

## UČNI NAČRT PREDMETA / COURSE SYLLABUS

<b>Predmet:</b>	<b>Načrtovanje stanovanjske gradnje</b>
<b>Course title:</b>	<b>Design of the Residential Buildings</b>

Študijski program in stopnja Study programme and level	Študijska smer Study field	Letnik Academic year	Semester Semester
II. stopnja	Pravo in management nepremičnin	1	1
II. level	Law and Management of Real Estate	1	1

Vrsta predmeta / Course type Obvezni/Obligatory

Univerzitetna koda predmeta / University course code:  

Predavanja Lectures	Seminar Seminar	Sem. vaje Tutorial	Lab. vaje Laboratory work	Teren. vaje Field work	Samost. delo Individ. work	ECTS
40	0	0	0	0	160	8

Nosilec predmeta / Lecturer: Izr. prof. dr. Živa Kristl

<b>Jeziki / Languages:</b>	<b>Predavanja / Lectures:</b>	slovenščina/Slovene
	<b>Vaje / Tutorial:</b>	slovenščina/Slovene

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

Vpis v 1. Letnik magistrskega študija

**Prerequisites:**

Enrollment in the 1<sup>st</sup> year of master study

**Vsebina:**

Predmet obravnava načrtovanje stanovanjske gradnje v kontekstu materialnega ovoja prostora (nosilna konstrukcija, regulacijske funkcije, kompozicija) in stanovanja kot prostora znotraj izgrajenega ovoja, ki je namenjen ugodnemu bivanju (ugodje, fizikalni parametri). Tretji element so značilnosti lokacije in dejavniki okolja, ki vplivajo na načrtovanje stanovanjske gradnje. Predmet sledi novim razvojnim smernicam načrtovanja stanovanjske gradnje, saj postaja očitno, da v postindustrijski družbi notranje okolje postaja človekovo dominantno okolje. Koncept

**Content (Syllabus outline):**

The course deals with the planning of housing in the context of the material envelope of the space (load bearing structure, control functions, composition) and the apartment as a space within the built envelope, which is intended for a favorable stay (function, comfort, physical parameters). The third element are the location parameters and environmental factors that influence residential construction planning. The course follows the newest development of housing construction planning. It is becoming apparent that in post-industrial society, the internal environment is becoming man's

stavbnega ovoja se danes transformira in postaja le opna, ki naj zaščiti notranji prostor pred vremenskimi neprijetnostmi. Bivalni prostor se glede kvalitete in impulzov okolja vedno bolj staplja z zunanjim prostorom, kar izboljšuje zdravje in ugodje uporabnikov. Predvsem je poudarek na toploti, dnevni svetlobi, osončenju in zraku. Funkcionalno bivalni prostor postaja fluiden in fleksibilen. Dodatna tendenca je čim boljša adaptacija stavbe na okoljske pogoje ter čim manjši vplivi na okolje (trajnostnost gradnje). Tak pristop omogočajo tudi nove informacijske tehnologije, ki nadzirajo in vodijo odziv stavbe.

Pri obravnavi načrtovanja stanovanjske gradnje je pomembno razumevanje dinamike uporabe prostora (tlorisna zasnova, funkcionalnost) in zavedanje, da ni enotnega in stalnega načina stanovanja. Predmet zajame razvoj tipologije stanovanjskih stavb skozi čas, kar omogoča razumevanje delovanja obstoječih stavb in postavi temelje za razumevanje nadaljnega razvoja (npr. industrializacija gradnje). V kontekstu trajnostnosti je pri predmetu predvsem zajet konceptualni razvoj odnosa med notranjim in zunanjim prostorom ter različni pristopi v skladu s stopnjo razvoja družbe in tehnologije in trajnostno vrednotenje bivalnega prostora. Na področju načrtovanja je poudarek na tehnični komunikaciji, opredelitvi temeljnih postopkov načrtovanja in kriterijev za vrednotenje uspešnosti načrtovanja. Vsa izhodišča so predstavljena s pomočjo širokega nabora primerov iz prakse.

dominant environment. Today, the concept of building envelope is being transformed and is becoming only a membrane that should protect the interior space from weather inconveniences. In terms of quality and environmental impulses, the living space is increasingly merging with the outdoor space, which improves the health and comfort of users. Above all, the emphasis is on heat, daylight, sunshine and air. Functionally the living space becomes fluid and flexible. An additional tendency is the best possible adaptation of the building to environmental conditions and the smallest possible impact on the environment (sustainability of construction). Such an approach is also made possible by new information technologies that control and guide the response of the building.

