAPY AND TARGETED TREATMENT:

Understanding progressive therapies that are rapidly developing in the world. The ways in which they work, which are further directions for improving the success of the treatment.

L5. THERAPEUTIC METHODS IN ONCOLOGY III:- RADIOTHERAPY

Getting to know the physical basics of radiation. Understanding of radiotherapy devices, effectiveness and side effects.

L6. BREAST CANCER

Acquaintance of students with risk factors for breast cancer. Histological and phenotypic differences in the behavior and treatment of breast cancer, multimodal principles of treatment and monitoring. Primary and secondary prevention.

L7. MALIGNANT TUMORS OF THE FEMALE SEXUAL ORGANS

Acquaintance of students with risk factors for malignant tumors of the female sexual organs. Histological and phenotypic differences in the behavior and treatment, multimodal principles of treatment and monitoring. Primary and secondary prevention.

L8. MALIGNANT TUMORS OF THE RESPIRATORY SYSTEM AND MEDIASTINUM

Acquaintance of students with risk factors for malignant tumors of the respiratory system and mediastinum. Histological and phenotypic differences in the behavior and treatment, multimodal principles of treatment and monitoring. Primary and secondary prevention.

L9. MALIGNANT TUMORS OF THE DIGESTIVE SYSTEM

Risk factors in both the female and male reproductive system. Most common pathohistological types.Methods of spreading of aforementioned tumors. Treatment of malignant tumors: surgically, with cytostatics, with radiotherapy, with biological therapy and with hormonal therapy. Prevention measures.

L10. MALIGNANT TUMORS OF THE URINARY SYSTEM AND MALE SEXUAL ORGANS

Risk factors for the malignant tumors of the urinary system and male sexual organs. Most common pathohistological types. Methods of spreading of aforementioned tumors. Treatment of malignant tumors: surgically, with cytostatics, with radiotherapy and with biological therapy. Prevention measures.

L11. HEAD AND NECK CANCERS

Risk factors for malignant tumors of the digestive and urinary tract system.Most common pathohistological types. Methods of spreading of aforementioned tumors. Treatment of malignant tumors: surgically, with cytostatics,with radiotherapy, and with biological therapy. Prevention measures.

L12. MALIGNANT BONE AND SOFT TISSUE TUMORS

Risk factors for malignant bone and soft tissue tumors, and common pathohistological types. Methods of spreading of aforementioned tumors. Treatment of malignant tumors: surgically, with cytostatics, with radiotherapy, and with biological therapy. Prevention measures.

L13. MALIGNANT TUMORS OF THE BLOOD-FORMING, LYMPHATIC AND ENDOCRINE SYSTEMS

Risk factors for the malignant tumors of the hematopoietic, lymphatic and endocrine systems. Most common pathohistological types. Methods of spreading of aforementioned tumors. Treatment of malignant tumors: with cytostatics, with radiotherapy and with biological therapy. Prevention measures.

L14. MALIGNANT SKIN TUMORS AND OF CENTRAL NERVOUS SYSTEM

Risk factors for the malignant skin tumors and of central nervous system. Most common pathohistological types. Methods of spreading of aforementioned tumors. Treatment of malignant tumors: surgically, with cytostatics, with radiotherapy and with biological therapy. Prevention measures.

L15. SUPPORTIVE AND SYMPTOMATIC TREATMENT; PALLIATIVE MEDICINE; HOSPICES; CANCER AND PUBLIC HEALTH INSTITUTION

Introducing students to patients in poor general condition and different ways of how to take care of them. Introducing palliative radiotherapy and chemotherapy. All the measures of symptomatic therapy.Introducing dietary issues and analgesic therapy. Pain infirmary. How does a hospice function? How are these patients supported by the system?

[Vježbe] list (with titles and explanation):

P1.Introductory lesson:approach to an oncological patient, anamnesis and status

Mastering the approach to the oncological patient, taking of the anamnesis and status.

P2. Radiation devices, administration of cytostatics and biological therapy

Introduction to the radiation devices and their effect on the tissue. Side effects of the radiation and the recovery. Introduction to cytostatic therapy at the departments as well as at the day clinic. Administration of cytostatics, side effects and recovery. How to take care of febrile neutropenia. Introduction to the biological therapy, administration, side effects and recovery.

P3. Breast cancer

Introducing students to breast-conserving and radical surgery performed on female patients. Anamnesis and status. Plan of the radiotherapy. Side effects and remedy of radiation. Administration of cytostatics. Premedication. Side effects and recovery of cytostatics. Exercise of rights to a wig or breast prosthetics.Lymph drainage.

P4.Malignant tumors of the female reproductive system

Cases of female patients with vaginal, vulva, uterus and ovaries tumors. Anamnesis and status.Brachytherapy-simulation of the application of radioactive caesium. Side effects and recovery.

