	UČNI NAČRT PREDMETA/COURSE SYLLABUS
Predmet	**Farmakologija**
Course title	**Pharmacology**

Študijski program in stopnja **Study programme and level**	**Študijska smer** **Study field**	**Letnik** **Academic year**	**Semester** **Semester**
Fitoterapija/1. stopnja	Ni smeri študija	2.	4.
Phytotherapy/1st level	No specific field	2nd	4th

Vrsta predmeta/Course type	obvezni/obligatory

Univerzitetna koda predmeta/University course code	FIT_2_UN7

Predavanja **Lectures**	**Sem. vaje** **Tutorial**	**Kab. vaje** **Cabinet tutorial**	**Lab. vaje** **Laboratory work**	**Teren. vaje** **Field work**	**Samost. delo** **Individ. work**	**ECTS**
30	30				90	6

Nosilec predmeta/Lecturer:	mag. Miroslava Abazović, viš. pred.

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

Pogoji za vključitev v delo oz. za opravljanje študijskih obveznosti:	**Prerequisites:**
• Vpis v drugi letnik študijskega programa. • Študent mora pred izpitom pripraviti in predstaviti seminarsko nalogo.	• The prerequisite for inclusion is enrolment in the second year of study. • Students have to successfully prepare and present a seminar paper before the examination.

Vsebina:	**Content (Syllabus outline):**
Splošna farmakologija. • *Uvod v farmakologijo,* opredelitev in področja farmakologije. • *Osnove predpisovanja zdravil.* Recept, vrste in farmacevtske oblike zdravil, odmerek, odmerjanje zdravil pri odraslih in otrocih, shranjevanje različnih vrst zdravil, režimi izdajanja zdravil, centralna baza zdravil. • *Farmakodinamika,* osnovni mehanizmi in mesta delovanja zdravil, odnos med odmerkom in učinkom zdravila, medsebojno delovanje zdravil, receptorji.	*General pharmacology.* • *Introduction to pharmacology,* definitions and fields of pharmacology. • *The basics of prescribing medications,* the prescription, types and pharmaceutic forms of medications, dosages, administering medication to adults and children, storage of different types of medications, regimens of giving out medication in pharmacy, register of medicinal products, • *Pharmacodynamics,* basic mechanisms and points of drug actions, relationship

- *Farmakokinetika.*
- Absorpcija, porazdelitev in metabolizem zdravil, izločanje zdravil iz telesa.
- *Interakcije med zdravili.*
- *Neželeni učinki zdravil.*
- Vplivi starosti, spola, prehrane in okolja na delovanje zdravil.
- *Uvajanje novih zdravil.*
- Predklinično in klinično preizkušanje zdravil.

Specialna farmakologija.

- *Farmakologija avtonomnega živčevja,* živčni prenašalci in receptorji v avtonomnem živčevju, zdravila z delovanjem v parasimpatičnem sistemu, zdravila z delovanjem v simpatičnem sistemu, lokalni anestetiki.
- *Farmakologija kardiovaskularnega sistema,* kardiotonični glikozidi in snovi z inotropnim učinkom, antiaritmiki, zdravila za zdravljenje angine pektoris, zvišanega krvnega tlaka in hiperlipoproteinemije.
- *Farmakologija ledvic.*
- Diuretiki.
- *Farmakologija krvi*, antianemijska sredstva, antikoagulantna sredstva, inhibitorji agregacije trombocitov, fibrinolitiki.
- *Farmakologija prebavil,* zdravila za zdravljenje peptične razjede, emetiki in antiemetiki, odvajala, antidiaroiki, spazmolitiki, zdravila, ki učinkujejo na jetra.
- *Farmakologija dihal,* antiastmatiki, ekspektoransi in mukolitiki, zdravila, ki pomirjajo kašelj.
- *Farmakologija endokrinega sistema.*
- Antidiabetiki.
- *Farmakologija osrednjega živčevja,* nevrotransmiterji v osrednjem živčevju, anksiolitiki, uspavala, antipsihotiki, antidepresivi, antiepileptiki, splošni anestetiki, antiparkinsoniki, analgetiki, depolarizirajoči in nepolarizirajoči mišični relaksanti, zdravila in snovi, ki povzročajo zasvojenost.
- *Antiseptiki, dezinficiensi in insekticidi.* Skupine, predstavniki, učinkovitost in uporaba, repelenti in insekticidi

between dosages and effect of medications, interactions of medications, receptors,

- *Pharmacokinetics.*
- Absorption, distribution, metabolism and secretion of medications.
- *Interactions of medications.*
- *Adverse effects of medications.*
- The effects of age, gender, diet and environment on the efficiency of medications.
- *Introducing new medications.*
- Pre-clinical and clinical testing of medications.

