

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
Razvoj videoiger in razširjenih resničnosti, visokošolski strokovni študijski program prve stopnje	-	Drugi	Četrta
Game and Extended Reality Development, first cycle Professional Study Programme	-	Second	Fourth

Vrsta predmeta / Course type

Izbirni / Elective

Univerzitetna koda predmeta / University course code:

4-RVRR-VS-IP-SP1-2025-02-27

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. 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 vključitev v delo je vpis v 1. letnik študija. Pogoj za pristop k izpitu so opravljene obveznosti na vajah in izdelana seminarska naloga.

Prerequisites:

The prerequisite is enrolment into the first year of the study. Before examination, a student must pass the requirements given at the exercises and prepare a project.

Vsebina:

Content (Syllabus outline):

<ul style="list-style-type: none"> ● Označevalni jeziki. <ul style="list-style-type: none"> ● Jezik in oznake HTML (HyperText Markup Language). ● XML (Extensible Markup Language). ● 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 jeziki PHP/Django Python. z jezikom PHP (PHP: Hypertext Preprocessor). ● Izdelava delujoče spletne aplikacije (poudarek na programiranju na strani klienta). ● Spletna ogrodja. Primer ogrodja (Django). 	<ul style="list-style-type: none"> ● Markup languages. <ul style="list-style-type: none"> ● HTML (HyperText Markup Language) language and tags. ● XML (Extensible Markup Language). ● Basics of graphical formats and their use on the Web. <ul style="list-style-type: none"> ● Raster formats. ● 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. ● Server based 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).
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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:

- Sposobnost analitičnega in algoritmičnega razmišljanja.
- Sposobnost fleksibilne uporabe znanja v praksi.
- Usposobljenost za izvajanje vseh faz razvoja programskih rešitev: načrtovanje, razvoj, testiranje, implementacija in vzdrževanje.

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:

- Ability of analytical and algorithmic thinking.
- Ability of flexible usage of knowledge in practice.
- Ability to perform all phases of software development: design, development, testing, implementation and maintenance.

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
- seminarska naloga bo študente naučila samostojnega reševanja praktičnih

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*

problemov z uporabo standardnih podatkovnih struktur in algoritmov

problems with the use of standard data structures and algorithms

Delež (v %) /
Weight (in %)

Načini ocenjevanja:

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>Študent lahko pristopi k pisnemu izpitu po opravljenih domačih nalogah in seminarski nalogi, pri katerih mora doseči vsaj 50% uspešnost.</p>	<p>60</p> <p>20</p> <p>20</p>	<ul style="list-style-type: none">• Written exam• Homeworks• Seminar paper <p>Student can take part in the written exam, after he/she completes his/her homeworks and the project with at least 50% success.</p>

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://itis.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, BOHANEK, Marko, MILEVA BOSHKOSKA, 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 BOSHKOSKA, Biljana, BOHANEK, 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]