



Fakulteta za naravoslovje
in matematiko



Fakulteta za elektrotehniko,
računalništvo in informatiko

UČNI NAČRT PREDMETA / COURSE SYLLABUS

Predmet:	Spletno programiranje
Course title:	Web Programming

Študijski program in stopnja Study programme and level	Študijska smer Study field	Letnik Academic year	Semester Semester
Izobraževalno računalništvo 1. stopnja UN Educational computer science 1 st cycle Academic undergraduate		2.	poletni Spring

Vrsta predmeta / Course type

Univerzitetna koda predmeta / University course code:

Predavanja Lectures	Seminar Seminar	Vaje Tutorial	Klinične vaje work	Druge oblike študija	Samost. delo Individ. work	ECTS
15		45 (15SV, 30LV)			120	6

Nosilec predmeta / Lecturer:

Jeziki / Languages:	Predavanja / Lectures:	slovenski / Slovene
	Vaje / Tutorial:	slovenski / Slovene

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

Osnove programiranja v enem od visokih programskih jezikov (C, C++ ali Java).

Prerequisites:

Student has to know basic programming in one of imperative programming languages (C, C++, Java).

Vsebina:

- Uvod: življenjski cikel gradnje spletnih aplikacij, spletni strežniki.
- Java in J2EE tehnologija.
- Tehnologija Microsoft .NET: ogrodje .NET, ADO.NET, ASP.NET.
- Trojček: PHP, Apache in MySQL.

Content (Syllabus outline):

- Introduction: web application life cycle, web servers.
- Java and J2EEE technology.
- Microsoft .NET: .NET Framework, ADO.NET, ASP.NET.
- PHP Apache, MySQL.

- Označevalni jeziki: XML, DTD, shema XML, XML DOM, XSLT, XPath, XLink, XPointer, XQuery.
- Socialna omrežja in tehnologije Spleta 2.0.
- Spletne storitve in storitveno usmerjena arhitektura: SOAP, WSDL, UDDI, WS standardi (WS-Security, WS-Transaction, WS-Coordination, WS-addressing, WS-Choreography, WS – Description...), storitveno vodilo, BPEL, storitveni vzorci.
- Portali, sistemi za upravljanje z vsebino, dokumentni sistemi, integracija vsebin in storitev.
- Priporočilni sistemi, iskalniki in upravljanje z identitetami.
- Pomenski splet: RDF, OWL, ontologije, predstavitev znanja.

- Markup languages: XML, DTD, XML shema, XML DOM, XSLT, XPath, XLink, XPointer, XQuery.
- Social networks and Web 2.0 technologies.
- Web Services and service oriented architecture: SOAP, WSDL, UDDI, WS standards (WS-Security, WS-Transaction, WS-Coordination, WS-Addressing, WS-Choreography, WS-Description...), service oriented bus, BPEL, web services patterns.
- Portals, content management systems, document systems, integration of content and services.
- Recommendation systems, search engines and identity management.
- Semantic Web: RDF, OWL, ontology, knowledge representation.

Temeljni literatura in viri / Readings:

- M. Ojsteršek: *Učno gradivo in primeri dosegljivi na <http://supz.feri.uni-mb.si>* – potrebna je prijava v portal.
- L. Shklar, R. Rosen: *Web Application Architecture: Principles, Protocols and Practices*, John Wiley & Sons, Chichester, West Sussex, 2009.
- N. S. Williams: *Professional Java for Web Applications*, John Wiley & Sons, Indianapolis, 2014
- D. Esposito: *Go to "Programming Microsoft ASP.NET MVC (3rd Edition) (Developer Reference)"*, O'Reilly Media Inc., 2014.
- S. Bergmann, S. Priesch: *Real-World Solutions for Developing High-Quality PHP Frameworks and Applications*, John Wiley & Sons, Indianapolis, 2011.
- D. K. Barry: *Web Services, Service-Oriented Architectures, and Cloud Computing, Second Edition: The Savvy Manager's Guide (The Savvy Manager's Guides)*, Elsevier, Waltham, 2013.

Cilji in kompetence:

Cilj predmeta je naučiti študenta razvoja spletnih aplikacij s trenutno aktualnimi spletnimi tehnologijami, programskimi orodji, skriptnimi in programskimi jeziki za razvoj spletnih aplikacij.

Objectives and competences:

The objective of this course is to acquaint students with the latest technologies, programming tools, scripting and programming languages suitable for Web applications development.

