

UČNI NAČRT PREDMETA / COURSE SYLLABUS

Predmet: Spletni in mobilni informacijski sistemi
Course title: Web and Mobile 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 ali tretji	Četrty ali šesti
Informatics in Contemporary Society, first cycle Professional Study Programme	-	Second or third	Fourth or sixth

Vrsta predmeta / Course type

Izbirni / Elective

Univerzitetna koda predmeta / University course code:

1-ISD-VS-IP-SMIS-2020-05-14

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. Davorin Kofjač

Jeziki / Languages:

Predavanja / Lectures: Slovenski / Slovenian, Angleški / English

Vaje / Tutorial: Slovenski / Slovenian, Angleški / English

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

Pogoj za vključitev v delo je vpis v 2. ali 3. letnik študija. Študent/študentka mora pred pristopom k izpitu pripraviti in zagovarjati seminarsko nalogo.

Prerequisites:

Prerequisite for inclusion is enrolment into the second year of the study. Prior to the exam, the student has to prepare and defend seminar work.

Vsebina:

- *Uvod:* opis predmeta ter splošnih informacijskih sistemov.
- *Spletni informacijski sistemi:* opredelitev spletnih informacijskih sistemov, predstavitev najpogostejših arhitektur IS, prednosti in slabosti ter primeri dobre prakse.
- *Mobilni informacijski sistemi:* predstavitev razlik v načrtovanju mobilnih in spletnih informacijskih

Content (Syllabus outline):

- *Introduction:* description of the course and general information systems.
- *Web information systems:* definition of web information systems, presentation of most common IS architectures, advantages and disadvantages, as well as examples of good practice.
- *Mobile information systems:* presentation of differences in planning mobile and web information systems, planning

sistemov, načrtovanje prožnih, razširljivih in vseprisotnih informacijskih sistemov.

- *Računalništvo v oblaku*: opredelitev porazdeljenega računalništva v obliki oblaka, analiza rešitev in storitev na področju, pregled tehnologij, načini komunikacije ter souporabe informacij.
- *Mobilni odjemalci*: predstavitev zmogljivosti mobilnih odjemalcev, analiza njihovih omejitev, načini komunikacije.

flexible, extendable and ubiquitous information systems.

- *Computer science in a cloud*: definition of computer science aspects divided in a form of a cloud, solutions and services analysis in the relative field, technologies overview, manners of communication and co-use of information.
- *Mobile customers*: presentation of mobile customer capacities, analysis of their limitations, ways of communication.

Temeljni literatura in viri / Readings:

- Lewis S. & Dunn M. (2019). *Native Mobile Development: A Cross-Reference for iOS and Android* (1st ed.). O'Reilly Media.
- Chauhan D. & Singh C. (2020). *Introduction to Cloud Computing: Concept, Technology and Architecture* (1st ed.). LAP LAMBERT Academic Publishing.
- Stair, R. M. & Reynolds, G. W. (2018). *Principles of information systems* (13th ed.). Boston (MA): Cengage Learning.
- Kranz, M. (2017). *Building the internet of things : implement new business models, disrupt competitors, and transform your industry*. Hoboken (New Jersey): Wiley, cop.
- Kim, G. (2016). *The DevOps handbook : how to create world-class agility, reliability, & security in technology organizations* (1st ed.). Portland: IT Revolution Press.

Cilji in kompetence:

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

- obvladanje raziskovalnih metod, postopkov in procesov
- razvoj (samo)kritične presoje
- sposobnost fleksibilne in aplikativne uporabe teoretičnega znanja
- organizacijske in vodstvene spretnosti za organiziranje aktivnega in samostojnega dela
- poznavanje in razumevanje širokega nabora aplikacij informacijsko komunikacijske tehnologije v sodobni družbi
- prizadevanje za kakovost strokovnega dela skozi avtonomnost, (samo)kritičnost, (samo)refleksivnost in (samo)evalviranje v strokovnem delu
- razumevanje in uporaba teoretičnih osnov analitičnega in svetovalnega dela (prenos znanja do uporabnika)

Objectives and competences:

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

- competence in research methods, procedures and processes
- development of (self)critical judgement
- ability to flexibly apply knowledge in practice
- managerial and leadership skills for organizing active and autonomous work
- knowledge and understanding of a wide range of applications of information communication technology in the modern society
- striving to achieve quality of professional work through autonomy, (self) criticism, (self) reflexivity and (self) evaluation in professional work
- understanding and use of theoretical bases of analytical and counselling work (transfer of knowledge to user)
- understanding of informatisation with the implementation of comprehensive information and

- razumevanje informatizacije z implementacijo celovitih informacijskih rešitev in e-poslovanja v praksi
- razumevanje in uporaba metod kritične analize in razvoja teorij ter njihova uporaba v reševanju konkretnih družbenih in delovnih problemov

- e-business solutions in practice
- understanding and use of the methods of critical analysis and development of theories, as well as their use in the solving of actual social and work problems

Predvideni študijski rezultati:

Znanje in razumevanje:

Študentka/študent:

- pozna in razume osnove informacijskih sistemov
- pozna in razume razlike med načrtovanjem ter razvojem spletnih in mobilnih informacijskih sistemov
- demonstrira zmožnost identifikacije potrebnih komponent
- prikaže razumevanje ter kritično ocenjevanje tehnologij za vzpostavitev ciljnega informacijskega sistema

Intended learning outcomes:

Knowledge and understanding:

The student:

- knows and understands information system basics
- knows and understands the differences between planning and development of web and mobile information systems
- demonstrates the ability to identify necessary components
- demonstrates understanding and the ability to critically assess technologies necessary for establishing a target information system

Metode poučevanja in učenja:

- *predavanja*, na katerih se študentje spoznajo s teoretičnim ozadjem spletnih in mobilnih informacijskih sistemov, s primeri dobre prakse ter z reševanjem problemov. Pričakuje se aktivna participacija študentov v obliki dialoga
- *laboratorijske vaje* so namenjene krepitvi praktičnih izkušenj na področju načrtovanja, razvoja in vzdrževanja informacijskih sistemov

Learning and teaching methods:

- *lectures* during which students are familiarized with theoretical backgrounds of web and mobile information systems, with examples of good practice and with problem solving. Active student participation in the form of a dialogue is expected
- *laboratory practice* is intended for strengthening practical experience related to planning, development and maintenance of information systems

Delež (v %) /

Weight (in %)

Načini ocenjevanja:

Način (pisni izpit, ustno izpraševanje, naloge, projekt):

- pisni izpit
- seminarska naloga

Assessment:

Type (examination, oral, coursework, project):

- written exam
- student project

50

50

Reference nosilca / Lecturer's references:

- KOLOŽVARI, Andrej, STOJANOVIĆ, Radovan, ZUPAN, Anton, SEMENKIN, Eugene S., STANOVOV, Vladimir V., KOFJAČ, Davorin, ŠKRABA, Andrej. Speech-recognition cloud harvesting for improving the navigation of cyber-physical wheelchairs for disabled persons. *Microprocessors and microsystems*, 2019, vol. 69, str. 179-187.
- ŠKRABA, Andrej, STANOVOV, Vladimir V., SEMENKIN, Eugene S., KOLOŽVARI, Andrej, KOFJAČ, Davorin. Development of algorithm for combination of cloud services for speech control of cyber-physical systems. *International Journal on Information Technologies and Security*, 2018, vol. 10, no. 1, str. 73-82.
- KOFJAČ, Davorin, STOJANOVIĆ, Radovan, KOLOŽVARI, Andrej, ŠKRABA, Andrej. Designing a low-cost real-time group heart rate monitoring system. *Microprocessors and microsystems*, 2018, vol. 63, str. 75-84.
- OGRIS, Vid, KRISTAN, Tomaž, ŠKRABA, Andrej, URH, Marko, KOFJAČ, Davorin. iUrnik : timetabling for primary educational institutions in Slovenia. *Interfaces*, ISSN 0092-2102, 2016, vol. 46, no. 3, str. 231-244.
- ŠKRABA, Andrej, STOJANOVIĆ, Radovan, ZUPAN, Anton, KOLOŽVARI, Andrej, KOFJAČ, Davorin. Speech-controlled cloud-based wheelchair platform for disabled persons. *Microprocessors and microsystems*, 2015, vol. 39, no. 8, str. 819-828.