

KLINIČNA PEDIATRIJA

UČNI NAČRT PREDMETA/COURSE SYLLABUS

Predmet:	Klinična pediatrija
Course title:	Clinical paediatrics
Članica nosilka/UL Member:	UL MF

Študijski programi in stopnja	Študijska smer	Letnik	Semestri	Izbirnost
Medicina, druga stopnja, enovit magistrski (v postopku)	Ni členitve (študijski program)	6. letnik	1. semester	obvezni

Univerzitetna koda predmeta/University course code:	0076621
Koda učne enote na članici/UL Member course code:	xx

Predavanja /Lectures	Seminar /Seminar	Vaje /Tutorials	Klinične vaje /Clinical tutorials	Druge oblike študija /Other forms of study	Samostojno delo /Individual student work	ECTS
18	30		152		40	8

Nosilec predmeta/Lecturer:	Tadej Avčin, Tadej Battelino, Janez Jazbec, Rok Orel
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Vrsta predmeta/Course type:	obvezni/Compulsory
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Jeziki/Languages:	Predavanja/Lectures:	Slovenščina
	Vaje/Tutorial:	Slovenščina

Pogoji za vključitev v delo oz. za opravljanje študijskih obveznosti:	Prerequisites:
Izpiti iz vseh predkliničnih predmetov Izpit iz internistične propedevitike Izpit iz Splošne pediatrije	Exams from all pre-clinical courses, exam from internal medicine history and examination techniques, Exam from General paediatrics

Vsebina:	Content (Syllabus outline):
Obravnava vsebin iz pediatrične propedevitike, splošne pediatrije, socialne pediatrije, preventivne in dispanzerske obravnave otrok, mladostnikov in mladih odraslih, normalne rasti in razvoja, neonatologije, pediatrične kardiologije, pediatrične hematologije in onkologije, pediatrične nevrologije, pediatrične nefrologije, pediatrične pulmologije, pediatrične infektologije, pediatrične imunologije in revmatologije, pediatrične gastroenterologije, hepatologije in nutricionistike, pediatrične endokrinologije, diabetologije in metabolizma, klinične genetike, pediatrične intenzivne terapije, pediatrične kirurgije, pediatrične anesteziologije, pedopsihiatrije, pediatrične nutricionistike, pediatrične slikovne diagnostike,	Syllabus comprises of paediatric history taking and clinical examination including neurological exam, general and social paediatrics, preventive measured and follow-up of toddlers, children, adolescents and young adults, normal growth and development, neonatology, paediatric cardiology, paediatric haematology and oncology, paediatric neurology, paediatric nephrology, paediatric pulmonology, paediatric infectious diseases, paediatric immunology and rheumatology, paediatric gastroenterology, hepatology and nutrition, paediatric endocrinology, diabetology and metabolism, clinical genetics, paediatric intensive therapy, paediatric surgery, paediatric imaging, laboratory techniques, paediatric and adolescent psychiatry, psychology, and

laboratorijske diagnostike v pediatriji, psihologije otroka, mladostnika in mlade odrasle osebe in etike v pediatriji. Posamezne vsebine so predstavljene po principih celostne obravnave pediatričnega bolnika in njegove družine in vključujejo etiologijo, patofiziologijo, patohistologijo, obravnavo s pomočjo medicinske tehnologije, klinično farmakologijo, zdravljenje, timski pristop, spremljanje in reintegracije v prvotno okolje.	ethics. All paediatric subspecialties are studied and learned in the frame of holistic paediatric approach to the whole family that includes aetiology, pathophysiology, pathohistology, laboratory diagnostics, medical imaging, medical technology, clinical pharmacology, treatment, follow-up, team approach and reintegration in to the society.
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Temeljna literatura in viri/Readings:

1. Kržišnik C. (ur.). Pediatrija. Ljubljana: DZS, 2014.
2. Lissauer T, Clayden G. Illustrated Textbook of Paediatrics; Fourth Edition, Mosby Elsevier, 2012.
3. Nelson Essentials of Pediatrics, Sixth Edition, Saunders Elsevier, 2011.
4. KRŽIŠNIK, Ciril, BATTELINO, Tadej (ur.). Izbrana poglavja iz pediatrije, 10-22. Ljubljana: Medicinska fakulteta, Katedra za pediatrijo, 1998-2014.

