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		**3.**	**6.**
Mathematics		**3.**	**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**		**105**	**6**

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:

Spoznati najpogostejše storitve interneta, življenski cikel spletne strani in orodja za razvoj spletnih aplikacij. Razviti matematično orientirano spletno aplikacijo.

Objectives and competences:

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:

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.

Intended learning outcomes:

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:

- Predavanja
- Računalniške vaje

Learning and teaching methods:

- Lectures
- Computer exercises

Načini ocenjevanja:

Assessment:

	Delež (v %) /	

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

1. BANIČ, Iztok, TARANENKO, Andrej. Measuring closeness of graphs - the Hausdorff distance. Bulletin of the Malaysian Mathematical Society, ISSN 0126-6705, 2017, vol. 40, iss. 1, str. 75-95, doi: 10.1007/s40840-015-0259-1.

2. KELENC, Aleksander, TARANENKO, Andrej. On the Hausdorff distance between some families of chemical graph. MATCH Communications in Mathematical and in Computer Chemistry, ISSN 0340-6253, 2015, vol. 74, no. 2, str. 223-246. http://match.pmf.kg.ac.rs/electronic_versions/Match74/n2/match74n2_223-246.pdf.

3. YERO, Ismael G., JAKOVAC, Marko, KUZIAK, Dorota, TARANENKO, Andrej. The partition dimension of strong product graphs and Cartesian product graphs. Discrete Mathematics, ISSN 0012-365X. [Print ed.], 2014, vol. 331, str. 43-52. http://dx.doi.org/10.1016/j.disc.2014.04.026.

4. BREŠAR, Boštjan, JAKOVAC, Marko, KATRENIČ, Ján, SEMANIŠIN, Gabriel, TARANENKO, Andrej. On the vertex k-path cover. Discrete applied mathematics, ISSN 0166-218X. [Print ed.], 2013, vol. 161, iss. 13/14, str. 1943-1949. http://dx.doi.org/10.1016/j.dam.2013.02.024.

5. TARANENKO, Andrej. A new characterization and a recognition algorithm of Lucas cubes. Discrete mathematics and theoretical computer science, ISSN 1365-8050, 2013, vol. 15, no. 3, str. 31-39. http://www.dmtcs.org/dmtcs-ojs/index.php/dmtcs/article/view/2192/4357.