Univerza v Mariboru

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Fakulteta za naravoslovje in matematiko

UČNI NAČRT PREDMETA / COURSE SYLLABUS	
Predmet:	Spletne aplikacije in storitve
Course title:	Web applications and services

Študijski program in stopnja **Study programme and level**	**Študijska smer** **Study field**	**Letnik** **Academic year**	**Semester** **Semester**
Matematika	Splošna matematika	**3.**	**5. ali 6.**
Mathematics	General 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: Andrej TARANENKO

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

Pogoji za vključitev v delo oz. za opravljanje študijskih obveznosti:	**Prerequisits:**
Računalniški praktikum	Programming Practicum

Vsebina:	**Content (Syllabus outline):**
Osnove in funkcije interneta. Najpomembnejše internetne aplikacije: spletni strežniki, odjemalci in protokol HTTP, FTP strežniki, odjemalci in protokol, strežniki, odjemalci in protokoli za elektronsko pošto. Življenjski cikel spletne strani. Razvoj spletnih strani: HTML, XHTML, XML, PHP, MySQL. CMS sistemi za dinamične spletne strani. Razvoj matematično orientirane spletne aplikacije.	Fundamentals and functions of the Internet. Common Internet applications: servers, clients and protocols for web pages, FTP and e-mail. The lifecycle of a webpage. Development of web pages: HTML, XHTML, XML, PHP, MySQL. CMC systems for dynamic web pages. Development of mathematically oriented web application.

Temeljni literatura in viri / Readings:

P. Bilke: Spoznajmo PHP in MySQL, Flamingo, 2002.
P. Mrhar: HTML – programiranje web strani, Flamingo, 1996.
P. Mrhar: XHTML 1.1 in slogi CSS2, Nova Gorica, 2002.
B. Jerman-Blažič in T. Turk: Internet, Novi Forum, 1996.
H. M. Deitel, P. J. Deitel, T. R. Nieto: Internet and World Wide Web: how to program, Prentice Hall, 2000.
C. D. Knuckles, D. Yuen, Web applications: concepts & real world design, Hoboken, J.Wiley & Sons, 2005.
G. Schlossnagle, Advanced PHP programming, Sams, 2004.
K. Topley, Java Web services in a nutshell, Sebastopol, O'Reilly, 2003.

Cilji in kompetence:	**Objectives and competences:**
Spoznati najpogostejše storitve interneta, življenski cikel spletne strani in orodja za razvoj spletnih aplikacij. Razviti matematično orientirano spletno aplikacijo.	To know the most common internet services, the lifecycle of a Web page and different development tools for Web applications. To develop a mathematically oriented real world Web application.

Predvideni študijski rezultati:	**Intended learning outcomes:**
Znanje in razumevanje. • Spoznati pristope k razvoju spletnih aplikacij in organizaciji spletne stran • Spoznati različne protokole, strežnike in odjemalce za spletne strani, prenos datotek in elektronsko pošto. • Razumeti osnovne konstrukte skriptnih jezikov • Spoznati orodja za razvoj spletnih aplikacij. • Razviti matematično orientirano spletno aplikacijo. Prenesljive/ključne spretnosti in drugi atributi: • Pridobljena znanja so podlaga za vse predmete, ki lahko izkoristijo internet.	Knowledge and understanding. • To know the approaches to Web design and organization of Website content • To know the protocols, servers and clients for web pages, file transfer and e-mail • To understand fundamental constructs of scripting languages • To know the different development tools • Development of mathematically oriented real world Web application. Transferable/Key Skills and other attributes: 1. The obtained knowledge is a basis for all subjects that can take advantage of Internet.

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):
Pisni izpit – teoretični del	30%	Written exam – theoretical part
Pisni izpit – praktični del	30%	Written exam – practical part
Projekt	40%	Project

Vsaka izmed naštetih obveznosti mora biti opravljena s pozitivno oceno. Pozitivna ocena pri projektu je pogoj za pristop k pisnemu izpitu.		Each of the mentioned commitments must be assessed with a passing grade. Passing grade of the project is required for taking the exam.
Reference nosilca / Lecturer's references:		

1. JAKOVAC, Marko, TARANENKO, Andrej. On the k-path vertex cover of some graph products. Discrete math.. [Print ed.], 2013, vol. 313, iss. 1, str. 94-100. http://dx.doi.org/10.1016/j.disc.2012.09.010, doi: 10.1016/j.disc.2012.09.010. [COBISS.SI-ID 19464968]

2. TARANENKO, Andrej, VESEL, Aleksander. 1-factors and characterization of reducible faces of plane elementary bipartite graphs. Discuss. Math., Graph Theory, 2012, vol. 32, no. 2, str. 289-297, doi: 10.7151/dmgt.1607. [COBISS.SI-ID 19104264]

3. TARANENKO, Andrej, ŽIGERT PLETERŠEK, Petra. Resonant sets of benzenoid graphs and hypercubes of their resonance graphs. MATCH Commun. Math. Comput. Chem. (Krag.), 2012, vol. 68, no. 1, str. 65-77. http://www.pmf.kg.ac.rs/match/content68n1.htm. [COBISS.SI-ID 16051990]

4. KLAVŽAR, Sandi, SALEM, Khaled, TARANENKO, Andrej. Maximum cardinality resonant sets and maximal alternating sets of hexagonal systems. Comput. math. appl. (1987). [Print ed.], 2010, vol. 59, no. 1, str. 506-513. http://dx.doi.org/10.1016/j.camwa.2009.06.011. [COBISS.SI-ID 15383641]

5. TARANENKO, Andrej, VESEL, Aleksander. Characterization of reducible hexagons and fast decomposition of elementary benzenoid graphs. Discrete appl. math.. [Print ed.], 2008, vol. 156, iss. 10, str. 1711-1724. http://dx.doi.org/10.1016/j.dam.2007.08.029, doi: 10.1016/j.dam.2007.08.029. [COBISS.SI-ID 16140552]