

UČNI NAČRT PREDMETA / COURSE SYLLABUS

Predmet:	Spletno programiranje 1
Course title:	Web Programming 1

Izobraževalni program in stopnja Educational programme and level	Študijska smer Study field	Akademsko leto Academic year
NOO projekt piloti: Naprednejša računalniška znanja (nivo: visokošolski strokovni študijski program)	Programiranje in razvoj aplikacij	2023/24
RRP pilot project: Advanced computer skills (level: first cycle professional study programme)	Programming and application development	2023/24

Vrsta predmeta / Course type Obvezni / Obligatory

Univerzitetna koda predmeta / University course code: NOO-PRA-VS-SP1-2023-24

Predavanja Lectures	Seminar Seminar	Vaje Tutorial	Klinične vaje work	Druge oblike študija	Samost. delo Individ. work	ECTS
30	-	30	-	-	120	6

Nosilec predmeta / Lecturer: izr. prof. dr. Pavle Boškoski

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 pristop k izpitu so opravljene obveznosti na vajah.

Prerequisites:

To pass the requirements given at the exercises before examination.

Vsebina:

- Označevalni jeziki.
 - Jezik in oznake HTML (HyperText Markup Language).
 - XML (Extensible Markup Language)
 - Osnove grafičnih formatov in njihove uporabe v Spletu.
 - Rastrski formati.
 - Vektorski format SVG (Scalable Vector Graphics).

Content (Syllabus outline):

- 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.
 - HTML 5.

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- 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. Jeziki PHP/Django Python.
- Izdelava delujoče spletne aplikacije (poudarek na programiranju na strani klienta).
- Spletna ogrodja. Primer ogrodja (Django).

- 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. The PHP language/Django Python.
- Development of a functional Web application (focus on the client-side programming).
- Web frameworks. Web application development examples (Django).

Temeljni literatura in viri / Readings:

- Frain B. (2020). Responsive Web Design with HTML5 and CSS: Develop future-proof responsive websites using the latest HTML5 and CSS techniques, 3rd Edition.
- Flanagan, D. (2020). JavaScript: The Definitive Guide : Master the World's Most-used Programming Language. O'Reilly Media.
- William S. Vincent (2022). Django for Beginners : build websites with Python & Django.
- Nixon, R. (2021). Learning PHP, MySQL and JavaScript: A Step-By-Step Guide to Creating Dynamic Websites. O'Reilly Media.

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

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

- 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

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:

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

Intended learning outcomes:

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:

- 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

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

Načini ocenjevanja:

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

- Pisni izpit
- Domače naloge uspešnost.

Delež (v %) /

Weight (in %) /

Assessment:

Type (examination, oral, coursework, project):

- Written exam
- Homeworks

Reference nosilca / Lecturer's references:

- BOŠKOSKI, Pavle. Towards digital transformation : implementation experience. V: RODIČ, Blaž (ur.). Book of Abstracts. Novo mesto: Faculty of Information Studies. 2017. <http://ifis.fis.unm.si/>. [COBISS.SI-ID 30969895]
- BOŠKOSKI, Pavle, JURIČIĆ, Đani, MUSIZZA, Bojan, ČERNE, Stanislav. Sistem za diagnostiko, prognostiko in podporo e-vzdrževanju industrijske opreme : tehnična izboljšava. Ljubljana: Institut Jožef Stefan, 2014. 21 str., ilustr. [COBISS.SI-ID 28376103]
- DEBENJAK, Andrej, BOŠKOSKI, Pavle, MUSIZZA, Bojan, KERN, Miha, BIČEK, Andrej. Informacijska arhitektura za proizvodno analitiko : primer Domel = Information architecture for production analytic : with application in Domel company. V: MUŠKINJA, Nenad (ur.), TOVORNIK, Boris (ur.). Zbornik desete konference Avtomatizacija v industriji in gospodarstvu, 6. in 7. april 2017, Maribor, Slovenija. Maribor: Društvo avtomatikov Slovenije. 2017, str. 38-43. [COBISS.SI-ID 30423079]
- DAMIJ, Nadja, BOŠKOSKI, Pavle, BOHANEC, Marko, MILEVA BOSHKOŠKA, Biljana. Ranking of business process simulation software tools with DEX/QQ hierarchical decision model. PloS one, ISSN 1932-6203, 2016, vol. 11, no. 2, str. 1-16, doi: 10.1371/journal.pone.0148391. [COBISS.SI-ID 29294119],
- MILEVA BOSHKOŠKA, Biljana, BOHANEC, Marko, BOŠKOSKI, Pavle, JURIČIĆ, Đani. Copula-based decision support system for quality ranking in the manufacturing of electronically commutated motors. Journal of intelligent manufacturing, ISSN 0956-5515, 2015, vol. 26, no. 2, str. 281-293, doi: 10.1007/s10845-013-0781-7. [COBISS.SI-ID 26734887]