Cilji in kompetence:

Cilji:

- Poznavanje patofizioloških, biokemičnih, elektrofizioloških in genetskih osnov pogostejših bolezni in sindromov v obdobju otroštva, mladostništva in mlade odrasle dobe.
- Znanje pediatrične propedeutike in celostnega pristopa k obravnavi otroka, mladostnika in mlade odrasle osebe, poznavanje sprememb med rastjo in razvojem ter ocenjevanje le teh.
- Poznavanje pogostnosti, klinične slike in diferencialne diagnoze bolezni po etioloških sklopih v različnih starostnih obdobjih.
- Poznavanje sodobnih diagnostičnih postopkov in njihovih prilagoditev za pediatrično populacijo, s poudarkom na laboratorijski diagnostiki, presejalni laboratorijski diagnostiki, elektrofiziološki diagnostiki, celoviti slikovni diagnostiki, molekularno-genetski in citogenetski diagnostiki, morfološki in patohistološki diagnostiki, mikrobiološki diagnostiki, psiho-socialni opredelitvi, prehranski analizi, funkcionalni diagnostiki, invazivni diagnostiki, prenatalni diagnostiki.
- Poznavanje sodobnih pristopov k celostni obravnavi in zdravljenju bolezni in stanj s poudarkom na posebnostih zdravljenja v različnih starostnih in razvojnih obdobjih: zdravljenje z osnovnimi skupinami zdravil vključno z biološkimi zdravili, prehransko zdravljenje, fizioterapija in rehabilitacija, logopedsko zdravljenje, osnove pediatrične in adolescenčne psihoterapije, genetsko svetovanje, spremljanje, sledenje in ocenjevanje postopkov zdravljenja.
- Poznavanje osnov preventivne pediatrije s cepljenjem, dispanzerskega dela in socialne pediatrije
- spremljanja in ocenjevanja kakovosti dela.

Kompetence:

- Poznavanje praktičnega pristopa in potrebne

Objectives and competences:

Objectives:

- Knowledge on pathophysiological, biochemical, electrophysiological and genetic basics of more common diseases and syndromes in paediatric and young adult population
- Knowledge and skills in paediatric history and clinical examination with holistic approach to paediatric and young adult population, with theoretical and practical knowledge on normal growth and development
- Knowledge on incidence, clinical presentation and differential diagnosis of diseases and syndromes in different age groups
- Knowledge on state-of-the-art diagnostic procedures and their modifications related to paediatric population, with special emphasis on laboratory diagnostics, screening, electrophysiology, paediatric imaging including safety issues, molecular genetics, pathohistology, microbiology, psycho-social context, nutrition, functional examinations including invasive and prenatal diagnostics
- Knowledge on principles of state-of-the-art therapy with emphasis on different age groups, pharmacotherapy with different therapeutic groups, nutrition counselling, physical therapy and rehabilitation, occupational therapy, logopaedic therapy, principles of psychotherapy, and critical appraisal of the therapeutic approach with follow-up
- Knowledge on principles of preventive paediatrics and follow-up of healthy population, vaccination, and school-medicine
- Knowledge on principles of quality assurance in paediatric care

Competencies:

- Skills required for obtaining history and performing clinical examination including

