2026/27

Univerza v Mariboru
Medicinska fakulteta

UČNI NAČRT PREDMETA / SUBJECT SPECIFICATION	
Predmet:	Interna medicina – praktično delo ob bolniku
Subject Title:	Internal medicine - work with patients

Študijski program **Study programme**	**Študijska smer** **Study field**	**Letnik** **Year**	**Semester** **Semester**
Splošna medicina, enovit magistrski študijski program		Šesti	11. in 12.
General medicine, Uniform master's degree study program		Sixth	11th and 12th

Univerzitetna koda predmeta / University subject code:

Predavanja **Lectures**	**Seminar** **Seminar**	**Sem. vaje** **Tutorial**	**Lab. vaje** **Labor work**	**praktikum**	**Samost. delo** **Individ. work**	**ECTS**
				360	240	**20**

Nosilec predmeta / Lecturer:

Red. prof. dr. Radovan Hojs
Red. prof. dr. Ivan Krajnc (sonosilec)

Jeziki / **Languages:**		
	Predavanja / Lecture:	Slovenščina/slovene
	Vaje / Tutorial:	Slovenščina/slovene

Pogoji za vključitev v delo oz. za opravljanje študijskih obveznosti:	**Prerequisites:**
Pogoji za pristop k posameznemu preverjanju znanja -najmanj 80 % udeležba na kliničnih vajah -opravljene in evidentirane vse obveznosti iz kartona vaj - potrjen karton vaj je sestavni del prijavnice k izpitu Pozitivno opravljen pisni izpit je pogoj za pristop k praktičnemu delu in ustnemu teoretičnemu delu. Za pozitivno oceno na pisnem izpitu je treba doseči 11 točk.	Requirements for access to individual knowledge checking: -at least 80% attendance at clinical practice -completed and recorded all obligations from the record of practice -validated record of practice is an integral component of the application form for the exam Positively completed written exam is the condition for access to practical part and oral theoretical part. For a positive mark on the written exam, 11 points need to be achieved.

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Vsebina:	**Content (Syllabus outline):**
Študent dela pod tutorstvom sobnega zdravnika v bolniških sobah. Opravlja pregled bolnika (status) in anamnezo. Sodeluje pri načrtovanju diagnostičnih preiskav, analizi izvidov in pri odločanju o zdravljenju. Študent aktivno sodeluje pri delu diplomiranih medicinskih sester, tako pri odvzemu krvi, dajanju injekcij… Spremlja bolnika na preiskave kot so rentgensko slikanje, invazivne kardiološke in gastroenterološke preiskave itd. Sobni zdravnik in predstojnik oddelka s svojim podpisom zagotavljata, da je opravil vse predvidene posege, ki so določeni v kartonu obveznosti študenta.	The student works under tutor's supervision in clinical wards. He/she performs examinations (clinical status) and establishes the patient's medical history. He/she cooperates in planning diagnostic procedures, analysis of results and subscription of the therapy. The student also actively participates in nurses' practice (taking blood examples, applications of ampoules). He/she accompanies the patient to X-ray and invasive cardiac and gastroenterological examinations etc. The student works in all departments of internal OPC and has to accomplish all scheduled commitments. At the end of practical training the head of the department confirms the student's work with a signature.

Temeljni literatura in viri / Textbooks:

Osnovna literatura:

1. A. Kocijančič: Klinična preiskava. Ljubljana: Littera picta, 2000.
2. Košnik, M., Štajer, D., Jug, B., Kocjan, T., & Koželj, M. (Eds.). (2022). Interna medicina (6. izd.). Medicinska fakulteta; Buča.

