

**UČNI NAČRT PREDMETA / COURSE SYLLABUS**

**Predmet:** Družboslovna metodologija  
**Course title:** Social Science Methodology

Študijski program in stopnja Study programme and level	Študijska smer Study field	Letnik Academic year	Semester Semester
Informacijska družba, doktorski študijski program tretje stopnje	-	Prvi	Prvi
Information Society, third cycle Doctoral Study Programme	-	First	First

**Vrsta predmeta / Course type**

Obvezni/ Compulsory

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

1-ID-DR-DM-2024-02-05

Predavanja Lectures	Seminar Seminar	Vaje Tutorial	Klinične vaje work	Druge oblike študija	Samost. delo Individ. work	ECTS
30	0	0	/	/	420	15

**Nosilec predmeta / Lecturer:**

prof. dr. Borut Rončević, prof. dr. Matej Makarovič, izr. prof. dr. Blaž Rodič

**Jeziki /  
Languages:**

**Predavanja /  
Lectures:** Slovenski / Slovenian, Angleški / English  
**Vaje / Tutorial:** Slovenski / Slovenian, Angleški / English

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

Vpis v prvi letnik študija.

**Prerequisites:**

Enrolment in the first year of studies.

**Vsebina:**

Cilj predmeta je dati študentom metodološke osnove za izdelavo doktorske naloge. V sklopu predmeta bodo študentje spoznali nabor kvantitativnih in kvalitativnih raziskovalnih metod, s katerimi bodo suvereno začeli z doktorsko raziskavo.

**KVALITATIVNA IN PRIMERJALNA  
METODOLOGIJA**

- Uporaba kvalitativne in primerjalne metodologije pri proučevanju informacijske družbe in za potrebe računalniških znanosti (konkretni primeri in pogovor s študenti)

**Content (Syllabus outline):**

The aim of the course is to endow the students with the methodological basis for preparation of their doctoral thesis. Within the course students will learn a number of quantitative and qualitative research methods, which will enable them to confidently start their doctoral research.

**QUALITATIVE AND COMPARATIVE RESEARCH  
METHODS**

- Using qualitative and comparative methodology in research on information society and in the computer science (specific

- Pregled izbranih kvalitativnih metod: terensko raziskovanje, kvalitativni intervjuji, fokusne skupine, analiza dokumentov
- Primerjalno raziskovanje: študije primerov, primerjalne študije primerov, analiza mehkih množic (fuzzy-set analiza), metodološki problemi v mednarodnem primerjalnem raziskovanju
- Metode triangulacije: interpretativna in pozitivistična paradigma, post-pozitivizem kot nova epistemološka sinteza, kombiniranje kvalitativnih in kvantitativnih metod
- Programska oprema za kvalitativno analizo

### **OSNOVNI STATISTIČNI KONCEPTI IN IZBRANE STATISTIČNE METODE**

- Izbrane teme iz inferenčne in bivariatne statistike (t test, bivariatna analiza variance, hi-kvadrat, Kenallov tao-b in gamma, korelacija intervalnih spremenljivk)
- Uvod v izbrane multivariatne metode (faktorska analiza, korespondenčna analiza, razvrščanje v skupine, regresija in njene izpeljave)

### **UVOD V ANALIZO OMREŽIJ**

- Omrežja in zakaj in preučujemo, prednosti omrežne predstavitve podatkov
- Družbena, informacijska in tehnološka omrežja
- Centralnost, Struktura skupnosti, dinamični procesi  
Močne in šibke vezi v socialnih omrežij

### **SODOBNE METODE ANALIZE PODATKOV**

- Podatkovno rudarjenje in druge metode za analizo podatkov
- Standardiziran proces prodatkovnega rudarjenja
- Vrste družboslovnih problemov in nalog primernih za reševanje s podatkovnim rudarjenjem

examples and discussion with students)

- Overview of selected qualitative methods: field research, qualitative interviews, focus groups, documentary analysis
- Comparative research: case studies, comparative case studies, fuzzy-set analysis, methodological problems in international comparative research
- Triangulation: interpretive and positivist paradigm, post-positivism as a new epistemological synthesis, combining qualitative and quantitative methods
- Software for qualitative analysis

### **BASIC STATISTICAL CONCEPTS AND SELECTED STATISTICAL METHODS**

- Selected topics from inferential and bivariate statistics (t test, bivariate analysis of variance, chi-square test, Kendall tau-b and gamma, correlation of interval variables)
- Introduction to selected multivariate methods (factor analysis, correspondence analysis, cluster analysis, regression and its derivations)

