



Fakulteta za naravoslovje
in matematiko

UČNI NAČRT PREDMETA / COURSE SYLLABUS							
Predmet:		Sistemska administracija					
Course title:		System Administration					
Študijski program in stopnja Study programme and level		Študijska smer Study field			Letnik Academic year		Semester Semester
Enovit magistrski študijski program druge stopnje Predmetni učitelj		/			4.		8
Five-year master's degree program Subject Teacher		/					
Vrsta predmeta / Course type				Obvezni / Obligatory			
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			3	42		75	5
Nosilec predmeta / Lecturer:				Janez Brest			
Jeziki / Languages:		Predavanja / Lectures:			slovenščina / Slovenian		
		Vaje / Tutorial:			slovenščina / Slovenian		
Pogoji za vključitev v delo oz. za opravljanje študijskih obveznosti:				Prerequisites:			
Ni pogojev.				None.			
Vsebina:				Content (Syllabus outline):			
<ul style="list-style-type: none">Uvod: operacijski sistemi, aplikacije, administrativna opravila.Nameščanje, konfiguriranje in upravljanje operacijskih sistemov.Skriptno programiranje: primeri bash ...Storitve, ki jih ponuja internet: upravljanje storitev, konfiguriranje storitev.Upravljanje in konfiguriranje: upravljanje in konfiguriranje omrežij, upravljanje in				<ul style="list-style-type: none">Introduction: operating systems, applications, administrative activities.Installation, configuration and management of operating systems.Script programming: examples: bash, ...Internet services: service management, service configuration.Management and configuration: networks management and configuration,			

<p>konfiguriranje stikal in usmerjevalnikov, upravljanje in konfiguriranje mobilnih omrežij.</p> <ul style="list-style-type: none"> • Upravljanje računalniških sistemov in podatkovnih baz. • Računalniška varnost, pogoste napake pri programiranju. • Programska oprema: programska oprema za analizo omrežnega prometa, programska oprema za ugotavljanje vdorov. • Kriptografija. • Uporabniki: tehnična podpora uporabnikom. • Odpornost na napake: metode, študij primerov. 	<p>management and configuration of switches and routers, management and configuration of mobile networks.</p> <ul style="list-style-type: none"> • Management of computer systems and databases. • Computer security, common programming mistakes. • Software: software tools for network traffic analysis, intrusion detection systems. • Cryptography. • Users: technical support. • Fault tolerance: methods, case study.
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Temeljni literatura in viri / Readings:

<ul style="list-style-type: none"> • M. Burgess: <i>Principles of Network and System Administration</i>, Second Edition, John Wiley & Sons, Ltd, West Sussex, 2004. • E. Nemeth, G. Snyder, T. R. Hein, B. Whaley, D. Mackin: <i>UNIX and Linux System Administration Handbook</i>, Addison-Wesley Professional, 5 edition, 2017. • C. Benvenuti: <i>Understanding Linux Network Internals</i>, O'Reilly, Sebastopol, 2006. • M. Bishop: <i>Computer Security: Art and Science</i>. Addison Wesley (2nd edition), 2017.

Cilji in kompetence:

<p>Cilj predmeta je seznaniti študente z osnovnimi principi sistemske administracije in varnosti.</p>

Objectives and competences:

<p>The objective of this course is to acquaint students with the basic principles of computer system administration and security.</p>

Predvideni študijski rezultati:

<p><u>Znanje in razumevanje:</u></p> <p>Po zaključku tega predmeta bo študent sposoben</p> <ul style="list-style-type: none"> • prikazati sposobnost namestitve vsaj enega izmed operacijskih sistemov, • izkazati sposobnost vzdrževanja različnih operacijskih sistemov, • ločevati med storitvami na serverju in odjemalcu, • uporabiti različne operacijske sisteme in priporočati določen operacijski sistem za določene potrebe, • identificirati, opisati in analizirati situacije, kjer so potrebne administrativne aktivnosti.