When considering housing construction planning, it is important to understand the dynamics of space use (floor plan, functionality) and to be aware that there is no uniform and permanent way of living. The course covers the development of a typology of residential buildings over time, which enables an understanding of the operation of existing buildings and lays the foundations for understanding further development (eg. Industrialization of construction). In the context of sustainability, the course mainly covers the conceptual development of the relationship between indoor and outdoor space and various approaches in accordance with the level of development of society and technology and the sustainable evaluation of living space.

In the field of design, the emphasis is on technical communication, the definition of elementary planning procedures and criteria for evaluating the planning realization. All explanations are presented with the help of a wide range of practical examples.

## Temeljna literatura in viri / Readings:

### Obvezna (Obligatory):

1. Živa Kristl, Trajnostni vidiki stanovanjske gradnje. 1. natis. Nova Gorica: Nova univerza, Evropska pravna fakulteta, 2019. 263 str., ilustr. ISBN 978-961-6731-30-0. [COBISS.SI-ID 301510656] (izbrana poglavja)
2. Deplazes, Andrea (Ed.), 2013: Constructing Architecture, Materials, Processes, Structures A Handbook, ISBN: 3-7643-7189-7, A Birkhäuser book, Basel. Izbrana poglavja
3. Szokolay Steven V., Introduction to Architectural Science, Architectural press 2004. Izbrana poglavja
4. Ching Francis D.K., Architecture: Form, Space and Order, New York: Van Nostrand Reinhold, 1979. Izbrana poglavja
5. Dieter George E., Engineering Design: A Materials and Processing Approach, McGraw Hill, 2000

### Priporočena (Recommended):

1. Van Gameren Dick, Ibelings Hans, 2006: Revisions of Space - An Architectural Manual, ISBN: 9056624210, Nai publishers, Amstredam. Izbrana poglavja
2. Asimow Morris, Introduction to Design, Prentice-Hall, 1962
3. Ching Francis D. K., ARCHITECTURAL GRAPHICS, JOHN WILEY & SONS, 2003
4. Hegger M., Construction materials manual. Basel: Birkhäuser, Munich: Edition Detail, cop. 2006.
5. Roth Leland M., Roth Amanda C. Clark, Understanding Architecture its Elements, History, and Meaning, Westview press, 1993
6. Neufert, Projektiranje v stavbarstvu, Tehniška založba Slovenije, 2002
7. Schneider, Friederike, 1994: Grundrißatlas : wohnungsbau = Floor plan atlas : housing, ISBN: 3-7643-2625-5, Birkhäuser, Basel
8. Rapoport, A., 1969: House form and culture, Pretence hall, Englewood Cliffs.
9. Zupančič, B., 2008. Die Architektur der ersten hälfte des 20. Jahrhunderts im Slowenischen raum : vom Architekten Anton Laščak bis zu den Schülern Plečniks bei Le Corbusier = Architecture on Slovenian area during the first half of the 20th century : from the architect Anton Laščak to the students of Plečnik with Le Corbusier. V: STILLER, Adolph (ur.). Slowenien : Architektur, Meister & Szene = Slovenia : architecture, the masters & the scene, (Architektur im Ringturm, 17). Salzburg: A. Pustet.
10. Venturi, R., 1977. Complexity and Contradiction in Architecture. New York, NY: The Museum of Modern Art.
11. Vitruvius, M. P., 1914. The Ten Books on Architecture. Morris Hicky Morgan. Cambridge: Harvard University Press. London: Humphrey Milford. Oxford University Press. [online] Dostopno na: <http://www.perseus.tufts.edu/hopper/text?doc=Vitr.%206.7&lang=original> [16.08.2018].

