



UČNI NAČRT PREDMETA / COURSE SYLLABUS

Ime predmeta:	Onkologija in paliativna medicina
Course title:	Oncology and palliative medicine

Študijski program in stopnja Study programme and cycle	Študijska smer Study option	Letnik Year of study	Semester Semester
Splošna medicina, enovit magistrski študijski program		Peti	9.
General medicine, Uniform master's degree study program		Fifth	9th

Vrsta predmeta (obvezni ali izbirni) /
Course type (compulsory or elective)

obvezni

compulsory

Univerzitetna koda predmeta / University course code:

Predavanja Lectures	Seminar Seminar	Vaje Tutorial			Klinične vaje Clinical training	Druge oblike študija Other forms of study	Samost. delo Individual work	ECTS
30	30	AV	LV	RV	30		90	6

Nosilec predmeta / Course coordinator:

Prof. dr. Marko Hočevar

Doc. dr. Irena Oblak

Jeziki /Languages:

Predavanja / Lectures:

slovenski/slovene

Vaje / Tutorial:

slovenski/slovene

Pogoji za vključitev v delo oz. za opravljanje študijskih obveznosti:

Prerequisites for enrolling in the course or for performing study obligations:

Vsebina (kratek pregled učnega načrta):

Splošna onkologija. Biologija, genetika in patologija raka. Epidemiologija in primarna preventiva rakavih bolezni. Kemopreventiva, presejanje (»screening«) in zgodnje odkrivanje raka, prediagnosticiranje. Mikroskopska verifikacija in zamejitev bolezni. Načela kirurškega, obsevalnega in sistemskega zdravljenja raka. Biološki načini zdravljenja raka. Načela kliničnega raziskovanja v onkologiji. Opredelitev ciljev zdravljenja: ozdravitev, remisija, simptomatsko (paliativno) zdravljenje. Multidisciplinarno odločanje, načela multimodalnega zdravljenja in soodločanje bolnika. Urgentna stanja v onkologiji in zapleti onkološkega zdravljenja. Rehabilitacija in ocenjevanje kvalitete življenja. Načela

Content (syllabus outline):

General oncology: Biology, genetics and pathology of malignant diseases. Epidemiology and primary prevention of cancer diseases. Chemoprevention, screening and early detection of cancer, overdiagnosis. Microscopic verification and staging of the disease. Principles of surgical, radiotherapeutic and systemic treatment of cancer. Treatment of cancer by biological means. The principles of clinical research in oncology. Definition of treatment results, such as cure, remission, symptomatic (palliative) treatment. Multidisciplinary approach in decision making, principles of multimodal treatment and patients cooperation. Urgent situation in oncology and complications during treatment. Rehabilitation and

in praktični napotki za paliativno zdravljenje: zdravljenje bolečine, prehrana, preprosti posegi – razbremenilna plevralna in abdominalna punkcija. Sekundarni maligni tumorji. Alternativne metode zdravljenja v onkologiji.

Specialna onkologija. Karcinom kože in maligni melanom. Rak glave in vratu. Rak ščitnice in drugi tumorji endokrinih žlez. Pljučni rak. Rak požiralnika in želodca. Rak debelega črevesa in danke. Rak jeter in

trebušne slinavke. Rak ledvice in mehurja. Rak prostate. Tumorji testisa. Rak dojke. Rak materničnega vratu, maternice in jajčnikov. Možganski tumorji. Rak neznanega izvora. Levkemije, limfomi in druge mieloproliferativne bolezni. Sarkomi mehkih tkiv in kosti. Otroška onkologija. Rak pri starejših bolnikih.

determination of the quality of life. Principles and practical suggestions for palliative treatment: pain control, diet, simple surgical intervention, e. g. pleural and abdominal fluid evacuation. Secondary malignancies. Alternative methods in oncology.

Special oncology: Skin cancer and malignant melanoma. Head and neck tumors. Thyroid cancer and other malignancies of endocrine glands. Lung cancer.

