

	UČNI NAČRT PREDMETA/COURSE SYLLABUS
Predmet	Klinična farmakologija
Course title	Clinical Pharmacology

Študijski program in stopnja Study programme and level	Študijska smer Study field	Letnik Academic year	Semester Semester
Zdravstvena nega / 2. stopnja	Ni smeri študija	1. / 2. letnik	2. / 3.
Nursing Care / 2 nd Cycle	No study field	1 st / 2 nd year	2 nd / 3 rd

Vrsta predmeta/Course type izbirni/elective

Univerzitetna koda predmeta/University course code 2ZN 1_2 IP1

Predavanja	Seminar	Sem. vaje	Lab. vaje	Teren. vaje	Samost. delo	ECTS
Lectures	Seminar	Tutorial	Laboratory work	Field work	Individ. work	
25		30			155	7

Nosilec predmeta/Lecturer:

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

Pogoji za vključitev v delo oz. za opravljanje študijskih obveznosti:	Prerequisites:
<ul style="list-style-type: none"> Vpis v prvi ali drugi letnik študijskega programa. Študent mora pred izpitom pripraviti in predstaviti ter zagovarjati projektno/raziskovalno nalogo. 	<ul style="list-style-type: none"> The prerequisite for inclusion is enrolment in the first or second year of study. Student has to prepare, present and defend a project/research paper before the exam.

Vsebina:	Content (Syllabus outline):
<ul style="list-style-type: none"> <i>Uvod v farmakologijo:</i> opredelitev in področja farmakologije. <i>Farmakodinamika:</i> osnovni mehanizmi in mesta delovanja zdravil, odnos med odmerkom in učinkom zdravila, medsebojno delovanje zdravil, receptorji. <i>Farmakokinetika:</i> absorpcija, porazdelitev in metabolizem zdravil, izločanje zdravil iz telesa. <i>Interakcije med zdravili.</i> <i>Neželeni učinki zdravil.</i> 	<ul style="list-style-type: none"> <i>Introduction to Pharmacology:</i> definitions and fields of pharmacology. <i>Pharmacodynamics:</i> basic mechanisms and points of drug actions, relationship between dosages and effect of medications, interactions of medicines, receptors. <i>Pharmacokinetics:</i> absorption, distribution, metabolism and secretion of medications. <i>Medications interactions.</i> <i>Adverse effects of medications.</i>

