



Univerza v Mariboru

Medicinska fakulteta

**UČNI NAČRT PREDMETA / COURSE SYLLABUS**

<b>Ime predmeta:</b>	Klinična farmakologija
<b>Course title:</b>	Clinical Pharmacology

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

<b>Vrsta predmeta (obvezni ali izbirni) / Course type (compulsory or elective)</b>	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	30	AV LV RV			45	3

**Nosilec predmeta / Course coordinator:**

**Jeziki /Languages:** **Predavanja / Lectures:**   
**Vaje / Tutorial:**

**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):**

- zakon in predpisi v zvezi z zdravili v Sloveniji;
- razvojna pot zdravila in klinične raziskave;
- klinično farmakodinamika in farmakokinetika;
- socialna farmakologija in farmakoekonomika;

**Content (syllabus outline):**

- Slovenian law and regulation of drug usage;
- development of drug and clinical research;
- clinical pharmacodynamics and pharmacokinetics;
- social pharmacology and pharmacoconomics;

- stranski učinki zdravil in interakcije med zdravili;
- racionalna raba antibiotikov;
- zdravila v nosečnosti in med dojenjem;
- farmakoterapija pri otroku in mladostniku;
- farmakoterapija v starosti;
- farmakoterapija pri hudih boleznih jeter;
- farmakoterapija pri hudo zmanjšani funkciji jeter in ledvic;
- etika v klinični farmakologiji;
- osnove predpisovanja zdravil, režim hranjenja in izdajanja;
- farmakoterapija arterijske hipertenzije;
- zdravljenje popuščanja srca;
- farmakoterapija bolečine;
- farmakoterapija anksioznosti in depresije;
- preprečevanje bolezni srca in žilja z zdravili;
- farmakoterapija ulkusne in refluksne bolezni;
- farmakoterapija hemostaze in anemij;
- klinični pregled antibiotikov po skupinah;
- farmakoterapija osteoporoze;
- farmakoterapija najpogostejših virusnih infekcij;
- farmakoterapija angine pectoris in miokardnega infarkta;
- farmakoterapija kronične obstruktivne bolezni pljuč;
- antibiotično zdravljenje bakterijskih infekcij na spodnjih dihalih;
- nemedicinska uporaba zdravil in kemijskih učinkovin.

- adverse effects of drugs and drug interactions;
- rational use of antibiotics;
- drugs during pregnancy and lactation;
- pharmacotherapy in children and teenagers;
- pharmacotherapy in geriatrics;
- pharmacotherapy in severe liver diseases;
- pharmacotherapy in renal failure
- ethics in pharmacotherapy;
- drug prescription and distribution;
- pharmacotherapy of arterial hypertension;
- management of heart failure;
- pharmacotherapy of pain;
- pharmacotherapy of anxiety and depression;
- prevention of cardiovascular diseases;
- pharmacotherapy of ulcer and reflux diseases;
- pharmacotherapy of coagulation and anemia;
- overview of antibiotic groups;
- pharmacotherapy of osteoporosis;
- pharmacotherapy of viral diseases;
- pharmacotherapy of angina pectoris and myocardial infarction;
- pharmacotherapy of chronic obstructive pulmonary disease;
- antibiotic treatment of lower respiratory tract infections;
- nonmedical use of drugs and chemical substances.

### Temeljni literatura in viri / Reading materials:

- JT Dipiro et all (eds). Pharmacotherapy, A Pathophysiologic Approach 7th ed. Mc Graw-Hill; 2008.
- SG Carruthers et all (eds). Clinical Pharmacology 4th ed. Mc Graw-Hill 2000.
- Bennett PN, Brown MJ (eds). Clinical pharmacology. 10 th ed. Edinburgh: Churchill Livingstone; 2008.
- Francetić I, Vitezić D (eds). Osnove kliničke farmakologije. Zagreb: Medicinska naklada; 2007.
- LL Brunton et all (eds). The Pharmacological Basis of Therapeutics. 12 th ed. Mc Graw-Hill; 2011.

Dodatna literatura

Drinovec J. Klinična farmakologija. Zdrav Vestn 2006; 75: 483-489.

### Cilji in kompetence:

Poznavanje predpisov farmakoterapije in kliničnega preizkušanja zdravil v Sloveniji. Študentje bodo poznali osnovne principe farmakoterapije najpogostejših bolezni v skladu s principi na izsledkih temelječe farmakoterapije. Znali bodo predpisovati zdravila, skladno s strokovno doktrino in predpisi.

### Objectives and competences:

Knowledge of Slovenian regulations on pharmacotherapy and clinical studies with drugs. Students will be able to use principles of pharmacotherapy in most frequent diseases according to evidence based pharmacotherapy. Students will be able to prescribe drugs in accordance with scientific principles and regulations.

**Predvideni študijski rezultati:****Znanje in razumevanje:**

Znali bodo uporabljati zdravila pri najpogostejših bolezenskih stanjih v ambulantni in med hospitalizacijo. Razumeli bodo mehanizme delovanja zdravil in razmerje med njihovo učinkovitostjo in varnostjo.

**Prenesljive/ključne spretnosti in drugi atributi:**

Obvladali bodo osnove na izsledkih temelječe farmakoterapije in poznali mednarodne in domače smernice za najpogostejše bolezni.