### **INTRODUCTION TO NETWORK ANALYSIS**

- Networks and why we study them, benefits of representing data as networks
- Social, information and technological networks
- Centrality, Community structure, dynamical processes
- Strong and weak ties in social networks

### **MODERN METHODS OF DATA ANALYSIS**

- Data mining and other methods for data analysis
- A standardized data mining procedure
- Tasks of data mining
- An overview of social science data mining methods: decision and regression trees, support vector

- Pregled najpomembnejših metod za podatkovno rudarjenje: odločitvena in regresijska drevesa, metoda podpornih vektorjev, Bayesovske metode, nevronske mreže
- Odločanje in modeli

#### **OSNOVE AGENTNEGA MODELIRANJA V DRUŽBOSLOVNEM RAZISKOVANJU**

- Uvod v modeliranje z agenti (MA), kdaj in zakaj uporabljati MA
- Pregled MA orodij, izbira teme MA projekta, Arhitekture agentnih modelov, izbira arhitekture za izbrani MA projekt
- Delavnica z izbranimi MA orodji, implementacija enostavnega modela

machines, Bayesian methods, neural networks

- Decision making and decision support methods and modeling

#### **BASICS OF AGENT BASED MODELLING IN SOCIAL SCIENCE RESEARCH**

- Introduction to agent based modelling (ABM), when and why to use ABM
- Overview of ABM tools, Choosing the ABM project theme, Architectures of agent-based models, selection of architecture for the selected ABM project
- Workshop with selected tools, implementation of a simple model

#### **Temeljni literatura in viri / Readings:**

- BLOOMBERG, L. D. (2019). *Completing Your Qualitative dissertation: A Road Map from Beginning to End*, Fourth Edition. Sage
- RAVITCH, S. M., & MITTENFELNER, C. N. (2020). *Qualitative Research: Bridging the Conceptual, Theoretical, and Methodological*, 2nd Edition. Sage.
- RAJARAMAN, ANAND in ULLMAN, JEFFREY DAVID (2012) *Mining of massive datasets*. New York: Cambridge university press.
- HÄRDLE, WOLFGANG KARL in SIMAR, LÉOPOLD (2015) *Applied Multivariate Statistical Analysis. Fourth Edition*. Heidelberg: Springer.
- HASTIE TREVOR, TIBSHIRANI ROBERT IN FRIEDMAN JEROME (2009) *The elements of statistical learning: Data Mining, Inference, and Prediction*. New York: Springer.
- PATTON MICHAEL QUINN (2015) *Qualitative Research & Evaluation Methods: Integrating Theory and Practice*. London: SAGE.
- RAGIN C. CHARLES (2008): *Redesigning Social Inquiry: Fuzzy-sets and Beyond*. Chicago: Chicago University Press.
- CRESWELL JOHN W. (2017) *A Concise Introduction to Mixed Methods Research*. SAGE.
- Railsback, S.F., Grimm V. (2011) *Agent-Based and Individual-Based Modeling: A Practical Introduction*, Princeton University Press.
- Grigoryev, I. (2014) *AnyLogic 7 in Three Days: A Quick Course in Simulation Modeling*, AnyLogic North America.
- Newman, M. (2010) *Networks: An Introduction*, Oxford University Press

**Cilji in kompetence:**

**Objectives and competences:**

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

- sposobnost identificiranja danega raziskovalnega problema, njegove analize ter možnih rešitev
- ustvarjanje novega znanja in prispevek k razvoju znanosti
- sposobnost obvladavanja standardnih metod, postopkov in procesov raziskovalnega dela na različnih znanstvenih področjih
- sposobnost samostojnega raziskovalno-razvojnega dela in vodenje raziskovalne skupine
- sposobnost za reševanje konkretnih raziskovalnih problemov na posameznih področjih družbenih in ostalih ved
- razvoj veščin in spretnosti v uporabi znanja na raziskovalnem področju doktorske disertacije
- sposobnost inovativne uporabe in kombiniranja raznih raziskovalnih metod

*Learning unit contributes to the development of the following general and subject-specific competences:*

- the ability to identify, analyze and construct solution a given research problem
- creation of new knowledge and contribution to the development of science
- mastery of standard methods and approaches in the process of scientific research in various scientific fields
- ability of independent research and development work and management of research group
- skills and abilities for solving concrete research problems in various fields of social and other sciences
- development of skills and abilities in usage of knowledge in doctoral research
- ability of innovative combined usage of various research methodologies

