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
Računalništvo in spletne tehnologije, visokošolski strokovni študijski program prve stopnje	-	Tretji	Peti
Computer Science and Web Technologies, first cycle Professional Study Programme	-	Third	Fifth

Vrsta predmeta / Course type Obvezni / Obligatory

Univerzitetna koda predmeta / University course code: 2-RST-VS-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 3. letnik študija.
Študent/študentka mora pred pristopom k izpitu pripraviti in zagovarjati seminarsko nalogo.

Prerequisits:

Prerequisite for inclusion is enrolment into the third 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:	**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 • razvoj veščin in spretnosti pri uporabi pridobljenega znanja s pomočjo reševanja empiričnih problemov *Predmetno-specifične kompetence:* • razumevanje in obvladovanje temeljnih principov delovanja spletnih in mobilnih informacijskih sistemov • razvoj kritične in samokritične presoje uporabniških zahtev ter zmožnost samoiniciativnosti z namenom optimizacije le-teh	*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 • development of skills and abilities by using the obtained knowledge for empirical problem solving *Subject-specific competences:* • understanding and mastering of basic operating principles of mobile and web information systems • development of critical and self-critical assessment capabilities in relation to user requirements and the

• poznavanje metod, postopkov in procesov za načrtovanje, razvoj in vzdrževanje informacijskih sistemov • zmožnost izbire optimalne tehnologije za vzpostavitev informacijskega sistema ter obvladovanje tehničnih in tehnoloških omejitev	ability to take initiative for the purposes of optimisation • familiarity with methods, procedures and processes relating to planning, development and maintenance of information systems • ability to select optimal technology necessary for establishing an information system and managing technical and technological limitations

Predvideni študijski rezultati:	**Intended learning outcomes:**
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	Knowledge and understanding: *The student:* • knows and understand 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:	**Learning and teaching methods:**
• *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	• *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

Načini ocenjevanja:	Delež (v %) / Weight (in %)	**Assessment:**
Način (pisni izpit, ustno izpraševanje, naloge, projekt):		Type (examination, oral, coursework, project):
• pisni izpit	50	• written exam
• seminarska naloga	50	• student project

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-phisical 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.