

**UČNI NAČRT PREDMETA / COURSE SYLLABUS**

**Predmet:** Doktorski seminar 1  
**Course title:** Doctoral seminar 1

Študijski program in stopnja Study programme and level	Študijska smer Study field	Letnik Academic year	Semester Semester
Informacijske znanosti, doktorski študijski program tretje stopnje	Obe smeri	Drugi	Tretji in četrti
Information sciences, third cycle Doctoral Study Programme	Both fields	Second	Third and fourth

**Vrsta predmeta / Course type**

Obvezni / Mandatory

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

1-IZ-DR- MKO-RZ-DS1-2024-04-24

Predavanja Lectures	Seminar Seminar	Vaje Tutorial	Klinične vaje work	Druge oblike študija	Samost. delo Individ. work	ECTS
-	30	-	-	-	270	10

**Nosilec predmeta / Lecturer:**

Izr. prof. dr. Borut Lužar, doc. dr. Panče Panov

**Jeziki /  
Languages:**

**Predavanja /  
Lectures:** Slovenski, angleški / Slovene, English  
**Vaje / Tutorial:**

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

Opravljenе vse obveznosti prvega letnika.

**Prerequisites:**

All obligations from the first year.

**Vsebina:**

Seminar se neposredno navezuje na pripravo doktorske disertacije in nanjo navezujočega se znanstvenega članka.

Študentje v okviru seminarja razvijajo prvi osnutek znanstvenega članka, ki se nanaša na njihovo izbrano raziskovalno temo dispozicije doktorske disertacije. Študentje osnutek članka v okviru seminarja tudi predstavijo. Študentje pri tem spremljajo ostale predstavitve doktorskih študentov in

**Content (Syllabus outline):**

The seminar is directly related to the preparation of the doctoral dissertation and the related scientific paper.

Within the seminar, the student develops the first draft of the scientific paper, which refers to the selected research topic of the disposition of the doctoral dissertation. The student also presents a draft of the scientific paper within the seminar. Students monitor other presentations of doctoral students and

pri tem aktivno sodelujejo preko izvajanja kolegialnih recenzij osnutkov člankov.

Pripravljen in predstavljen osnutek mora z danimi relevantnimi pripombami in predlogi služiti kot zadostna podlaga za pripravo končnega besedila znanstvenega članka.

actively participate through the implementation of peer reviews of drafts of the scientific papers.

The completed and presented draft must serve as a sufficient basis for the preparation of the final text of a scientific paper.

### Temeljni literatura in viri / Readings:

- Becker, L. M., & Denicolo, P. (2012). *Publishing journal articles*. Sage.
- Belcher, W. L. (2019). *Writing your journal article in twelve weeks: a guide to academic publishing success*. The University of Chicago Press.
- Higham, N. J. (2020). *Handbook of writing for the mathematical sciences* (3. izdaja). Society for Industrial and Applied Mathematics.
- Zorbel, J (2015). *Writing for Computer Science* (3. izdaja). Springer
- Strunk, W., & White, E.B. (2019). *The Elements of Style* (4. izdaja). Pearson

### Cilji in kompetence:

Učna enota prispeva k razvoju naslednjih splošnih in predmetno-specifičnih kompetenc:

Splošne kompetence:

- Sposobnost identificiranja danega raziskovalnega problema, njegove analize, ovrednotenja ter oblikovanja možnih rešitev.
- Ustvarjanje novega znanja, ki pomeni relevanten prispevek k razvoju znanosti.
- Sposobnost obvladanja standardnih metod, postopkov in procesov raziskovalnega dela na znanstvenem področju študija.
- Prizadevanje za kakovost znanstveno-raziskovalnega dela skozi avtonomnost, (samo)kritičnost, (samo)refleksivnost in (samo)evalviranje.
- Sposobnost za reševanje konkretnih raziskovalnih problemov na posameznem znanstvenem področju.
- Razvoj veščin in spretnosti v uporabi znanja na raziskovalnem področju doktorske disertacije.
- Sposobnost inovativne uporabe in kombiniranja raznih raziskovalnih metod.

### Objectives and competences:

The module contributes to the following general and subject-specific competences:

General competences:

- Ability to identify a given research problem, analyse it, evaluate it and formulate possible solutions.
- Ability to create new knowledge, which represents a contribution to science.
- Ability to master standard methods, procedures and processes of research work in the scientific field of study.
- Striving for quality in scientific research through autonomy, (self-)criticism, (self)reflexivity and (self-)evaluation.
- Ability to solve specific research problem in a particular scientific field.
- Development of skills and abilities in usage of knowledge in the scientific field of doctoral dissertation.
- Ability to innovatively use and combine diverse research methods.
- Ability to acquire, interpret, select, evaluate, and insert new knowledge.