<ul style="list-style-type: none"> • <i>Zloraba zdravil, doping, problemi samozdravljenja, placebo in homeopatija.</i> • <i>Farmakogenomika in personalizirana medicina.</i> • <i>Farmakologija avtonomnega živčevja:</i> simpatično in parasimpatično živčevje. • <i>Farmakologija kardiovaskularnega sistema:</i> zdravila za zdravljenje visokega krvnega tlaka, angine pectoris, srčnega popuščanja in motenj srčnega ritma ter zdravila, ki posegajo v strjevanje krvi. • <i>Farmakologija uropoetskega sistema.</i> • <i>Farmakologija prebavil:</i> zdravila za zdravljenje peptične razjede, emetiki in antiemetiki, odvajala, antidiaroiiki, spazmolitiki, zdravila, ki učinkujejo na jetra. • <i>Farmakologija dihal.</i> • <i>Farmakologija endokrinega sistema:</i> hormoni nadledvične žleze, ščitnice, trebušne slinavke, zdravila v motnjah delovanja nadledvične žleze, ščitnice, antidiabetiki. • <i>Farmakologija gibalnega in mišično-skeletnega sistema.</i> • <i>Imunofarmakologija:</i> protivnetne spojine in imunosupresivi. • <i>Farmakologija osrednjega živčevja:</i> anksiolitiki in uspavala, antipsihotiki in antidepresivi, antiepileptiki, zdravila za zdravljenje nevrodegenerativnih boleznih, zdravila za zdravljenje bolečine, zdravila in snovi, ki povzročajo zasvojenost. • <i>Antiseptiki, dezinficijensi in insekticidi:</i> mehanizem, delovanje, skupine, predstavniki, učinkovitost in uporaba, repelenti in insekticidi. • <i>Kemoterapevtiki in antibiotiki:</i> 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. • <i>Toksikologija:</i> osnovni principi, preprečevanje in zdravljenje 	<ul style="list-style-type: none"> • <i>Medications abuse, doping, problems of self-healing, placebo and homeopathy.</i> • <i>Pharmacogenomics and personalised medicine.</i> • <i>Pharmacology of autonomic nervous system:</i> sympathetic and parasympathetic nervous system. • <i>Pharmacology of the cardiovascular system:</i> medications for treatment of high blood pressure, angina pectoris, heart failure and cardiac arrhythmias, and medications that interfere with blood clotting. • <i>Pharmacology of the kidneys.</i> • <i>Pharmacology of the gastrointestinal tract:</i> medications for treatment of peptic ulcer, emetics and antiemetics, laxatives, antidiarrhoeal medications, spasmolytics, medications affecting the liver. • <i>Pharmacology of the respiratory system.</i> • <i>Pharmacology of the endocrine system:</i> hormones of adrenal cortex, thyroid gland, pancreas, drugs in disorders of adrenal and thyroid glands, antidiabetics. • <i>Pharmacology of the orthopaedic and musculoskeletal system.</i> • <i>Immunopharmacology:</i> anti-inflammatory and immunosuppressant medications. • <i>Pharmacology of the central nervous system:</i> anxiolytic and hypnotic medications, antipsychotics and antidepressants, antiepileptics, medicational treatment of neurodegenerative diseases, analgesics, medications and substances that cause addiction. • <i>Antiseptics, disinfectants and insecticides:</i> groups, representatives, performance and usage, repellents and insecticides. • <i>Chemotherapy agents and antibiotics:</i> antibacterial medications that inhibit nucleic acid, cell wall and protein synthesis, fungicides, antivirus substances and substances against
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<p>zastropitev, pomembne skupine antidotov.</p> <ul style="list-style-type: none"> • <i>Osnove predpisovanja zdravil:</i> vrste in farmacevtske oblike zdravil, shranjevanje zdravil, sestavni deli recepta, odmerjanje zdravil pri odraslih in otrocih, režimi izdajanja zdravil, Centralna baza zdravil R Slovenije. • <i>Klinični primeri.</i> 	<p>AIDS, cytostatic medication, antiseptics for the urinary system, medications against intestinal parasites, antimalarials, amebicides.</p> <ul style="list-style-type: none"> • <i>Toxicology:</i> basic principles, prevention and treatment of intoxications, important groups of antidotes. • <i>The basics of prescribing medications:</i> types and pharmaceutic forms of medications, storage of different types of medications, the prescription - its main parts, dosages, administering medication to adults and children, regimens of giving out medications in pharmacy, Register of medicinal products R Slovenia. • <i>Case studies.</i>
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Temeljna literatura in viri/Readings:

Temeljna literatura / Basic literature:

- Karch, A. M. (2017). *Focus on Nursing Pharmacology*. 7th edition. Wolters Kluwer.
- Katzung, B. G. (2018.) *Basic and Clinical Pharmacolog*. 14th edition. McGraw-Hill.
- Rang, H. P., Dale, M. M., Ritter, J. M. in Flower, R .J. (2016). *Rang and Dale's Pharmacology*. 8th edition. Edinburgh: Churchill, Livingstone.

Priporočena literatura/ Recommended literature:

- Brunton, L. L., Chabner, B. A. in Knollmann, B. C. (2011). *Goodman & Gilman's The Pharmacological Basis of Therapeutics*. 12th Edition. New York: McGraw-Hill.
- Kladnik-Januš, B. (2006). *Farmakologija*. Univerza v Mariboru, Visoka zdravstvena šola.
- Lüllmann, H., Mohr, K., Hein, L., Bieger, D. (2005). *Color Atlas of Pharmacology*. G. Thieme Verlag, Stuttgart, New York. (repetitorij, pregledne slike).
- Neal, J. N. (2016). *Medical Pharmacology at a Glance*. 8th edition. Wiley Blackwell.

