

	UČNI NAČRT PREDMETA/COURSE SYLLABUS
Predmet	Spletne tehnologije
Course title	Web Technologies

Študijski program in stopnja Study programme and level	Študijska smer Study field	Letnik Academic year	Semester Semester
Poslovna informatika / 1. stopnja	Računalništvo in informatika	2. letnik	3.
Business Informatics / 1 st Cycle	Computer and Information Science	2 nd year	3 rd

Vrsta predmeta/Course type obvezni/obligatory

Univerzitetna koda predmeta/University course code I_RI_2_UN5

Predavanja Lectures	Seminar Seminar	Sem. vaje Tutorial	Lab. vaje Laboratory work	Teren. vaje Field work	Samost. delo Individ. work	ECTS
30			30		90	6

Nosilec predmeta/Lecturer: doc. dr. Sebastian Lahajnar

Jeziki/ Languages: **Predavanja/Lectures:** slovenski/Slovenian
Vaje/Tutorial: slovenski/Slovenian

Pogoji za vključitev v delo oz. za opravljanje študijskih obveznosti: **Prerequisites:**

<ul style="list-style-type: none"> • Vpis v drugi letnik študijskega programa. • Študent mora pred izpitom pripraviti in predstaviti seminarsko nalogo. 	<ul style="list-style-type: none"> • The prerequisite for inclusion is enrolment in the second year of study. • Students have to successfully prepare and present a seminar paper before the examination.
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Vsebina: **Content (Syllabus outline):**

<ul style="list-style-type: none"> • <i>Uvod:</i> Storitve interneta, ključni protokoli in sloji, naslavljanje in sistem imenskega prostora, poslovanje na internetu, osnove zagotavljanja varnosti. • <i>Spletne aplikacije:</i> Definicija pojma spletne aplikacije, klasifikacija po različnih kriterijih, zgodovina razvoja. • <i>Arhitekture programskih rešitev:</i> Razvoj arhitektur skozi čas, monolitski pristop, 	<ul style="list-style-type: none"> • <i>Introduction:</i> Internet services, key protocols and layers, addressing and the namespace system, doing business on the internet, the basics of internet security. • <i>Web applications:</i> Web application definition, classification by different criteria, history of web development.
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<p>arhitektura odjemalec/strežnik, večslojna arhitektura.</p> <ul style="list-style-type: none"> • <i>Arhitekture spletnih aplikacij:</i> Lahki odjemalec debeli odjemalec, spletna dostava, MVC (Model–view–controller). • <i>Tehnologije za razvoj spletnih aplikacij na strani odjemalca:</i> HTML5, slogi CSS, skriptni jeziki (JavaScript). • <i>Tehnologije za razvoj spletnih aplikacij na strani strežnika:</i> Common Gateway Interface, PHP, ASP.NET, Java Servlets in Javas Server Pages. • <i>Uvod v XML:</i> Definicija, zgradba dokumenta XML, preverjanje veljavnosti z uporabo DTD in XMLScheme, XPath, XLINK, XPointer, XSLT. • <i>Uvod v HTML:</i> Strukturiranje vsebin, posebne oblike besedila, izdelava povezav, kreiranje table in seznamov. • <i>Naprednejši HTML:</i> Delo z vsebniki, določitev glave dokumenta, izgradnja obrazcev HTML5, vključevanje multimedija (slika, zvok video vsebina), izdelava postavitve spletnih strani. • <i>Osnove CSS (Cascading Style Sheets):</i> Opredelitev pravil CSS, vključevanje v dokument HTML, izdelava zunanjih CSS dokumentov. • <i>Oblikovanje s CSS:</i> Oblikovanje ozadja, besedila, povezav, seznamov, obrob, table. • <i>Pozicioniranje elementov s CSS:</i> Prikaz elementov na zaslonu, načini pozicioniranja (statično, fiksno, relativno, absolutno), pozicioniranje s float, različne možnosti poravnave. • <i>Osnove JavaScripta:</i> Prikaz podatkov, sintaksa jezika, definiranje spremenljivk, delo z operatorji, izdelava funkcij, prestrezanje dogodkov HTML, delo z nizi, številkami in datumi. • <i>Naprednejše programiranje v JavaScriptu:</i> Vejanje programske kode z odločitvami, ponavljanje z uporabo zank, delo s polji, preverjanje obrazcev HTML, delo z JavaScript HTML BOM (Browser Object Model) objekti: Window, Window.Location, Window.Navigator, Alert, Confirm in Prompt. 	<ul style="list-style-type: none"> • <i>Applications architecture:</i> Development of architectures over time, monolithic approach, client / server architecture, multilayer architecture. • <i>Web application architecture:</i> Thin and fat client, online delivery, MVC (Model-view-controller) architecture. • <i>Web application development technologies on the client side:</i> HTML5, CSS stylesheets, scripting languages (JavaScript). • <i>Web application development technologies on the server side:</i> Common Gateway Interface, PHP, ASP.NET, Java Servlets, and Javas Server Pages. • <i>Introduction to XML:</i> Definition, XML document structure, validation using DTD and XMLScheme, XPath, XLINK, XPointer, XSLT. • <i>Introduction to HTML:</i> Structuring content, specific text formats, creating links, creating tables and lists. • <i>Advanced HTML:</i> Working with containers, header definition, building HTML5 forms, multimedia integration (image, sound video content), website layout creation. • <i>Cascading Style Sheets:</i> Defining CSS rules, integrating into the HTML document, creating external CSS documents. • <i>CSS design:</i> Formatting wallpapers, text, links, lists, borders and tables. • <i>Elements positioning with CSS:</i> Displaying elements on the screen, positioning modes (static, fixed, relative, absolute), positioning with float, different alignment options. • <i>JavaScript basics:</i> Displaying data, language syntax, definition of variables, dealing with operators, creation of functions, interception of HTML events, working with strings, numbers and dates. • <i>Advanced programming in JavaScript:</i> Code execution with decisions, repeating code using loops, working with Arrays, validating HTML forms, working with JavaScript HTML BOM (Browser Object Model) objects: Window,
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<ul style="list-style-type: none"> • <i>JavaScript DOM: Osnove JavaScript HTML DOM (Document Object Model) objektnega modela.</i> 	<p>Window.Location, Window.Navigator, Alert, Confirm in Prompt.</p> <ul style="list-style-type: none"> • <i>JavaScript DOM: The basics of the JavaScript HTML DOM (Document Object Model) object model.</i>
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Temeljna literatura in viri/Readings:

