2026/2027

Univerza v Mariboru
Medicinska fakulteta

UČNI NAČRT PREDMETA / COURSE SYLLABUS	
Ime predmeta:	**Z dokazi podprta medicina**
Course title:	**Evidence based 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		Drugi	3.
General medicine, Uniform master's degree study program		Second	3rd

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
		15						
15	15	**AV**	**LV**	**RV**			75	4

Nosilec predmeta / Course coordinator:	doc. dr. Marko Milojević izr. prof. dr. Eva Turk
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:**
Znanja iz predkliničnih predmetov in informatike. OBVEZNOSTI ŠTUDENTOV**:** - obvezna prisotnost na vajah (100 %) in seminarjih (80 %) - opravljene vaje in seminarji - seminarska naloga (priprava kratkega poročila na podlagi PICO vprašanj) - sodelovanje pri pedagoškem procesu POGOJI ZA PRISTOP K POSAMEZNEMU PREVERJANJU ZNANJA: Opravljene vaje in seminarji so pogoj za pristop k pisnemu izpitu.	Knowledge from preclinical subjects and informatics. STUDENT'S COMMITMENTS: - obligatory attendance at laboratory work (100 %) and seminars (80 %) - completed laboratory work and seminars - seminar paper (a short report on PICO questions) - in-class participation REQUIREMENTS FOR ACCESS TO INDIVIDUAL KNOWLEDGE CHECKING: Completed laboratory work and coursework are required for access to the written exam.

Vsebina (kratek pregled učnega načrta):

Predavanja:

- Kaj je z dokazi podprta medicina (praksa)?
  - Zgodovina
  - Najzaslužnejše osebe za razvoj z dokazi podprte medicine
  - Časovni potek razvoja in integracija v medicino
  - Analogija z drugimi področji
  - Pristopi integracije po svetu
  - Podatkovne baze, sistematični pregledi in drugi pristopi sinteze znanja– osnove
- Kritična presoja obstoječih podatkov kot osnovno orodje načrtovanja v predkliničnih raziskavah in klinični praksi

Seminarji:

Uvod v EBM

- Ključna vprašanja glede EBM–PICO naloge?
- Oblikovanje raziskave/projekta?
- Kritičen pregled raziskav
- Osnove merjenja v medicini: veljavnost, točnost, natančnost in zanesljivost
- Diagnostika in testiranje hipotez

Vrste študij

- Kvalitativno raziskovanje
- Kvantitativno raziskovanje
- Opazovalne študije
- Randomizirane klinične študije
- Prikazov primera
- Hierarhičnost dokazov
- Drugo

Kako iskati literaturo – baze podatkov?

Kaj je učinkovito zdravljenje?

- Sistematični pregled literature
- Kdaj narediti sistematični pregled literature?
- Ocenjevanje kvalitete metodologije sistematičnih pregledov
- Meta analize

Kako napisati članek?

Kako kritično prebrati članek?

Ali lahko verjamemo kliničnim smernicam?

- Ravnovesje med koristmi in škodo smernic

Na dokazih podprta klinična praksa

Content (syllabus outline):

Lectures:

- What is Evidence based medicine (practice)?
  - History
  - Crucial people for development of EBM
  - Timeline and integration in medicine
  - Analogy with other fields
  - Approaches around the world
  - Databases, systematic literature reviews and other approaches to knowledge synthesis- basics
- Critical appraisal of information as the core tool to research development in pre- and clinical practice

Seminars:

Introduction to EBM

- Key questions in EBM- PICO tasks?
- Project/research development
- Critical appraisal of studies
- Basics of measurement in medicine: validity, accuracy, precision, reliability
- Diagnostics and hypothesis testing

Types of studies:

- Qualitative research
- Quantitative research
- Observational studies
- RCTs
- Case studies
- Hierarchy of evidence
- Drugo

Literature search - data bases?

What is efficient/effective treatment?

- Systematic literature review
- When do we need a systematic literature review?
- Appraisal of methodological quality
- Meta analyses

How a write a paper?

Hot to critically read a paper?

Can we trust clinical guidelines?

- What is the balance between benefits and disadvantages?

EBM in clinical practice

Temeljni literatura in viri / Reading materials:

Obvezna literatura

- Guyatt G, Rennie D, Meade MO, Cook DJ: User's Guides to the Medical Literature – A manual for evidence-based clinical practice, 3rd edition. JAMAevidence, McGraw Hill Education, 2015 (ali novejša izdaja).
- Higgins JPT, Thomas J, Chandler J, Cumpston M, Li T, Page MJ, Welch VA (editors). *Cochrane Handbook for Systematic Reviews of Interventions*. 2nd Edition. Chichester (UK): John Wiley & Sons, 2019.
- ŠIKIĆ POGAČAR, Maja, MILOJEVIĆ, Marko, TEMENT, Matic, TURK, Eva, MAVER, Tina, MAVER, Uroš, MIČETIĆ-TURK, Dušanka. *Navodila za vaje pri predmetu Na dokazih podprta medicina : vaje 1-5 : e-gradivo pri*

predmetu Na dokazih podprta medicina. Maribor: [s. n.], 2019. 1 spletni vir (1 datoteka PDF (34 str.)), ilustr. https://estudij.um.si/mod/resource/view.php?id=244011. [COBISS.SI-ID 36273667]

