Name of the course

Clinical oncology

Year of study **2022/2023**

Course teacher: Asst. Prof. Inga Marijanović, PhD, MD

Plan of the course

OBJECTIVES

Cancer is one of mankind's severest diseases, causing a death rate of 25% in developed countries. Due to advances in cancer screening, diagnoses and treatment, future doctors will face an increasing number of cancer patients and survivors. The aim of this course is to cover fundamental understanding of cancer biology, epidemiology, diagnostics, basic knowledge in systemic oncologic therapy and radiotherapy cancer, as well as outlines of role of family doctor and palliative care. Recognizing of oncologic emergencies as well as side-effects of oncologic treatment will be stressed out. In addition, students should become familiar clinical decision making based on interdisciplinary team communication and application of treatment concepts/algorithms in a multidisciplinary setting.

COURSE DESCRIPTION

Teaching is conducted in the form of lectures, seminars and exercises during which the teacher explains the topic and encourages active and critical thinking of the students and participation in the discussion. Teachers and students discuss the specifics and problems within each topic covered. Attendance records are kept for each student. At the end of the class there is a written final exam.

	Tuesday, 10.01.2023.	Wednesday, 11.01.2023.	Thursday, 12.01.2023.	Friday, 13.01.2023.	Monday, 16.01.2023.
8:30-9:15	Lecture 1	Lecture 2	Lecture 3	Lecture 4	Lecture 5
9:30-14:00	Exercises 1-5	Exercises 6-10	Exercises 11-15	Exercises 16-20	Exercises 21-25
14:15-15:45	Seminar 1 and 2	Seminar 3 and 4	Seminar 5 and 6	Seminar 7 and 8	Seminar 9 and 10
	Tuesday, 17.01.2023.	**Wednesday 18.01.2023.**	**Thursday, 19.01.2023.**		
9:00-13:30	Exercises 26-30	Exercises 31-35	Exercises		

	Topics of lectures and seminars
Lecture 1 ***Teacher:*** ***Asst. Prof. Marijanović/ Asst. Prof.Tica Sedlar***	Title: Introduction. Tumor biology.
	Short description: Familiarity with oncology, basic concepts and key features of cancer.
	The genetic basis of cancer. Oncogenes. Tumor suppressor genes. Tumorous angiogenesis, invasion and engraftment. The immune system and cancer.
	Literature: mandatory and supplementary.
Lecture 2	Title: Tumor etiology. Tumor epidemiology.

Teacher: ***Asst. Prof. Marijanović/ Asst. Prof.Tica Sedlar***	Short description: Familiarity with chemical, physical and biological carcinogenesis. Getting to know the basic parameters of descriptive epidemiology, the movement of cancer in the world and the most common types
	Literature: mandatory and supplementary.
Lecture 3 ***Teacher:*** ***Asst. Prof. Marijanović/ Asst. Prof.Tica Sedlar***	Title: Prevention and early diagnosis of malignant tumors. Psychosocial aspects of oncology patients.
	Short description: Familiarity with primary prevention, chemoprophylaxis, surgery prophylaxis, secondary prevention, screening methods for certain malignant tumors. Mental deviations in patients with malignant disease. Emotional support. The role of the doctor. Adjuvant treatment. Treatment of metastatic disease. Treatment of disease recurrence. A patient in the terminal phase.
	Literature: mandatory and supplementary.
Lecture 4 ***Teacher:*** ***Asst. Prof. Marijanović/ Asst. Prof.Tica Sedlar***	Title: Cytostatic therapy. Radiotherapy. Side effects of oncological treatment.
	Short description: Getting to know the physical and radiobiological basics of radiotherapy, forms of radiotherapy, radiotherapy devices, goals and unwanted effects of radiotherapy. Getting to know the kinetics of tumor cells and chemotherapy, the division of cytostatics, the method of application of cytostatics and the unwanted effects of chemotherapy. Familiarity with the most common side effects of oncological treatment, including emergency conditions caused by oncological treatment.
	Literature: mandatory and supplementary