spretnosti za celostno obravnavo novorojenčka, otroka, mladostnika in mlade odrasle osebe skupaj z njegovo družino ter specifične prilagoditve posameznih postopkov in procesov glede na starost in razvojno stopnjo. Poseben poudarek je na spremljanju akutno in kritično bolnega otroka in kronično bolnega otroka in mladostnika ter njegove družine.	neurological examination for paediatric population in different age groups: neonatology, toddlers, children, adolescents and young adults, with all necessary modifications related to different age groups - Practical planning of clinical work-up with follow-up - Special emphasis on medical care of critically ill child and chronically ill child and the family
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Predvideni študijski rezultati: Znanje in razumevanje: Znanje: Študent osvoji osnove diagnostične in terapevtske obravnave zdravega in bolnega otroka, mladostnika in mlade odrasle osebe s stališča celostne obravnave v pediatriji. Razumevanje: Študent razume fiziologijo rasti in razvoja, etiopatogenezo pojavov, bolezni, sindromov in stanj v pediatrični populaciji, ter principe zdravljenja. Refleksija: Razumevanje teoretičnega znanja in izkušenj iz prakse z zmožnostjo samo-ocenjevanja in kritičnega odnosa do svojega dela ob bolniku. Samo-ocenjevanje skladnosti med teoretičnim znanjem in praktičnim ravnanjem. Samo-ocenjevanje napredka v znanju in praktičnih spretnostih. Samo-ocena pridobljenih tehnik kliničnega pregleda in diagnostičnega postopka. Samo-ocena pridobljenih spretnosti komunikacije z bolnim otrokom, mladostnikom in mlado odraslo osebo ter njihovo družino. Prenosljive spretnosti: Tesna povezanost različnih predkliničnih in kliničnih strok (npr. biokemija, biologija, genetika, anatomija, fiziologija, patološka fiziologija, histologija z embriologijo, slikovna diagnostika, interna medicina, kirurgija, ginekologija) pri obravnavi, ploda, novorojenca, otroka mladostnika in mlade odrasle osebe. Spoznavanje z raziskovalnim delom, branje, razumevanje predstavitev in pisanje člankov.	Intended learning outcomes: Knowledge and understanding: Knowledge: The student acquires knowledge on diagnostic and therapeutic approaches to medical care of children, adolescents and young adults within the holistic approach in paediatrics Understanding: The student understand the physiology of growth and development, etio-pathogenesis of diseases and syndromes in paediatric population, and principles of therapeutic approaches Reflection: Comprehensive understanding of basic pre-clinical knowledge and its implication in clinical work with paediatric patients Self-evaluation of concordance between own pre-clinical knowledge with practical clinical skills Self-evaluation of own progress in clinical learning and skills Self-evaluation of communication skills and its impact on work with patients in different age groups and their families Transferable knowledge: Tight interaction between pre-clinical knowledge (e.g. biochemistry, biology, genetics, anatomy, physiology, histology) with clinical practice (e.g. medical imaging, internal medicine, surgery, gynaecology and obstetrics) in the management of foetus, neonates, toddlers, children, adolescents and young adults.
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Metode poučevanja in učenja: Predavanja s kliničnimi primeri Vodeni seminarji (v naprej pripravljene predloge v e-učilnici) Klinične vaje ob bolniku z mentorjem Samostojen študij	Learning and teaching methods: Lectures with clinical cases Guided seminars (with templates in the e-classroom) Clinical work with patients under guidance Individual work
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Načini ocenjevanja: Pisni izpit: pozitivna ocena je pogoj za pristop k praktičnemu izpitu; Ocenjevanje pisnega dela izpita je glede na odstotek pravih	Delež/Weight 20,00 %	Assessment: Multiple choice test Multiple choice test: positive result is required for admittance to the practical examination Evaluation of the
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odgovorov po naslednji ocenjevalni lestvici: 0,00 % do 59,99 % = 5, 60,00 % do 67,99 % = 6, 68,00 % do 75,99 % = 7, 76,00 % do 83,99 % = 8, 84,00 % do 91,99 % = 9, 92,00 % do 100 % = 10 Izpit je opravljen uspešno, če študent dobi oceno od 6 do 10.		written part of the exam as a percentage of correct answers according to the following rating scale: 0.00 % do 59.99 % = 5, 60.00 % do 67.99 % = 6, 68.00 % do 75.99 % = 7, 76.00 % do 83.99 % = 8, 84.00 % do 91.99 % = 9, 92.00 % do 100 % = 10 The exam is passed if the student receives a grade from 6 to 10.
Praktični izpit: pozitivna ocena je pogoj za pristop k ustnemu izpitu;	20,00 %	Practical examination Practical examination: positive result is required for admittance to the oral examination
Ustni izpit	60,00 %	Oral examination