Cilji in kompetence:

Učna enota prispeva k razvoju naslednjih splošnih in specifičnih kompetenc:

- poglobiti temeljno znanje s področja farmakologije,
- razumeti dognanja farmakodinamike in farmakokinetike,
- seznaniti se z osnovnimi oblikami zdravil, ravnanjem z njimi in z osnovami predpisovanja zdravil,

Objectives and competences:

The learning unit mainly contributes to the development of the following general and specific competences:

- deepening fundamental knowledge in the field of pharmacology,
- learning fundamental knowledge in the field of pharmacokinetics, pharmacodynamics,
- understanding the basic forms of medications, treatments and the basics of prescribing medications,

<ul style="list-style-type: none"> • poznati osnovne mehanizme delovanja zdravil, njihove učinke na organizem, poti presnove in izločanja, • spoznati skupine zdravil po farmakodinamskih učinkih, • poznati nevarnosti neželenih učinkov zdravil in posledic, ki lahko nastanejo pri neprimerni uporabi ali zlorabi zdravil in pozna potrebne ukrepe pri tem, • poznati vplive zdravil na plod, problem mutageneze, teratogeneze in kancerogeneze, • seznaniti se z etičnimi in znanstvenimi zahtevami pri preizkušanju in vrednotenju zdravil, • seznaniti se z racionalno in varno uporabo zdravil in z zdravstveno-ekonomskim pomenom potrošnje zdravil, • 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. 	<ul style="list-style-type: none"> • being familiar with the basic mechanisms of medication effects, their effects on the organism, excretion through metabolic pathways, • being familiar with groups of medications at the pharmacodynamic level – effects, • knowing the risks, side effects of medications and their consequences, by unsuitable use or abuse and knowing the necessary measures in the case, • knowing the effects of medications on fetus, the problem of teratogenesis, carcinogenesis and mutagenesis, • being acquainted with the ethical and scientific requirements in testing and evaluation of medications, • being acquainted with the rational and safe use of medications and health-economic importance of medication consumption, • inclusion of professional ethics, recognising and using moral and ethical principles at work, • being able to adapt the individual all-round and systematic treatment according to the relevant physical, social, cultural, psychological, spiritual and social factors, • being able to recognize and interpret the signs of a normal or changing health status (nursing diagnosis setup); • being able to respect the patient's dignity, privacy and confidentiality of the data; • being able to inform, educate, raise awareness and monitor the patients and their families, • being able to keep the record of nursing documentation, writing reports and using the modern technology, • being able to actively promote health, to evaluate risk and to take care of safety for all people in the working environment.
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Predvideni študijski rezultati:**Intended learning outcomes:**

<p>Študent/študentka:</p> <ul style="list-style-type: none"> • pozna in razume mehanizme delovanja zdravil, njihove učinke na organizem, poti presnove in izločanja, • pozna skupine zdravil po farmakodinamskih učinkih, • razume nevarnosti neželeni učinkov zdravil in posledic, ki lahko nastanejo pri neprimerni uporabi ali zlorabi zdravil in pozna potrebne ukrepe pri tem, • pozna vplive zdravil na plod, problem mutageneze, teratogeneze in kancerogeneze, • seznanjeni se z etičnimi in znanstvenimi zahtevami pri preizkušanju in vrednotenju zdravil, seznanjeni se z racionalno in varno uporabo zdravil in z zdravstveno-ekonomskim pomenom potrošnje zdravil. 	<p>Students:</p> <ul style="list-style-type: none"> • know and understand the mechanisms of medication effects, their effects on the organism, and excretion through metabolic pathways, • know the categorising of medicinal products by pharmacodynamic effects, • 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 medications, • get acquainted with the rational and safe use of medications and health-economic importance of medication consumption.
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Metode poučevanja in učenja:**Learning and teaching methods:**

<ul style="list-style-type: none"> • <i>predavanja</i> z aktivno udeležbo študentov (razlaga, diskusija, vprašanja, primeri, reševanje problemov), • <i>seminarske vaje</i>: priprava, predstavitev in uspešen zagovor projektne/raziskovalne naloge, • <i>konzultacije</i>. 	<ul style="list-style-type: none"> • <i>lectures</i> with active student participation (explanation, discussion, questions, examples, problem solving); • <i>tutorial</i>: preparation, presentation and a successful defence of a project/research paper, • <i>consultations</i>.
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Načini ocenjevanja:

Delež (v %)

Weight (in %)

Assessment:

<p>Načini:</p> <ul style="list-style-type: none"> • izpit • izdelava, predstavitev in zagovor projektne/raziskovalne naloge <p>Ocenjevalna lestvica: ECTS.</p>	<p>50 %</p> <p>50 %</p>	<p>Types:</p> <ul style="list-style-type: none"> • exam • preparation, presentation and defence of the project/research paper <p>Grading scheme: ECTS.</p>
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