### Regulatorni in strateški dokumenti s področja, npr.:

1. Evropski zeleni dogovor, 2020; [https://ec.europa.eu/info/publications/communication-european-green-deal\\_en](https://ec.europa.eu/info/publications/communication-european-green-deal_en)
2. COM 433, 2012. Strategija za trajnostno konkurenčnost gradbenega sektorja in gradbenih podjetij. Sporočilo Evropske komisije Evropskemu parlamentu in Svetu. [online] Dostopno na: <https://eur-lex.europa.eu/legal-content/SL/TXT/PDF/?uri=CELEX:52012DC0433&from=en> [20.10.2018].

3. MOP, 2015. Stanovanjska problematika v Republiki Sloveniji. Spremljajoče gradivo k Nacionalnem stanovanjskem programu, Direktorat za prostor, graditev in stanovanja, Ljubljana: MOP RS. [online] Dostopno na: [http://www.mop.gov.si/fileadmin/mop.gov.si/pageuploads/podrocja/stanovanja/NSP\\_spremljajoce\\_gradivo\\_2015.pdf](http://www.mop.gov.si/fileadmin/mop.gov.si/pageuploads/podrocja/stanovanja/NSP_spremljajoce_gradivo_2015.pdf)
4. CPR 305, 2011. Uredba o gradbenih proizvodih. Official Journal of the European Union.
5. EED 27, 2012. Energy efficiency directive. Official Journal of the European Union.
6. EPBD 31, 2010. Directive on the energy performance of buildings recast. Official Journal of the European Union.
7. EPBD 844, 2018. Directive amending Directive 2010/31/EU on the energy performance of buildings and Directive 2012/27/EU. Official Journal of the European Union.
8. Periodična literatura (priporočeni znanstveni članki s področja)
9. Študijska gradiva (VIS)

### **Cilji in kompetence:**

Cilj predmeta je skozi multidisciplinaren pristop predstaviti pomen kvalitete načrtovanja stanovanjske gradnje, ki skozi tehnično, oblikovno, pomensko in druge vidike vpliva na vrednost nepremičnin in na njihovo delovanje. V okviru predmeta se študenti seznanijo s strokovnimi pojmi s področja načrtovanja stanovanjskih stavb, tehničnimi zahtevami, funkcionalnostjo, razvojem, ugodjem v bivalnem okolju, bistvenimi funkcijami stavbnega ovoja, osnovnimi postopki načrtovanja in presoje pomenske, tehnične in oblikovne kvalitete.

### **Študenti/ke bodo pridobili naslednje predmetno specifične kompetence:**

- poznavanje in razumevanje širokega nabora pojmov v zvezi z načrtovanjem stanovanjskih stavb in spodobnost vodenja strokovnega dialoga;
- razumevanje in razvoj sposobnosti uporabe temeljnih principov tehnične komunikacije ob upoštevanju zahtev in postopkov v načrtovanju;
- razumevanje funkcije prostora v kontekstu stanovanja;
- seznanjenost s kompozicijskimi principi pri načrtovanju stanovanjskih stavb;
- poznavanje orisa razvoja stanovanjskih stavb skozi različne vidike in spodobnost navezave na obstoječe stavbe;

### **Objectives and competences:**

The aim of the course is to present the importance of the quality of housing construction planning through a multidisciplinary approach, which influences the value of real estate and their operation through technical, design, semantic and other aspects. Within the course, students get acquainted with professional concepts in the field of residential building design, technical requirements, functionality, development, comfort in the living environment, the essential functions of the building envelope, basic planning procedures and assessment of semantic, technical and design quality.