Temeljna literatura/Basic literature

- Dean, J. (2018). *Web Programming with HTML5, CSS, and JavaScript*. Jones & Bartlett Learning.

Priporočljiva literatura/Recommended literature

- Sklar, J. (2014). *Principles of Web Design: The Web Technologies Series, 6th Edition*, Cengage Learning.
- Ullman, L. (2017). *PHP and MySQL for Dynamic Web Sites, 5th Edition*. Peachpit Press.

Cilji in kompetence:

Učna enota prispeva predvsem k razvoju naslednjih splošnih in specifičnih kompetenc:

- poznavanje in razumevanje procesov v tehniško-tehnološkem ter poslovnem okolju in sposobnost za njihovo analizo, sintezo in predvidevanje rešitev ter njihovih posledic,
- sposobnost definiranja, razumevanja in ustvarjalnega reševanja strokovnih izzivov na področjih računalništva in informatike,
- usposobljenost za pridobivanje novih in poglobljanje pridobljenih strokovnih znanj računalništva in informatike,
- usposobljenost za analizo in načrtovanje sistemov,
- zmožnost opisati dano situacijo s pravilno uporabo matematičnih in računalniških simbolov ter zapisov,
- praktično znanje in veščine pri razvoju programske in strojne opreme ter informacijskih tehnologij, ki so potrebne za uspešno delo na strokovnem področju računalništva in informatike (programiranje, računalniška arhitektura, omrežja itd.),
- usposobljenost za analizo in razvoj strojne in programske opreme,
- poznavanje zmožnosti in omejitev informacijskih tehnologij.

Objectives and competences:

The learning unit mainly contributes to the development of the following general and specific competences:

- knowledge and understanding of processes in the technical-technological and business environment, as well as the ability for their analysis, synthesis and prediction of the solutions and their consequences,
- the ability to define, understand and creatively solve professional challenges in the fields of computer science and informatics,
- the ability to acquire new and deepen the acquired professional knowledge of computer science and informatics,
- being qualified to analyze and design systems,
- the ability to describe the given situation with a proper use of mathematical and computer symbols and records,
- practical knowledge and skills in the development of software and hardware and information technologies necessary for successful work in the field of computer science and informatics (programming, computer architecture, networks, etc.),
- being qualified for the analysis and development of hardware and software,

	<ul style="list-style-type: none"> knowing the capabilities and limitations of information technologies.
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Predvideni študijski rezultati:

Intended learning outcomes:

<p>Študent/študentka:</p> <ul style="list-style-type: none"> pozna in razume pomen razvoja spletnih aplikacij, pozna tehnologije za razvoj spletnih aplikacij na strani odjemalca in strežnika, pozna in razume arhitekturo in delovanje spletnih aplikacij, pozna in razume osnove metodološkega pristopa za razvoj spletnih aplikacij, pozna osnove označevalnega jezika HTML in ga uporablja, pozna jezik CSS in ga uporablja za oblikovanje spletnih strani, pozna in uporablja programski jezik JavaScript za reševanje enostavnejših programskih problemov, pozna in razume pomen in vlogo jezika XML. 	<p>Students:</p> <ul style="list-style-type: none"> know and understand the importance of developing web applications, know the technologies for web applications development on the client and server side, know and understand the architecture and operation of web applications, understand the basic methodological approach for web applications development, know the basics of the HTML markup language and its application, know the CSS language and uses it to format web pages, know and use the JavaScript programming language to solve simpler software problems, know and understand the meaning and role of the XML language.
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Metode poučevanja in učenja:

Learning and teaching methods:

<ul style="list-style-type: none"> <i>predavanja</i> z aktivno udeležbo študentov (razlaga, diskusija, vprašanja, primeri, reševanje problemov), <i>laboratorijske vaje</i>: refleksija izkušenj, praktično reševanje več tipičnih problemov na računalniku, predstavitev in zagovor programskih rešitev, diskusija, sporočanje povratne informacije. 	<ul style="list-style-type: none"> <i>lectures</i> with active student participation (explanation, discussion, questions, examples, problem solving), <i>laboratory work</i>: reflection on experience, practical solving of several typical problems on a computer, presentation and defence of programming solutions, discussion, feedback.
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Načini ocenjevanja:

Delež (v %)

Weight (in %)

Assessment:

<p>Načini:</p> <ul style="list-style-type: none"> izpit izdelava, predstavitev in zagovor seminarske naloge <p>Ocenjevalna lestvica: ECTS.</p>	<p>60 %</p> <p>40 %</p>	<p>Types:</p> <ul style="list-style-type: none"> exam preparation, presentation and defence of the seminar paper <p>Grading scheme: ECTS.</p>
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