

UČNI NAČRT PREDMETA / COURSE SYLLABUS

Predmet:	Spletno programiranje 2
Course title:	Web Programming 2

Študijski program in stopnja Study programme and level	Študijska smer Study field	Letnik Academic year	Semester Semester
Računalništvo in spletne tehnologije, visokošolski strokovni študijski program prve stopnje	-	Drugi	Tretji
Computer Science and Web Technologies, first cycle Professional Study Programme	-	Second	Third

Vrsta predmeta / Course type Obvezni / Obligatory

Univerzitetna koda predmeta / University course code: 2-RST-VS-SP2-2020-05-14

Predavanja Lectures	Seminar Seminar	Vaje Tutorial	Klinične vaje work	Druge oblike študija	Samost. delo Individ. work	ECTS
30	/	45	/	/	105	6

Nosilec predmeta / Lecturer: izr. prof. dr. Biljana Mileva Boshkoska

Jeziki / Languages: **Predavanja / Lectures:** Slovenski / Slovenian, Angleški / English
Vaje / Tutorial: Slovenski / Slovenian, Angleški / English

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

Pogoj za vključitev v delo je vpis v 2. letnik študija. Pogoj za pristop k izpitu so opravljene obveznosti na vajah.

Prerequisites:

Enrolment into the second year of the study. Student has to pass the requirements given at the exercises before examination.

Vsebina:

- Spletno programiranje na strežniku.
 - Jezik PHP (PHP: Hypertext Preprocessor).
- Uporaba relacijskih podatkovnih baz na strežniku.
- Uporaba podatkovnih baz v spletnih aplikacijah.
- Pojem uporabniške seje. Delo s sejami.
- Arhitektura Model-View-Controller.

Content (Syllabus outline):

- Server—side Web programming.
 - PHP (PHP: Hypertext Preprocessor) language.
- Use of relational databases on the server.
- Use of databases in Web applications.
- User session principle. Use of sessions.
- Model-View-Controller architecture.
- Templates. Case example with the Smarty template system.

- Predloge (Templates). Primer na sistemu za predloge Smarty.
- Varnost spletnih aplikacij.
 - Splošni principi varnosti spletnih aplikacij.
 - Piškotki.
 - Primeri najbolj znanih napadov in obramba pred njimi.
- Spletna ogrodja. Primer ogrodja (Django).
- Uvod v Spletne storitve (Web services).
- Izdelava delujoče vzorčne spletne aplikacije (klient-strežnik-podatkovna baza).

- Web application security.
 - General principles of Web application security.
 - Cookies.
 - Examples of common attacks and defence against them.
- Web frameworks. Example of a framework (Django).
- Introduction to Web services.
- Development of an example application (client-server-database).

Temeljni literatura in viri / Readings:

- Nixon, R. (2018). *Learning PHP, MySQL & JavaScript: with jQuery, CSS & HTML5* (5th ed.). O'Reilly Media.
- Štrancar, M. & Klemen, S. (2005). *PHP in MySQL na spletnem strežniku Apache*. Založba Pasadena.
- Welling, L. & Thomson, L. (2017). *PHP and MySQL Web Development* (5th ed.). Addison-Wesley Professional.
- Rocco, M. (2013). *Instant Django 1.5 Application Development Starter*. Packt Publishing Ltd.

Cilji in kompetence:

Učna enota prispeva k razvoju naslednjih splošnih in predmetno-specifičnih kompetenc:

Splošne kompetence:

- usposobljenost za izvajanje vseh faz razvoja spletnih in mobilnih aplikacij: načrtovanje, razvoj, zagon, prodaja, vzdrževanje
- poznavanje osnov računalništva in informacijske tehnologije
- zmožnost skupinskega dela v vseh fazah razvoja spletnih in mobilnih rešitev
- obvladovanje postopkov zagotavljanja varnega in stabilnega delovanja spletnih in mobilnih aplikacij in sprotnega odpravljanja napak

Predmetno-specifične kompetence:

- razumevanje delovanja interneta in svetovnega spleta.
- poznavanje in sposobnost praktične uporabe tehnologij za spletno programiranje na strani klienta in

Objectives and competences:

The instructional unit contributes to the development of the following general and subject-specific competences:

General competences:

- competence to carry out all phases in the development of web and mobile applications: planning, development, start-up, sales, maintenance
- familiarity with the basics of computer science and information technology
- ability to operate within a team during all phases of development of web and mobile solutions
- mastering procedures of ensuring safe and stable functioning of web and mobile applications, and elimination of errors

Subject-specific competences:

- understanding of the internet and the Web
- knowledge and the ability of practical use of client-side and server-side Web

strežnika ter sposobnost razvoja dinamičnih spletnih aplikacij

- poznavanje osnovnih principov in tehnik zagotavljanja varnosti v spletnih aplikacijah

technologies and capability of developing dynamical Web pages

- knowledge of basic principles and techniques for strengthening Web application security

Predvideni študijski rezultati:

Znanje in razumevanje:

Študent/študentka:

- razume, kako deluje Internet in svetovni splet
- operativno pozna označevalne in programske jezike za spletno programiranje na strani strežnika
- pozna razmerje oblika-funkcija in zna to upoštevati pri načrtovanju spletnih aplikacij
- je sposoben/-na izdelovati dinamične spletne strani s komponentami, ki se izvajajo na strežniku

Intended learning outcomes:

Knowledge and understanding:

The student:

- understands the Internet and the Web
- gains operative knowledge of markup and server-side programming languages
- is aware of the design-function relationship and able to design Web applications accordingly
- can develop dynamical Web pages with components that run on the server-side

Metode poučevanja in učenja:

- *predavanja* z aktivno udeležbo študentov (razlaga, diskusija, vprašanja, primeri, reševanje problemov)
- *vaje*, kjer bodo študentje na konkretnih problemih ponovili, utrdili in dodatno osvetlili pojme in metode, spoznane na predavanjih
- *domače naloge*: s katerimi bodo študentje stimulirani, da sproti študirajo snov, ki bo obravnavana na predavanjih in vajah
- *seminarska naloga* bo študente naučila samostojnega reševanja praktičnih problemov z uporabo standardnih podatkovnih struktur in algoritmov

Learning and teaching methods:

- *lectures* with active student participation (explanation, discussion, questions, examples, problem solving)
- *lab work*, during which the students will use practical problems to repeat and strengthen the topics and methods presented at the lectures
- *homeworks* will stimulate the students to study concurrently with lectures and lab work
- *student project* will prepare the students to autonomously solve practical problems with the use of standard data structures and algorithms

Delež (v %) /

Načini ocenjevanja:

Weight (in %)

Assessment:

Način (pisni izpit, ustno izpraševanje, naloge, projekt):	Delež (v %) / Weight (in %)	Type (examination, oral, coursework, project):
<ul style="list-style-type: none"> • Pisni izpit • Domače naloge • Seminarska naloga 	<p>60</p> <p>20</p> <p>20</p>	<ul style="list-style-type: none"> • Written exam • Homeworks • Seminar paper
<p>Študent lahko pristopi k pisnemu izpitu po opravljenih domačih nalogah in seminarski nalogi, pri</p>		<p>Student can take part in the written exam, after she completes her homeworks and the practical project with at least 50% success.</p>

katerih mora doseči vsaj 50% uspešnost.		
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Reference nosilca / Lecturer's references:

- STROJNIK, Lidija, STOPAR, Matej, ZLATIC, Emil, KOKALJ, Doris, NAGLIČ, Mateja, ŽENKO, Bernard, ŽNIDARŠIČ, Martin, BOHANEK, Marko, MILEVA BOSHKOSKA, Biljana, LUŠTREK, Mitja, GRADIŠEK, Anton, POTOČNIK, Doris, OGRINC, Nives. Authentication of key aroma compounds in apple using stable isotope approach. *Food chemistry*, ISSN 0308-8146. [Print ed.], 2019, vol. 277, str. 766-773, doi: 10.1016/j.foodchem.2018.10.140. [COBISS.SI-ID 31834663].
- BOŠKOSKI, Pavle, DEBENJAK, Andrej, MILEVA BOSHKOSKA, Biljana. Rayleigh copula for describing impedance data - with application to condition monitoring of proton exchange membrane fuel cells. *European journal of operational research*, ISSN 0377-2217. [Print ed.], 2018, vol. 266, no. 1, str. 269-277, doi: 10.1016/j.ejor.2017.08.058. [COBISS.SI-ID 30736167].
- GRAŠIČ, Valerij, KOS, Andrej, MILEVA BOSHKOSKA, Biljana. Classification of incoming calls for the capital city of Slovenia smart city 112 public safety system using open Internet of Things data. *International journal of distributed sensor networks*, ISSN 1550-1477. [Online ed.], 2018, vol. 14, no. 9, str. 1-12, ilustr. <https://journals.sagepub.com/doi/pdf/10.1177/1550147718801703>, doi: 10.1177/1550147718801703. [COBISS.SI-ID 2048569107].
- MILJKOVIĆ, Dragana, LAVRAČ, Nada, BOHANEK, Marko, MILEVA BOSHKOSKA, Biljana. Discovering dependencies between domains of redox potential and plant defence through triplet extraction and copulas. *International journal of intelligent engineering informatics*, ISSN 1758-8723, 2018, vol. 6, no. 1/2, str. 61-77. <http://www.inderscience.com/info/ingeneral/forthcoming.php?jcode=ijiei>, doi: 10.1504/IJIEI.2018.10012065. [COBISS.SI-ID 2048463379].
- MILEVA BOSHKOSKA, Biljana, LIU, Shaofeng, CHEN, Huilan. Towards a knowledge management framework for crossing knowledge boundaries in agricultural value chain. *Journal of decision systems*, ISSN 1246-0125, [in press] 2018, 15 str., doi: 10.1080/12460125.2018.1468173. [COBISS.SI-ID 31392807].
- MILEVA BOSHKOSKA, Biljana, RONČEVIĆ, Borut, DŽAJIĆ URŠIČ, Erika. Modeling and evaluation of the possibilities of forming a regional industrial symbiosis networks. *Social sciences*, ISSN 2076-0760, 2018, vol. 7, iss. 1. <http://www.mdpi.com/2076-0760/7/1/13/pdf>, doi: 10.3390/socsci7010013. [COBISS.SI-ID 2048488723].
- BOHANEK, Marko, MILEVA BOSHKOSKA, Biljana, PRINS, Theo W., KOK, Esther. SIGMO: a decision support System for Identification of genetically modified food or feed products. *Food control*, ISSN 0956-7135. [Print ed.], 2016, vol. 71, str. 168-177, doi: 10.1016/j.foodcont.2016.06.032. [COBISS.SI-ID 29620007].