**Predvideni študijski rezultati:**

Znanje in razumevanje:

*Študent/študentka:*

- obvlada ključne raziskovalne metode, ki so potrebne za izdelavo doktorske naloge,
- pozna naravo velikih količin podatkov
- je sposoben kombinirati metode kvalitativne in kvantitativne analize,
- je sposoben samostojnega raziskovalnega dela z uporabo kvalitativnih in kvantitativnih metod,
- je sposoben kombinirati različne pristope družboslovnega raziskovanja,
- je sposoben predstaviti svojih raziskovalnih rezultatov v znanstvenih publikacijah.

**Intended learning outcomes:**

Knowledge and understanding:

*The student:*

- masters key research methods that are necessary to conduct the doctoral research work,
- knows the nature of big data
- is able to combine the methods of qualitative and quantitative analysis,
- is capable of independent research using qualitative and quantitative methods,
- is able to combine different approaches from social sciences,
- is able to present his/her research results in scientific publications.

**Metode poučevanja in učenja:**

**Learning and teaching methods:**

<ul style="list-style-type: none"> <li>• <i>Predavanja</i> z aktivno udeležbo študentov; kratka razlaga, diskusija, razprava na primerih, reševanje problematike.</li> <li>• <i>Seminarsko delo</i> v obliki priprave in zagovora projektne naloge.</li> <li>• <i>Individualno delo</i> študentov: samostojni študij znanstvene in strokovne literature in rezultatov raziskav. Izdelava domačih nalog in projektne naloge.</li> </ul>	<ul style="list-style-type: none"> <li>• <i>Lectures</i> with active participation of students; a brief explanation, discussion, debate on cases dealing with the problems.</li> <li>• <i>Seminar</i> in the form of preparation and presentation of project assignment.</li> <li>• <i>Individual work</i> of students; independent study of scientific and professional literature and research results. Work on home and project assignments.</li> </ul>
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Delež (v %) /  
Weight (in %)

**Načini ocenjevanja:**

**Assessment:**

Način (pisni izpit, ustno izpraševanje, naloge, projekt): Študent izbere enega nosilca, ki določi potrebne naloge.	100	Type (examination, oral, coursework, project): Student chooses one of the lecturers who sets the entire course requirements.
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**Reference nosilca / Lecturer's references:**

<ul style="list-style-type: none"> <li>• FRIC, Urška, RONČEVIĆ, Borut, DŽAJIĆ URŠIČ, Erika. Role of computer software tools in industrial symbiotic networks and the examination of sociocultural factors. <i>Environmental progress &amp; sustainable energy</i>. 2020, vol. 39, no. 2, 7 str.</li> <li>• RONČEVIĆ, Borut, BESEDNJAK VALIČ, Tamara. How to think about regional development agencies as a sociologist. <i>The social sciences</i>. [Online ed.]. 2019, vol. 14, iss. 9, str. 326-334</li> <li>• GOLOB, T., GORIŠEK, M., &amp; MAKAROVIC, M. (2023). Authoritarian and populist challenges to democracy correspond to a lack of economic, social, and cultural capitals. <i>Societies</i>, 13(8), 1–12.</li> <li>• MAJETIĆ, Filip, MAKAROVIC, Matej, ŠIMLEŠA, Dražen, GOLOB, Tea. Performance of work integration social enterprises in Croatia, Slovenia, and Italian regions of Lombardy and Trentino. <i>Economics &amp; sociology</i>. 2019, vol. 12, no. 1, str. 286-301.</li> <li>• GOLOB, Tea, MAKAROVIC, Matej. Reflexivity and structural positions : the effects of generation, gender and education. <i>Social sciences</i>. 2019, vol. 8, no. 9, str. 1-23.</li> <li>• BARBO, Matej, RODIČ, Blaž. Modeling the influence of safety aid market penetration on traffic safety : case of collision warning system for powered two-wheelers. <i>Accident analysis and prevention</i>. [Print ed.]. 2023, vol. 192 (107240), str. 1-11</li> <li>• BRELIH, Marjan, RODIČ, Blaž. Comparison of multi-criteria decision methodologies : case of water management investment project. V: PANKOWSKA, Malgorzata (ur.). <i>Digital transformation, perspective development, and value creation : research case studies</i>. New York; Abingdon: Routledge, 2024. Str. [118]-136, Routledge advances in management and business studies</li> </ul>
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