



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	2022/23
RRP pilot project: Advanced computer skills (level: first cycle professional study programme)	Programming and application development	2022/23

Vrsta predmeta / Course type Obvezni / Obligatory

Univerzitetna koda predmeta / University course code: NOO-PRA-VS-SP1-2022-23

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 Boškosi

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:

Content (Syllabus outline):



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| <ul style="list-style-type: none">• Opisni jeziki.<ul style="list-style-type: none">• Jezik in oznake HTML (HyperText Markup Language).• ML (Markup Language) XML in YAML.• Osnove grafičnih formatov in njihove uporabe v Spletu.<ul style="list-style-type: none">▪ Rastrski formati.▪ 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.<ul style="list-style-type: none">• Jezik JavaScript.• Objektni model DOM (Document Object Model).• Tehnologija asinhronega JavaScripta.• Podatkovni format JSON (JavaScript Object Notation).• Osnove spletnega programiranja na strežniku s primeri v PHP (PHP: Hypertext Preprocessor) in Python.• Izdelava delujoče spletne aplikacije (poudarek na programiranju na strani klienta). | <ul style="list-style-type: none">• Markup languages.<ul style="list-style-type: none">• HTML (HyperText Markup Language) language and tags.• ML (Markup Language) XML and YAML.• Basics of graphical formats and their use on the Web.<ul style="list-style-type: none">• Raster formats.<ul style="list-style-type: none">• SVG (Scalable Vector Graphics) vector format.• 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.<ul style="list-style-type: none">• JavaScript language.• DOM (Document Object Model) object model.• Asynchronous JavaScript technology.• JSON (JavaScript Object Notation) data format.• Basics of server-side Web programming with examples in PHP (PHP: Hypertext Preprocessor) and Python.• Development of a functional Web application (focus on the client-side programming). |
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Temeljni literatura in viri / Readings:

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| <ul style="list-style-type: none">• Frain B. (2020). Responsive Web Design with HTML5 and CSS: Develop future-proof responsive websites using the latest HTML5 and CSS techniques, 3rd Edition• William S. Vincent (2022). Django for Beginners• Nixon, R. (2018). <i>Learning PHP, MySQL & JavaScript: with jQuery, CSS & HTML5</i> (5th ed.). O'Reilly Media.• Pilgrim, M. (2010). <i>HTML5: Up and Running: Dive into the Future of Web Development</i>. O'Reilly Media.• Bramer, M. (2015). <i>Web Programming with PHP and MySQL: A Practical Guide</i>. Springer International Publishing. |
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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:

- poznavanje opisnih jezikov
- poznavanje delovanja interneta in svetovnega spleta
- poznavanje tehnologij za spletno programiranje na strani klienta in sposobnost razvoja dinamičnih aplikacij

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:

- 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:

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

- 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

Delež (v %) /

Weight (in %) **Assessment:**

Načini ocenjevanja:

Način (pisni izpit, ustno izpraševanje, naloge, projekt):	Delež (v %) / Weight (in %)	Type (examination, oral, coursework, project):
<ul style="list-style-type: none"> • Pisni izpit 	80	<ul style="list-style-type: none"> • Written exam
<ul style="list-style-type: none"> • Domače naloge uspešnost. 	20	<ul style="list-style-type: none"> • Homeworks

Reference nosilca / Lecturer's references:

- 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].
- DEBENJAK, Andrej, BOŠKOSKI, Pavle, MUSIZZA, Bojan, KERN, Miha, BIČEK, Andrej. Informacijska arhitektura za proizvodno analitiko : primer Domel. Zbornik desete konference Avtomatizacija v industriji in gospodarstvu, 6. in 7. april 2017, Maribor, Slovenija. Maribor: Društvo avtomatikov Slovenije, 2017. Str. 38-43. ISBN 978-961-93818-3-0. [COBISS.SI-ID 30423079]
- 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]
- ANDONOVIKJ, Viktor, BOŠKOSKI, Pavle, EVKOSKI, Bojan, REDEK, Tjaša, BOSHKOSKA, Biljana Mileva. Community analysis in Slovenian labour network 2010-2020. *Journal of decision systems*. 2022, vol. 31, suppl. 1, str. 308-318. ISSN 1246-0125. DOI: 10.1080/12460125.2022.2070944. [COBISS.SI-ID 107861251]
- Boškosi, Pavle, Perne, Matija, Redek, Tjaša, Boshkoska, Biljana Mileva. Occupation similarity through bipartite graphs arXiv preprint arXiv:2202.11064