Končni uspeh:	Final grade:
10 (A) Izjemno znanje brez ali z zanemarljivimi napakami	10 (A) Excellent knowledge with no or negligible errors
9 (B) Zelo dobro znanje z manjšimi napakami	9 (B) Very good knowledge with minor errors
8 (C) Dobro znanje s posameznimi pomanjkljivostmi	8 (C) Good knowledge with some deficiencies
7 (D) Dobro znanje z več pomanjkljivostmi	7 (D) Good knowledge with several deficiencies
6 (E) Znanje ustreza le minimalnim kriterijem	6 (E) Knowledge meets only minimum criteria
5 (F) Znanje ne ustreza minimalnim kriterijem	5 (F) Knowledge does not meet minimum criteria

Reference nosilca/Lecturer's references:

Prof. dr. Tadej Avčin

- PERME, Tina, POKORN, Marko, MARKELJ, Gašper, AVČIN, Tadej, BATTELINO, Tadej, URŠIČ, Tina, VIDMAR, Ivan, GROSEK, Štefan. Two episodes of systemic capillary leak syndrome in an eight-year-old boy, following influenza A virus infection. The Pediatric infectious disease journal, ISSN 0891-3668, Feb. 2014, vol. 33, iss.2, str. 222-224.
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- AVČIN, Tadej, CIMAZ, Rolando, ROZMAN, Blaž, et al. The Ped-APS registry : the antiphospholipid syndrome in childhood. Lupus, ISSN 0961-2033, 2009, letn. 18, št. 10, str. 894-899.
- AVČIN, Tadej, BENSELER, Susanne M., TYRRELL, Pascal N., ČUČNIK, Saša, SILVERMAN, Earl D. A followup study of antiphospholipid antibodies and associated neuropsychiatric manifestations in 137 children with systemic lupus erythematosus. Arthritis and rheumatism, ISSN 0004-3591, 2008, letn. 59, št. 2, str. 206-213.
- SEN, Ethan S, BERESFORD, Michael W, AVČIN, Tadej, RAMANAN, A V. How to use --- lupus anticoagulants. Archives of Disease in Childhood, ISSN 0003-9888, 2013, iss. 12, vol. 98, str. 52-57.

Prof. dr. Tadej Battelino

- PHILLIP, Moshe, BATTELINO, Tadej, BRATINA, Nataša, AVBELJ, Magdalena, et al. Nocturnal glucose control with an artificial pancreas at a diabetes camp. The New England journal of medicine, ISSN 0028-4793, 28. 2. 2013, vol. 368, iss. 9, str. 824-833.
- ŽERJAV-TANŠEK, Mojca, GROŠELJ, Urh, MURKO, Simona, KOBE, Helena, REPIČ-LAMPRET, Barbka, BATTELINO, Tadej. Assessment of tetrahydrobiopterin (BH4)-responsiveness and spontaneous phenylalanine reduction in a phenylalanine hydroxylase deficiency population. Molecular genetics and metabolism, ISSN 1096-7192, sep. 2012, vol. 107, iss. 1/2, str. 37-42.
- LUDVIGSSON, Johnny, KRISKY, David, CASAS, Rosaura, BATTELINO, Tadej, CASTAÑO, Luis, GREENING, James, KORDONOURI, Olga, OTONKOSKI, Timo, POZZILLI, Paolo, ROBERT, Jean-Jacques, VEEZE, Henk J., PALMER, Jerry. GAD65 antigen therapy in recently diagnosed type 1 diabetes mellitus. The New England journal of medicine, ISSN 0028-4793, 2012, vol. 366, no. 5, str. 433-442.
- KOVAČ, Jernej, MACEDONI-LUKŠIČ, Marta, TREBUŠAK PODKRAJŠEK, Katarina, KLANČAR, Gašper, BATTELINO, Tadej. Rare single nucleotide polymorphisms in the regulatory regions of the superoxide dismutase genes in autism spectrum disorder. Autism research, ISSN 1939-3806, 2014, vol. 7, iss. 1, str. 138-144.

