

**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
Podiplomski (magistrski) program (2. stopnja)	Pravo in management nepremičnin	1/2	1/2
Postgraduate (Master's) Programme (2nd degree)	Real Estate Law and Management	1/2	1/2

**Vrsta predmeta / Course type** izbirni / Elective

**Univerzitetna koda predmeta / University course code:**

Predavanja Lectures	Seminar Seminar	Vaje Tutorial	Klinične vaje work	Druge oblike študija	Samost. delo Individ. work	ECTS
30					120	6

**Nosilec predmeta / Lecturer:** izr. prof. dr. Boštjan Kerbler / Boštjan Kerbler, PhD, Associate Professor

**Jeziki / Languages:**  
**Predavanja / Lectures:** Slovenski jezik/ Slovenian/Angleški jezik/English  
**Vaje / Tutorial:** Slovenski jezik/ Slovenian/Angleški jezik/English

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

Vpis v 1. letnik podiplomskega študija.  
Udeležba na predavanjih je obvezna (vsaj 80-odstotna prisotnost).

**Prerequisites:**

Enrollment in the 1st year of postgraduate study.  
Attendance at lectures is mandatory (at least 80%).

**Vsebina:**

**Content (Syllabus outline):**

## 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 – 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 –

## 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 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

mestnih oblasti, javnih in zasebnih partnerjev ter interesnih skupin prebivalstva. Vendar pa so pandemija covid-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 nepremičnin pa zaradi tega nadvse priporočljiva za potrebe bodoče poklicne kariere študentov, pa tudi za potrebe razumevanja sveta, v katerem živimo oziroma bomo živel v prihodnje.

### **Vsebina**

Izbirni predmet lahko študentje izberejo na dodiplomski in podiplomski ravni. Vendar pa se vsebina predmeta na obeh ravneh razlikuje. Kljub temu znanje o tematiki ni predpogoj za izbiro predmeta na magistrskem študiju. Tudi če študentje predmeta niso poslušali na dodiplomski ravni, je namreč vsebina predmeta na podiplomskem študiju prilagojena tako, da študentje v začetku predavanj pridobijo osnovo znanje o pametnih mestih in skupnostih, vendar pa so za razliko od znanja na dodiplomski ravni tudi te (osnovne) vsebine bolj kompleksno in kritično predstavljene. V nadaljevanju predavanj na podiplomski ravni (magistrski študij) študentje to znanje poglobijo 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.

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 Real Estate Law and Management 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 the two levels. Nevertheless, knowledge of the subject is not a prerequisite for choosing a subject in the master's study. Even if the students did not choose the course at the undergraduate level, the content of the course at the postgraduate level is adapted so that students acquire basic knowledge about smart cities and communities at the beginning of the lectures, but in comparison to the knowledge at the undergraduate level, these (basic) contents are also more complex and critically presented at the postgraduate level. In the continuation of lectures at the postgraduate level (master's study), students deepen and upgrade this knowledge, mainly by studying various examples of smart cities around the world and in Slovenia, and by in-depth analysis of various methods of integrated management of smart cities and communities.

### **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.
- Berst, J. idr. (2015): *Smart cities readiness guide: The planning manual for building tomorrow's cities today*. Smart Cities Council.
- Mohanty, S. P. (2016): *Everything you wanted to know about smart cities*. IEEE Consumer Electronics Magazine, 5(3), str./pp. 60–70.
- OECD (2020): *Smart cities and inclusive growth*. Pariz.
- Garrido-Marijuan, A., Pargova, Y., Wilson, C. (2017): *The making of a smart city: Best practices across Europe*. Evropska komisija, Bruselj.
- Kozłowski, W., Suvar, K. (2021): *Smart city: Definitions, dimensions, and initiatives*. European Research Studies Journal, 24(special issue 3), str. /pp. 509–520.
- Albino, V., Berardi, U., Dangelico, R. M. (2013): *Smart cities: definitions, dimensions, and performance*. Business.

#### **Cilji in kompetence:**

##### **Predmetno-specifični cilji kompetence :**

- poglobljeno se spoznati z okoliščinami, ki so vodile do nastanka pametnih mest in skupnosti,
- poglobljeno in kritično se seznaniti z razvojem pametnih mest in skupnosti,
- poglobljeno spoznati posamezna področja pametnih mest in skupnosti,
- poglobljeno spoznati delovanje pametnih mest in skupnosti,
- poglobljeno in kritično preučiti posamezne primere dobrih praks pametnih mest in skupnosti v svetu in Sloveniji,
- poglobljeno in kritično se seznaniti s celostnim upravljanje pametnih mest in skupnosti,
- kritično razmišljati o pomenu pametnih mest in skupnosti,
- kritično prepoznati pomen in koristi celostnega znanja o pametnih mestih in

#### **Objectives and competences:**

##### **Subjects specific objectives and competences:**

- Getting to know in-depth the circumstances that led to the creation of smart cities and communities;
- Getting to know in-depth and critical knowledge of the development of smart cities and communities;
- Getting to know in-depth the individual areas of smart cities and communities;
- Getting to know in-depth about the operation of smart cities and communities;
- Studying in-depth and critically of individual examples of good practices of smart cities and communities in the world and in Slovenia;
- Becoming familiar in-depth and critically with the integrated management of smart cities and communities;
- Thinking critically about the importance of smart cities and communities;

skupnostih.