Predvideni študijski rezultati:

Znanje in razumevanje:

Po zaključku tega predmeta bo študent sposoben:

- poiskati na internetu ustrezne informacije o tehnologijah, skriptnih in programskih jezikih, programskih orodjih, ki jih uporablja pri razvoju svojih spletnih aplikacij,
- izbrati ustrezno tehnologijo, skriptni jezik, programski jezik, programsko orodje in podatkovno bazo za razvoj spletne aplikacije,
- uporabljati skriptne jezike pri razvoju predstavitvenega dela spletne aplikacije,
- uporabljati programska jezika C# in Java pri razvoju poslovne logike in podatkovnega sloja spletnih aplikacij,
- analizirati, načrtovati, izdelati, testirati in promovirati spletno aplikacijo, izdelati spletno storitev.
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Prenosljive/ključne spretnosti in drugi atributi:

- *Spretnosti komuniciranja*: ustni zagovor laboratorijskih vaj, ustno izražanje na ustnem izpitu, pisno izražanje pri pisnem izpitu.
- *Uporaba informacijske tehnologije*: uporaba programskih

Intended learning outcomes:

Knowledge and understanding:

On completion of this course the student will be able to

- find appropriate information on the internet about programming tools, scripting and programming languages suitable for development of Web applications,
- select appropriate technology, data base, programming tool, scripting and programming language for Web application development,
- use of scripting languages for development of presentation layer of Web application,
- use of C# or Java for development of business and data layer of web application,
- analyse, design, implement, test and promote Web application,
- implement a Web service.

Transferable/Key skills and other attributes:

- *Communication skills*: oral lab work defence, manner of expression at written examination and oral examination.
- *Use of information technology*: use of different tools for

<p>orodij za načrtovanje, implementacijo, razhroščevanje in testiranje spletnih aplikacij.</p> <ul style="list-style-type: none"> • <i>Reševanje problemov</i>: načrtovanje in implementacija spletnih aplikacij. • <i>Delo v skupini</i>: študenti v skupini analizirajo, načrtujejo, izdelajo in testirajo spletno aplikacijo. 	<p>program design, implementation, debugging and testing of simple Web applications.</p> <ul style="list-style-type: none"> • <i>Problem solving</i>: design and implementation of simple Web application. • <i>Working in a group</i>: team of students analyse, design, implement and test their Web application.
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Metode poučevanja in učenja:

- predavanja,
- laboratorijske vaje,
- delo v skupini.

Learning and teaching methods:

- lectures,
- lab work,
- working in group.

	Delež (v %) / Weight (in %)	Assessment:
Načini ocenjevanja:		
• računalniške vaje*,	50 %	• computer lab work*,
• 1. vmesni pisni izpit,	15 %	• 1st midterm written exam,
• 2. vmesni pisni izpit,	15 %	• 2nd midterm written exam,
• 3. vmesni pisni izpit.	20 %	• 3rd midterm written exam.

*Obvezno / Mandatory

Opomba: Če študent ni uspešno opravil vseh treh vmesnih izpitov, jih nadomesti s pisnim izpitom v deležu 50%.

Note: If a student has not completed all three midterm exams, he replaces them with a written exam in the weight of 50%.

Reference nosilca / Lecturer's references:

- OJSTERŠEK, Milan, BREZOVNIK, Janez, KOTAR, Mojca, FERME, Marko, HROVAT, Goran, BREGANT, Albin, BOROVIČ, Mladen. Establishing of a Slovenian open access infrastructure: a technical point of view. Program, ISSN 0033-0337, 2014, vol. 48, no. 4, str. 394-412. <http://www.emeraldinsight.com/doi/pdfplus/10.1108/PROG-02-2014-0005>, doi: 10.1108/PROG-02-2014-0005. [COBISS.SI-ID 18052630].
- FERME, Marko, OJSTERŠEK, Milan. Text analysis with sequence matching. Int. j. comput., 2011, vol.5, iss.2, str.235-242. <http://www.naun.org/journals/computers/20-234.pdf>. [COBISS.SI-ID 14857750].
- BREZOVNIK, Janez, OJSTERŠEK, Milan. Advanced features of Digital library of University of Maribor. Int. j. educ. inf. technol., 2011, vol. 5, iss. 1, str. 34-41. <http://www.naun.org/journals/educationinformation/19-520.pdf>. [COBISS.SI-ID 14742294].
- BREZOVNIK, Janez, OJSTERŠEK, Milan. TextProc - a natural language processing framework and its use as plagiarism detection system. Int. j. educ. inf. technol., 2011, vol. 5, iss. 3, str.2 93-300. <http://www.naun.org/journals/educationinformation/19-872.pdf>. [COBISS.SI-ID 14856982].
- ČEH, Ines, OJSTERŠEK, Milan. Developing a question answering system for the slovene language. WSEAS transactions on information science and applications, Sep. 2009, vol. 6, iss. 9, str. 1533-1543. <http://www.wseas.us/e-library/transactions/information/2009/29-627.pdf>. [COBISS.SI-ID 13408022].