UČNI NAČRT PREDMETA / COURSE SYLLABUS

Predmet:	**Pametna mesta in skupnosti**
Course title:	**Smart cities and communities**

Študijski program in stopnja **Study programme and level**	**Študijska smer** **Study field**	**Letnik** **Academic year**	**Semester** **Semester**
Pravo in management infrastrukture in nepremičnin – 1. stopnja		3	2
Law and Management of Infrastructure and Real Estate – 1st degree		3	2

Vrsta predmeta / Course type:	izbirni / elective
Koda predmeta /Course code:	

Predavanja **Lectures**	**Seminar** **Seminar**	**Vaje** **Tutorial**	**Druge oblike študija** **Other type study**	**Samost. delo** **Individual work**	**ECTS**
35		30		85	6

Nosilec predmeta / Lecturer:		prof. dr. Boštjan Kerbler / prof. Boštjan Kerbler, PhD
Jeziki/Languages:	Predavanja / Lectures:	slovenski jezik / Slovenian
	Seminar / Seminar:	slovenski jezik / Slovenian

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

Izpolnjevanje pogojev za vpis v 3. letnik.
Zahteva se vsaj 80 % prisotnost na predavanjih.

Prerequisites:

Fulfilment of the requirements for enrolment in the third year of study.
At least 80% attendance at lectures is required.

Vsebina:

Izhodišče

V mestih danes živi več prebivalcev kot kadarkoli prej, strokovnjaki pa napovedujejo, da se bo delež mestnega prebivalstva v prihodnje še povečal. Z globalizacijo iz mest v obmestna in na podeželska območja zelo hitro širi tudi urbanizacija in urbaniziran način življenja. Vse to pa prinaša številne izzive. Rešitev za težave, ki jih predstavljata rast mestnega prebivalstva in nadaljnja urbanizacija, je preobrazba mest v pametna mesta. Ključna komponenta razvoja in definicije pametnih mest je digitalni prostor mest. Pametno mesto namreč uporablja digitalne ali informacijsko-komunikacijske tehnologije, ki so med seboj združene in povezane v celoto. To omogoča izboljšanje kakovosti in učinkovitosti mestnih storitev, zmanjšanje stroškov, porabe virov, onesnaževanja in izpustov toplogrednih plinov, bolj učinkovito in aktivno sodelovanje ljudi ter visoko kakovost bivanja. Pametno mesto je torej prilagojeno potrebam sodobnega človeka ter izzivom, ki jih prinašajo podnebne spremembe, omejena količina naravnih virov in izzivi v energetiki, gospodarstvu in družbi. Pametno mesto zato deluje za skupno dobro. Koncept pametnega mesta zajema več vidikov –

Content (Syllabus outline):

Premise

Today, more people live in cities than ever before, and experts predict that the share of the urban population will increase in the future. With globalization, urbanization and an urbanized way of life is spreading very quickly from cities to suburban and rural areas. All this brings many challenges. The solution to the problems posed by urban population growth and further urbanization is the transformation of cities into smart cities. A key component of the development and definition of smart cities is the digital space of cities. Namely, a smart city uses digital or information and communication technologies, which are combined with each other and connected into a whole. This makes it possible to improve the quality and efficiency of city services, reduce costs, resource consumption, pollution and greenhouse gas emissions, more effective and active participation of people and a high quality of life. A smart city is therefore adapted to the needs of modern man and to the challenges brought by climate change, the limited amount of natural resources and challenges in energetics, economy and society. A smart city therefore works for the common good. The

pametno upravljanje, pametne zgradbe, pametna mobilnost, pametno infrastrukturo (energija, odpadki, vodni krog), pametno urbanistično načrtovanje itd. Vsa ta področja, skupaj z aktivnimi prebivalci in ključnimi deležniki mesta, ki sodelujejo pri nastajanju pametnih rešitev in delujejo v korist večje kakovosti bivanja, pa tvorijo pametno skupnost. Pametna mesta in skupnosti torej združujejo učinkovitost, gospodarnost, trajnostni razvoj in visoko kakovost bivanja. Pot za preobrazbo urbanih območij v pametnega mesta in skupnosti je dolga, z mnogimi izzivi in za vsako mesto specifična, saj so mesta različno velika in razvita, potrebno pa je tudi sodelovanje ključnih deležnikov – mestnih oblasti, javnih in zasebnih partnerjev ter interesnih skupin prebivalstva. Vendar pa so pandemija covida-19 in ukrepi za njeno omejitev pospešili uvajanje digitalnih inovacij, novih informacijskih aplikacij in rešitev ter predvsem umetne inteligence, prinesli pa so tudi spoznanje, da je postala pametna integracija mest nujna. Znanje o pametnih mestih in skupnostih je zato naložba sedanjosti za prihodnost, izbira predmeta na študiju prava in managementa infrastrukture nepremičnin pa zaradi tega nadvse priporočljiva za potrebe bodoče poklicne kariere študentov, pa tudi za potrebe razumevanja sveta, v katerem živimo oziroma bomo živeli v prihodnje.