### **Students will gain the following subject specific competencies:**

- knowledge and understanding of a wide range of concepts related to the design of residential buildings and the ability to conduct a professional dialogue;
- understanding and developing the ability to apply the principles of technical communication, taking into account the requirements and procedures in planning;
- understanding of function of space in the context of residence;
- knowledge of compositional principles in the design of residential buildings;
- knowledge of the outline of the development of residential buildings

- poznavanje najpomembnejših gradiv in njihovih funkcionalnih potencialov;
- razumevanje pomena zdravega in ugodnega bivalnega prostora in vpliva stavbnega ovoja na kvaliteto bivalnega prostora;
- razumevanje pomena uporabe multidisciplinarnega pristopa pri načrtovanju stanovanjske gradnje;
- sposobnost uporabe primarnih postopkov načrtovanja in razumevanje pomena različnih vidikov pri vrednotenju kvalitete načrtovanega;
- razvoj sposobnosti kritično analizirati dostopne regulatorne vire in znanstvena besedila;
- sposobnost kritične presoja primerov iz prakse in vrednotenja njihovega delovanja in kakovosti;

**Študenti/ke bodo pridobili naslednje splošne kompetence:**

- sposobnost samostojnega in avtonomnega študijskega dela;
- sposobnost kritične strokovne razprave in analize o temeljnih pojmih načrtovanja;
- uporaba ustreznih metod raziskovanja, njihovih postopkov, analize in sinteze;
- sposobnost za razumevanje in reševanje konkretnih delovnih problemov z uporabo relevantnih metod in postopkov;
- sposobnost skupinskega dela in pripravljenosti za sodelovanja pri reševanju konkretnih primerov s področja;
- razvoj komunikacijskih sposobnosti in veščin pri obravnavi in analizi nepremičnin;
- razvoj ustvarjalnosti in sposobnosti premagovanja problemov pri ravnanju z nepremičninami;
- razvoj sposobnosti vodenja pri reševanju konkretnih primerov s področja načrtovanja stanovanjskih stavb;

through various aspects and the suitability of the connection to existing buildings;

- knowledge of essential materials and their functional potentials;
- understanding the importance of a healthy and comfortable living space and the impact of the building envelope on the quality of the living space;
- understanding the importance of using a multidisciplinary approach in residential construction planning;
- ability to use primary planning procedures and understand the importance of various aspects in quality evaluation of the design;
- developing the ability to critically analyze available regulatory sources and scientific texts;
- the ability to critically assess cases from practice and evaluate their performance and quality;

**Students will acquire the following general competencies:**

- ability of independent and autonomous study work;
- ability to critically discuss and analyze the basic concepts of planning;
- use of appropriate research methods, their procedures, analysis and synthesis;
- ability to understand and solve specific work problems using relevant methods and procedures;
- ability to work in groups and be willing to cooperate in solving concrete cases in the field;
- development of communication skills and abilities in the treatment and analysis of real estate;
- development of creativity and ability to overcome problems in real estate management;
- development of leadership skills in solving concrete cases in the field of residential building design;
- development of the ability to use

- razvoj sposobnosti uporabe interdisciplinarnih znanj pri obravnavi problemov s področja načrtovanja stanovanjskih stavb;
- razvoj veščin in spretnosti v uporabi pridobljenega znanja ter uporaba informacijsko komunikacijske tehnologije in sistemov;

- interdisciplinary knowledge in dealing with design problems;
- development of skills in the use of acquired knowledge and the use of information and communication technology and systems;

### **Predvideni študijski rezultati:**

Znanje in razumevanje:

*Študent/študentka:*

- pozna širši pojem in pomen načrtovanja stanovanjske gradnje;
- razume pomen uporabe multidisciplinarnega pristopa pri načrtovanju stanovanjske gradnje;
- pravilno uporablja širok nabor osnovnih pojmov v zvezi z načrtovanjem stanovanjskih stavb in je sposoben komunicirati z različnimi deležniki v postopku načrtovanja stanovanjskih stavb;
- prepozna in ceni kompozicijske principe pri načrtovanju stanovanjskih stavb;
- pozna osnovni oris razvoja stanovanjskih stavb skozi različne vidike in razume vzroke zanj;
- pozna osnovna gradiva in njihove funkcije;
- pozna in razume kompleksnost koncepta materialnega ovoja prostora (nosilna konstrukcija, regulacijske funkcije, kompozicija) in principe njegovega delovanja;
- pozna in razume kompleksnost koncepta stanovanja kot prostora znotraj izgrajenega ovoja, ki je namenjen ugodnemu bivanju (funkcija, ugodje, fizikalni parametri);
- razume in upošteva pomen zdravega in ugodnega bivalnega prostora in vpliva stavbnega ovoja na kvaliteto bivalnega prostora;
- pozna in zmore analizirati dejavnike okolja, ki vplivajo na načrtovanje