P5. Prostate cancers

Cases of patients with prostate tumors, localized illness and with metastazis. Anamnesis and status.Planning of conformal radiotherapy. Hormonal radiotherapy. Application of LHRH agonist. Radiation of bone metastasis. Cytostatic therapy in curing the prostate cancer.

P6. Intratoracal tumors

Cases of patients with intratoracal tumors: lungs tumors and mesotheliomas. Anamnesis and status. Planning of radical radiotherapy.Cytostatic and biological therapy. Getting the patient ready for the administration of cytostatics. Syndrome of vena cava and Pancoast syndrome, treated as emergencies in oncology.

P7.Digestive system tumors

Cases of patients with esophagus, stomach, pancreas and colorectal tumors. Radiation side effects and recovery. Cytostatic therapy for aforementioned tumors. Cytostatic side effects and recovery. Application of biological therapy. Anus praeter.

P8.Urinary bladder and kidney tumors

Cases of patients with urinary bladder cancer and malignant ki dneys tumors. Anamneses and status.Planning of radiotherapy concerning the urinary bladder cancer, immunotherapy. Biological therapy and its side effects. Recovery. Urostoma, nefrostoma.

P9.Oral cavity,pharynx and larynx cancers

Cases of patients with oral cavity, pharynx and larynx tumors. Anamnesis and status.Planning of concomitant chemoradiotherapy for the aforementioned tumors. Side effects and recovery from radiation and cytostatic therapy.

P10.Malignant tumors of central nervous system and paranasal sinuses

Cases of patients with malignant tumors of the central nervous system and paranasal sinuses. Anamnesis and status. Planning of radiotherapy for the glioblastoma and maxilla cancer. Therapy of the brain edema. Cytostatic therapy. Spinal cord compression. Supportive methods.

P11. Testicular tumors

Cases of patients with testicular tumor of seminoma and nonseminoma type. Anamnesis and status.Radiotherapy and cytostatic therapy. Side effects and recovery. Cryopreservation of sperm.

P12.Malignant skin tumors

Cases of basal cell carcinoma and planocellular skin carcinoma. Anamnesis and status.Radiotherapy. Treatment of radiodermatitis. Malignant melanoma. Treatment with special attention to biological therapy.

P13.Bone and soft tissue tumors

Cases of bone and soft tissue tumors.Anamnesis and status. Treatment of sarcoma.

P14. Hematological malignant tumors

Cases of hematological malignant diseases. Anamnesis and st atus, Radiation of the lymphoma and plasmacytoma.

P15. Palliative treatment

Cases of patients undertaking palliative treatment. Palliative patients' diet. Gastrostomy PEG. Analgesic therapy. Pain clinic. Evacuation of ascites and pleural effusion.Palliative radiotherapy and chemotherapy.Teams for palliative care and hospices.

Student obligations:

Students must attend lessons regularly and be actively involved in all the aspects of the course.During lessons and practical part, they must be ready at all times to answer questions. Therefore students must read designated texts before class and be prepared to participate in the lessons. The students must take two exames (2 half exames and the final exam).Students can be absent from the maximum of 30% of the classes, exclusively due to health reasons confirmed by a GP. Being present at classes is mandatory.The compensation of the lost classes is possible only with the agreement by the lecturer. In case the student is absent for more than 30% of the classes, it shall lose the privilege to attend further classes and to take the final exam. In accordance with that, the student has gained 0 ECTS points and is graded F.

Exam (exam taking, description of the written/oral/practical part of the exam, point distribution, grading criteria):

Grading criteria is carried out according to valid Regulations of studies University of Rijeka, and according to Regulations of grading students at the Faculty of Medicine in Rijeka (adopted by the Faculty committee of Medicine in Rijeka).

Final grade- written exam (max 50% of the final grade) + final oral exam (max of 50% of the final grade)

Written examination consists of 50 questions and can amount to max 50% of the final grade. Due to the results of the written part, the student qualifies to take the final oral exam. Students that get >25%, in the written part (25 or more correctly answered questions), get the right to take the final oral examination.

Final exam is oral and the student can get a maximum of 50% of the final grade, and depending on the satisfactory results of the exam it gets 25 or more percent according to the final grade .