Dodatna literatura

- Cochrane Collaboration: http://www.cochrane.org
- Higgins JPT, Thomas J, Chandler J, Cumpston M, Li T, Page MJ, Welch VA (editors). *Cochrane Handbook for Systematic Reviews of Interventions* version 6.3 (updated February 2022). Cochrane, 2022. Available from www.training.cochrane.org/handbook.
- Hamer, Susan, and Gill Collinson. Achieving evidence-based practice: A handbook for practitioners. Elsevier Health Sciences, 2014.
- Fijan, S.; Kolč, N.; Hrašovec, M.; Jamtvedt, G.; Pogačar, M.Š.; Mičetić Turk, D.; Maver, U. Single-Strain Probiotic Lactobacilli for the Treatment of Atopic Dermatitis in Children: A Systematic Review and Meta-Analysis. Pharmaceutics 2023, 15, 1256. https://doi.org/10.3390/pharmaceutics15041256
- Gough, D., Davies, P., Jamtvedt, G. et al. Evidence Synthesis International (ESI): Position Statement. Syst Rev 9, 155 (2020). https://doi.org/10.1186/s13643-020-01415-5
- Ormstad, H., Jamtvedt, G., Svege, I. et al. The Bridge Building Model: connecting evidence-based practice, evidence-based research, public involvement and needs led research. Res Involv Engagem 7, 77 (2021). https://doi.org/10.1186/s40900-021-00320-y
- Lund, H., Robinson, K.A., Gjerland, A. et al. Meta-research evaluating redundancy and use of systematic reviews when planning new studies in health research: a scoping review. Syst Rev 11, 241 (2022). https://doi.org/10.1186/s13643-022-02096-y
- Oxman M, Habib L, Jamtvedt G, et alUsing claims in the media to teach essential concepts for evidence-based healthcareBMJ Evidence-Based Medicine 2021;26:234-236.

Cilji in kompetence:

- spoznati osnove »z dokazi podprte medicine«
- pridobiti pregledno znanje iz kritičnega vrednotenja obstoječih podatkov
- sistematično načrtovanje z dokazi podrtih predkliničnih in kliničnih raziskav
- sistematično načrtovanje pristopov v klinični praksi
- osvojiti podlago za na dokazih temelječe sprejemanje kliničnih odločitev

Objectives and competences:

- learn the basics about »evidence based medicine«
- obtain basic knowledge of critical available data appraisal
- systematic planning of evidence based preclinical and clinical studies
- systematic planning of clinical procedures and practice
- obtain the basis for evidence based clinical decision making

Predvideni študijski rezultati:

Znanje in razumevanje:

- spoznati osnove »z dokazi podprte medicine«
- pridobiti pregledno znanje kritičnega vrednotenja obstoječih podatkov
- sistematično načrtovanje z dokazi podrtih predkliničnih in kliničnih raziskav
- sistematično načrtovanje pristopov v klinični praksi
- osvojiti podlago za na dokazih temelječe sprejemanje kliničnih odločitev

Prenesljive/ključne spretnosti in drugi atributi:

- osnove z dokazi podprte medicine
- priprava in uporaba sistematičnega pregleda

Intended learning outcomes:

The students gain fundamental knowledge on:

- learn the basics about »evidence based medicine«
- obtain basic knowledge of critical available data appraisal
- systematic planning of evidence based preclinical and clinical studies
- systematic planning of clinical procedures and practice
- obtain the basis for evidence based clinical decision making

Transferable/Key Skills and other attributes:

- basics in evidence based medicine
- preparation and use of systematic reviewing
- systematic planning of studies and use in practice

- sistematično načrtovanje raziskav in uporaba v praksi	

Metode poučevanja in učenja:	**Learning and teaching methods:**
Predavanja, seminarji, vaje.	Classroom lectures, seminars, tutorials.