### **Intended learning outcomes:**

Knowledge and understanding:

Student:

- knows the broader concept and importance of residential buildings design;
- understands the importance of using a multidisciplinary approach in residential buildings design;
- correctly uses a wide range of basic concepts related to the design of residential buildings and is able to communicate with various stakeholders in the process of residential buildings design
- recognizes and appreciates compositional principles in the design of residential buildings;
- knows the basic outline of the development of residential buildings through various aspects and understands the reasons for it;
- knows the basic materials and their functions;
- knows and understands the complexity of the concept of the material envelope of space (load-bearing structure, regulation functions, composition) and the principles of its operation;
- knows and understands the complexity of the concept of housing as a space within the built envelope, which is intended for a comfortable stay (function, comfort, physical parameters);
- understands and takes into account the importance of healthy and comfortable

stanovanjske gradnje;

- razume in upošteva potek osnovnih postopkov načrtovanja in razume pomen in vpliv različnih vidikov pri vrednotenju kvalitete in uspešnosti načrtovanja stanovanjskih stavb;
- sposoben je analizirati dostopne regulatorne vire in znanstvena besedila;
- kritično presoja primere iz prakse in vrednoti njihovo delovanja in kakovost;
- razvija sposobnost umeščanja novih informacij in interpretacij v kontekst razvoja stroke na področju;
- razvija sposobnost fleksibilne uporabe znanja v praksi;

living space and the impact of the building envelope on the quality of living space;

- knows and is able to analyze environmental factors that influence the residential buildings design;
- understands and takes into account the course of basic planning procedures and understands the importance and impact of various aspects in evaluating the quality and success of residential building planning;
- is able to analyze available regulatory sources and scientific texts;
- critically assesses examples from practice and evaluates their performance and quality;
- develops the ability to place new information and interpretations in the context of the development of the profession in the field;
- develops the ability to flexibly apply knowledge in practice;

#### 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
- Terensko delo (npr. ogled stavb)
- 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. building survey)
- Inviting guests from companies
- Attending round table and conference

**Načini ocenjevanja:**Delež (v %) /  
Weight (in %)**Assessment:**

Način (pisni izpit, ustno izpraševanje, naloge, projekt): - pisni izpit - seminarska naloga	<b>75%</b> <b>25%</b>	Type (examination, oral, coursework, project): - Written examination - Seminar work
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**Reference nosilca / Lecturer's references:**