5. BATTELINO, Tadej, CONGET, Ignacio, OLSEN, B., SCHÜTZ-FUHRMANN, I., HOMMEL, E., HOOGMA, R., SCHIERLOH, U., SULLI, N., BOLINDER, Jan. The use and efficacy of continuous glucose monitoring in type 1 diabetes treated with insulin pump therapy : a randomised controlled trial. *Diabetologia*, ISSN 1432-0428, dec. 2012, vol. 55, no. 12, str. 3155-3162.

Prof. dr. Janez Jazbec

1. Kroeze E, Arias Padilla L, Bakker M, Boer JM, Hagleitner MM, Burkhardt B, Mori T, Attarbaschi A, Verdú-Amorós J, Pillon M, Anderzhanova L, Kabíčková E, Chiang AKS, Kebudi R, Mellgren K, Lazic J, **Jazbec J**, Meijerink JPP, Beishuizen A, Loeffen JLC; [Pediatric Precursor B-Cell Lymphoblastic Malignancies: From Extramedullary to Medullary Involvement](#). European Intergroup for Childhood Non-Hodgkin Lymphoma (EICNHL) and the International Berlin–Frankfurt–Münster (i-BFM) Study. *Cancers (Basel)*. 2022 Aug 12;14(16):str.1-19.

2. Campbell M, Kiss C, Zimmermann M, Riccheri C, Kowalczyk J, Felice MS, Kuzmanovic M, Kovacs G, Kosmidis H, Gonzalez A, Bilic E, Castillo L, Kolenova A, **Jazbec J**, Popa A, Konstantinov D, Kappelmayer J, Szczepanski T, Dworzak M, Buldini B, Gaipa G, Marinov N, Rossi J, Nagy A, Gaspar I, Stary J, Schrappe M. J. [Childhood Acute Lymphoblastic Leukemia: Results of the Randomized Acute Lymphoblastic Leukemia Intercontinental-Berlin-Frankfurt-Münster 2009 Trial](#). *Clin Oncol*. 2023 Jul 1;41(19):str.1-13.

3. Avčin SL, Črepinšek K, Jenko Bizjan B, Šket R, Kovač J, Vrhovšek B, Blazina J, Blatnik O, Kordič R, Kitanovski L, **Jazbec J**, Debeljak M, Tesovnik T. [Integrative Transcriptomic Profiling of the Wilms Tumor](#). *Cancers (Basel)*. 2023 Jul 28;15(15):str.1-19.

Prof. dr. Rok Orel

1. ROBERTS, S. E., THORNE, K., THAPAR, Nikhil, BROEKAERT, Ilse, BENNINGA, Marc, DOLINŠEK, Jernej, MAS, E., MIELE, Erasmo, **OREL, Rok**, PIENAR, Corina, RIBES KONINCKX, Carmen, THOMSON, Mike, TZIVINIKOS, Christos, MORRISON-REES, Sian, JOHN, A., WILLIAMS, J. G. A systematic review and meta analysis of paediatric inflammatory bowel disease incidence and prevalence across Europe. *Journal of Crohn's and colitis*. 2020, vol. 14, issue 8, str. 1119-1148, ilustr. ISSN 1876-4479.

2. ROMANO, Claudio, DIPASQUALE, Valeria, VAN WINCKEL, Myriam, HULST, Jessie, BROEKAERT, Ilse, BRONSKY, Jiri, DALL'OGGIO, Luigi, FIDLER MIS, Nataša, HOJSAK, Iva, **OREL, Rok**, et al. Management of gastrointestinal and nutritional problems in children with neurological impairment : a survey of practice. *Journal of pediatric gastroenterology and nutrition*. 2021, vol. 72, iss. 4, str. e97-e101.

3. URLEP ŽUŽEJ, Darja, **OREL, Rok**, KUNSTEK, Patricija, BENEDIK, Evgen. Treatment of active Crohn's disease in children using partial enteral nutrition combined with a modified crohn's disease exclusion diet: a pilot prospective cohort trial on clinical and endoscopic outcomes. *Nutrients*. 2023, vol. 15, issue 21, [article no.] 4676, str. 1-15, ilustr.