Lecture 5 ***Teacher:*** ***Asst. Prof. Marijanović/ Asst. Prof.Tica Sedlar***	Title: Hormonal therapy. Immunotherapy. Other forms of therapy: targeted therapy, gene therapy, photodynamic therapy, hyperthermia, antiangiogenic therapy.
	Get to know the types of endocrine therapy (especially for breast and prostate cancer), the types and application of immunotherapy, the types and mode of action of targeted therapy, and other forms of oncology therapy.
	Literature: mandatory and supplementary
Seminar 1 ***Teacher:*** ***Asst. Prof. Marijanović/ Dr. Jović Zlatović***	Breast cancer
	Get to know the etiology and epidemiology, methods of diagnosis, types of therapy, monitoring and prognosis of breast cancer
	Literature: mandatory and supplementary

Seminar 2 ***Teacher:*** ***Dr. Tomić***	Lung cancer
	Get to know the etiology and epidemiology, methods of diagnosis, types of therapy, monitoring and prognosis of lung cancer
	Literature: mandatory and supplementary
Seminar 3 ***Teacher:*** ***Asst. Prof. Marijanović/ Dr. Jović Zlatović***	Skin cancer and melanoma
	Get to know the etiology and epidemiology, methods of diagnosis, types of therapy, monitoring and prognosis of skin cancer, especially melanoma

	Literature: mandatory and supplementary
Seminar 4 ***Teacher: Dr. Buhovac***	Brain tumors
	Get to know the etiology and epidemiology, methods of diagnosis, types of therapy, monitoring and prognosis of brain tumors
	Literature: mandatory and supplementary
Seminar 5 ***Teacher:*** ***Dr. Jović Zlatović***	Gastrointestinal tumors (Part I)
	Get to know the etiology and epidemiology, methods of diagnosis, types of therapy, monitoring and prognosis of gastrointestinal tumors (part I)
	Literature: mandatory and supplementary
Seminar 6 ***Teacher:*** ***Dr. Parić***	Head and neck tumors
	Get to know the etiology and epidemiology, methods of diagnosis, types of therapy, monitoring and prognosis of head and neck tumors
	Literature: mandatory and supplementary
Seminar 7 ***Teacher:*** ***Dr. Buhovac***	Urogenital tumors (Part I)
	Get to know the etiology and epidemiology, methods of diagnosis, types of therapy, monitoring and prognosis of urogenital tumors (Part I)
	Literature: mandatory and supplementary
Seminar 8 ***Teacher: dr. Miletić***	Gastrointestinal tumors (Part II)
	Get to know the etiology and epidemiology, methods of diagnosis, types of therapy, monitoring and prognosis of gastrointestinal tumors (Part II)
	Literature: mandatory and supplementary
Seminar 9 ***Teacher: dr. Tomić***	Gynecological tumors
	Get to know the etiology and epidemiology, methods of diagnosis, types of therapy, monitoring and prognosis of gynecological tumors
	Literature: mandatory and supplementary
Seminar 10 ***Teacher: dr. Kraljević***	Urogenital tumors (2. dio)
	Get to know the etiology and epidemiology, methods of diagnosis, types of therapy, monitoring and prognosis of urogenital tumors (Part II)
	Literature: mandatory and supplementary

Required literature:
Clinical Oncology, editors Anthony J Neal and Peter J Hoskin, 4th edition; 2012. by Taylor and Francis Group
Written materials provided by teachers

Additional information about the course
1. Klinička onkologija, editors Vrdoljak E, Belac Lovasić I, Kusić Z, Gugić D, Juretić A; 2018. by Medicinska naklada
2. Cancer: Principles and Practice of Oncology, editors DeVita VT, Lawrence TS, Rosenberg SA, 11th edition, 2018. by Lippincott Williams and Wilkins;
3. Perez and Brady's Principles and Practice of Radiation Oncology, editors Halperin EC, Perez CA, Brady LW, Waser DE, 7th edition, 2018. by Lippincott Williams and Wilkins
4. www.nccn.org
5. www.esmo.org

Exam

At the end of the class there is a written final exam. The final exam is a written and oral exam.
The student succeeds on the basis of the solved questions on the test, of which 50% of the correct answers to the questions in the test must be satisfied in order to pass.

