Univerza v Mariboru
University of Maribor

Medicinska fakulteta
Faculty of Medicine

OPIS PREDMETA / SUBJECT SPECIFICATION	
Predmet:	Kancerogeneza in biologija tumorjev
Subject Title:	Carcinogenesis and tumor biology

Študijski program Study programme	Študijska smer Study field	Letnik Year	Semester Semester
Biomedicinska tehnologija Biomedical technology		2	**3 ali 4**

Univerzitetna koda predmeta / University subject code:

Predavanja Lectures	Seminar Seminar	Sem. vaje Tutorial	Lab. vaje Lab. work	Teren. vaje Field work	Samost. delo Individ. work	ECTS
15	20		10		105	**5**

Nosilec predmeta / Lecturer: Prof. dr. Matjaž Zwitter

Jeziki / Languages:	**Predavanja / Lecture:**	Slovensko in/ali angleško /Slovenian and/or English
	Vaje / Tutorial:	Slovensko in/ali angleško /Slovenian and/or English

Pogoji za vključitev v delo oz. za opravljanje študijskih obveznosti:	**Prerequisites:**
Kandidat mora doseči 300 ECTS na predhodnem študiju.	Graduate degree 300 ECTS

Vsebina:	**Contents (Syllabus outline):**
Uvod: od normalnih tkiv do neoplastičnega procesa Pospeševalni dejavniki kancerogeneze: epidemiologija raka Pospeševalni dejavniki kancerogeneze: spoznanja klinične onkologije Ionizirajoče sevanje in ostali fizikalni dejavniki v kancerogenezi Kemična kancerogeneza Virusna kancerogeneza Genetski dejavniki v kancerogenezi Kemopreventiva raka Tumorska biologija Imunologija raka Invazija in metastaziranje Biologija limfoproliferativnih bolezni Biologija tumorjev epitelnih tkiv Biološke osnove radioterapije Biološke osnove kemoterapije Tarčna biološka zdravila	Introduction: from normal tissue to neoplasia Carcinogenesis, risk factors and cancer epidemiology Carcinogenesis: lessons from clinical oncology Ionising radiation and other physical factors in carcinogenesis Chemocal carcinogenesis Viral carcinogenesis Genetic factors in carcinogenesis Cancer chemoprevention Introduction to tumor biology Cancer immunology Invasion and metastasis Biology of lymphoproliferative disorders Biology of epithelial neoplasia Biological basis of radiotherapy Biological basis of cancer chemotherapy Targeted biological therapy

Temeljni študijski viri / Textbooks:

1. I.F. Tannock, R.P. Hill: The basic science of oncology, 3rd ed. McGraw-Hill, 1998
2. F. Macdonald, C.H.J.Ford, A.G.Casson: Molecular biology of cancer. BIOS Scientific Publishers, 2004
3. R.B. McKinnell, R.E. Parchment, A.O. Perantoni, G.B. Pierce: The biological basis of cancer. Cambridge University Press, Cambridge 1998.
4. G.G. Steel: Basic clinical radiobiology, 3rd ed. Arnold, London 2002

Cilji:	**Objectives:**

Študent bo spoznal: • nastanek raka • heterogenost rakavih bolezni v njihovem nastanku, razvoju, vzorcu širjenja in odzivu na zdravljenje • biološke temelje medicinskih intervencij pri preprečevanju, odkrivanju in zdravljenju rakavih bolezni	The student should understand: • principles of carcinogenesis • heterogeneiety of cancer in its genesis, development, metastatic process and response to treatment • biological foundations of medical interventions in prevention, detection and treatment of cancer
Predvideni študijski rezultati:	**Intended learning outcomes:**
Znanje in razumevanje: Razumevanje biologije, nastanka in razvoja posameznih rakavih bolezni bo študent koristno uporabil pri svojem raziskovalnem delu Prenesljive/ključne spretnosti in drugi atributi: Študent bo svoje znanje prenašal na ostale sodelavce v raziskovalnem timu in jih spodbujal k globjemu razumevanju biologije raka kot nujnega pogoja za uspešnejše obvladovanje raka	Knowledge and Understanding: Understanding of cancer biology and development will be invaluable for practical planning of research in the field of oncology Transferable/Key Skills and other attributes: The student will strive to pass his/her knowledge to other members of the research team and promote deeper understanding of cancer biology as a prerequisite for more efficient cancer control
Metode poučevanja in učenja:	**Learning and teaching methods:**
Predavanja – predvidoma 20 ur Seminarji: študentje pripravijo pregled svojega ožjega področja, s poudarkom na spoznanjih epidemiologije in biologije Seminarske vaje: študentje izdelajo program raziskave s svojega področja	Lectures – approximately 20 hours Seminar: students will prepare a survey from their filed of interest in clinical oncology, with emphasis on cancer epidemiology and biology Tutorials: students will prepare a proposal for research on their field of interest

Načini ocenjevanja:	Delež (v %) / Weight (in %)	**Assessment:**
Način (pisni izpit, ustno izpraševanje, naloge, projekt)		Type (examination, oral, coursework, project):
pisni izpit		written exam
ocena seminarske naloge		seminar
ocena seminarske vaje		tutorial

Materialni pogoji za izvedbo predmeta :	***Material conditions for subject realization***
Računalniška projekcija	Computer projection
Obveznosti študentov:	***Students' commitments:***
(pisni, ustni izpit, naloge, projekti)	*(written, oral examination, coursework, projects):*
Pisni kolokvij Aktivno sodelovanje pri pripravi seminarjev in seminarskih vaj	Written exam Active participation at seminars and in tutorials