Oesophageal and gastric carcinomas. Tumors of the colon and anus. Liver and pancreatic tumors. Kidney and urinary bladder cancer. Prostatic and breast cancer. Testicular tumours. Cervical cancer, cancer of the uterus and ovarian cancer. Origo ignota malignancies. Leukemias, lymphomas and other myeloproliferative diseases. Soft tissue and bone sarcomas. Pediatric oncology. Malignancies in elderly people.

Temeljni literatura in viri / Reading materials:

ONKOLOGIJA: UČBENIK ZA ŠTUDENTE MEDICINE

[pdf](#)

elektronska izdaja, 759 str., brezplačna odprtodostopna publikacija

Urednika

prof. dr. Primož Strojani, dr. med.
prof. dr. Marko Hočevar, dr. med.

<https://www.onko-i.si/ucbenik-onkologija>

Cilji in kompetence:

Na osnovi že prej pridobljenega znanja bo študent zgradil okvir za multidisciplinarno delo v onkologiji. Spoznal bo osnovne smernice za diagnostiko rakavih bolezni, zamejevanje bolezni in odločitev o zdravljenju. Obnovil bo načela kirurškega zdravljenja raka, nato pa se bo posebej posvetil osnovam radioterapije, internistične onkologije in načelom kombiniranega multimodalnega zdravljenja. Spoznal bo osnove rehabilitacije in paliativne onkologije.

Objectives and competences:

Based on previous acquired knowledge the undergraduate will be able to form his/her frame for the multidisciplinary approach in oncology. The undergraduates knowledge of basic directive in oncological diagnostics will permit him to assess the degree of disease extension and consequently the appropriate treatment scheme. Based on the acquired knowledge of surgery the candidate will pay particular attention to the treatment with radiotherapy, systemic medical treatment and combined multimodal treatment. Rehabilitation and palliative treatment will be part of the candidates educative programme as well.

Predvideni študijski rezultati:

Znanje in razumevanje:

Po uspešno zaključenem programu bo kandidat sposoben sodelovati v onkoloških strokovnih skupinah, timih, pri diagnosticiranju in zdravljenju bolnikov z rakavo boleznijo. Na osnovi praktičnih izkušenj, ki si jih bo pridobil v bolnišničnem delu, bo kandidat pridobil

Intended learning outcomes:

Knowledge and understanding:

After a successful completion of the programme the candidate will be qualified to collaborate in oncological teams in diagnosing and treatment planning of cancer diseases. Based on candidates practical experience gained during following hospital activity, the candidate will acquire the necessary practical and theoretical

potrebno znanje, ki mu bo v pomoč pri samostojnem delu. Prenesljive/ključne spretnosti in drugi atributi: Na osnovi pridobljenega teoretičnega znanja in praktične izkušnosti se kandidat kvalificira za prenašanje svojega znanja, to je učenja, slušateljem na šolah, kjer je onkologija v programu študija.	knowledge which will enable him/her also for individual activities and responsibilities in cancer hospital. Transferable/Key Skills and other attributes: Based on the acquired theoretical knowledge and practical experience the candidate will qualify as a teacher at schools and courses, where oncology is a regular part of schools teaching programme.
--	--

Metode poučevanja in učenja:

Med te sodijo čelna predavanja, seminarji, klinično delo pri bolnikih in individualna seminarska dela na temah, ki se tičejo tega predmeta

Learning and teaching methods:

Among them are full length lectures, seminars, clinical approach with patients and individual seminars with the presentation and discussion in the class.