Final score:
The final assessment is carried out according to the Regulation of Studies of the University of Mostar and applies to all study groups. According to the Regulations on studying final grade is obtained as follows:
A = 91-100% 5
B = 79 to 90% 4
C = 67 to 78% 3
D = 55 to 66% 2
F = 0 to 54% 1

SYLLABUS

Name of the course	Clinical oncology			**Code**	
Type of study program Cycle	Integrated university study, medicine			**Year of study**	2022/2023
Credits (ECTS) :		*Semester*		Number of hours per semester (l+e+s)	5h (lectures) 10h (seminars) 35h (clinical practice)
Status of the course:	mandatory	*Preconditions:*		*Comparative conditions:*	/
Access to course:	Fifth year students			*Hours of instructions*:	According to schedule

Course teacher:	Asst. Prof. Inga Marijanović, PhD, MD
Consultations:	As agreed with students
E-mail address and phone number:	inga.marijanovic71@gmail.com
Associate teachers	Asst. Prof. Ivana Tica Sedlar, PhD, MD Josipa Jović Zlatović, MD Teo Buhovac, MD Marija Kraljević, MD Dragana Miletić, MD Ana Parić, MD Krešimir Tomić, MD
Consultations:	As agreed with students
E-mail address and phone number:	
The aims of the course:	The aims of the course are: This course's aim is to provide students with a fundamental grasp of cancer biology, epidemiology, diagnostics, systemic oncologic treatment, and radiotherapy of cancer, as well as an overview of the roles of primary care physicians and palliative care. It will be emphasized how important it is to recognize oncologic emergencies and adverse effects of oncologic treatment. Students should also learn how to use treatment principles and algorithms in a multidisciplinary context and make clinical decisions based on interdisciplinary team communication.

Learning outcomes (general and specific competences):	General outcomes To acquire basic knowledge in general oncology that includes biology, etiology and epidemiology of cancer, prevention and early diagnosis of malignant tumors, different types of therapy in oncology (radiotherapy, chemotherapy, hormone therapy, immunotherapy, targeted therapy and other forms) and from special oncology (tumors of the central nervous system, tumors of the respiratory system and mid-chest, tumors of the digestive system system, tumors of the urinary system, tumors of the female reproductive system, tumors of the male reproductive system, breast cancer, head and neck tumors). Specific outcomes Special emphasis is placed on training students to perform skills in the field of clinical examination of patients, then get acquainted with the most common emergencies, as well as the side effects of oncology therapy and its role family doctor in the care of oncology patients.

Course content (Syllabus):				
Format of instruction (mark in bold)	**Lectures**	**Exercises**	**Seminars**	**Independent assignments**
	Consultations	**Work with mentor**	Field work	Other
Student responsibilities	Teaching is conducted in the form of lectures, seminars and exercises during the course in which the teacher explains the topic and encourages active and critical thinking of the students and participation in the discussion. Teachers discuss specifics with students and problems within each treated topic. Attendance at classes is recorded for every student. At the end of the class there is a written final exam			
Screening student work (mark in bold)	Class attendance	Class participations	Seminar essay	Practical training
	Oral exam	**Written exam**	Continuous assessment	Essay
Detailed evaluation within a *European system of points*				

STUDENTS RESPONSIBILITIES	HOURS	PROPORTIONS OF ECTS CREDITS	PROPORTIONS OF GRADE
Class attendance and participations	5+35+10=50		
Seminar essay			
Written exam			
Oral exam			
Total			

Further clarification:

Final score:
The final assessment is carried out according to the Regulation of Studies of the University of Mostar and applies to all study groups. According to the Regulations on studying final grade is obtained as follows:

A = 91-100% 5
B = 79 to 90% 4
C = 67 to 78% 3
D = 55 to 66% 2
F = 0 to 54% 1

Required literature:	Clinical Oncology, editors Anthony J Neal and Peter J Hoskin, 4th edition; 2012. by Taylor and Francis Group Written materials provided by teachers
Optional literature:	
Additional information about the course	1. Klinička onkologija, editors Vrdoljak E, Belac Lovasić I, Kusić Z, Gugić D, Juretić A; 2018. by Medicinska naklada 2. Cancer: Principles and Practice of Oncology, editors DeVita VT, Lawrence TS, Rosenberg SA, 11th edition, 2018. by Lippincott Williams and Wilkins; 3. Perez and Brady's Principles and Practice of Radiation Oncology, editors Halperin EC, Perez CA, Brady LW, Waser DE, 7th edition, 2018. by Lippincott Williams and Wilkins 4. www.nccn.org 5. www.esmo.org