Načini ocenjevanja:	Delež (v %) / Share (in %)	**Assessment methods:**
Način (pisni izpit, ustno izpraševanje, naloge, projekt): • pisni izpit	**100**	Type (examination, oral, coursework, project): • written exam

Reference nosilca / Course coordinator's references:

EVA TURK:

1. HAN, Emeline, TAN, Melisa Mei Jin, **TURK, Eva,** SRIDHAR, Devi, LEUNG, Gabriel M, SHIBUYA, Kenji, ASGARI, Nima, OH, Juhwan, GARCÍA-BASTEIRO, Alberto L, HANEFELD, Johanna, et al. Lessons learnt from easing COVID-19 restrictions : an analysis of countries and regions in Asia Pacific and Europe. *The Lancet*. [Online ed.]. 2020, vol. 396, iss. 10261, str. 1525-1534. ISSN 1474-
2. **TURK, Eva**, DURRANCE-BAGALE, Anna, HAN, Emeline, BELL, Sadie, RAJAN, Selina, LOTA, Maria Margarita M, OCHU, Chinwe, LAZO PORRAS, Maria, MISHRA, Pallavi, FRUMENCE, Gasto, MCKEE, Martin, LEGIDO-QUIGLEY, Helena. International experiences with co-production and people centredness offer lessons for covid-19 responses. *BMJ*. 2021, vol. 372, str. 1-4. ISSN 1756-1833.
3. **TURK, Eva**, WONTOR, Viola, VERA-MUÑOZ, Cecilia, COMNES, Lucia, RODRIGUES, Natercia, FERRARI, Giovanna, MOEN, Anne. Human-centered integrated care pathways for co-creating a digital, user-centric health information solution. *Journal of integrated care*. 2022, vol. 30, no. 4, str. 296-309, ilustr. ISSN 2042-8685
4. HALDANE, Victoria, JUNG, Anne-Sophie, FOO, Chuan De, SHRESTHA, Pami, URDANETA, Elena, **TURK, Eva,** GAVIRIA, Juan I, BOADAS, Jesus, BUSE, Kent, MIRANDA, J Jaime, et al. Integrating HIV and substance misuse services: a person-centred approach grounded in human rights. *The Lancet. Psychiatry*. Aug. 2022, vol. 9, no. 8, str. 676-688. ISSN 2215-0374
5. BATTELINO, Ula Magdalena, **TURK, Eva**. Vpliv pandemije covida-19 na vključevanje telemedicine v zdravstveni sistem: dejavniki, ki so to omogočili in kako lahko telemedicina koristi zdravstvu tudi po koncu pandemije = How did COVID – 19 help implement telemedicine in health care: what were the factors that made it possible and how can we use telemedicine to our advantage after the pandemic is over. *Zdravniški vestnik : glasilo Slovenskega zdravniškega društva*. [Spletna izd.]. 2022, letn. 91, št. 11-12, str. 525-533. ISSN 1581-0224.
6. PREVOLNIK RUPEL, Valentina, DIVJAK, Marko, **TURK, Eva**. Changes in the level of knowledge of diabetes among elderly with diabetes in Slovenia in the period 2011-2020. *Primary care diabetes*. [in press] 2021, 5 str., tabela, graf. prikazi. ISSN 1751-9918.
7. **TURK, Eva,** MIČETIĆ-TURK, Dušanka, ŠIKIĆ POGAČAR, Maja, TAPAJNER, Alojz, VLAISAVLJEVIĆ, Veljko, PREVOLNIK RUPEL, Valentina. Health related QoL in celiac disease patients in Slovenia. *Health and quality of life outcomes*. 2020, vol. 18, art. no. 356, 6 str., tabele. ISSN 1477-7525.

MARKO MILOJEVIĆ:

1. VAJDA, Jernej, BJELIĆ, Dragana, VIHAR, Boštjan, VESENJAK, Matej, DOBNIK-DUBROVSKI, Polona, GRADIŠNIK, Lidija, BELAK, Monika, MAVER, Uroš, **MILOJEVIĆ, Marko**. 3D printed fibroblast-laden alginate-cellulose scaffolds support extracellular matrix formation and angiogenic growth factor secretion. International journal of biological macromolecules. 2025, vol. 332, part 2, [art. no.] 148701, str. 1-17. .
2. VAJDA, Jernej, VIHAR, Boštjan, **MILOJEVIĆ, Marko**, BJELIĆ, Dragana, BREČKO, Amadeja, MAVER, Uroš. Substrate-dependent variability in viability and angiogenicmarker expression among three endothelial cell subtypes : insights for artificial tissue vascularization. Macromolecular bioscience. [Print ed.]. Jul. 2025, vol. 25, iss. 7, str. 1-18.
3. VAJDA, Jernej, VIHAR, Boštjan, ČINČ ĆURIĆ, Laura, MAVER, Uroš, VESENJAK, Matej, DOBNIK-DUBROVSKI, Polona, **MILOJEVIĆ, Marko**. Sr2+vs.Ca2+ as post-processing ionic crosslinkers: implications for 3D bioprinting of

polysaccharide hydrogels in tissue engineering. Journal of materials research and technology. [Spletna izd.]. March-April 2023, vol. 23, str. 1805-1820157-168.

4. VAJDA, Jernej, BANOVIĆ, Luka, MIŠKO, Mihael, DRSTVENŠEK, Igor, **MILOJEVIĆ, Marko**, MAVER, Uroš, VIHAR, Boštjan. Algorithmic linearization improves Syringe-based extrusion in elastic systems using Hydrogel-based materials. Materials & design. May 2023, vol. 229, [article no.] 111884, 13 str. ISSN 0264-1275