Univerza v Mariboru

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Fakulteta za naravoslovje in matematiko

UČNI NAČRT PREDMETA / COURSE SYLLABUS	
Predmet:	**Osnove informacijskih sistemov**
Course title:	Fundamentals of Information Systems

Študijski program in stopnja **Study programme and level**	**Študijska smer** **Study field**	**Letnik** **Academic year**	**Semester** **Semester**
Izobraževalno računalništvo – dvopredmetni, 1. stopnja		**3.**	**5.**
Educational computer science – Double-major, 1st degree		**3.**	**5.**

Vrsta predmeta / Course type

Univerzitetna koda predmeta / University course code:

Predavanja **Lectures**	**Seminar** **Seminar**	**Sem. vaje** **Tutorial**	**Lab. vaje** **Laboratory work**	**Teren. vaje** **Field work**	**Samost. delo** **Individ. work**	**ECTS**
30	**15**		**15**		**60**	**4**

Nosilec predmeta / Lecturer: Krista Rizman Žalik

Jeziki / Languages:		
	Predavanja / Lectures:	SLOVENSKO/SLOVENE
	Vaje / Tutorial:	SLOVENSKO/SLOVENE

Pogoji za vključitev v delo oz. za opravljanje študijskih obveznosti:	**Prerequisits:**
Jih ni.	There are none.

Vsebina:	**Content (Syllabus outline):**
Podatek in informacija. Merilo informacije, enačba informacije, entropija informacije. Informacijski sistemi in razvojni koraki	Data and information. Measure of information equation, entropy of information. Information systems and development phases of

življenjskega cikla programske opreme. Uveljavljene in novejše metode in orodja razvoja informacijskih sistemov in programske opreme (UML). Atributi kakovosti: izvajanja, razvoja. Arhitekture informacijskih sistemov: podatkovno usmerjena, pretočna arhitektura, arhitektura z virtualnim strojem, arhitektura klica in vrnitve, aktualne komponente arhitekture. Varovanje informacijskih sistemov. Šolski informacijski sistemi.	software lifecycle. Enforced and new methods and tools for software development of information systems development (UML). Quality attributes: execution and development. Architectures: data centred dataflow architecture, virtual machine architecture, and call and return architecture, actual component architecture. Security of information systems. School information system.

Temeljni literatura in viri / Readings:

U. Mesojedec, Java, programiranje za internet, Pasadena, 1997.
M. Campione, K.Walrath, The Java tutorial : object-oriented programming for the Internet, Addison-Wesley, 1996.
H.M. Deitel, P.J. Deitel, Java How to Program, Prentice Hall, 2007.
Stevens, P., Pooley, R., Using UML: software engineering with objects and components, Addison-Wesley, 2000.

Cilji in kompetence:	**Objectives and competences:**
Poglobiti znanje razvoja, vzdrževanja in varovanja informacijskih sistemov.	To deepen the knowledge of development, maintenance and security of information systems

Predvideni študijski rezultati:	**Intended learning outcomes:**
Znanje in razumevanje: Znanje konceptov razvoja, vzdrževanja in varovanja informacijskih sistemov.	Knowledge and Understanding: The knowledge of basic concepts of development, maintenance and security of information systems.
Metode poučevanja in učenja:	**Learning and teaching methods:**
• Predavanja • Računalniške vaje	• Lectures • Computer exercises

Načini ocenjevanja: / **Assessment:**

Način (pisni izpit, ustno izpraševanje, naloge, projekt)	Delež (v %) / Weight (in %)	Type (examination, oral, coursework, project):
Seminar	30%	Seminar

Naloge Izpit - teorija Vsaka izmed naštetih obveznosti mora biti opravljena s pozitivno oceno. Pozitivni oceni pri seminarju in nalogah sta pogoj za pristop k izpitu.	30% 40%	Coursework Exam (written) – theory Each of the mentioned commitments must be assessed with a passing grade. Passing grades of the seminar and coursework are required for taking the exam.
Reference nosilca / Lecturer's references:		

1. RIZMAN ŽALIK, Krista, ŽALIK, Borut. Validity index for clusters of different sizes and densities. *Pattern recogn. lett. (Print)*. [Print ed.], Jan. 2011, vol. 32, iss. 2, str. 221-234, doi: 10.1016/j.patrec.2010.08.007. [COBISS.SI-ID 14640150]

2. RIZMAN ŽALIK, Krista. Cluster validity index for estimation of fuzzy clusters of different sizes and densities. *Pattern recogn.*. [Print ed.], Oct. 2010, vol. 43, iss. 10, str. 3374-3390, doi: 10.1016/j.patcog.2010.04.025. [COBISS.SI-ID 14640406]

3. RIZMAN ŽALIK, Krista, ŽALIK, Borut. A sweep-line algorithm for spatial clustering. *Adv. eng. softw. (1992)*. [Print ed.], Jun. 2009, vol. 40, iss. 6, str. 445-451, doi: 10.1016/j.advengsoft.2008.06.003. [COBISS.SI-ID 12450582]

4. RIZMAN ŽALIK, Krista. An efficient k'-means clustering algorithm. *Pattern recogn. lett. (Print)*. [Print ed.], July 2008, vol. 29, iss. 9, str. 1385-1391. http://dx.doi.org/10.1016/j.patrec.2008.02.014. [COBISS.SI-ID 12121366]

5. RIZMAN ŽALIK, Krista. Discovering significant biclusters in gene expression data. *WSEAS transactions on information science and applications*, Sep. 2005, vol. 2, iss. 9, str. 1454-1461. [COBISS.SI-ID 14906120]