Annexes: calendar classes

The number of teaching units	**TOPICS AND LITERATURE**
I.	Title: Introduction. Tumor biology.
	Short description: Familiarity with oncology, basic concepts and key features cancer. The genetic basis of cancer. Oncogenes. Tumor suppressor genes. Tumorous angiogenesis, invasion and engraftment. The immune system and cancer.
	Literature: mandatory and supplementary
II.	Title: Tumor etiology. Tumor epidemiology.
	Short description: Familiarity with chemical, physical and biological carcinogenesis. Getting to know the basic parameters of descriptive epidemiology, the movement of cancer in the world and the most common types
	Literature: mandatory and supplementary
III.	Title: Prevention and early diagnosis of malignant tumors. Psychosocial aspects of oncology patients.
	Short description: Familiarity with primary prevention, chemoprophylaxis, surgery prophylaxis, secondary prevention, screening methods for certain malignant tumors.

	Mental deviations in patients with malignant disease. Emotional support. The role of the doctor. Adjuvant treatment. Treatment of metastatic disease. Treatment of disease recurrence. A patient in the terminal phase.
	Literature: mandatory and supplementary
IV.	Title: Cytostatic therapy. Radiotherapy. Side effects of oncological treatment.
	Short description: Getting to know the physical and radiobiological basics of radiotherapy, forms of radiotherapy, radiotherapy devices, goals and unwanted effects of radiotherapy. Getting to know the kinetics of tumor cells and chemotherapy, the division of cytostatics, the method of application of cytostatics and the unwanted effects of chemotherapy. Familiarity with the most common side effects of oncological treatment, including emergency conditions caused by oncological treatment.
	Literature: mandatory and supplementary
V.	Title: Hormonal therapy. Immunotherapy. Other forms of therapy: targeted therapy, gene therapy, photodynamic therapy, hyperthermia, antiangiogenic therapy.
	Get to know the types of endocrine therapy (especially for breast and prostate cancer), the types and application of immunotherapy, the types and mode of action of targeted therapy, and other forms of oncology therapy.
	Literature: mandatory and supplementary

VI.	Breast cancer
	Get to know the etiology and epidemiology, methods of diagnosis, types of therapy, monitoring and prognosis of breast cancer
	Literature: mandatory and supplementary
VII.	Lung cancer
	Get to know the etiology and epidemiology, methods of diagnosis, types of therapy, monitoring and prognosis of lung cancer
	Literature: mandatory and supplementary
VIII.	Skin cancer. Melanoma.
	Get to know the etiology and epidemiology, methods of diagnosis, types of therapy, monitoring and prognosis of skin cancer, especially melanoma.
	Literature: mandatory and supplementary
IX.	Brain tumors.
	Get to know the etiology and epidemiology, methods of diagnosis, types of therapy, monitoring and prognosis of brain tumors.
	Literature: mandatory and supplementary
X.	Gastrointestinal tumors (Part I)
	Get to know the etiology and epidemiology, methods of diagnosis, types of therapy, monitoring and prognosis of gastrointestinal tumors (Part I)
	Literature: mandatory and supplementary
XI.	Head and neck tumors
	Get to know the etiology and epidemiology, methods of diagnosis, types of therapy, monitoring and prognosis of head and neck tumors.
	Literature: mandatory and supplementary
XII.	Urogenital tumors (Part I)

	Get to know the etiology and epidemiology, methods of diagnosis, types of therapy, monitoring and prognosis of urogenital tumors (Part I)
	Literature: mandatory and supplementary
XIII.	Gastrointestinal tumors (Part II)
	Get to know the etiology and epidemiology, methods of diagnosis, types of therapy, monitoring and prognosis of GI tumors (Part II)
	Literature: mandatory and supplementary
XIV.	Gynecological tumors
	Get to know the etiology and epidemiology, methods of diagnosis, types of therapy, monitoring and prognosis of gynecological tumors
	Literature: mandatory and supplementary
XV.	Urogenital tumors (Part II).
	Get to know the etiology and epidemiology, methods of diagnosis, types of therapy, monitoring and prognosis of urogenital tumors (Part II)
	Literature: mandatory and supplementary