

UČNI NAČRT PREDMETA / COURSE SYLLABUS

Predmet: Sistemi in metode za poslovno obveščanje
Course title: Business Intelligence Systems and Methods

Študijski program in stopnja Study programme and level	Študijska smer Study field	Letnik Academic year	Semester Semester
Računalništvo in spletne tehnologije, magistrski študijski program druge stopnje	-	Prvi	Prvi
Computer science and web technologies, second cycle Masters Study Programme	-	First	First

Vrsta predmeta / Course type

Obvezni / Obligatory

Univerzitetna koda predmeta / University course code:

2-RST-MAG-SMPO-2024-02-05

Predavanja Lectures	Seminar Seminar	Vaje Tutorial	Klinične vaje work	Druge oblike študija	Samost. delo Individ. work	ECTS
30	-	20	-	-	130	6

Nosilec predmeta / Lecturer:

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 imeti pozitivno ocenjene vaje in seminarsko nalogo.

Prerequisites:

Positively evaluated exercises and seminar paper are a prerequisites for exam.

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"> • Informacijski sistemi na različnih ravneh: Poslovni IS, Integrirani IS, MIS, SPO, EIS. • Čemu lahko rečemo BI? Razlogi za vpeljavo BI. Poslovna vrednost BI. • Zahteve za gradnjo BI. Tipi informacij v BI. • Podpora odločanju z BI. Zahtevnost odločanja. Odločanje na različnih ravneh. Proces odločanja. Pristopi k odločanju. • 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), Skupinsko odločanje in podpora sodelovanju. • Komponente sistemov poslovnega obveščanja • Sestava BI. Podatkovno skladišče. Večdimenzionalnost podatkov. OLAP orodja. Vrtilne tabele. Rudarjenje v podatkih. • Uporabniški vmesnik BI. Vizualizacija podatkov. • Trendi razvoja BI: Sistemi za upravljanje poslovne uspešnosti. Geografski informacijski sistemi. Metode umetne inteligence v SPO, Intelligentni sistemi, Industrija 4.0 in internet naprav (IoT). 	<p>information, and management process.</p> <ul style="list-style-type: none"> • Information systems at different levels: business IS, integrated IS, BI, DSS, EIS. • What can we refer to as BI? The reasons for the introduction of BI. Business value of BI. • Requirements for construction of the BI. Types of information in the BI. • Decision support with BI. Complexity of decision-making. Decision-making at various levels. Decision-making process. Approaches to decision making. • Areas of decision support: Operations research (OR), Decision support systems (DSS), Knowledge management systems (KMS), Modelling and simulation, Group decision making. Support for cooperation. • BI components • Composition of BI. Data warehouse. Multidimensional data. OLAP tools. Pivot table. Data mining. • The user interface of BI. Visualization of data. • BI development trends: Business performance management systems. Geographic Information Systems. Artificial intelligence in the DSS, Intelligent Systems, Industry 4.0 and Internet of Things (IoT).
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Temeljni literatura in viri / Readings:

- Turban, E., Volonino, L., Information Technology for Management: Advancing Sustainable, Profitable Business Growth 11th Edition, Wiley, 2017
- Rainer, R.K., Management Information Systems 4th Edition, Wiley, 2015
- Sharda, R., Delen, D., Turban, E., Business Intelligence and Analytics: Systems for Decision Support, 10th Edition, Pearson, 2015.
- Borschchev A. (2013), The Big Book of Simulation Modeling. Multimethod Modeling with AnyLogic 6, AnyLogic North America
- Turban, E., Aronson, J.E., Liang T.P., Sharda R.: *Decision Support and Business Intelligence Systems* (8th Edition). London: Prentice-Hall, 2007.
- Laudon J.P., Laudon K.C.: *Management Information Systems & Multimedia Student CD Package* (10th Edition), Prentice Hall, 2007
- Howson C.: *Successful Business Intelligence: Secrets to Making BI a Killer App*, 2008

Cilji in kompetence:

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

- razvoj kritične in samokritične presoje;
 - sposobnost fleksibilne uporabe znanja v praksi;
 - uporaba metodoloških orodij, t.j. izvajanje, koordiniranje in organiziranje raziskav, uporaba raznih raziskovalnih metod in tehnik;
 - usposobljenost za samostojno in avtonomno uporabo, nadzor in vzdrževanje informacijsko komunikacijske tehnologije v organizaciji;
 - usposobljenost za skupinsko delo v vseh fazah razvoja in raziskovanja spletnih in mobilnih rešitev;
 - usposobljenost za samoučenje s ciljem obvladovanja najnovejših relevantnih spletnih in mobilnih tehnologij;
 - zmožnost za prepoznavanje in izkoriščanje priložnosti, ki jih ponuja spletna tehnologija.
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- sposobnost sinteze izvirnih idej, konceptov in rešitev določenih problemov iz različnih disciplinarnih področij;
 - sposobnost timskega dela;
 - razumevanje podpore odločanju s poslovno inteligenco;
 - poglobljeno poznavanje nabora metod za podporo pri odločanju ter simulacija odločitvenih modelov.

Objectives and competences:

The instructional unit contributes to the development of the following general and subject-specific competences:

- the development of critical and self-critical assessment;
 - the ability of the flexible use of knowledge in practice;
 - the use of methodological tools, i.e. implementation, coordination and organization of research, the use of different research methods and techniques;
 - competence for independent and autonomous use, monitoring and maintenance of information communication technology in an institution;
 - ability to work in team at all stages of development and research of online and mobile solutions;
 - ability to self-educate with the aim to master relevant state-of-the-art web and mobile technologies;
 - ability to recognize and seize opportunities offered by the web technology.
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- competence to form original ideas, concepts and solutions for specific problems from different disciplines;
 - the ability of the flexible use of knowledge in practice;
 - teamwork 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:

Sposobnost študenta/študentke bo:

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

Intended learning outcomes:

Knowledge and understanding:

Students that complete the course will:

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

- 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

- 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, pogovori, vprašanja, primeri, reševanje problemov)*
- *seminarske vaje v povezavi s prakso (večkriterijsko odločanje, podpora odločanju)*
- *individualne in skupinske konzultacije (pogovori, dodatna razlaga, obravnava specifičnih vprašanj)*
- *spodbujanje samostojnega študija in raziskovanja (motiviranje, usmerjanje, samoopazovanje, samouravnavanje, refleksija, samoocenjevanje)*

Learning and teaching methods:

- Lectures with the active participation of students (presentation, discussion, questions, problems, problem solving);
- Laboratory exercises (multi-criteria modelling, decision support);
- Individual and group consultation (discussion, additional explanation, specific issues).
- stimulation of independent study and research (motivation, guidance, self-observation, self-regulation, reflection, self-assessment)

Načini ocenjevanja:

Delež (v %) /
Weight (in %)

Assessment:

Način (pisni izpit, ustno izpraševanje, naloge, projekt):	Delež (v %) / Weight (in %)	Type (examination, oral, coursework, project):
<ul style="list-style-type: none"> • pisni izpit 	50 %	<ul style="list-style-type: none"> • written exam
<ul style="list-style-type: none"> • empirična seminarska naloga, poročila laboratorijskih vaj 	50 %	<ul style="list-style-type: none"> • empirical seminar work, report on laboratory exercises