KVANTITATIVNE METODE V JAVNEM SEKTORJU

UČNI NAČRT PREDMETA/COURSE SYLLABUS

Predmet:	Kvantitativne metode v javnem sektorju
Course title:	Quantitative Methods In Public Sector
Članica nosilka/UL Member:	UL FU

Študijski programi in stopnja	Študijska smer	Letnik	Semestri	Izbirnost
Management v upravi, druga stopnja, magistrski	Management kakovosti v javnem sektorju (smer)	2. letnik	Celoletni	izbirni

Univerzitetna koda predmeta/University course code: 0601805

Koda učne enote na članici/UL Member course code: 596

Predavanja /Lectures	Seminar /Seminar	Vaje /Tutorials	Klinične vaje /Clinical tutorials	Druge oblike študija /Other forms of study	Samostojno delo /Individual student work	ECTS
21	11			118	60	7

Nosilec predmeta/Lecturer:	Lan Umek

Vrsta predmeta/Course type:	Strokovno izbirni/Professional elective

Jeziki/Languages:	Predavanja/Lectures:	Angleščina, Slovenščina
	Vaje/Tutorial:	Angleščina, Slovenščina

Pogoji za vključitev v delo oz. za opravljanje študijskih obveznosti:	**Prerequisites:**
Ni.	No prerequisites.

Vsebina:

1. Uvodna prestavitev metod
2. Kvantitativni modeli: opredelitev, lastnosti, oblikovanje modela in uporaba
3. Linearni program: osnovna opredelitev, modeli, fazni, dinamizirani, primeri
4. Multivariantna analiza: korelacija, regresija
5. Razvrščanje v skupine
6. Uvrščanje v skupine
7. Metoda podatkovne ovojnice
8. Mehka logika: opredelitev, uporaba
9. Bibliometrična analiza
10. Uporaba kvantitativnih metod pri kompleksnih problemih v upravi

Content (Syllabus outline):

1. Initial review of methods
2. Quantitative models: definition, properties, design, and applications
3. Linear programming: definition, phase, dynamic models, applications
4. Multivariate analysis: correlation, regression
5. Clustering
6. Classification
7. Data envelopment analysis
8. Fuzzy logic: definitions and applications
9. Bibliometric analysis
10. Use of quantitative methods to deal with complex problems in administration

Temeljna literatura in viri/Readings:

Obvezna literatura

- Eiselt, H.A. & Sandblom, C.-L., 2010. Operations Research: A Model-Based Approach 1st iz., Springer, p. 1-122.
- Welsh, S. & Comer, J., 2006. Quantitative Methods for Public Administration: Techniques and Applications 3rd ed., Waveland Pr Inc. (izbrana poglavja)
- Cooper, W.W., Seiford, L.M. & Tone, K., 2006. Data Envelopment Analysis: A Comprehensive Text with Models, Applications, References and DEA-Solver Software 2nd ed., Springer. (izbrana poglavja)
- Nelson, B.L. & Mathematics, 2010. Stochastic Modeling: Analysis and Simulation, Dover Publications p. 1- 146.
- Nguyen, H.T. & Walker, E.A., 2005. A First Course in Fuzzy Logic, Third Edition 3rd ed., Chapman and Hall/CRC p. 1 - 170.

Dodatna literatura in viri

- Jenkins-Smith, H. C., Ripberger, J. T., Copeland, G., Nowlin, M. C., Hughes, T., Fister, A. L., & Wehde, W. (2017). Quantitative Research Methods for Political Science, Public Policy and Public Administration (With Applications in R). (izbrana poglavja)
- Ravindran, A.R., 2008. Operations Research Applications 1st ed., CRC Press. (izbrana poglavja)
- Ozcan, Y.A., 2009. Quantitative Methods in Health Care Management: Techniques and Applications 2nd iz., Jossey-Bass. (izbrana poglavja)

Cilji in kompetence:	Objectives and competences:
Študent:	Student:
- prepozna in opredeli problem, postavi raziskovalna vprašanja in ali trditve in opredeli raziskovalne hipoteze, - samostojno izbere primerno kvantitativno metodo oziroma model za reševanje problema, - preuči primere uporabe metod oziroma modela in pripravi načrt reševanja problema, - zbere in analizira informacije ter podatke z uporabo primernih metod, kot sta analiza vsebin in primerjalna analiza, - rezultate analize kritično obravnava in jih sooči z rezultati predhodnih analiz in konkretno situacijo v javnem sektorju.	- recognizes and defines problem, asks research questions and/or thesis and defines research hypotheses, - chooses independently suitable quantitative method and/or model for particular problem solving - considers similar cases of applications of methods and prepares the plan problem solving process, - gathers and analyses information and data using suitable methods like content analysis and comparative analysis, - makes critical reflexion to the results of analyses and relates them to the results of earlier studies and situation in public sector.
Študent je usposobljen za:	Student is qualified
- načrtovanje rešitve problema z uporabo primernega kvantitativnega modela z vsemi potrebni elementi, - oblikovanje problemskega pristopa in utemeljitev nameravanega kvantitativnega modela, umeščanje dela v predhodno raziskovalno in izkustveno okolje na osnovi študija literature in virov, - izvedbo konkretne kvantitativne analize z uporabo ustreznih metod oziroma modelov, - komentiranje in vsebinsko interpretacija rezultatov kvantitativne analize	- to plan problem solving process with the help of suitable quantitative model with all necessary elements, - to incorporate the problem approach and assert the intended quantitative model, and to place the work into predefined research and practical framework, - to perform specific quantitative analysis using suitable methods and/or models,

• kritično poročanje o rezultatih in o prednostih in slabostih uporabe izbranih metod oziroma modelov.	• to interpret methodological and content issues of the results of quantitative analysis • to report critically the results and advantages and disadvantages of application of the method and/or models.