1. KRISTL, Živa. Trajnostni vidiki stanovanjske gradnje. 1. natis. Nova Gorica: Nova univerza, Evropska pravna fakulteta, 2019. 263 str. ilustr. ISBN 978-961-6731-30-0. [COBISS.SI-ID 301510656]
2. KRISTL, Živa. Ranljivost nepremičnin v okviru intenziviranja podnebnih sprememb. V: GRUM, Bojan (ur.). Znanstvene razprave s področja nepremičnin. 1. natis. Nova Gorica: Nova univerza, Evropska pravna fakulteta. 2019, str. 153-177, ilustr. [COBISS.SI-ID 2048047076]
3. KRISTL, Živa, TEMELJOTOV SALAJ, Alenka, ROUMBOUTSOS, Athena. Sustainability and universal design aspects in heritage building refurbishment. *Facilities*, ISSN 0263-2772, 2019, vol. , iss. , str. [1-24], ilustr., doi: 10.1108/F-07-2018-0081. [COBISS.SI-ID 2048069860], [SNIP, WoS do 18. 1. 2020: št.
4. KRISTL, Živa. Dnevna svetloba v učilnicah in igralnicah = Daylight in classrooms and playrooms. V: ZBAŠNIK-SENEGAČNIK, Martina (ur.). Pogledi na prostor javnih vrtcev in osnovnih šol. Ljubljana: Fakulteta za arhitekturo. 2019, str. 166-173, ilustr. [COBISS.SI-ID 2048042212]
5. KOŠIR, Mitja, GOSTIŠA, Tamara, KRISTL, Živa. Influence of architectural building envelope characteristics on energy performance in Central European climatic conditions. *Journal of building engineering*, ISSN 2352-7102, jan. 2018, letn. 15, str. 278-288, ilustr. [https://ac.els-cdn.com/S2352710217304941/1-s2.0-S2352710217304941-main.pdf?tid=f3f8f724-df1f-11e7-8bc0-0000aab0f6c&acdnat=1513071579\\_3bff529e341779ec28b9f1bafbacf7bc](https://ac.els-cdn.com/S2352710217304941/1-s2.0-S2352710217304941-main.pdf?tid=f3f8f724-df1f-11e7-8bc0-0000aab0f6c&acdnat=1513071579_3bff529e341779ec28b9f1bafbacf7bc), doi: [10.1016/j.jobe.2017.11.023](https://doi.org/10.1016/j.jobe.2017.11.023). [COBISS.SI-ID [8237409](https://doi.org/10.1016/j.jobe.2017.11.023)]
6. BLECICH, Paolo, FRANKOVIĆ, Marko, KRISTL, Živa. Energy retrofit of the Krsan Castle : from sustainable to responsible design : a case study. *Energy and buildings*, ISSN 0378-7788. [Print ed.], 15. Jun. 2016, vol. 122, str. 23-33, graf. prikazi. <http://www.sciencedirect.com/science/article/pii/S0378778816302456>. [COBISS.SI-ID [1024717681](https://doi.org/10.1016/j.enpol.2014.01.045)]
7. KOŠIR, Mitja, CAPELUTO, Isaac Guedi, KRAINER, Aleš, KRISTL, Živa. Solar potential in existing urban layouts: critical overview of the existing building stock in Slovenian context. *Energy policy*, ISSN 0301-4215. [Print ed.], jun. 2014, letn. 69, št. X, str. 443-456, ilustr., doi: [10.1016/j.enpol.2014.01.045](https://doi.org/10.1016/j.enpol.2014.01.045). [COBISS.SI-ID [6496609](https://doi.org/10.1016/j.enpol.2014.01.045)]
8. KOŠIR, Mitja, KRAINER, Aleš, KRISTL, Živa. Integral control sistem of indoor environment in continuously occupied spaces. *Automation in construction*, ISSN 0926-5805. [Print ed.], 2012, letn. 21, št. 1, str. 199-209, ilustr., doi: [10.1016/j.autcon.2011.06.004](https://doi.org/10.1016/j.autcon.2011.06.004). [COBISS.SI-ID [5442145](https://doi.org/10.1016/j.autcon.2011.06.004)]



9. KRISTL, Živa, TEMELJOTOV SALAJ, Alenka. Sustainability principles in retrofitting and re-use of industrial heritage buildings. V: GRUM, Bojan (ur.), TEMELJOTOV SALAJ, Alenka (ur.). *Proceedings*. Ljubljana: Institute of Real Estate Studies. 2017, str. 20-33. [COBISS.SI-ID [1024744817](#)]
10. KRISTL, Živa. Implementation of innovative energy retrofitting measures in heritage buildings - a review. V: FRANKOVIĆ, Bernard (ur.). *Energija i okoliš 2016 : prilagodba klimatskim promjenama i energijska sigurnost na JI Europe - čista energija za bolji svijet = Energy and the environment 2016*, Međunarodni kongres Energija i okoliš, Opatija, Croatia, October 26-28, 2016. Rijeka: Hrvatski savez za sunčevu energiju. 2016, str. 349-358, ilustr. [COBISS.SI-ID [7739489](#)]