Special pharmacology

- *Pharmacology of the autonomic nervous system,* neurotransmitters and receptors in the autonomic nervous system, medications acting in parasympathetic system, medications acting in sympathetic system, local anaesthetics.
- *Pharmacology of the cardiovascular system,* cardiotonic glycosides and substances with an inotropic effect, antiarrhythmic agents, medications for the angina pectoris disease, high-blood pressure and hyperlipoproteinemia.
- *Pharmacology of the kidneys.*
- Diuretics.
- *Pharmacology of blood*, antianemic substances, anticoagulant agents, thrombocytes aggregation inhibitors, fibrinolytics.
- *Pharmacology of the gastrointestinal tract,* mediactions for treatment of peptic ulcer, emetics and antiemetics, laxatives, antidiarrheal medications, spasmolytics, medications affecting the liver.
- *Pharmacology of the respiratory system, a*ntiasthmatics, expectorants and mucolytics, medications that soothe coughs.
- *Pharmacology of the endocrine system.*
- Antidiabetics.
- *Pharmacology of the central nervous system,* neurotransmitters and receptors in the central nervous system, anxiolytics, hypnotics, antipsychotics,

• *Kemoterapevtiki in antibiotiki.* • osnove antimikrobnega zdravljenja, antibakterijska zdravila, ki zavirajo sintezo nukleinskih kislin, celične stene, in proteinov, fungicidi, antivirusne snovi in snovi proti AIDS, citostatiki, antiseptiki za sečila, zdravila proti črevesnim zajedalcem, antimalariki. amebicidi, snovi, ki vplivajo na imunski odgovor, • *Nekatere zastrupitve in antidoti.*	antidepressants, antiepileptics, general anaesthetics, antiparkinsonians, analgetics, depolarizing and nondepolarizing muscle relaxants, medications and substances that cause addiction. • *Antiseptics, disinfectants and insecticides* groups, representatives, performance and usage, repellents and insecticides. • *Chemotherapy agents and antibiotics.* basics of antimicrobial treatment, antibacterial medications that inhibit nucleic acid, cell wall and protein synthesis, fungicides, antivirus substances and substances against AIDS, cytostatic medication, antiseptics for the urinary system, medications against intestinal parasites, antimalarials, amebicides, substances with an impact on the immune response. • *Some intoxications and antidotes.*

Temeljna literatura in viri/Readings:

Temeljna literatura / Basic literature:

- Karch, A.M., (2016). *Focus on Nursing Pharmacology*. 7th edition. Wolters Kluwer.
- Neal, J.N., (2009). *Medical Pharmacology at a Glance*. 6th edition. Wiley Blackwell.
- Kladnik-Januš, B., (2006). *Farmakologija.* Univerza v Mariboru, Visoka zdravstvena šola.

Priporočena literatura/ Recommended literature:

- Rang, H.P., Dale, M.M., Ritter, J.M., Flower, R.J., (2016). R*ang and Dale's Pharmacology.* 8th edition. Edinburgh: Churchill, Livingstone.
- Brunton, L.L., Chabner, B.A., Knollmann, B.C. (2011). *Goodman & Gilman's The Pharmacological Basis of Therapeutics.* 12th Edition. New York: McGraw-Hill.
- Spina, D., (2008). *Flesh and Bones of Medical Pharmacology.* Mosby Elsevier
- Lüllmann, H., Mohr, K., Hein, L., Bieger, D. (2005). *Color Atlas of Pharmacology.* G. Thieme Verlag, Stuttgart, New York. (repetitorij, pregledne slike).
- Varagić, V.M., Milošević, M.P. (2009). *Farmakologija.* 23. izd. Beograd: Elit Medica.

