

**UČNI NAČRT PREDMETA / COURSE SYLLABUS**

**Predmet:** Menedžerski informacijski sistemi  
**Course title:** Management Information Systems

Študijski program in stopnja Study programme and level	Študijska smer Study field	Letnik Academic year	Semester Semester
Informatika v sodobni družbi, magistrski študijski program druge stopnje	-	Prvi	Prvi
Informatics in Contemporary Society, second cycle Masters Study Programme	-	First	First

**Vrsta predmeta / Course type**

Obvezni / Obligatory

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

1-ISD-MAG-MIS-2025-01-17

Predavanja Lectures	Seminar Seminar	Vaje Tutorial	Klinične vaje work	Druge oblike študija	Samost. delo Individ. work	ECTS
25	-	20	-	-	105	5

**Nosilec predmeta / Lecturer:** izr. prof. dr. Blaž Rodič

**Jeziki / Languages:**

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

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

Študent/študentka mora pred pristopom k izpitu pripraviti in zagovarjati empirično seminarsko nalogo.

**Prerequisites:**

Prior to the exam, the student has to prepare and present seminar work.

**Vsebina:**

- Uvod v predmet: kaj je poslovno obveščanje (BI)? Razvoj in prihodnost BI.
- Informatika, informacije in podatki.
- Informacijski sistem. Razvoj informatike. Evolucija BI.
- Upravljalvska piramida. Ravni informacijskih sistemov. Podpora IS poslovnemu sistemu. Razmerje IS in procesov: temeljni, informacijski, in upravljalvski proces.

**Content (Syllabus outline):**

- Introduction to the course: What Business Intelligence (BI)? Development and the future of BI.
- Information technology, information and data.
- Information system. Development of informatics. The evolution of BI.
- Management Pyramid. Levels of information systems. IS support for the business systems. Relationship between the IS and processes: basic,

<ul style="list-style-type: none"> <li>• Informacijski sistemi na različnih ravneh: Poslovni IS, Integrirani IS, MIS, SPO, EIS.</li> <li>• Čemu lahko rečemo BI? Razlogi za vpeljavo BI. Poslovna vrednost BI.</li> <li>• Zahteve za gradnjo BI. Tipi informacij v BI.</li> <li>• Podpora odločanju z BI. Zahtevnost odločanja. Odločanje na različnih ravneh. Proces odločanja. Pristopi k odločanju.</li> <li>• Večkriterijsko modeliranje. Kvantitativni in kvalitativni modeli. Ekspertni sistemi.</li> <li>• Vodila za načrtovanje SPO.</li> <li>• Področja podpore odločanju: Operacijske raziskave (OR), Sistemi za podporo odločanju (SPO), Sistemi za upravljanje odnosov s strankami (CRM), Upravljanje z znanjem (KMS), Modeliranje in simulacija (MS), Rudarjenje v podatkih.</li> <li>• Skupinsko odločanje in podpora sodelovanju.</li> <li>• Komponente sistemov poslovnega obveščanja</li> <li>• Podatkovno skladišče. Večdimenzionalnost podatkov. OLAP orodja. Vrtilne tabele.</li> <li>• Uporabniški vmesnik BI. Vizualizacija podatkov. Sistemi za upravljanje poslovne uspešnosti.</li> <li>• Tehnološki trendi, povezani s poslovnim obveščanjem</li> </ul>	<p>information, and management process.</p> <ul style="list-style-type: none"> <li>• Information systems at different levels: business IS, integrated IS, BI, DSS, EIS.</li> <li>• What can we refer to as BI? The reasons for the introduction of BI. Business value of BI.</li> <li>• Requirements for construction of the BI. Types of information in the BI.</li> <li>• Decision support with BI. Complexity of decision-making. Decision-making at various levels. Decision-making process. Approaches to decision making.</li> <li>• Multicriteria modelling. Quantitative and qualitative models.</li> <li>• Guidelines for DSS design.</li> <li>• Areas of decision support: Operations research (OR), Decision support systems (DSS), Knowledge management systems (KMS), Data mining.</li> <li>• Modelling and simulation, Group decision making. Support for cooperation.</li> <li>• Composition of BI</li> <li>• Data warehouse. Multidimensional data. OLAP tools. Pivot tables.</li> <li>• The user interface of BI. Visualization of data.</li> <li>• Business performance management systems.</li> <li>• Technological trends in BI</li> </ul>
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### Temeljni literatura in viri / Readings:

<ul style="list-style-type: none"> <li>• Turban, E., Pollard, C., Wood, G., Information Technology for Management: On-Demand Strategies for Performance, Growth and Sustainability, 11th Edition, Wiley, 2018</li> <li>• Rainer, R.K., Management Information Systems 4th Edition, Wiley, 2016</li> <li>• Sharda, R., Delen, D., Turban, E., Analytics, Data Science, &amp; Artificial Intelligence: Systems for Decision Support, 11th Edition, Pearson, 2020.</li> <li>• Borschchev A., The Big Book of Simulation Modeling. Multimethod Modeling with AnyLogic 8, AnyLogic North America, 2020.</li> <li>• Howson C.: <i>Successful Business Intelligence: Secrets to Making BI a Killer App</i>, 2nd Ed, 2014</li> <li>• Bohanec, M.: <i>Odločanje in modeli</i>, DMFA Založništvo, Ljubljana 2006</li> </ul>
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**Cilji in kompetence:****Cilji:**

Glavni cilj predmeta je seznaniti slušatelje s področjem uporabe večkriterijskega odločitvenega modeliranja in področja poslovnega obveščanja pri podpori odločanju.

*Učna enota prispeva k razvoju naslednjih splošnih kompetenc:*

- Sposobnost oblikovanja izvirnih idej, konceptov in rešitev določenih problemov;
- Poznavanje in razumevanje interakcij med informacijsko komunikacijsko tehnologijo in sodobno družbo;
- Poznavanje in razumevanje širokega nabora aplikacij informacijsko komunikacijske tehnologije v sodobni družbi;
- Usposobljenost za načrtovanje in vodenje organizacijskih in informacijskih sprememb v organizaciji, ki so potrebne pri uvajanju ali posodabljanju informacijsko komunikacijske tehnologije ter kakovostni uporabi le-te;

*In predmetno specifične kompetence:*

- Obvladovanje metod izdelave večkriterijskih odločitvenih modelov.
- Znanje modeliranja odločitvenih procesov.
- razumevanje podpore odločanju s poslovno inteligenco;
- poglobljeno poznavanje nabora metod za podporo pri odločanju ter simulacija odločitvenih modelov.

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

Courses main objective is to introduce the application of multicriteria decision modeling and business intelligence methods in decision support.

*The instructional unit contributes to the development of the following general competences:*

- Ability to formulate original ideas, concepts and solutions to certain problems;
- Knowledge and understanding of interactions between ICT and modern society;
- Knowledge and understanding of a wide range of ICT applications in modern society;
- Ability to plan and manage organizational and information changes in the organization, which are necessary for the introduction or updating of ICT and its quality use;

*And Subject-specific competences:*

- proficiency in methods for design of multi-criteria decision models;
- decision process modelling skills;
- understanding of BI decision support;
- in-depth understanding of methods for decision support and simulation of decision models.

**Predvideni študijski rezultati:**

Znanje in razumevanje:

*Študent/študentka ima/obvlada:*

- poznavanje strateškega pomena menedžerskih informacijskih sistemov oz. sistemov za poslovno obveščanje

**Intended learning outcomes:**

Knowledge and understanding:

Students have/master the:

- recognize the strategic importance of management information systems i.e. business intelligence systems,

- poznavanje uporabnosti informacijskih sistemov za podporo menedžmentu
- uporaba informacijskih sistemov kot podpora odločanju
- obvladovanje metod izdelave večkriterijskih odločitvenih modelov
- poznavanje izbora tehnologij in sistemov za poslovno obveščanje,
- poznavanje etičnih vidikov uporabe menedžerskih informacijskih sistemov

- recognize the utility of information systems in management support ,
- learn how to use information systems and decision support,
- master multi-criteria decision modelling,
- be familiar with a selection of business intelligence technologies and methods,
- understand the ethical aspects of the use of management information systems.