Načini ocenjevanja:	Delež (v %) / Share (in %)	Assessment methods:
Način (pisni izpit in/ali ustno izpraševanje, naloge, projekt) Seminarska naloga Ustni izpit Skupna ocena: 91–100 % = odlično (10) 81–90 % = prav dobro (9) 71–80 % = prav dobro (8) 61–70 % = dobro (7) 51–60 % = zadostno (6) ŠTUDIJSKE OBVEZNOSTI ŠTUDENTOV Obvezna 70% prisotnost na predavanjih. 1. Opravljene vaje 2. Opravljen seminar z aktivnim sodelovanjem POGOJI ZA PRISTOP K POSAMEZNEMU PREVERJANJU ZNANJA Opravljene vaje na Onkološkem inštitutu Ljubljana in predstavljen seminar. Temo individualnega seminarja prejmejo študenti na predavanjih.	50 50	Type (examination written and/or oral, coursework, project): Coursework Oral examination Total grade: 91 – 100% = excellent (10) 81 – 90% = very good (9) 71 – 80% = very good (8) 61 – 70% = good (7) 51 – 60% = satisfactory (6) ACADEMIC OBLIGATIONS OF STUDENTS Obligatory 70% attendance at lectures. 1 Completed practice 2 Completed coursework with active cooperation REQUIREMENTS FOR ACCESS TO INDIVIDUAL KNOWLEDGE CHECKING Completed practice at the Institute of Oncology Ljubljana and presented coursework. The theme of an individual coursework is given to students at lectures.

Reference nosilca / Course coordinator's references:

Hočevar Marko 1. CUDERMAN, Anka, ŠENICA, Katra, REP, Sebastijan, HOČEVAR, Marko, KOCJAN, Tomaž, JENSTERLE SEVER, Mojca, ZALETEL, Katja, LEŽAIČ, Luka. [sup]18F-Fluorocholine PET/CT in primary hyperparathyroidism : superior diagnostic performance to conventional scintigraphic imaging for localization of hyperfunctioning parathyroid glands. <i>The Journal of nuclear medicine</i>. [Print ed.]. Apr. 2020, vol. 61, iss. 4, str. 577-583. ISSN 0161-5505. DOI: 10.2967/jnumed.119.229914. [COBISS.SI-ID 34505433], [JCR, SNIP, WoS do 5. 4. 2023: št. citatov (TC): 38, čistih citatov (CI): 37, čistih citatov na avtorja (CIAu): 4,63, Scopus do 7. 4. 2023: št. citatov (TC): 38, čistih citatov (CI): 37, čistih citatov na avtorja (CIAu): 4,63] 2. LANDI, Maria Teresa, BISHOP, David Timothy, MACGREGOR, Stuart, MACHIELA, Mitchell J., STRATIGOS, Alexander J., GHIORZO, Paola, BROSSARD, Myriam, CALISTA, Donato, CHOI, Jiyeon, HOČEVAR, Marko, NOVAKOVIĆ, Srdjan, et al.

Genome-wide association meta-analyses combining multiple risk phenotypes provide insights into the genetic architecture of cutaneous melanoma susceptibility. *Nature genetics*. 2020, vol. 52, no. 5, str. 494-504. ISSN 1061-4036. DOI: [10.1038/s41588-020-0611-8](https://doi.org/10.1038/s41588-020-0611-8). [COBISS.SI-ID [30474755](#)], [JCR, SNIP, WoS do 4. 4. 2023: št. citatov (TC): 71, čistih citatov (CI): 71, čistih citatov na avtorja (CIAu): 3,25, Scopus do 14. 4. 2023: št. citatov (TC): 76, čistih citatov (CI): 76, čistih citatov na avtorja (CIAu): 3,48]

3. GORNJEC, Andreja, NOVAKOVIĆ, Srdjan, STEGEL, Vida, HOČEVAR, Marko, POHAR-MARINŠEK, Živa, GAZIĆ, Barbara, KRAJC, Mateja, ŠKOF, Erik. Cytology material is equivalent to tumor tissue in determining mutations of BRCA 1/2 genes in patients with tubo-ovarian high grade serous carcinoma. *BMC cancer*. 2019, vol. 19, no. 1, str. [1-10]. ISSN 1471-2407. <https://bmccancer.biomedcentral.com/articles/10.1186/s12885-019-5535-2>, DOI: [10.1186/s12885-019-5535-2](https://doi.org/10.1186/s12885-019-5535-2). [COBISS.SI-ID [3228283](#)], [JCR, SNIP, WoS do 24. 2. 2023: št. citatov (TC): 16, čistih citatov (CI): 12, čistih citatov na avtorja (CIAu): 1,50, Scopus do 18. 2. 2023: št. citatov (TC): 16, čistih citatov (CI): 13, čistih citatov na avtorja (CIAu): 1,63]

