UČNI NAČRT PREDMETA / COURSE SYLLABUS	
Predmet:	Informacijski sistemi
Course title:	Information Systems

Študijski program in stopnja Study programme and level	Študijska smer Study field	Letnik Academic year	Semester Semester
Informatika v sodobni družbi, visokošolski strokovni študijski program prve stopnje	-	Drugi	Četrti
Informatics in Contemporary Society, first cycle Professional Study Programme	-	Second	Fourth

Vrsta predmeta / Course type	Obvezni / Obligatory
Univerzitetna koda predmeta / University course code:	1-ISD-VS-IS-2025-12-04

Predavanja Lectures	Seminar Seminar	Vaje Tutorial	Klinične vaje work	Druge oblike študija	Samost. delo Individ. work	ECTS
30	/	45	/	/	105	6

Nosilec predmeta / Lecturer:	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:

Ni posebnih zahtev za vključitev v delo.

Prerequisites:

There are no prerequisites for taking part in the course activities.

Vsebina:

- *Uvod v predmet:*
  Namen študija predmeta, povezanost predmeta z drugimi predmeti, vsebina študija predmeta, študijska literatura.
- *Informacijski sistem:*
  Namen in cilji informacijskega sistema. Opredelitev osnovnih konceptov in njihovih notacij. Klasifikacija informacijskih sistemov.
- *Informacijski sistem in organizacija*:
  Vloga informacijskega sistema v organizaciji. Organiziranje podatkov in informacij v organizaciji. Upravljanje s podatki.

Content (Syllabus outline):

- *Introduction*:
  The purpose of the subject, connections with other subjects, subject contents, study literature.
- *Information System:*
  Purpose and goals. Basic concepts and notations. Information systems classification.
- *Information system and the organization:*
  The role of IS in the organization. Data and information organization. Data management.
- *Information system lifecycle*:

• *Življenjski cikel informacijskega sistema*: strategija, načrtovanje, analiza, oblikovanje, razvoj, uvajanje in vzdrževanje. • *Metodologije za razvijanje informacijskega sistema:* Informacijski inženiring. Strukturna sistemska analiza in razvoj. Objektni pristop, Poenoten razvojni proces. Strukturne diagramske tehnike in UML, agilne metodologije. Karakteristike metodologij in izbira metodologije. • *Trendi razvoja informacijskih sistemov:* Računalništvo v oblaku, IS kot storitev. • *Varnost in kakovost informacijskih sistemov ter s tem povezani standardi.*	strategy, planning, design, development, deployment, operation and maintenance, support. • *Information systems development methodologies*. Information engineering, structured system analysis and development, object approach, unified development process. Structured diagramming techniques and UML, agile methodologies. Characteristics of methodologies and methodology selection. • *IS development trends:* cloud computing, IS as a service. • *Information systems security and quality, related standards.*

Temeljni literatura in viri / Readings:

- Rainer, R. K, Prince, B. & Cegielski, C. G. (2013). *Introduction to Information Systems: Supporting and Transforming Business.* Wiley.
- Stair, R. & Reynolds, G. (2020). *Principles of Information Systems* (14th ed.). Boston: Cengage Learning.
- Valacich, J. & George, J.(2017). *Modern Systems Analysis and Design* (8th ed.). Pearson.
- Dennis, A., Wixom, B. & Tegarden, D. (2012). *Systems Analysis and Design with UML* (4th ed.). Wiley.
- Whitten, J. L. & Bentley, L. D. (2007). *Introduction to Systems Analysis and Design*. McGraw-Hill.