I. 45-50% excellent (5)- (A)
II. 35-44 % very good (4)- (B)
III. 30-34% good (3)- (C)
IV. 25-29% sufficient (2)- (D)

Final grade: written examination + final oral exam

I. 90-100% 5 A Excellent
II. 75-89,9% 4 B Very good
III. 60-74,9% 3 C Good
IV. 50-59,9% 2 D Sufficient
V. 0-49,9% 1 F Insufficient

Other notes (related to the course) important for students:

Classes, as well as all the other information about the course, such as exam dates are to be found on line, Department of Oncology and Radiotherapy

COURSE HOURS 2024/2025

Clinical Oncology

[Predavanja] (Place and time or group)	**[Vježbe]** (Place and time or group)
09.05.2025	
L1. INTRODUCTORY LECTURE: FUNDAMENTALS OF ONCOLOGY AND MULTIDISCIPLINARY OF ONCOLOGY: • [ONLINE] (17:00 - 19:00) [2157] ○ CO L2. BIOLOGY OF CANCER: HALLMARKS OF CANCER: • [ONLINE] (17:00 - 19:00) [2157] ○ CO L3. THERAPEUTIC METHODS IN ONCOLOGY I: SURGICAL AND SYSTEMIC TREATMENT OF MALIGNANT TUMORS: • [ONLINE] (17:00 - 19:00) [2157] ○ CO	P1.Introductory lesson:approach to an oncological patient, anamnesis and status: • [Klinika za onkologiju] (10:00 - 13:00) [2288] ○ CO P2. Radiation devices, administration of cytostatics and biological therapy: • [Klinika za onkologiju] (10:00 - 13:00) [2288] ○ CO P3. Breast cancer: • [Klinika za onkologiju] (10:00 - 13:00) [2288] ○ CO
doc. dr. sc. Trivanović Dragan, dr. med. [2157] · viši asistent dr. sc. Vučinić Damir, dr. med. [2288]	
16.05.2025	
L4. THERAPEUTIC METHODS IN ONCOLOGY II: IMMUNOTHERAPY AND TARGETED TREATMENT:: • [Klinika za infektivne bolesti] (15:00 - 18:00) [2157] ○ CO L5. THERAPEUTIC METHODS IN ONCOLOGY III:- RADIOTHERAPY: • [Klinika za infektivne bolesti] (15:00 - 18:00) [2157] ○ CO L6. BREAST CANCER: • [Klinika za infektivne bolesti] (15:00 - 18:00) [2157] ○ CO	P4.Malignant tumors of the female reproductive system: • [Klinika za onkologiju] (10:00 - 13:00) [2288] ○ CO P5. Prostate cancers: • [Klinika za onkologiju] (10:00 - 13:00) [2288] ○ CO P6. Intratoracal tumors: • [Klinika za onkologiju] (10:00 - 13:00) [2288] ○ CO
doc. dr. sc. Trivanović Dragan, dr. med. [2157] · viši asistent dr. sc. Vučinić Damir, dr. med. [2288]	
23.05.2025	
L7. MALIGNANT TUMORS OF THE FEMALE SEXUAL ORGANS: • [Klinika za infektivne bolesti] (15:00 - 18:00) [2157] ○ CO L8. MALIGNANT TUMORS OF THE RESPIRATORY SYSTEM AND MEDIASTINUM: • [Klinika za infektivne bolesti] (15:00 - 18:00) [2157] ○ CO L9. MALIGNANT TUMORS OF THE DIGESTIVE SYSTEM: • [Klinika za infektivne bolesti] (15:00 - 18:00) [2157] ○ CO	P7.Digestive system tumors: • [Klinika za onkologiju] (10:00 - 13:00) [449] ○ CO P8.Urinary bladder and kidney tumors: • [Klinika za onkologiju] (10:00 - 13:00) [449] ○ CO P9.Oral cavity,pharynx and larynx cancers: • [Klinika za onkologiju] (10:00 - 13:00) [449] ○ CO
Bukovica Petrc Ana-Marija, dr. med. [449] · doc. dr. sc. Trivanović Dragan, dr. med. [2157]	
30.05.2025	

L10. MALIGNANT TUMORS OF THE URINARY SYSTEM AND MALE SEXUAL ORGANS: • [Klinika za infektivne bolesti] (15:00 - 16:00) [2157] ◦ CO L11. HEAD AND NECK CANCERS: • [Klinika za infektivne bolesti] (15:00 - 16:00) [2157] ◦ CO L12. MALIGNANT BONE AND SOFT TISSUE TUMORS: • [Klinika za infektivne bolesti] (15:00 - 16:00) [2157] ◦ CO	P10.Malignant tumors of central nervous system and paranasal sinuses: • [Klinika za onkologiju] (10:00 - 12:00) [449] ◦ CO P11. Testicular tumors: • [Klinika za onkologiju] (10:00 - 12:00) [449] ◦ CO P12.Malignant skin tumors: • [Klinika za onkologiju] (10:00 - 12:00) [449] ◦ CO
Bukovica Petrc Ana-Marija, dr. med. [449] · doc. dr. sc. Trivanović Dragan, dr. med. [2157]	
06.06.2025	
L13. MALIGNANT TUMORS OF THE BLOOD-FORMING, LYMPHATIC AND ENDOCRINE SYSTEMS: • [Klinika za onkologiju] (15:00 - 19:00) [314] [2157] ◦ CO L14. MALIGNANT SKIN TUMORS AND OF CENTRAL NERVOUS SYSTEM: • [Klinika za onkologiju] (15:00 - 19:00) [314] [2157] ◦ CO L15. SUPPORTIVE AND SYMPTOMATIC TREATMENT; PALLIATIVE MEDICINE; HOSPICES; CANCER AND PUBLIC HEALTH INSTITUTION: • [Klinika za onkologiju] (15:00 - 19:00) [314] [2157] ◦ CO	P13.Bone and soft tissue tumors: • [Klinika za onkologiju] (11:00 - 16:00) [449] [2157] ◦ CO P14. Hematological malignant tumors: • [Klinika za onkologiju] (11:00 - 16:00) [449] [2157] ◦ CO P15. Palliative treatment: • [Klinika za onkologiju] (11:00 - 16:00) [449] [2157] ◦ CO
Bukovica Petrc Ana-Marija, dr. med. [449] · prof. dr. sc. Dobrila-Dintinjana Renata, dr. med. [314] · doc. dr. sc. Trivanović Dragan, dr. med. [2157]	

