



Univerza v Mariboru



MEDICINSKA FAKULTETA

UČNI NAČRT PREDMETA / COURSE SYLLABUS

Predmet:	Farmakologija s toksikologijo
Course title:	Pharmacology with toxicology

Študijski program in stopnja Study programme and level	Študijska smer Study field	Letnik Academic year	Semester Semester
EMŠ Splošna medicina General medicine		2	4

Vrsta predmeta / Course type

Univerzitetna koda predmeta / University course code:

Predavanja Lectures	Seminar Seminar	Sem. vaje Tutorial	Lab. vaje Laboratory work	Teren. vaje Field work	Samost. delo Individ. work	ECTS
57	53		10		180	10

Nosilec predmeta / Lecturer:

Doc. dr. Polonca Ferk

Jeziki /

Predavanja / Lectures: Slovenski/Slovene

Languages:

Vaje / Tutorial: Slovenski/Slovene

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

Prerequisites:

Ni posebnih pogojev za vključitev.

There are no special conditions for inclusion.

Vsebina:

Content (Syllabus outline):

Osnove splošne farmakologije in toksikologije

- farmakodinamika/toksikodinamika
- farmakokinetika/toksikokinetika
- področja farmakologije in toksikologije

Kemijski mediatorji**Zdravila z učinki na organske sisteme**

- srce in žilje
- ledvice
- kri in krvotvorni organi
- prebavila
- dihal
- periferni živčni sistem
- osrednji živčni sistem
- zdravila, ki uravnavajo nivo glukoze v krvi
- zdravila z vplivom na hemostazo in trombozo
- zdravila z vplivom na nivo lipidov v krvi
- farmakološko zdravljenje debelosti, farmakologija hipofize, nadledvičnice, ščitnice, reproduktivnega sistema, kosti, endokrinopatij
- protivnetne učinkovine in imunomodulatorji
- nizkomolekularna in biološka zdravila
- osnovni principi kemoterapije, zdravila v terapiji rakavih obolenj
- protimikrobno zdravljenje: protibakterijska zdravila, protivirusna zdravila, antimikotiki, antiprotozoiki, antihelmintiki
- antiseptiki, dezinficijensi, insekticidi
- zlorabe zdravil, odvisnost od zdravil
- prehranska dopolnila
- razvoj novega zdravila

Principles in general pharmacology and toxicology

- pharmacodynamics/toxicodynamics
- pharmacokinetics/toxicokinetics
- areas in pharmacology and toxicology

Chemical mediators**Special pharmacology of:**

- cardiovascular system
- kidneys
- blood and haematopoiesis
- gastrointestinal system
- respiratory system
- peripheral nervous system
- central nervous system
- drugs influencing blood glucose levels
- drugs affecting haemostasis and thrombosis
- drugs affecting blood lipid levels
- pharmacological treatment of obesity, pharmacology of pituitary, adrenal glands, thyroid, reproductive system, bones, endocrinopathies
- antiinflammatory drugs and immunomodulators
- small-molecular and biological drugs
- basic principles of chemotherapy, anticancer drugs
- antimicrobial agents: antibacterial, antiviral, antifungal, antiprotozoal and antihelminthic drugs
- antiseptic, disinfective and insecticide agents
- drug abuse, drug dependence
- food supplements
- development of new drugs

Temeljni literatura in viri / Readings:

- Rang HP, Dale M, Ritter JM, Flower RJ, Henderson G. Pharmacology. 7th ed. Churchill Livingstone; 2012. (or the latest edition)
- Katzung BG, Masters SB, Trevor AJ. Basic and clinical pharmacology. 11th ed. New York: McGraw-Hill; 2009. (or the latest edition)
- Goodman LS, Gilman AG, Limbird LE, Hardman JG, Goodman Gilman A. The pharmacological basis of therapeutics. 10th ed. New York: McGraw-Hill; 2001. (or the latest edition)
- Klaassen CD. Casarett & Doull's toxicology: The basic science of poisons. 7th ed. New York: McGraw-Hill; 2008. (or the latest edition)
- Baza podatkov o zdravilih: <http://www.zdravila.net/>
- Javna agencija RS za zdravila in medicinske pripomočke: <http://www.jazmp.si/>
- Evropska agencija za zdravila (EMA): <http://www.ema.europa.eu/ema/>
- Ferk P, Lipnik-Štangelj M. Navodila za vaje iz farmakologije in toksikologije. Spremenjena in dopolnjena izd. Maribor: Medicinska fakulteta; 2010. (ali kasnejša izdaja)

Cilji in kompetence:

- spoznati osnovne mehanizme delovanja zdravil, vpliv zdravil na organizem in vpliv organizma na zdravila
- pridobiti pregledno znanje o zdravilih po osnovnih farmakodinamičnih skupinah
- pridobivanje sposobnosti za povezovanje pričakovanih učinkov, koristnih in škodljivih
- spoznati osnove toksikologije, pridobiti pregledno znanje o prepoznavanju in ukrepanju

Objectives and competences:

- to acquire knowledge on basic mechanisms of drug actions and the fate of drugs in the human body
- to get an overview of the most important pharmacodynamic groups of drugs
- to gain the ability for linking the expected effects, useful and harmful
- to acquire knowledge on general principles in toxicology as well as on recognizing and acting in

pri zastrupitvah z zdravili	drug poisoning
Predvideni študijski rezultati:	Intended learning outcomes:
Znanje in razumevanje: • razumeti osnovne mehanizme delovanja zdravil, vpliv zdravil na organizem in vpliv organizma na zdravila • poznavanje zdravil po osnovnih farmakodinamičnih skupinah • sposobnost za povezovanje pričakovanih učinkov, koristnih in škodljivih • razumevanje interakcij med zdravili in zdravil s hrano • poznavanje osnov toksikologije, primerno znanje o prepoznavanju in ukrepanju pri zastrupitvah z zdravili • sposobnost kritično uporabljati relevantne literaturne vire na področju farmakologije in toksikologije	Knowledge and understanding: • understanding basic mechanisms of drug actions and the fate of drugs in the human body • knowledge on major pharmacodynamic groups of drugs • the ability for linking the expected effects, useful and harmful • understanding drug-drug and drug-food interactions • understanding general principles in toxicology, appropriate knowledge on recognizing and acting in drug poisoning • the ability of critical usage of relevant literature sources in the field of pharmacology and toxicology
Metode poučevanja in učenja:	%Learning and teaching methods:
• predavanja • seminarji • vaje • samostojno delo	• lectures • seminars • practical work • individual work
Delež (v %) / Weight (in %)	
Načini ocenjevanja: Način (pisni izpit, ustno izpraševanje, naloge, projekt) Pogoj za pristop k izpitu so uspešno opravljene vaje in seminarji ter pridobljena pozitivna ocena iz seminarjev. • seminar, seminarski kolokvij in oblike sprotnega preverjanja znanja (testi, aktivno sodelovanje, domače naloge) • izpit pisni; • izpit ustni.	Assessment: Type (examination, oral, coursework, project): Successfully completed practical work and seminars including positive assessment of the final seminar test are necessary to approach the exam. • seminar, seminar test and real-time examinations (tests, active cooperation, homeworks) • written examination; • oral examination.
Reference nosilca / Lecturer's references:	
FERK, Polonca, TERAN, Nataša, GERŠAK, Ksenija. The (TAAAA)n microsatellite polymorphism in the SHBG gene influences serum SHBG levels in women with polycystic ovary syndrome. Hum. reprod. (Oxf.), 2007, letn. 22, št. 4, str. 1031-1036. [COBISS.SI-ID 22198489] FERK, Polonca, POHAR PERME, Maja, GERŠAK, Ksenija. Insulin gene polymorphism in women with polycystic ovary syndrome. J. int. med. res., 2008, letn. 36, št. 6, str. 1180-1187. [COBISS.SI-ID 25007833] ČERNE, Jasmina Živa, FERK, Polonca, LESKOŠEK, Branimir, GERŠAK, Ksenija. Hormone replacement therapy and some risk factors for breast cancer among Slovenian postmenopausal women. Climacteric (Carnforth), 2011, vol. 14, issue 4, str. 458-463, doi: 10.3109/13697137.2010.541307. [COBISS.SI-ID 28234457] PAL, Marjetka, LESKOŠEK, Branimir, FERK, Polonca. Poraba antihipertenzivnih zdravil v Sloveniji in primerjava z Norveško = Consumption of antihypertensives in Slovenia and comparison with Norway. Zdrav Vestn (Tisk. izd.). [Tiskana izd.], maj 2011, letn. 80, št. 5, str. 386-394, ilustr. http://szd.si/user_files/vsebinske/Zdravniški_Vestnik/2011/maj/386-94.pdf. [COBISS.SI-ID 28446937] ČERNE, Jasmina Živa, FERK, Polonca, FRKOVIĆ-GRAZIO, Snježana, LESKOŠEK, Branimir, GERŠAK, Ksenija. Risk factors for HR- and HER2-defined breast cancer in Slovenian postmenopausal women. Climacteric (Carnforth), 2012, vol. 15,	

issue 1, str. 68-74, doi: [10.3109/13697137.2011.609286](https://doi.org/10.3109/13697137.2011.609286). [COBISS.SI-ID [29099993](#)]

SKRGATIC, L., PAVIČIĆ BALDANI, Dinka, ČERNE, Jasmina Živa, **FERK, Polonca**, GERŠAK, Ksenija. CAG repeat polymorphism in androgen receptor gene is not directly associated with polycystic ovary syndrome but influences serum testosterone levels. J Steroid Biochem Mol Biol. [Print ed.], 2012, vol. 128, issue 3/5, str. 107-112, graf. prikazi, doi: [10.1016/j.jsbmb.2011.11.006](https://doi.org/10.1016/j.jsbmb.2011.11.006). [COBISS.SI-ID [29115865](#)]

PAL, Marjetka, **FERK, Polonca**. Interakcije zdravil z zaviralci angiotenzinske konvertaze = Drug interactions with angiotensin-converting enzyme inhibitors. Acta medico-biotechnica, 2012, vol. 5, no. 1, str. 15-23.
http://www.actamedbio.mf.uni-mb.si/article/Interakcije+zdravil+z+zaviralci+angiotenzinske+konvertaze_414. [COBISS.SI-ID [512188728](#)]

FERK, Polonca, LIPNIK-ŠTANGELJ, Metoda. Navodila za vaje iz farmakologije in toksikologije. Spremenjena in dopolnjena izd. Maribor: Medicinska fakulteta, 2010. 41 str., ilustr. ISBN 978-961-6739-12-2. [COBISS.SI-ID [64958721](#)]