Dodatna literatura:

1. Loscalzo J, Fauci A, Kasper D, Hauser S, Longo D, Jameson J.L. Harrison's Principles of Internal Medicine (Vol.1 & Vol. 2). 21st ed. McGraw-Hill Education Ltd, 2022.
2. Feather, A., Randall, D., & Waterhouse, M. (Eds.). (2021). Kumar & Clark's clinical medicine (10th ed.). Elsevier.
3. Recenzirani zborniki srečanj internistov in zdravnikov splošne medicine „Iz prakse za prakso". Od leta 2000- dalje
4. Špela Kosi, Rok Gajšek, Luka Varda, Meta Penko, Tadej Zorman, David Šuran, Tadej Petreski : »*Simulacija akutnega koronarnega sindroma pri predmetu interna medicina«, 2025 (e-gradivo)*

Cilji:	**Objectives:**
Cilji predmeta so priprava študentov na samostojno delo z internističnim bolnikom. Študent mora osvojiti teoretično in praktično način pristopa k bolniku, obvladati mora odnos z njim in s svojci. Znati mora vzeti anamnezo, pregledati bolnika, ovrednotiti diagnostične metode in predlagati ustrezno zdravljenje. Študent bo usposobljen obravnavati bolnika skladno z načeli medicinske etike in deontologije.	The objectives of the subject are preparation of students to independent work with an internist patient. The student has to acquire theoretical and practical modes of approach to the patient, the student has to master the attitude towards the patient and the patient's relatives. The student has to know how to make an anamnesis, examine the patient, evaluate diagnostic methods and suggest appropriate treatment. The student will be qualified to treat a patient in congruence with the principles of medical ethics and deontology.
Predvideni študijski rezultati:	**Intended learning outcomes:**
Študent mora obvladati osnovne metode klinične preiskave, inspekcija, palpacija, perkusija, avskultacija, vzeti anamnezo, določiti splošni klinični status, specialni klinični status, diagnostične in terapevtske metode (glej klinična znanja in metode). Študent mora poznati diagnostične metode: arterijska punkcija, UZ, endoskopija, ledvična ali jetrna biopsija, plevralna punkcija, pregled urinskega sedimenta, pregled krvne slike, scintigrafske preiskave, abdominalna punkcija, venepunkcija, RTG pregled, CT pregled, EMR, alergijski testi, bronhoskopija, kateterizacija srca, pregledi z Dopplerskim UZ srca, EKG,	The student has to master the basic methods of clinical examination, inspection, palpation, percussion, auscultation, taking anamnesis, determine general clinical status, special clinical status, diagnostic and therapeutic methods (see clinical knowledge and methods). The student has to be acquainted with the diagnostic methods: arterial puncture, ultrasound, endoscopy, renal or liver biopsy, pleural puncture, examination of urinary sediment, complete blood count, scintigraphic examinations, abdominal puncture, venipuncture, Roentgen examination, CT scan, endoscopic mucosal resection, allergy tests, bronchoscopy, cardiac