Predvideni študijski rezultati:

Intended learning outcomes:

Študentje:

- razumejo pomen primerjalne analize v javnem sektorju, ki je podlaga za izboljšanje kakovosti in učinkovitosti,
- so zmožni oblikovati program izvajanja primerjalnih analiz v okolju lokalne samouprave,
- so zmožni opredeliti in uporabiti proračunske kazalnike,
- so zmožni opredeliti in uporabiti kazalnike učinkovitosti in uspešnosti ter interpretirati rezultate,
- so zmožni pripraviti in izvesti empirične raziskave merjenja učinkovitosti in uspešnosti z uporabo ustreznih kazalnikov,
- so zmožni oceniti ustreznost rezultatov raziskav,
- so zmožni pripraviti rezultate raziskav v obliki, ki je primerna za objavo v ustreznih publikacijah,
- so zmožni sodelovati v skupinskem delu, potrebnem za izvedbo bolj zapletenih primerjalnih analiz in ovrednotiti proces skupinskega dela.

Students will:

- understand the importance of performance benchmarking in public sector as the ground for quality and effectiveness improvement,
- be able to design program of the implementation of benchmarking in local government environment,
- to define and to use the budgetary indicators
- to define and to use performance indicators (effectiveness, efficiency, economy) and to interpret the results,
- be able to prepare and to perform empirical research of performance measuring using suitable indicators,
- be capable to assess the research result relevancy,
- be able to prepare research results in form suitable for understanding and verification of the research results that are acceptable for the publicity in the relevant publications,
- be able to participate in the team work needed for execution of complex benchmarking analyses and to assess team work process.

Metode poučevanja in učenja:

Learning and teaching methods:

- predavanje
- seminar
- raziskava
- projektno delo
- seminarsko delo
- skupinska predstavitev
- e-učenje

- lecture
- seminars
- research
- project work
- seminar paper
- (group) presentation
- e-learning

Načini ocenjevanja:

	Delež/Weight	Assessment:
seminarska delo (npr. projektna naloga, seminarska naloga) in/ali zagovor dela	80,00 %	seminar work (project work, seminar workpaper) and/or oral exam
pisni in/ali ustni izpit	20,00 %	written and/or oral exam

Reference nosilca/Lecturer's references:

- UMEK, Lan, KERŽIČ, Damijana, ARISTOVNIK, Aleksander, TOMAŽEVIČ, Nina. An assessment of the effectiveness of Moodle e-learning system for undergraduate public administration education. International journal of innovation and learning. 2017, vol. 21, no. 2, str. 165-177. ISSN 1741-8089. DOI: 10.1504/IJIL.2017.081939.
- ARISTOVNIK, Aleksander, KERŽIČ, Damijana, RAVŠELJ, Dejan, TOMAŽEVIČ, Nina, UMEK, Lan. Impacts of the COVID-19 pandemic on life of higher education students: a global perspective. Sustainability. 2020, vol. 12, iss. 20, str. 1-34, ilustr. ISSN 2071-1050. https://www.mdpi.com/2071-1050/12/20/8438, DOI: 10.3390/su12208438. DEMŠAR, Janez, CURK, Tomaž, ERJAVEC, Aleš, GORUP, Črtomir, HOČEVAR, Tomaž, MILUTINOVIĆ, Mitar, MOŽINA, Martin, POLAJNAR, Matija, TOPLAK, Marko, STARIČ, Anže, ŠTAJDOHAR, Miha, UMEK, Lan, ŽAGAR, Lan, ŽBONTAR, Jure, ŽITNIK, Marinka, ZUPAN, Blaž. Orange : data mining toolbox in Python. Journal of machine learning research. [Print ed.]. Aug. 2013, vol. 14, str. 2349-2353. ISSN 1532-4435. http://jmlr.org/papers/volume14/demsar13a/demsar13a.pdf, http://eprints.fri.uni-lj.si/2267/.
- ARISTOVNIK, Aleksander, RAVŠELJ, Dejan, UMEK, Lan. A bibliometric analysis of COVID-19 across science and social science research landscape. Sustainability. 2020, vol. 12, iss. 21, str. 1-30, ilustr. ISSN 2071-1050. https://www.mdpi.com/2071-1050/12/21/9132, DOI: 10.3390/su12219132. https://journals.plos.org/plosone/article/file?id=10.1371/journal.pone.0223767&type=printable
- UMEK, Lan, ZUPAN, Blaž. Subgroup discovery in data sets with multi-dimensional responses. Intelligent data analysis. [Print ed.]. 2011, vol. 15, no. 4, str. 533-549, ilustr. ISSN 1088-467X. http://eprints.fri.uni-lj.si/1484/.