Univerza v Mariboru

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, 1. stopnja		**3.**	**5. ali 6.**
Mathematics, 1st degree		**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.	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.

Razvoj matematično orientirane spletne aplikacije.	

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: • 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:**
	Delež (v %) / Weight (in %)	
Sprotno preverjanje:		Mid-term testing:
Pisni testi – teorija (3 do 6 pisnih testov na semester)	30%	Written tests – theory (from 3 to 5 written tests during the semester)
Projekt	40%	Project
Izpit:		Exams:
Pisni izpit – praktični del	30%	Written exam – practical part
Vsaka izmed naštetih obveznosti mora biti opravljena s pozitivno oceno.		Each of the mentioned commitments must be assessed with a passing grade.
Opravljene sprotne obveznosti so pogoj za pristop k izpitu.		Passing grades of all mid-term testings are required for taking the exam.

Reference nosilca / Lecturer's references:

1. BREŠAR, Boštjan, JAKOVAC, Marko, KATRENIČ, Ján, SEMANIŠIN, Gabriel, TARANENKO, Andrej. On the vertex k-path cover. *Discrete appl. math.*. [Print ed.], 2013, vol. 161, iss. 13/14, str. 1943-1949, doi: 10.1016/j.dam.2013.02.024. [COBISS.SI-ID19859464]

2. 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-ID19464968]

3. 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]

4. 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]

5. 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]