Intended learning outcomes:

<p><u>Knowledge and understanding:</u></p> <p>On completion of this course the student will be able to</p> <ul style="list-style-type: none"> • illustrate the ability to install at least one operating system, • demonstrate the ability to support various operating systems, • distinguish between server and client services, • demonstrate knowledge and understanding of various operating systems and recommend a particular operating system to satisfy given needs, • identify, describe and analyse situations,

	which interfere with administrative activities.
Prenosljive/ključne spretnosti in drugi atributi:	Transferable/Key skills and other attributes:
<ul style="list-style-type: none"> • <i>Spretnosti komuniciranja:</i> ustni zagovor laboratorijskih vaj, pisno izražanje pri pisnem izpitu. • <i>Uporaba informacijske tehnologije:</i> uporaba programskih orodij in skript za avtomatizacijo opravil v sistemski administraciji. • <i>Reševanje problemov:</i> načrtovanje, namestitve in vzdrževanje računalniških sistemov. 	<ul style="list-style-type: none"> • <i>Communication skills:</i> oral lab work defence, manner of expression at written examination. • <i>Use of information technology:</i> use of software tools and scripts to automate routine tasks in system administration. • <i>Problem solving:</i> designing, installing and managing of computer systems.

Metode poučevanja in učenja:

- predavanja,
- seminarske vaje,
- laboratorijske vaje.

Learning and teaching methods:

- lectures,
- tutorials,
- lab work.

Načini ocenjevanja:

 Delež (v %) /
Weight (in %)

Assessment:

<ul style="list-style-type: none"> • laboratorijske vaje, • 1. kolokvij, • 2. kolokvij. 	50 % 25 % 25 %	<ul style="list-style-type: none"> • lab work, • 1st midterm examination, • 2nd midterm examination.
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Opomba: Kolokvija se lahko nadomestita s pisnim izpitom v deležu 50 %.

Note: The midterm examination may be replaced by a written exam in the weight of 50%.

Reference nosilca / Lecturer's references:

- BOŠKOVIĆ, Borko, BREST, Janez. Protein folding optimization using differential evolution extended with local search and component reinitialization. *Information sciences*, ISSN 0020-0255. [Print ed.], July 2018, vol. 454/455, str. 178-199, doi: 10.1016/j.ins.2018.04.072. [COBISS.SI-ID 21401878], [JCR, SNIP, WoS do 11. 11. 2018: št. citatov (TC): 1, čistih citatov (CI): 1, čistih citatov na avtorja (CIAu): 0.50, Scopus do 29. 10. 2018: št. citatov (TC): 1, čistih citatov (CI): 1, čistih citatov na avtorja (CIAu): 0.50]
- SEPESY MAUČEC, Mirjam, BREST, Janez, BOŠKOVIĆ, Borko, KAČIČ, Zdravko. Improved differential evolution for large-scale black-box optimization. *IEEE access*, ISSN 2169-3536, Dec. 2018, iss. 1, vol. 6, str. 29516-29531, doi: 10.1109/ACCESS.2018.2842114. [COBISS.SI-ID 21465622], [JCR, SNIP, WoS do 14. 4. 2019: št. citatov (TC): 2, čistih citatov (CI): 2, čistih citatov na avtorja (CIAu): 0.50, Scopus do 30. 11. 2018: št. citatov (TC): 2, čistih citatov (CI): 1, čistih citatov na avtorja (CIAu): 0.25]
- FISTER, Iztok, FISTER, Dušan, DEB, Suash, MLAKAR, Uroš, BREST, Janez, FISTER, Iztok. Post hoc analysis of sport performance with differential evolution. *Neural computing & applications*, ISSN 0941-0643, First Online: 02 March 2018, str. 1-10, doi: 10.1007/s00521-018-3395-3. [COBISS.SI-ID 21214998], [JCR, SNIP, Scopus do 29. 4. 2019: št. citatov (TC): 1, čistih citatov (CI): 1, čistih citatov na avtorja (CIAu): 0.17]

