

## UČNI NAČRT PREDMETA / COURSE SYLLABUS

<b>Predmet:</b>	Spletno programiranje 2
<b>Course title:</b>	Web Programming 2

Študijski program in stopnja Study programme and level	Študijska smer Study field	Letnik Academic year	Semester Semester
Informatika v sodobni družbi, visokošolski strokovni študijski program prve stopnje	-	Drugi ali tretji	Četrta ali šesta
Informatics in Contemporary Society, first cycle Professional Study Programme	-	Second or third	Fourth or sixth

**Vrsta predmeta / Course type**

Izbirni / Elective

**Univerzitetna koda predmeta / University course code:**

1-ISD-VS-IP-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. ali 3. letnik. Pogoj za pristop k izpitu so opravljene obveznosti na vajah.

**Prerequisites:**

Enrollment into the 2nd 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.
- Predloge (Templates). Primer na sistemu za predloge Smarty.
- Varnost spletnih aplikacij.

**Content (Syllabus outline):**

- Server—side Web programming.
  - PHP language (PHP: Hypertext Preprocessor).
- 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.
- Web application security.

- Splošni principi varnosti spletnih aplikacij.
- Piškotki.
- Pojem uporabniške seje. Delo s sejami.
- 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).

- General principles of Web. application security.
- Cookies.
- User session principle. Use of sessions.
- 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:*

- poznavanje in razumevanje širokega nabora aplikacij informacijsko komunikacijske tehnologije v sodobni družbi
- poznavanje in razumevanje interakcij med informacijsko komunikacijsko tehnologijo in sodobno družbo
- razvoj in uporaba informacijsko komunikacijske tehnologije, sposobnosti in spretnosti v lokalnem in mednarodnem okolju
- sposobnost fleksibilne in aplikativne uporabe teoretičnega znanja
- obvladanje raziskovalnih metod, postopkov in procesov
- uporaba metodologij informatizacije poslovnih procesov v praksi

### Objectives and competences:

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

- knowledge and understanding of a wide range of applications of information communication technology in the modern society
- knowledge and understanding of interactions between ICT and the modern society
- development and the use of ICT, abilities and skills in local and international environment
- ability to flexibly apply knowledge in practice
- competence in research methods, procedures and processes
- the use of methodologies of business processes informatisation in practice

**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 %) /

Weight (in %)

**Načini ocenjevanja:****Assessment:**

Način (pisni izpit, ustno izpraševanje, naloge, projekt):

- Pisni izpit
- Domače naloge
- Seminarska naloga

60  
20  
20

Type (examination, oral, coursework, project):

- Written exam
- Homeworks
- 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 practical project with at least 50% success.

**Reference nosilca / Lecturer's references:**

- STROJNIK, Lidija, STOPAR, Matej, ZLATIČ, 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].