Vsebina

Izbirni predmet lahko študentje izberejo na dodiplomski in podiplomski ravni. Vendar pa se vsebina predmeta na obeh ravneh razlikuje. Na dodiplomskem študiju bodo študentje pridobili osnovno znanje o pametnih mestih in skupnostih, o njihovem delovanju in razvoju ter posameznih vidikih oziroma področjih, ki pametna mesta in skupnosti opredeljujejo. Na podiplomski ravni (magistrski študij) pa bodo študentje to znanje poglobili in nadgradili, predvsem s študijami različnih primerov pametnih mest po svetu in v Sloveniji ter s poglobljeno analizo različnih načinov celostnega upravljanja pametnih mest in skupnosti. Če želijo študentje pridobiti celostno znanje o pametnih mestih in skupnostih je zelo priporočljivo, da izberejo predmet na obeh študijskih ravneh.

concept of a smart city encompasses several aspects – smart management, smart buildings, smart mobility, smart infrastructure (energy, waste, water cycle), smart urban planning, etc. All these areas, together with active residents and key stakeholders of the city, who participate in the creation of smart solutions and brings benefits in a higher quality of living, form a smart community. Smart cities and communities therefore combine efficiency, better economy, sustainable development and a high quality of life. The path to the transformation of urban areas into smart cities and communities is long, with many challenges and specifics for each city, as cities are of different sizes and developed differently, and the cooperation of key stakeholders – city authorities, public and private partners, and interest groups of the population – is also necessary. However, the covid-19 pandemic and the measures for its limitation have accelerated the introduction of digital innovations, new IT applications and solutions, and especially artificial intelligence and have also brought the realization that smart urban integration has become imperative. Knowledge about smart cities and communities is therefore an investment of the present for the future, and the choice of this elective study course at the study filed Law and Management of Infrastructure and Real Estate is therefore highly recommended for the needs of the future professional career of students, as well as for the needs of understanding the world in which we live or will live in the future.

Content

Students can choose an elective course at the undergraduate or postgraduate level. However, the subject content differs between these two levels. During the undergraduate studies, students will acquire basic knowledge about smart cities and communities, about their operation and development, as well as individual aspects or areas that define smart cities and communities. At the postgraduate level (master's study), students will deepen and upgrade this knowledge, mainly by studying different examples of smart cities around the world and in Slovenia, and by in-depth analysis of integrated management of smart cities and communities. If students want to acquire comprehensive knowledge about smart cities and communities, it is highly recommended that they choose a course at both study levels.

Temeljna literatura in viri / Readings:

- Cizelj, B. (2016): Pametna mesta in mesta znanja/znanosti. V/In: Ovin, R. (ur./ed.): Spoznanja iz ekonomskih ter uporabnih poslovnih in družbenih študij, str./pp. 97–103. Maribor, Doba Fakulteta za uporabne poslovne in družbene študije.
- Simič, N. (ur./ed.) (2012): Pametna mesta. Ljubljana, Elektrotehniška zveza Slovenije.
- Pergar, P., Bevc Šekoranja, B., Degan, R. (2015): Urbanizem pametnih skupnosti. V/In: Mohorčič, M., Robnik, A., Baškovč, D. (ur./eds.): Pametna mesta in skupnosti kot razvojna priložnost Slovenije, str./pp. 82–85. Ljubljana, Institut »Jožef Stefan«.

• Ministrstvo za gospodarski razvoj in tehnologijo (2017): SRIP PMiS – Pametna mesta in skupnosti: akcijski načrt. Ljubljana.
• Reichental, J. (2020): Smart cities. Hoboken, Wiley.

Cilji in kompetence:	**Objectives and competences:**
Študentje bodo razvili **splošne kompetence**: • prepoznati izzive globalizacije za mestna in urbanizirana območja ter območja, na katere prodira urbanizacija, • prepoznati priložnosti za trajnostni razvoj v mestih in dvig kakovosti bivanja v njih, • razumeti pomen sodobnih tehnologij ter njihovega združevanja in povezovanja, • zavedati se pomena vključevanja ljudi pri odločanju in upravljanju (participativni pristop), • sposobnost kreativnega in inovativnega razmišljanja, • ozaveščanje o pomenu novih znanj za razvoj mestnih območij in človeške družbe v prihodnosti.	Students will develop the following **general competences**: • Recognizing the challenges of globalization for urban and urbanized areas and areas that are being penetrated by urbanization; • Recognizing opportunities for sustainable development in cities and improving the quality of living in them; • Understanding the importance of modern technologies and their combination and integration; • Being aware of the importance of involving people in decision-making and management (participatory approach); • The ability to think creatively and innovatively, • Raising awareness of the importance of new knowledge for the development of urban areas and human society in the future.
Študentje bodo razvili **predmetno-specifične kompetence**: • spoznati se z okoliščinami, ki so vodile do nastanka pametnih mest in skupnosti, • seznaniti se z razvojem pametnih mest in skupnosti, • spoznati posamezna področja pametnih mest in skupnosti, • spoznati delovanje pametnih mest in skupnosti, • razumeti pomen pametnih mest in skupnosti, • prepoznati pomen in koristi znanja o pametnih mestih in skupnostih.	Students will develop the following **course-specific competences:** • Getting to know the circumstances that led to the creation of smart cities and communities; • Getting to know the development of smart cities and communities; • Getting to know individual areas of smart cities and communities; • Getting to know the operation of smart cities and communities; • Understanding the importance of smart cities and communities; • Recognizing the importance and benefits of knowledge about smart cities and communities.

