



Univerza v Mariboru



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Fakulteta za naravoslovje in
matematiko

UČNI NAČRT PREDMETA / COURSE SYLLABUS

Predmet:	Računalniške periferne naprave in sistemi
Course title:	Computer Peripheral Devices and Systems

Študijski program in stopnja Study programme and level	Študijska smer Study field	Letnik Academic year	Semester Semester
Matematika	Uporabna matematika	3.	5. ali 6.
Mathematics	Applied Mathematics	3.	5. or 6.

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
45			30		135	7

Nosilec predmeta / Lecturer: Krista RIZMAN ŽALIK

Jeziki /

Languages:

Predavanja /

Lectures:

Vaje / Tutorial:

SLOVENSKO/SLOVENE

SLOVENSKO/SLOVENE

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

Jih ni.

Prerequisites:

There are none.

Vsebina:

Razvoj in zgradba računalniških sistemov.
Sekvenčnost obdelav v računalniških sistemih.
Predstavitev podatkov in logična vezja.
Podatkovni tipi in standardi.

Komponente računalniških sistemov.
Hitri pomnilnik (statični, dinamični, hierarhija pomnilnika).
Dodatni pomnilniki in osnove elektronskih, optičnih in magnetnih tehnologij pomnilnikov.
Tehnike stiskanja podatkov in mehanizmi

Content (Syllabus outline):

Computer systems development and architecture.
Sequential execution in computer systems. Data presentation and logical nets. Data types and standards.

Components of computer systems:
Other memory and basics of electronic, optical and magnetic technologies of saving data. Techniques of data compression and mechanisms of errors recognition and

zaznavanja in popravljanja napak.
 Delovanje interaktivnih perifernih naprav (tipkovnica, miška, zvok).
 Prikazovalniki: delovanje katodne cevi, prikazovalniki na osnovi tekočih kristalov, plazma prikazovalniki in nove razvojne tehnologije.
 Grafične kartice.
 Tiskalniki, risalniki, tablice, skenerji.
 Naprave za navidezno resničnost.
 Zmogljivost računalniških sistemov in nadgradljivost.

correcting.
 Working of interactive peripheral devices (keyboard, mouse, sound).
 Monitors: working of cathode ray tubes, monitors with liquid crystals, plasma monitors and new technologies.
 Graphical cards.
 Printers, plotters, tables and scanners.
 Virtual reality devices.
 Capacity of computer systems and scalability.

Temeljni literatura in viri / Readings:

Ron White: How computers work, (prevod Kako rade računari), 2004, QUE, 2003.
 Žalik, Zdravec, Pogorelec, Računalniške periferne naprave in uporabniški vmestniki, FERi, 2002.
 I. Englander, The Architecture of Computer Hardware and Systems Software: An Information Technology Approach, Wiley, 2003.

Cilji in kompetence:

Predstaviti računalniške sisteme in periferne naprave z vidikov: arhitekture, izgradnje, uporabljenih tehnologij, organizacije in principov delovanja.

Objectives and competences:

Main objective is to gain knowledge about the computer systems and peripheral devices from the following views: architectural, how to build, technologies used, organisation and principles of working.

Predvideni študijski rezultati:

Znanje in razumevanje:

- Znanje zgradbe in delovanja računalniških sistemov, perifernih naprav in računalniških tehnologij z ciljem učinkovitejše gradnje, izvajanja in vzdrževanja programske opreme.

Prenesljive/ključne spretnosti in drugi atributi:

- Razumevanje temeljnih principov delovanja in tehnologij računalniških sistemov.

Intended learning outcomes:

Knowledge and Understanding:

- Knowledge of architecture and operating of computer systems and computer peripheral devices and technologies with the aim to efficient build, execute and maintenance of computer systems.

Transferable/Key Skills and other attributes:

- Understanding of activities of computer systems and used technologies for individual components.

Metode poučevanja in učenja:

- Predavanja
- Računalniške vaje

Learning and teaching methods:

- Lectures
- Computer exercises

Načini ocenjevanja:

Assessment:

Način (pisni izpit, ustno izpraševanje,	Delež (v %) /	Type (examination, oral, coursework,
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naloge, projekt) Računalniške naloge Izpit (ustni) – teoretični del Vsaka izmed naštetih obveznosti mora biti opravljena s pozitivno oceno. Pozitivna ocena pri pisnem testu je pogoj za pristop k izpitu.	Weight (in %) 50% 50%	project): Computer exercises Exam (oral) – theoretical part Each of the mentioned commitments must be assessed with a passing grade. Passing grade of the written test is 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. <i>Pattern recogn. lett. (Print)</i>. [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. <i>Pattern recogn.</i>. [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. <i>Adv. eng. softw. (1992)</i>. [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. <i>Pattern recogn. lett. (Print)</i>. [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. <i>WSEAS transactions on information science and applications</i>, Sep. 2005, vol. 2, iss. 9, str. 1454-1461. [COBISS.SI-ID 14906120]		