4. REP, Sebastijan, HOČEVAR, Marko, VAUPOTIČ, Janja, ZDEŠAR, Urban, ZALETEL, Katja, LEŽAIČ, Luka. 1818F-choline PET/CT for parathyroid scintigraphy : significantly lower radiation exposure of patients in comparison to conventional nuclear medicine imaging approaches. *Journal of radiological protection*. Feb. 2018, vol. 38, no. 1, str. 343-356. ISSN 1361-6498. <http://iopscience.iop.org/article/10.1088/1361-6498/aaa86f/meta>, DOI: [10.1088/1361-6498/aaa86f](https://doi.org/10.1088/1361-6498/aaa86f). [COBISS.SI-ID [5427563](#)], [JCR, SNIP, WoS do 4. 4. 2023: št. citatov (TC): 28, čistih citatov (CI): 26, čistih citatov na avtorja (CIAu): 4,33, Scopus do 11. 4. 2023: št. citatov (TC): 31, čistih citatov (CI): 29, čistih citatov na avtorja (CIAu): 4,83]

5. DUFFY, David, et al., NOVAKOVIĆ, Srdjan (927), HOČEVAR, Marko (927), et al. Novel pleiotropic risk loci for melanoma and nevus density implicate multiple biological pathways. *Nature communications*. Nov. 2018, vol. 9, iss. 1. ISSN 2041-1723. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6235897/>, DOI: [10.1038/s41467-018-06649-5](https://doi.org/10.1038/s41467-018-06649-5). [COBISS.SI-ID [3455355](#)], [JCR, SNIP, WoS do 15. 4. 2023: št. citatov (TC): 53, čistih citatov (CI): 51, čistih citatov na avtorja (CIAu): 2,52, Scopus do 16. 4. 2023: št. citatov (TC): 58, čistih citatov (CI): 57, čistih citatov na avtorja (CIAu): 2,82]

Oblak Irena

1. SWEN, Jesse J., WOUTEN, Cathelijne H van der, MARISON, Lianne EN, ABDULLAH-KOOLMEES, Heshu, BLAGEC, Kathrin, BLAGUS, Tanja, BÖHRINGER, Stefan, CAMBON-THOMSEN, Anne, CECCHIN, Erika, DOLŽAN, Vita, et al., PRAZNIK, Monika (927), SLAPŠAK, Urška (927), VONČINA, Blaž (927), RAJTER, Branka (927), ŠKRINJAR, Andrej (927), MARJETIČ ULČAKAR, Angelika (927), ZIDANŠEK, Anja (927), STEGNE IGNJATOVIČ, Tea (927), MAZEJ POREDOŠ, Barbara (927), VIVOD PEČNIK, Živka (927), POPLAS-SUSIČ, Tonka (927), JUTERŠEK, Milojka (927), SKOPORC, Janja (927), KOTAR, Tjaša (927), PETEK ŠTER, Marija (927), DERNOVŠEK, Mojca Zvezdana (927), KLEN, Jasna (927), MLINŠEK, Gregor (927), MIKLAVČIČ, Petra (927), PLEMENITAŠ ILJEŠ, Anja (927), GRAŠIČ-KUHAR, Cvetka (927), OBLAK, Irena (927), STRAŽIŠAR, Branka (927), ŠTRBAC, Danijela (927), MATOS, Erika (927), MENCINGER, Marina (927), VRBNJAK, Marko (927), SAJE, Marko (927), RADOVANOVIČ, Mirjana (927), JERAS, Katja (927), BUKOVEC, Lucija (927), TERZIČ, Tea (927), TSERMPINI, Evangelia Eirini (927), et al. A 12-gene pharmacogenetic panel to prevent adverse drug reactions : an open-label, multicentre, controlled, cluster-randomised crossover implementation study. *The Lancet*. [Print ed.]. 2023, vol. 401, iss. 10374, str. 347-356, ilustr. ISSN 0140-6736. [https://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(22\)01841-4/fulltext](https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(22)01841-4/fulltext), DOI: [10.1016/S0140-6736\(22\)01841-4](https://doi.org/10.1016/S0140-6736(22)01841-4). [COBISS.SI-ID [140605187](#)], [JCR, SNIP, Scopus do 15. 5. 2023: št. citatov (TC): 5, čistih citatov (CI): 5, čistih citatov na avtorja (CIAu): 0,21]