<p><b>Predmetno-specifične kompetence:</b></p> <ul style="list-style-type: none"> <li>• Sposobnost avtonomnega reševanja konkretnih raziskovalnih problemov z analizo, izbiro primerne metodologije in razvojem postopka reševanja.</li> <li>• Sposobnost operacionalizacije abstraktnih teoretskih konceptov.</li> <li>• Formulacija in sposobnost zagovarjanja raziskovalnega načrta.</li> <li>• Sposobnost priprave znanstvenega članka, njegove predstavitve ter izvedbe kolegialnih recenzij.</li> </ul>
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<p><b>Subject-specific competences:</b></p> <ul style="list-style-type: none"> <li>• Ability to autonomously solve concrete research problems by analysis, choosing appropriate methodology and develop the solving process.</li> <li>• Ability to operationalize abstract theoretical concepts.</li> <li>• Formulation of the research design and the ability to defend it.</li> <li>• Ability to prepare a scientific paper, present it and conduct peer reviews.</li> </ul>
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<p><b>Predvideni študijski rezultati:</b></p> <p>Znanje in razumevanje:</p> <p><i>Študent/študentka pridobi znanja za:</i></p> <ul style="list-style-type: none"> <li>• pripravo osnutka znanstvenega članka,</li> <li>• predstavitev znanstvenega članka,</li> <li>• kritično presojo znanstvenih člankov,</li> <li>• zagovor in utemeljitev rezultatov znanstvene raziskave.</li> </ul>
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<p><b>Intended learning outcomes:</b></p> <p>Knowledge and understanding:</p> <p><i>The student acquires knowledge for:</i></p> <ul style="list-style-type: none"> <li>• the preparation of a scientific paper,</li> <li>• the presentation of a scientific paper,</li> <li>• critical assessment of scientific papers,</li> <li>• defense and justification of results of scientific research.</li> </ul>
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<p><b>Metode poučevanja in učenja:</b></p> <ul style="list-style-type: none"> <li>• Seminarsko delo;</li> <li>• Kritično mišljenje;</li> <li>• Individualno delo.</li> </ul>
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<p><b>Learning and teaching methods:</b></p> <ul style="list-style-type: none"> <li>• Seminar work;</li> <li>• Critical thinking;</li> <li>• Individual work.</li> </ul>
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<b>Načini ocenjevanja:</b>	Delež (v %) / Weight (in %)	<b>Assessment:</b>
Način (pisni izpit, ustno izpraševanje, naloge, projekt):		Type (examination, oral, coursework, project):
<ul style="list-style-type: none"> <li>• Priprava in predstavitev osnutka znanstvenega članka</li> </ul>	<b>60</b>	<ul style="list-style-type: none"> <li>• Preparation and presentation of a draft scientific paper</li> </ul>
<ul style="list-style-type: none"> <li>• Dve kolegialni recenziji</li> </ul>	<b>40</b>	<ul style="list-style-type: none"> <li>• Two peer reviews</li> </ul>

<p><b>Reference nosilca / Lecturer's references:</b></p> <p>Doc. dr. Panče Panov</p> <ul style="list-style-type: none"> <li>• Dimitrovski, I., Kitanoški, I., Panov, P., Kostovska, A., Simidjievski, N., Kocev, D. (2023). AiTLAS: artificial intelligence toolbox for Earth observation. <i>Remote Sensing</i> 15(9), 2343. <a href="https://dx.doi.org/10.3390/rs15092343">https://dx.doi.org/10.3390/rs15092343</a></li> <li>• Kostovska, A., Vermetten, D., Doerr, C., Džeroski, S., Panov, P., Eftimov, T. (2023). OPTION: OPTimization algorithm benchmarking ONtology. <i>IEEE transactions on evolutionary computation</i> 27(6), 1618–1632. <a href="https://dx.doi.org/10.17605/OSF.IO/TD25Y">https://dx.doi.org/10.17605/OSF.IO/TD25Y</a></li> </ul>
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- Kostovska, A., Bogatinovski, J., Džeroski, S., Kocev, D., Panov, P. (2022). A catalogue with semantic annotations makes multilabel datasets FAIR. *Scientific reports*, 12, 7267-1-7267-11. <https://dx.doi.org/10.1038/s41598-022-11316-3>
- Vitali, F., Zinno, P., Schifano, E., Gori, A., Costa, A., De Filippo, C., Koroušić-Seljak, B., Panov, P., Devirgiliis, C., Cavalieri, D. (2022). Semantics of dairy fermented foods: a microbiologist's perspective. *Foods* 11(13), 1939-1-1939-18. <https://dx.doi.org/10.3390/foods11131939>
- Osojnik, A., Panov, P., Džeroski, S (2020). Incremental predictive clustering trees for online semi-supervised multi-target regression. *Machine Learning* 109(11), 2121–2139. <https://dx.doi.org/10.1007/s10994-020-05918-z>

Izr. prof. dr. Borut Lužar:

- Modic, D., Lužar, B., & Yoshioka-Kobayashi, T. (2023). Structure of university licensing networks. *Scientometrics*, 128, 901–932. <https://doi.org/10.1007/s11192-022-04564-7>
- Gusmeroli, N., Hrga, T., Lužar, B., Povh, J., Siebenhofer, M., & Wiegele, A. (2022). BiqBin: A Parallel Branch-and-bound Solver for Binary Quadratic Problems with Linear Constraints. *ACM Transactions on Mathematical Software*, 48(2), 1–31. <https://doi.org/10.1145/3514039>
- Hocquard, H., Lajou, D., & Lužar, B. (2022). Between proper and strong edge-colorings of subcubic graphs. *Journal of Graph Theory*, 101(4), 686–716. <https://doi.org/10.1002/jgt.22848>
- La, H., Lužar, B., & Štorgel, K. (2022). Further extensions of the Grötzsch Theorem. *Discrete Mathematics*, 345(6), 112849. <https://doi.org/10.1016/j.disc.2022.112849>
- Rojko, K., & Lužar, B. (2022). Scientific performance across research disciplines: Trends and differences in the case of Slovenia. *Journal of Informetrics*, 16(2), 101261. <https://doi.org/10.1016/j.joi.2022.101261>