obremenilni testi za srce, Holter-monitoring, punkcija sklepov, pljučni funkcijski testi.	catheterization, cardiac examination with Doppler ultrasound, ECG, stress tests, Holter monitoring, joint puncture, pulmonary functional tests.
Metode poučevanja in učenja:	**Learning and teaching methods:**
Praktično klinično delo **Naloge študenta:** Skrbi za bolnike na najmanj treh (3) posteljah, od sprejema do odpusta: - anamneze; - jutranji orientacijski obiski pacientov z merjenji RR in poročanjem mentorju; - fizikalni pregledi; - poročanje o bolnikih na vizitah; - predlog načrta preiskav (načela racionalne diagnostike) in terapije; - posegi (glej karton za spremljanje praktikuma); - sodelovanje pri pogovorih s svojci; - koncepti epikriz in zaključkov. Študent sprejema (napravi anamnezo in klinični pregled) na oddelek oz. kliniko tudi novo prispele bolnike, ki jih kasneje ne vodi več. S pogojem, da ni motena kontinuiteta dela v bolniških sobah, se lahko študent pridruži svojemu mentorju tudi pri drugih opravilih (npr. v ambulanti). **Evidenco** o opravljenem delu (karton, beležka) študenti predložijo glavnemu mentorju po končanih vajah. Znanje in napredovanje študentov se preverja sprotno. **Oblike skupinskega izpopolnjevanja**: - redni strokovni sestanki na kliniki; - posebej za študente organizirane oblike: klinični seminarji s prikazom zanimivih bolnikov, osnove EKG, tečaji iz TPO, dializnega zdravljenja, endoskopij itd. Vsak študent pripravi en (1) **seminar** iz klinične kazuistike ali literature. P**riporočena opravila**, ki naj bi jih študent opravljal med delom na oddelku: - odvzemi venske in arterijske krvi, različne oblike parenteralnih aplikacij (s.c., i.m., i.v.); - uvajanje venskih katetrov (brahialnih); - kateterizacija sečnega mehurja; - uvajanje želodčne sonde; - makroskopska ocena sputuma; - torakalne in abdominalne punkcije; - intubacija (v sklopu reanimacijskega tečaja oz. tečaja TPO); - snemanje EKG; - bronhialna toaleta; - meritve funkcije pljuč	Practical clinical work Tasks of the student: takes care of the patients on at least three hospital beds, from hospital admission until release of the patient from hospital: anamneses; morning orientational visits of patients with RR (recovery room) measurements and reporting to the mentor; physical examinations; reporting about patients at visitations; suggestion of the plan of examinations (principles of rational diagnostics) and therapy; interventions (see medical record for monitoring practical training); cooperation in conversations with relatives; concepts of epicrises and conclusions. The student admits (makes the anamnesis and clinical examination) to the ward or clinic also newly arrived patients who are later no longer under the student's care. Provided that continuity of work in hospital rooms is not disturbed, the student can join his/her mentor also in other jobs (e.g. in an outpatients' clinic). A record of completed work (medical record, notebook) is submitted by students to the main mentor after the finished practical work. Knowledge and progress of students is checked regularly. Forms of group training: regular professional meetings at the clinic; specially organized forms for the students: clinical seminars with the presentation of interesting patients, ECG basics, courses in CPR, dialytic treatment, endoscopies etc. Each student prepares one seminar from clinical casuistry or literature. Recommended jobs which the student should do during his/her work at the ward: taking of venous and arterial blood, various forms of parenteral applications (subcutaneous injection, intracutaneous or intradermal injection, intramuscular injection, intravenous injection); introduction of venous catheters (brachial); catheterization of the bladder; introducing of the gastric probe; macroscopic evaluation of sputum; thoracic and abdominal punctures; intubation (within the resuscitation course or CPR course); recording of ECG;

	bronchial toilet; measurements of pulmonary function

Načini ocenjevanja:	Delež (v %) / Weight (in %)	**Assessment:**
- pisni izpit - praktični izpit - ustni izpit	30 % 20 % 50 %	- written exam - Practical exam - Oral exam
Opombe: Oblike in način preverjanja in ocenjevanja znanja -sprotno preverjanje znanja ob bolniku -pisni izpit - 5 vprašanj esejskega tipa, ovrednotena s po 4 točkami; - praktični izpit (pregled bolnika) - ustni izpit Ocenjevalna lestvica pri pisnem, praktičnem in ustnem izpitu 56 % do 65 % - 6 66 % do 75 % - 7 76 % do 85 % - 8 86 % do 95 % - 9 96 % do 100 % - 10 Če študent ne opravi ustnega izpita, ponavlja izpit v celoti (tudi pisni izpit in praktični izpit ob bolniku).		Notes: Forms and mode of checking and assessing knowledge: regular knowledge checking by the patient's side written exam – 5 essay-type questions, evaluated with 4 points each; - practical exam (examination of the patient) - oral exam Grading scale in written, practical, andoral exam 56% to 65% - 6 66% to 75% - 7 76% to 85% - 8 86% to 95% - 9 96% to 100% - 10 In case a student fails the oral exam, he/she takes the exam again entirely (including written exam and practical exam)

Reference nosilca / Lecturer's references:

IVAN KRAJNC:

1. ŽITEK, Taja, BJELIĆ, Dragana, KOTNIK, Petra, GOLLE, Andrej, JURGEC, Staša, POTOČNIK, Uroš, KNEZ, Željko, FINŠGAR, Matjaž, KRAJNC, Ivan, KRAJNC, Igor, KNEZ MAREVCI, Maša. Natural hemp-ginger extract and its biological and therapeutic efficacy. Molecules. 2022, vol. 27, iss. 22, 16 str., ilustr. ISSN 1420-3049. DOI: 10.3390/molecules27227694. [COBISS.SI-ID 129523715], [JCR, SNIP, WoS do 12. 2. 2023: št. citatov (TC): 1, čistih citatov (CI): 1, čistih citatov na avtorja (CIAu): 0,10, Scopus do 6. 2. 2023: št. citatov (TC): 1, čistih citatov (CI): 1, čistih citatov na avtorja (CIAu): 0,10]
2. KRAJNC, Mitja, PEČOVNIK-BALON, Breda, KRAJNC, Ivan. Non-traditional risk factors for coronary calcification and its progression in patients with type 2 diabetes : the impact of postprandial glycemia and fetuin-A. JIMR online. 2019, vol. 47, iss. 2, str. 846-858, ilustr. ISSN 1473-2300. https://journals.sagepub.com/doi/pdf/10.1177/0300060518814080, DOI: 10.1177/0300060518814080. [COBISS.SI-ID 6578239], [JCR, SNIP, WoS do 25. 2. 2021: št. citatov (TC): 3, čistih citatov (CI): 3, čistih citatov na avtorja (CIAu): 1,00, Scopus do 28. 2. 2021: št. citatov (TC): 3, čistih citatov (CI): 3, čistih citatov na avtorja (CIAu): 1,00]
3. KRAJNC, Ivan. Pogled v zgodovino ustanovitve Medicinske fakultete Univerze v Mariboru leta 2003 in pogled na njen nadaljnji strokovni razvoj do junija 2020. V: KRAJNC, Ivan (ur.), PIVEC, Gregor (ur.). Medicinska fakulteta Univerze v Mariboru : monografija o ustanovitvi. 1. izd. Maribor: Univerzitetna založba: = University Press, 2022. Str. 105-144, ilustr. ISBN 978-961-286-682-2. [COBISS.SI-ID 145113603]

4. KRAJNC, Ivan, TAKAČ, Iztok, MIČETIĆ-TURK, Dušanka, BORKO, Elko. Strokovni temelji za nastanek Medicinske fakultete Univerze v Mariboru in statutarne spremembe učne bolnišnice Maribor v Univerzitetni klinični center Maribor. V: KRAJNC, Ivan (ur.), PIVEC, Gregor (ur.). Medicinska fakulteta Univerze v Mariboru : monografija o ustanovitvi. 1. izd. Maribor: Univerzitetna založba: = University Press, 2022. Str. 7-102, ilustr. ISBN 978-961-286-682-2. [COBISS.SI-ID 145110275]
5. MAVER, Uroš, KRAJNC, Ivan. Prihodnji izzivi Medicinske fakultete - pogled skozi prizmo raziskovalnega dela in projektov. V: KRAJNC, Ivan (ur.), PIVEC, Gregor (ur.). Medicinska fakulteta Univerze v Mariboru : monografija o ustanovitvi. 1. izd. Maribor: Univerzitetna založba: = University Press, 2022. Str. 331-339, ilustr. ISBN 978-961-286-682-2. [COBISS.SI-ID 145125379]