Predvideni študijski rezultati: **Znanje in razumevanje:**	**Intended learning outcomes:** **Knowledge and understanding:**
Študent bo: • pridobil znanje in razumevanje o razvoju in značilnostih pametnih mest in skupnosti, • pridobil znanje in razumevanje o delovanju pametnih mest in skupnosti ter področjih, ki pametna mesta in skupnosti opredeljujejo, • pridobil znanje in razumevanje o pomenu pametnih mest in skupnosti za človeško družbo, • pridobil sposobnost za samostojno kreativno razmišljanje o pametnih mestih in skupnostih.	**Students will:** • Acquire knowledge and understanding about the development and characteristics of smart cities and communities; • Acquire knowledge and understanding of the operation of smart cities and communities and the areas that define smart cities and communities; • Acquire knowledge and understanding about the importance of smart cities and communities for human society, • Acquire ability for independent, creative thinking about smart cities and communities.

Metode poučevanja in učenja:	**Learning and teaching methods:**
Oblike dela: ☒ Frontalna oblika poučevanja ☒ Delo v manjših skupinah oz. individualno ☒ Samostojno delo študentov ☒ Študij s pomočjo IKT tehnologij ☐ drugo (vpišite) _____ **Metode (načini) dela:** ☒ Razlaga ☒ Razgovor/ diskusija/debata ☒ Delo z besedilom ☒ Proučevanje primerov raziskav ☒ Igra vlog ☐ Druge vrste nastopov študentov ☒ Reševanje nalog/vaje ☐ Študijski obiski podjetij ipd.) ☐ Vključevanje gostov iz prakse ☐ Udeležba na okrogli mizi, na konferenci	**Types of learning/teaching:** ☒ Frontal teaching ☒ Work in smaller groups or individual work ☒ Independent students work ☒ Study with the help of ICT technologies ☐ other _____ **Teaching methods:** ☒ Explanation ☒ Conversation/discussion/debate ☒ Work with texts ☒ Research case studies ☒ Role-play ☐ Different presentation ☒ Solving exercises/study exercises ☐ Field work (e.g. company visits) ☐ Inviting guests from companies ☐ Attending round table and conference

Načini ocenjevanja: **Način (pisni izpit, ustno izpraševanje, naloge, projekt)**	**Teža (v %) / Weight (in %)**	**Assessment:** **Type (examination, oral, coursework, project)**
Sprotno ustno (aktivno sodelovanje pri kontaktnih urah in pri raziskavah)		Oral verification and assessment of knowledge
Sprotno pisno preverjanje znanja (krajši pisni izdelki)		Written verification and assessment of knowledge (short written casework)
Daljši pisni izdelki (seminarska naloga, projektna naloga, raziskovalna poročila)		Longer written casework
Javni nastop in predstavitev lastnega raziskovalnega dela		Public presentation of one's research
Končni ustni izpit		Final examination (oral)
Končni pisni izpit	**100**	Final examination (written)
Drugo (vpišite)		Other:

Reference nosilca / Lecture's references:

Dr. Boštjan Kerbler je predavatelj na Evropski pravni fakulteti Nove univerze. Za svoje poglobljeno raziskovalno delo je že v času študija prejel dve Prešernovi nagradi. Njegovo specialistično področje dela so stanovanjske študije in inovativne oblike bivalnih okolij, ki vključujejo tudi pametne rešitve, temelječe na sodobnih tehnologijah. Kot raziskovalni svetnik je redno zaposlen na Urbanističnem inštitutu Republike Slovenije, ki je aktiven član partnerstva SRIP PMiS – Strateško razvojno inovacijsko partnerstvo Pametna mesta in skupnosti. Gre za obliko partnerstva, v okviru katere deležniki združujejo moči pri razvoju rešitev za dvig kakovosti življenja v t.i. mestih prihodnosti.

Boštjan Kerbler, PhD is a lecturer at the European Faculty of Law, New University. For his in-depth research work, he received two awards during his study. His research areas are housing studies and innovative forms of living environments, which also include smart solutions based on modern technologies. As a researcher counsellor he is full-time employed at the Urban Planning Institute of the Republic of Slovenia, which is an active member of the SRIP PMiS partnership – Strategic Development Innovation Partnership Smart Cities and Communities. This is a form of partnership in which stakeholders join forces in the development of solutions to improve the quality of life in the so-called cities of the future.