List of lectures, seminars and practicals:

[PREDAVANJA] (TOPIC)	Number of hours	Location
L1. INTRODUCTORY LECTURE: FUNDAMENTALS OF ONCOLOGY AND MULTIDISCIPLINARY OF ONCOLOGY	1	[ONLINE]
L2. BIOLOGY OF CANCER: HALLMARKS OF CANCER	1	[ONLINE]
L3. THERAPEUTIC METHODS IN ONCOLOGY I: SURGICAL AND SYSTEMIC TREATMENT OF MALIGNANT TUMORS	1	[ONLINE]
L4. THERAPEUTIC METHODS IN ONCOLOGY II: IMMUNOTHERAPY AND TARGETED TREATMENT:	1	[Klinika za infektivne bolesti]
L5. THERAPEUTIC METHODS IN ONCOLOGY III:- RADIOTHERAPY	1	[Klinika za infektivne bolesti]
L6. BREAST CANCER	1	[Klinika za infektivne bolesti]
L7. MALIGNANT TUMORS OF THE FEMALE SEXUAL ORGANS	1	[Klinika za infektivne bolesti]
L8. MALIGNANT TUMORS OF THE RESPIRATORY SYSTEM AND MEDIASTINUM	1	[Klinika za infektivne bolesti]
L9. MALIGNANT TUMORS OF THE DIGESTIVE SYSTEM	1	[Klinika za infektivne bolesti]
L10. MALIGNANT TUMORS OF THE URINARY SYSTEM AND MALE SEXUAL ORGANS	1	[Klinika za infektivne bolesti]
L11. HEAD AND NECK CANCERS	1	[Klinika za infektivne bolesti]
L12. MALIGNANT BONE AND SOFT TISSUE TUMORS	1	[Klinika za infektivne bolesti]
L13. MALIGNANT TUMORS OF THE BLOOD-FORMING, LYMPHATIC AND ENDOCRINE SYSTEMS	1	[Klinika za onkologiju]

L14. MALIGNANT SKIN TUMORS AND OF CENTRAL NERVOUS SYSTEM	1	[Klinika za onkologiju]
L15. SUPPORTIVE AND SYMPTOMATIC TREATMENT; PALLIATIVE MEDICINE; HOSPICES; CANCER AND PUBLIC HEALTH INSTITUTION	1	[Klinika za onkologiju]

[VJEŽBE] (TOPIC)	Number of hours	Location
P1.Introductory lesson:approach to an oncological patient, anamnesis and status	1	[Klinika za onkologiju]
P2. Radiation devices, administration of cytostatics and biological therapy	1	[Klinika za onkologiju]
P3. Breast cancer	1	[Klinika za onkologiju]
P4.Malignant tumors of the female reproductive system	1	[Klinika za onkologiju]
P5. Prostate cancers	1	[Klinika za onkologiju]
P6. Intratoracal tumors	1	[Klinika za onkologiju]
P7.Digestive system tumors	1	[Klinika za onkologiju]
P8.Urinary bladder and kidney tumors	1	[Klinika za onkologiju]
P9.Oral cavity,pharynx and larynx cancers	1	[Klinika za onkologiju]
P10.Malignant tumors of central nervous system and paranasal sinuses	1	[Klinika za onkologiju]
P11. Testicular tumors	1	[Klinika za onkologiju]
P12.Malignant skin tumors	1	[Klinika za onkologiju]
P13.Bone and soft tissue tumors	1	[Klinika za onkologiju]
P14. Hematological malignant tumors	1	[Klinika za onkologiju]
P15. Palliative treatment	1	[Klinika za onkologiju]

EXAM DATES (final exam):

1.	09.06.2025.
2.	11.07.2025.
3.	10.09.2025.