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1. Physicians' responsibility toward environmental degradation and climate change: A position paper of the European Federation of Internal Medicine. Campos L, Barreto JV, Bassetti S, Bivol M, Burbridge A, Castellino P, Correia JA, Durusu-Tanriöver M, Fierbinteanu-Braticevici C, Hanslik T, Heleniak Z, Hojs R, Lazebnic L, Mylona M, Raspe M, Melo JQE, Pietrantonio F, Gans R, Pálsson R, Montano N, Gómez-Huelgas R, Dicker D. Eur J Intern Med. 2022 Oct;104:55-58. doi: 10.1016/j.ejim.2022.08.001. Epub 2022 Aug 31. PMID: 36055953
2. The Role of Vascular Lesions in Diabetes Across a Spectrum of Clinical Kidney Disease. Rodríguez-Rodríguez R, Hojs R, Trevisani F, Morales E, Fernández G, Bevc S, Cases Corona CM, Cruzado JM, Quero M, Navarro Díaz M, Bettiga A, Di Marco F, López Martínez M, Moreso F, García Garro C, Khazim K, Ghanem F, Praga M, Ibernón M, Laranjinha I, Mendonça L, Bigotte Vieira M, Hornum M, Feldt-Rasmussen B, Fernández-Fernández B, Concepción PF, Negrín Mena N, Ortiz A, Porrini E; DIABESITY working group of the ERA. Kidney Int Rep. 2021 Jun 12;6(9):2392-2403. doi: 10.1016/j.ekir.2021.06.001. eCollection 2021 Sep. PMID: 34514200 Free PMC article.
3. A randomized multicenter trial on a lung ultrasound-guided treatment strategy in patients on chronic hemodialysis with high cardiovascular risk. Zoccali C, Torino C, Mallamaci F, Sarafidis P, Papagianni A, Ekart R, Hojs R, Klinger M, Letachowicz K, Fliser D, Seiler-Mußler S, Lizzi F, Wiecek A, Miskiewicz A, Siamopoulos K, Balafa O, Slotki I, Shavit L, Stavroulopoulos A, Covic A, Siriopol D, Massy ZA, Seidowsky A, Battaglia Y, Martinez-Castelao A, Polo-Torcal C, Coudert-Krier MJ, Rossignol P, Fiaccadori E, Regolisti G, Hannedouche T, Bachelet T, Jager KJ, Dekker FW, Tripepi R, Tripepi G, Gargani L, Sicari R, Picano E, London GM. Kidney Int. 2021 Dec;100(6):1325-1333. doi: 10.1016/j.kint.2021.07.024. Epub 2021 Aug 19.PMID: 34418415 Clinical Trial.
4. Diabetic patients with chronic kidney disease: Non-invasive assessment of cardiovascular risk. Piko N, Bevc S, Ekart R, Petreski T, Vodošek Hojs N, Hojs R. World J Diabetes. 2021 Jul 15;12(7):975-996. doi: 10.4239/wjd.v12.i7.975. PMID: 34326949 Free PMC article. Review.
5. Mineralocorticoid Receptor Antagonists in Diabetic Kidney Disease. Vodošek Hojs N, Bevc S, Ekart R, Piko N, Petreski T, Hojs R. Pharmaceuticals (Basel). 2021 Jun 11;14(6):561. doi: 10.3390/ph14060561. PMID: 34208285 Free PMC article. Review.
6. CHA2DS2-VASc Score as a Predictor of Cardiovascular and All-Cause Mortality in Chronic Kidney Disease Patients. Vodošek Hojs N, Ekart R, Bevc S, Piko N, Hojs R. Am J Nephrol. 2021;52(5):404-411. doi: 10.1159/000516121. Epub 2021 May 11. PMID: 33975308
7. Subclinical atherosclerosis in patients with relapsing-remitting multiple sclerosis. Omerzu T, Magdič J, Hojs R, Potočnik U, Gorenjak M, Fabjan TH. Wien Klin Wochenschr. 2021 Apr 26. doi: 10.1007/s00508-021-01862-7. Online ahead of print. PMID: 33903956
8. Oxidative Stress Markers in Chronic Kidney Disease with Emphasis on Diabetic Nephropathy. Vodošek Hojs N, Bevc S, Ekart R, Hojs R. Antioxidants (Basel). 2020 Sep 27;9(10):925. doi: 10.3390/antiox9100925. PMID: 32992565 Free PMC article. Review.
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