UČNI NAČRT PREDMETA / COURSE SYLLABUS

Predmet:	Spletno programiranje 1
Course title:	Web Programming 1

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	-	Prvi	Drugi
Computer Science and Web Technologies, first cycle Professional Study Programme	-	First	Second

Vrsta predmeta / Course type	Obvezni / Obligatory

Univerzitetna koda predmeta / University course code:	2-RST-VS-SP1-2020-05-14

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:	**Prerequisits:**
Pogoj za vključitev v delo je vpis v 1. letnik študija. Pogoj za pristop k izpitu so opravljene obveznosti na vajah.	The prerequisite is enrolment into the first year of the study. Student has to pass the requirements given at the exercises before examination.

Vsebina:	**Content (Syllabus outline):**
- Opisni jeziki. - Jezik in oznake HTML (HyperText Markup Language). - XML (Extensible Markup Language). - Osnove grafičnih formatov in njihove uporabe v Spletu. - Rastrski formati.	- Markup languages. - HTML (HyperText Markup Language) language and tags. - XML (Extensible Markup Language). - Basics of graphical formats and their use on the Web. - Raster formats. - SVG (Scalable Vector Graphics) vector format.

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- ▪ Vektorski format SVG (Scalable Vector Graphics).
  - HTML 5.
- Osnove semantičnega Spleta.
- Osnove spletnega okolja in komunikacije v njem. Uvod v HTTP (Hypertext Transfer Protocol) protokol.
- Elementi Spletne strani. Formularji in dogodki.
- Slogovne predloge CSS (Cascading Style Sheets). Uporaba plasti.
- Principi oblikovanja spletnih strani.
- Spletno programiranje na strani klienta.
  - Jezik JavaScript.
  - Objektni model DOM (Document Object Model).
  - Tehnologija asinhronega JavaScripta.
  - Podatkovni format JSON (JavaScript Object Notation).
- Osnove spletnega programiranja na strežniku z jezikom PHP (PHP: Hypertext Preprocessor).
- Izdelava delujoče spletne aplikacije (poudarek na programiranju na strani klienta).

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- HTML 5.
- Basics of the Semantic Web.
- Web environment and communication. Introduction to the http (Hypertext Transfer Protocol) protocol.
- Web page elements. Forms and events.
- CSS (Cascading Style Sheets) style sheets. Use of layers.
- Web page design principles.
- Client-side Web programming.
  - JavaScript language.
  - DOM (Document Object Model) object model.
  - Asynchronous JavaScript technology.
  - JSON (JavaScript Object Notation) data format.
- Basics of server-side Web programming with the PHP (PHP: Hypertext Preprocessor) language.
- Development of a functional Web application (focus on the client-side programming).

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Temeljni literatura in viri / Readings:

- Nixon, R. (2018). *Learning PHP, MySQL & JavaScript: with jQuery, CSS & HTML5* (5th ed.). **O'Reilly Media.**
- Pilgrim, M. (2010). *HTML5: Up and Running: Dive into the Future of Web Development.* O'Reilly Media.
- Meloni, J. C. (2014). *Sams Teach Yourself HTML, CSS and JavaScript all in One* (2nd ed.). Sams Publishing.
- Young, M. J. (2002). *XML: step by step.* Microsoft Press.
- Bramer, M. (2015). *Web Programming with PHP and MySQL: A Practical Guide.* Springer International Publishing.

Cilji in kompetence:

Objectives and competences:

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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

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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

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- 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:* - poznavanje opisnih jezikov - poznavanje delovanja interneta in svetovnega spleta - poznavanje tehnologij za spletno programiranje na strani klienta in sposobnost razvoja dinamičnih aplikacij	- 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:* - knowledge of markup languages - knowledge of the internet and the web - knowledge of client-side web technologies and capability of developing dynamical Web pages

Predvideni študijski rezultati:	**Intended learning outcomes:**
Znanje in razumevanje: *Študent/študentka:* - razume, kako deluje Internet in svetovni splet - operativno pozna označevalne in programske jezike za spletno programiranje na strani klienta - pozna razmerje oblika-funkcija in zna to upoštevati pri načrtovanju spletnih aplikacij - je sposoben izdelovati dinamične spletne strani	Knowledge and understanding: *The student:* - understands the workings of the Internet and the Web - gains operative knowledge of markup and client-side programming languages - is aware of the design-function relationship and able to design Web applications accordingly - is capable of developing dynamical Web pages

Metode poučevanja in učenja:	**Learning and teaching methods:**
- *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*	- *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*

Načini ocenjevanja:	Delež (v %) / Weight (in %)	**Assessment:**
Način (pisni izpit, ustno izpraševanje, naloge, projekt):		Type (examination, oral, coursework, project):
- Pisni izpit	60	- Written exam

• Domače naloge	20	• Homeworks
• Seminarska naloga	20	• Seminar paper
Študent lahko pristopi k pisnemu izpitu po opravljenih domačih nalogah in seminarski nalogi, pri katerih mora doseči vsaj 50% uspešnost.		Student can take part in the written exam, after he/she completes his/her homeworks and the seminar paper with at least 50% success.

Reference nosilca / Lecturer's references:

- STROJNIK, Lidija, STOPAR, Matej, ZLATIĆ, Emil, KOKALJ, Doris, NAGLIČ, Mateja, ŽENKO, Bernard, ŽNIDARŠIČ, Martin, BOHANEC, 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, BOHANEC, 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].
- BOHANEC, 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].