#### Metode poučevanja in učenja:

- Predavanja z aktivno udeležbo študentov (razlaga snovi, diskusija, vprašanja, primeri);
- Laboratorijske vaje (metode in programska oprema za podporo odločanju);
- Individualno delo (študij znanstvene in strokovne literature in priprava empirične seminarske naloge).

#### Learning and teaching methods:

- Lectures with the active participation of students (presentation, discussion, questions, examples);
- Laboratory exercises (decision support methods and software);
- Individual work (study of scientific and professional literature and development of empirical seminar work)

#### Načini ocenjevanja:

- Način (pisni izpit, ustno izpraševanje, naloge, projekt):
- pisni izpit
  - empirična seminarska naloga

Delež (v %) /  
Weight (in %)

#### Assessment:

- Type (examination, oral, coursework, project):
- written exam
  - empirical seminar work

#### Reference nosilca / Lecturer's references:

- RODIČ, Blaž. Industry 4.0 and the new simulation modelling paradigm. Organizacija : revija za management, informatiko in kadre, ISSN 1318-5454. [Tiskana izd.], aug. 2017, vol. 50, no. 3, str. 193-207, ilustr., doi: 10.1515/orga-2017-0017
- BRELIH, Marjan, RAJKOVIČ, Uroš, RUŽIČ, Tomaž, RODIČ, Blaž, KOZELJ, Daniel. Modelling decision knowledge for the evaluation of water management investment projects. Central European Journal of Operations Research, ISSN 1435-246X, 2018, vol. , iss. , str. <https://link.springer.com/content/pdf/10.1007%2Fs10100-018-0600-5.pdf>, doi: 10.1007/s10100-018-0600-5.
- KANDUČ, Tadej, RODIČ, Blaž. Optimisation of machine layout using a force generated graph algorithm and simulated annealing. International journal of simulation modelling, ISSN 1726-4529, 2016, vol. 15, no. 2, str. 275-287.

- RODIČ, Blaž, BAGGIA, Alenka. Dynamic airport ground crew scheduling using a heuristic scheduling algorithm. *International journal of applied mathematics and informatics*, ISSN 2074-1278, 2013, vol. 7, iss. 4, str. 153-163.
- RODIČ, Blaž. Mobile agents for distributed decision support systems. *The International Scientific Journal of Management Information Systems*, ISSN 1452-774X, 2011, vol. 6, no. 1, str. 20-27.
- RODIČ, Blaž, KLJAJIĆ, Mirosljub. Accessing distributed data sources with mobile agents and XML. V: JAŠKOVÁ, Mária (ur.). *ECON '05 : [selected research papers]*, (Research works proceedings, ISSN 0862-7908, Vol. 12, 2005). Ostrava: Technical University of Ostrava, Faculty of Economics. 2005, str. 280-287.
- RODIČ, Blaž, KLJAJIĆ, Mirosljub. Integracija simulacijskih orodij v e-poslovni informacijski sistem. V: GRIČAR, Jože (ur.). *Izboljšanje konkurenčnosti regije z e-poslovanjem*, (Organizacija, ISSN 1318-5454, Letn. 37, 2004, št. 3). Kranj: Moderna organizacija. 2004, str. 162-167.
- ŠKRABA, Andrej, BAGGIA, Alenka, RODIČ, Blaž. Application of a group decision support system in the reform of study programmes. V: DONDON, Philippe (ur.). *Recent advances in education and modern educational technologies*, (Educational technologies series, 9). [S. l.: s. n.]. 2013, str. 128-134.
- RODIČ, Blaž. Issues of e-collaboration and knowledge management in media industries. V: LUGMAYR, Artur (ur.), et al. *Information systems and management in media and entertainment industries*, (International series on computer entertainment and media technology (Online), ISSN 2364-9488). Cham: Springer. cop. 2016.