financer: Financer: European Union Horizon 2020; Sofinancerji: UK Medical Research Council (MRC) Clinical Pharmacology Training Scheme (cofunded by MRC, Roche, Union Chimique Belge [UCB] Pharma, Eli Lilly, and Novartis); e UK Engineering and Physical Sciences Research Council and AstraZeneca; UK Pharmacogenetics and Stratified Medicine Network from Bristol Myers Squibb; and human leucocyte antigen genotyping panel with MC Diagnostics; Robert Bosch Stiftung; Novartis, grant, CYP2C9; German Research Foundation (DFG), grant, EXC 2180-390900677, Germany's Excellence Strategy

2. ŽAGAR, Tina, TOMŠIČ, Sonja, ZADNIK, Vesna, BRIC, Nika, BIRK, Mojca, VURZER, Blaž, MIHOR, Ana, LOKAR, Katarina, OBLAK, Irena. Impact of the COVID-19 epidemic on cancer burden and cancer care in Slovenia : a follow-up study. *Radiology and oncology*. [Print ed.]. 2022, vol. 56, no. 4, str. 488-500, ilustr. ISSN 1318-2099.

<https://sciendo.com/article/10.2478/raon-2022-0050>, DOI: 10.2478/raon-2022-0050. [COBISS.SI-ID 135540483], [JCR, SNIP, WoS, Scopus]

3. ORAŽEM, Miha, OBLAK, Irena, ŠPANIĆ, Tanja, RATOŠA, Ivica. Telemedicine in radiation oncology post-COVID-19 pandemic : there is no turning back. *International journal of radiation oncology, biology, physics*. [Print ed.]. 2020, vol. 108, iss. 2, str. 411-415. ISSN 0360-3016.

<https://www.sciencedirect.com/science/article/abs/pii/S0360301620313390?via%3Dihub>, <https://repozitorij.uni-lj.si/lzpisGradiva.php?id=122088&lang=slv>, <https://repozitorij.uni-lj.si/lzpisGradiva.php?id=122088>, DOI: 10.1016/j.ijrobp.2020.06.052. [COBISS.SI-ID 26998531], [JCR, SNIP, WoS do 21. 3. 2023: št. citatov (TC): 13, čistih citatov (CI): 12, čistih citatov na avtorja (CIAu): 3,00, Scopus do 1. 5. 2023: št. citatov (TC): 16, čistih citatov (CI): 16, čistih citatov na avtorja (CIAu): 4,00]

4. ORAŽEM, Miha, OBLAK, Irena, ŠPANIĆ, Tanja, RATOŠA, Ivica. Pogledi bolnikov in onkologov na uvajanje telemedicine v času epidemije covid-19 = Patients' and oncologists' perspectives on telemedicine implementation during COVID-19 epidemic. *Onkologija : strokovni časopis za zdravnike*. [Tiskana izd.]. dec. 2020, letn. 24, št. 2, str. 6-11, ilustr. ISSN 1408-1741. <http://www.dlib.si/details/URN:NBN:SI:doc-LQJBLTLU>, <https://dirros.openscience.si/lzpisGradiva.php?id=13778>, DOI: 10.25670/oi2020-007on. [COBISS.SI-ID 41128963], [WoS]