Cilji in kompetence:	**Objectives and competences:**
Učna enota prispeva k razvoju naslednjih splošnih in predmetno-specifičnih kompetenc: *Splošne kompetence:* • obvladanje raziskovalnih metod, postopkov in procesov • razvoj kritične in samokritične presoje • sposobnost fleksibilne uporabe znanja v praksi • sposobnost za reševanje konkretnih tehničnih in analitičnih problemov z uporabo ustreznih metod in postopkov • sposobnost pridobivanja, selekcije, ocenjevanja in umeščanja novih informacij in zmožnost interpretacije v ustreznem kontekstu • razumevanje in uporaba analitičnih metod in njihova uporaba v reševanju konkretnih problemov	*The instructional unit contributes to the development of the following general and subject-specific competences:* *General competences:* • mastering research methods, procedures and processes • development of critical and self-critical judgement • ability to use the acquired knowledge in practice in a flexible manner • ability to solve technical and analytical problems using appropriate methods and procedures • ability to find, select, evaluate and position the new information as well as appropriate, context-aware interpretation • understanding and application of analytical methods to practical cases

- razvoj veščin in spretnosti pri uporabi pridobljenega znanja s pomočjo reševanja empiričnih problemov

Predmetno-specifične kompetence:
- sposobnost uporabe tehnik za zajem zahtev IS
- spoznavanje komunikacije med predstavniki managementa in informacijske tehnologije
- sposobnost izbire uporabe informacijsko-komunikacijske tehnologije, orodij in sistemov za načrtovanje IS
- sposobnost uporabe sodobnih računalniških orodij namenjenih poslovnemu odločanju in analizi podatkov

- development of skills and abilities by using the obtained knowledge for empirical problem solving

Subject-specific competences:
- ability to use appropriate tools and techniques for develop software specification requirements
- ability to develop skills and abilities for communication between representatives of management and information technology
- the ability to choose information and communication technologies, tools and systems for designing and implementing information system
- ability to use modern computer tools for decision support and data analysis

Predvideni študijski rezultati:

Znanje in razumevanje:

Študent/študentka:
- pozna in razume namen in cilje informacijskega sistema organizacije
- pozna procese, ki jih je mogoče informacijsko podpreti z informacijskim sistemom
- je zmožen identificirati prispevek informacijskega sistema k dodani vrednosti organizacije
- prepozna uporabo spletnih tehnologij pri razvoju informacijskega sistema
- pozna in razume strukturo informacijskega sistema organizacije
- pozna značilnosti posameznih funkcijskih informacijskih sistemov organizacije
- pozna in razume življenjski cikel poslovnega informacijskega sistema
- pozna in razume prednosti in pomanjkljivosti različnih metodologij in tehnik za analizo in razvoj poslovnega informacijskega sistema
- pozna in uporablja metode in tehnike informacijskega inženiringa
- pozna in uporablja osnovne elemente jezika UML
- je zmožen sodelovati pri analizi in razvoju informacijskega sistema organizacije
- je zmožen sinteze pri razvoju informacijskega sistema

Intended learning outcomes:

Knowledge and understanding:

The student:
- knows and understands the purpose and goals of information system within the organizational context
- knows processes that can be supported by information system
- is able to identify the contribution of the IS to the organization's added value
- uses web technologies by development of information systems
- knows and understands the information systems structure
- recognizes the differences among information systems in different areas of use
- knows and understands business information systems lifecycle
- knows and understands the strengths and weaknesses of various analysis and development methodologies and techniques
- knows and uses information engineering methods and techniques
- knows and uses elementary UML syntax
- is able to take part in information system analysis and development activities
- is able to make a synthesis when developing information system
- on the basis of acquired knowledge is able to judge on suitability of existing information systems

• pridobljeno znanje uporablja za ugotavljanje ustreznosti poslovnega informacijskega sistema	

Metode poučevanja in učenja:	**Learning and teaching methods:**
• *predavanja* z aktivno udeležbo študentov (razlaga, diskusija, vprašanja, primeri, reševanje problemov) • *laboratorijske vaje* (delo na osebnem računalniku, spoznavanje različnih vrst informacijskih sistemov, spoznavanje orodij za analizo, uporaba različnih diagramskih tehnik)	• *lectures* with emphasis on students' activity (explanation, discussion, cases, problem solving) • *laboratory training* (work on a personal computer, getting acquainted with several kinds of information systems, learning to use analysis tools and diagramming techniques)

Načini ocenjevanja:	Delež (v %) / Weight (in %)	**Assessment:**
Način (pisni izpit, ustno izpraševanje, naloge, projekt): • pisni izpit	100	Type (examination, oral, coursework, project): • written exam

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, Miroljub. 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, Miroljub. 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.