Cilji in kompetence:	**Objectives and competences:**
Učna enota prispeva k razvoju naslednjih splošnih in specifičnih kompetenc: • usvojiti temeljno znanje s področja farmakologije, • razumeti dognanja farmakodinamike in farmakokinetike, • seznaniti se z osnovnimi oblikami zdravil, ravnanjem z njimi in z osnovami predpisovanja zdravil,	*The learning unit mainly contributes to the development of the following general and specific competences* • acquiring fundamental knowledge in the field of pharmacology, • understanding the fundamental knowledge in the field of pharmacokinetics and pharmacodynamics,

• poznati osnovne mehanizme delovanja zdravil, njihove učinke na organizem, poti presnove in izločanja, • razvijati sposobnost za povezovanje in uporabo spoznanj z različnih znanstvenih ved in disciplin pri delu s pacientom, • vključevanje profesionalne etike, prepoznavanje in uporaba moralnih in etičnih načel pri delu, • sposobnost vsestranskega in sistematičnega prilagajanja obravnave pacienta glede na relevantne fizikalne, socialne, kulturne, psihološke, spiritualne in družbene dejavnike, • sposobnost prepoznati in interpretirati znake normalnega in spreminjajočega se zdravja (postavljanje diagnoz), • sposobnost spoštovati pacientovo dostojanstvo, zasebnost in zaupnost podatkov, • sposobnost informirati, izobraževati, vzgajati in nadzorovati, paciente/oskrbovance in njihove družine, • usposobljenost za vodenje zdravstvene dokumentacije, pisanje poročil in uporabo ustrezne tehnologije, • usposobljenost aktivno promovirati zdravje, oceniti tveganje in skrbeti za varnost vseh ljudi v delovnem okolju.	• being familiar with the basic forms of medications, treatments and the basics of prescribing medications, • being familiar with the basic mechanisms of medication effects, their effects on the organism, excretion through metabolic pathways, • the ability to integrate and apply knowledge from different scientific sciences and disciplines when working with a patient, • inclusion of professional ethics, recognising and using moral and ethical principles at work, • the ability to adapt the individual all-round and systematic treatment according to the relevant physical, social, cultural, psychological, spiritual and social factors, • the ability to recognize and interpret the signs of a normal or changing health status (nursing diagnosis setup); • the ability to respect the patient's dignity, privacy and confidentiality of the data; • the ability to inform, educate raise awareness and monitor the patients and their families, • the ability to keep the record of nursing documentation, writing reports and using the modern technology, • the ability to actively promote health, to evaluate risk and to take care of safety for all people in the working environment.

Predvideni študijski rezultati:	**Intended learning outcomes:**
Študent/študentka: • se seznani z osnovnimi oblikami zdravil, ravnanjem z njimi in z osnovami predpisovanja zdravil, • pozna in razume osnovne mehanizme delovanja zdravil, njihove učinke na organizem, poti presnove in izločanja, • pozna skupine zdravil po farmakodinamskih učinkih, • razume nevarnosti stranskih učinkov zdravil in posledic, ki lahko nastanejo pri	***Students:*** • get acquainted with the basic forms of medications, their usage and with basics of prescribing medications, • know and understand the basic mechanisms of medication effects, their effects on the organism, and excretion through metabolic pathways, • know the categorising of medicinal products by pharmacodynamic effects,

neprimerni uporabi ali zlorabi zdravil in pozna potrebne ukrepe pri tem, • pozna vplive zdravil na plod, problem mutageneze, teratogeneze in kancerogeneze, • seznani se z etičnimi in znanstvenimi zahtevami pri preizkušanju in vrednotenju zdravil, • seznani se z racionalno in varno uporabo zdravil in z zdravstveno-ekonomskim pomenom potrošnje zdravil.	• know the risks, side effects of medications and their consequences, by unsuitable use or abuse and know the necessary measures in the case, • know the effects of medications on fetus, the problem of teratogenesis, carcinogenesis and mutagenesis, • get acquainted with the ethical and scientific requirements in testing and evaluation of medicinal products, • get acquainted with the rational and safe use of medicines and health-economic importance of medication consumption.

Metode poučevanja in učenja:	**Learning and teaching methods:**
• *predavanja* z aktivno udeležbo študentov (razlaga, diskusija, vprašanja, primeri, reševanje problemov), • *seminarske vaje:* priprava, predstavitev in uspešen zagovor seminarske naloge (reševanje problemskih situacij, študije primera, kritično presojanje, vrednotenje, diskusija, refleksija, projektno delo, timsko delo, individualno delo).	• *lectures* with active student participation (explanation, discussion, questions, examples, problem solving), • *tutorial*: preparation, successful seminar paper presentation (problem solving, case studies, critical evaluation, assessment, discussion, reflection, project work, teamwork, individual work).

Načini ocenjevanja:	Delež (v %) Weight (in %)	**Assessment:**
Načini: • izpit • izdelava, predstavitev in zagovor seminarske naloge Ocenjevalna lestvica: ECTS.	60 % 40 %	Types: • exam • preparation, presentation and defence of the seminar paper Grading scheme: ECTS.