**Splošni cilji in kompetence:**

- kritično prepoznati izzive globalizacije za mestna in urbanizirana območja ter območja, na katere prodira urbanizacija,
- kritično prepoznati priložnosti za trajnostni razvoj v mestih in dvig kakovosti bivanja v njih,
- poglobljeno razumeti pomen sodobnih tehnologij ter njihovega združevanja in povezovanja,
- kritično se zavedati pomena vključevanja ljudi pri odločanju in upravljanju (participativni pristop),
- sposobnost kritičnega, poglobljenega ter celostnega kreativnega in inovativnega razmišljanja,
- celostno ozaveščanje o pomenu novih znanj za razvoj mestnih območij in človeške družbe v prihodnosti.

- Recognizing critically the importance and benefits of holistic knowledge about smart cities and communities.

**General objectives and competences:**

- Recognizing critically the challenges of globalization for urban and urbanized areas and areas that are being penetrated by urbanization;
- Recognizing critically opportunities for sustainable development in cities and improving the quality of living in them;
- Understanding in-depth the importance of modern technologies and their combination and integration;
- Being critically aware of the importance of involving people in decision-making and management (participatory approach);
- The ability to think critically, in-depth and comprehensively, creatively and innovatively;
- Raising holistic awareness of the importance of new knowledge for the development of urban areas and human society in the future.

**Predvideni študijski rezultati:**

- pridobiti poglobljeno znanje in razumevanje o razvoju in značilnostih pametnih mest in skupnosti,
- pridobiti poglobljeno znanje in razumevanje o delovanju pametnih mest in skupnosti ter področjih, ki pametna mesta in skupnosti opredeljujejo,
- pridobiti kritično in poglobljeno znanje in razumevanje o pametnih rešitvah in konkretnih primerih vzpostavitve in delovanja pametnih mest ter učinkih teh rešitev na okolje in družbo,
- pridobiti poglobljeno in kritično znanje o priložnostih in prednostih preobrazbe urbanih območij v pametna mesta,
- pridobiti poglobljeno in kritično znanje in

**Intended learning outcomes:**

- Acquiring in-depth knowledge and understanding about the development and characteristics of smart cities and communities;
- Acquiring in-depth knowledge and understanding of the operation of smart cities and communities and the areas that define smart cities and communities;
- Acquiring critical and in-depth knowledge and understanding of smart solutions and concrete examples of the establishment and operation of smart cities and the effects of these solutions on the environment and society;
- Acquiring in-depth and critical knowledge about the opportunities and advantages of

razumevanje o načinih celostnega upravljanja pametnih mest ter veščinah, znanjih in kompetencah, ki so za to potrebne,

- pridobiti poglobljeno in kritično znanje za prepoznavanje ovir in iskanje rešitev za implementacijo koncepta pametnih mest in skupnosti v družbi,
- pridobiti poglobljeno znanje in razumevanje o pomenu pametnih mest in skupnosti za človeško družbo,
- pridobiti sposobnost za samostojno, kreativno in kritično razmišljanje o pametnih mestih in skupnostih in njihovem celostnem upravljanju.

transforming urban areas into smart cities;

- Acquiring in-depth and critical knowledge and understanding of the methods of integrated management of smart cities and the skills, knowledge and competences required for this;
- Acquiring in-depth and critical knowledge for identifying obstacles and finding solutions for implementing the concept of smart cities and communities into society;
- Acquiring in-depth knowledge and understanding about the importance of smart cities and communities for human society;
- Acquiring ability for independent, creative and critical thinking about smart cities and communities and their integrated management.

**Metode poučevanja in učenja:**

**Oblike dela:**

Frontalna oblika poučevanja  
 Delo v manjših skupinah oz. v dvojicah  
 Samostojno delo študentov  
 e-učenje  
 drugo (vpišite) \_\_\_\_\_

**Metode (načini) dela:**

Razlaga  
 Razgovor/ diskusija/debata  
 Delo z besedilom  
 Proučevanje primera  
 Igra vlog  
 Druge vrste nastopov študentov  
 Reševanje nalog  
 Študijski obiski podjetij ipd.)  
 Vključevanje gostov iz prakse  
 Udeležba na okrogli mizi, na konferenci

**Learning and teaching methods:**

**Types of learning/teaching:**

**Frontal** teaching  
 Work in smaller groups or pair work  
 Independent students work  
 e-learning  
 other \_\_\_\_\_

**Teaching methods:**

Explanation  
 Conversation/discussion/debate  
 Work with texts  
 Case studies  
 Role-play  
 Different presentation  
 Solving exercises  
 Field work (e.g. company visits)  
 Inviting guests from companies  
 Attending round table and conference

Delež (v %) /

**Načini ocenjevanja:**

Weight (in %) **Assessment:**

Seminarska naloga	<b>30 %</b>	Term paper
Oddaja seminarske naloge je pogoj za		Term paper submission is a condition for

pristop k pisnemu preverjanju znanja.		taking the written examination.
Pisni izpit	<b>70 %</b>	Written examination

**Reference nosilca / Lecturer'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.