**Metode poučevanja in učenja:****Predavanja:**

Splošna poglavja z navodili za pripravo seminarjev in individualno delo.

**Seminarji:**

Posebna poglavja farmakoterapije v različnih starostnih in življenjskih obdobjih ter ob najpogostejših bolezenskih stanjih.

**Konzultacije:**

Priprava seminarjev in drugo.  
Individualno delo.

**Intended learning outcomes:****Knowledge and Understanding:**

They will be able to use drugs in most frequent diseases among out-patients and during hospitalization. They will understand mechanisms of the drugs and relation between their effectiveness and safety.

**Transferable/Key Skills and other attributes:**

They will use principles of evidence based pharmacotherapy and they will know international and Slovene guidelines for the most frequent diseases.

**Learning and teaching methods:****Lectures:**

General topics with instructions for seminars and individual work.

**Seminars:**

Special topics of pharmacotherapy in different periods of age and life and during the most frequent diseases.

**Consultations:**

Preparing seminars etc.  
Individual work.

Delež (v %) /

**Načini ocenjevanja:**

Share (in %)

**Assessment methods:**

Opravljen seminar	<b>25 %</b>	Approved seminar
Pisni izpit	<b>40 %</b>	Written examination
Ustni izpit	<b>35 %</b>	Oral examination
<b>POGOJ ZA PRISTOP K IZPITU:</b> Opravljen seminar je pogoj za pristop k pisnemu izpitu. Opravljen pisni izpit je pogoj za pristop k ustnem izpitu.		<b>REQUIREMENTS FOR ACCESS TO INDIVIDUAL KNOWLEDGE CHECKING:</b> Eligible to enter written examination after completion of seminar. Eligible to enter oral examination after completion of written examination.

**Reference nosilca / Course coordinator's references:**

1. BEVC, Sebastjan, VODOŠEK HOJS, Nina, KNEHTL, Maša, EKART, Robert, HOJS, Radovan. Cystatin C as a predictor of mortality in elderly patients with chronic kidney disease. *The aging male*. 2019, vol. 22, no. 1, str. 62-67. ISSN 1473-0790.  
<https://www.tandfonline.com/doi/abs/10.1080/13685538.2018.1479386?journalCode=itam20>,  
<https://doi.org/10.1080/13685538.2018.1479386>, DOI: [10.1080/13685538.2018.1479386](https://doi.org/10.1080/13685538.2018.1479386). [COBISS.SI-ID [6434879](https://www.cobiss.si/id/6434879)]
2. MIHEVC, Matic, PETRESKI, Tadej, MAVER, Uroš, BEVC, Sebastjan. Renal proximal tubular epithelial cells : review of isolation, characterization, and culturing techniques. *Molecular biology reports*. Dec. 2020, vol. 47, issue 12, str. 9865-9882, ilustr. ISSN 1573-4978. <https://link.springer.com/article/10.1007/s11033-020-05977-4>, <https://doi.org/10.1007/s11033-020-05977-4>, DOI: [10.1007/s11033-020-05977-4](https://doi.org/10.1007/s11033-020-05977-4). [COBISS.SI-ID [37514499](https://www.cobiss.si/id/37514499)]
3. PETRESKI, Tadej, EKART, Robert, HOJS, Radovan, BEVC, Sebastjan. Hyperuricemia, the heart, and the kidneys : to treat or not to treat?. *Renal failure*. 2020, vol. 42, issue 1, str. 978-986. ISSN 1525-6049.

<https://www.tandfonline.com/doi/full/10.1080/0886022X.2020.1822185>,

<https://doi.org/10.1080/0886022X.2020.1822185>, DOI: [10.1080/0886022X.2020.1822185](https://doi.org/10.1080/0886022X.2020.1822185). [COBISS.SI-ID [30199299](https://doi.org/10.1080/0886022X.2020.1822185)]

4. BAKKUM, Michiel J., RICHIR, Milan C., PAPAIOANNIDOU, Paraskevi, LIKIC, Robert, et al., BEVC, Sebastjan (927), KRŽAN, Mojca (927), et al. EurOP [sup]2 E - the European Open Platform for Prescribing Education, a consensus study among clinical pharmacology and therapeutics teachers. *European Journal of Clinical Pharmacology*. 2021, vol. 77, iss. 8, str. 1209-1218, ilustr. ISSN 0031-6970. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8275529/>, DOI: [10.1007/s00228-021-03101-4](https://doi.org/10.1007/s00228-021-03101-4). [COBISS.SI-ID [106371587](https://doi.org/10.1007/s00228-021-03101-4)]
5. KNEHTL, Maša, PETRESKI, Tadej, PIKO, Nejc, EKART, Robert, BEVC, Sebastjan. Polypharmacy and mental health issues in the senior hemodialysis patient. *Frontiers in psychiatry*. 12 May 2022, str. 1-12, ilustr. ISSN 1664-0640. <https://www.frontiersin.org/articles/10.3389/fpsy.2022.882860/full#ack1>, <https://doi.org/10.3389/fpsy.2022.882860>, DOI: [10.3389/fpsy.2022.882860](https://doi.org/10.3389/fpsy.2022.882860). [COBISS.SI-ID [107792643](https://doi.org/10.3389/fpsy.2022.882860)]