

	UČNI NAČRT PREDMETA/COURSE SYLLABUS
Predmet	Razvoj in upravljanje informacijskih sistemov
Course title	Development and Management of Information Systems

Študijski program in stopnja Study programme and level	Študijska smer Study field	Letnik Academic year	Semester Semester
Poslovna informatika / 1. stopnja	Računalništvo in informatika	3. letnik	5.
Business Informatics / 1 st Cycle	Computer and Information Science	3 rd year	5 th

Vrsta predmeta/Course type obvezni/obligatory

Univerzitetna koda predmeta/University course code I_RI_3_UNI

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 tretji 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 third 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> zgodovina metodologij razvoja informacijskih sistemov, ključni koncepti in principi, osnovni življenjski cikel razvoja. • <i>Razvojni modeli:</i> Osnove razvojnih modelov, ad-hoc model, zaporedni, inkrementalni, prototipni, spiralni, 	<ul style="list-style-type: none"> • <i>Introduction:</i> The history of information systems development methodologies, key concepts and principles, the basic development life cycle. • <i>Development models:</i> Development models basics, ad-hoc model, sequential, incremental, prototype, spiral, research, reusability model.
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<p>raziskovalni model, model ponovne uporabljivosti.</p> <ul style="list-style-type: none"> • <i>Strukturne tehnike za analizo in modeliranje informacijskih sistemov:</i> Model ER, dekompozicijski diagram, diagram podatkovnih tokov, psevdo koda, strukturni diagram, diagram poteka, odločitvene tabele in drevesa. • <i>Objektne tehnike:</i> Osnovni koncepti objektnega pristopa, splošno o jeziku UML, diagramске tehnike za opis statičnega (razredni, paketni, komponentni, postavitveni diagram) in dinamičnega (diagrami komunikacije, diagram prehajanja stanj, diagram aktivnosti) vidika informacijskega sistema. • <i>Modeliranje poslovnih procesov:</i> Osnovni koncepti modeliranja procesov, izgradnja procesne arhitekture, vrste modelov, diagramске tehnike za modeliranje (BPMN, EPC). • <i>Strukturne metodologije razvoja informacijskih sistemov:</i> Sistemska analiza in načrtovanje, informacijski inženiring. • <i>Objektne metodologije razvoja informacijskih sistemov:</i> RUP (Rational Unified Process), Iconix. • <i>Agilne metodologije razvoja informacijskih sistemov:</i> Scrum, ekstremno programiranje. • <i>Primerjava metodologij:</i> Prednosti in slabosti metodologij, smotrnost uporabe v različnih situacijah. • <i>Situacijski inženiring metodologij:</i> Osnove discipline, ključni pristopi, izgradnja novih metod v nasprotju s prilagajanjem obstoječih, sestavljanje delov metod in komponent v organizacijah in projektom prilagojene metodologije. 	<ul style="list-style-type: none"> • <i>Structural techniques for IS analysis and modelling:</i> ER model, decomposition diagram, data flow diagram, pseudo code, structural diagram, flow chart, decision table and decision tree. • <i>Object techniques:</i> Basic concepts of the object-based approach, generally on UML language, diagrammatic techniques for describing static (class, packet, component, node diagram) and dynamic (communication diagrams, state transition, activity diagram) aspect of the information system. • <i>Business processes modelling:</i> Basic concepts of process modelling, building process architecture, model types, diagram modelling techniques (BPMN, EPC). • <i>Structural methodologies for information systems development:</i> System analysis and planning, Information engineering. • <i>Object methodologies for information systems development:</i> RUP (Rational Unified Process), Iconix. • <i>Agile methodologies for information systems development:</i> Scrum, Extreme programming. • <i>Comparison of methodologies:</i> Advantages and disadvantages of methodologies, the rationality of using them in different situations. • <i>Situational method engineering:</i> Introduction to the discipline, key approaches, the construction of new methods in contrast to adaptation of the existing ones, the compilation of method parts and components in organizations and project-tailored methodologies.
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Temeljna literatura in viri/Readings:

Temeljna literatura/Basic literature

- Avison, D., Fitzgerald, G. (2006). Information Systems Development, 4th Edition. McGraw-Hill Education.
- Tilley, S., Rosenblatt, H. J. (2016). *Systems Analysis and Design, 11th Edition*. Cengage Learning.

Priporočljiva literatura/Recommended literature

- Silver, B. (2011). *Bpmn Method and Style, 2nd Edition, with Bpmn Implementer's Guide*. Cody-Cassidy Press.
- Paul, D., Turner, P., Cadle, J. (2014). *Business Analysis Techniques, revised Edition*. BCS, The Chartered Institute for IT.

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,
- poznavanje načinov predstavitve, zapisa in modeliranja informacij,
- usposobljenost za timsko in projektno delo,
- 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,
- knowing the ways of presenting, recording and modeling information,
- being qualified for teamwork and project work,
- knowing the capabilities and limitations of information technologies.

Predvideni študijski rezultati:**Študent/študentka:**

- razume ključne koncepte in principe metodologij razvoja informacijskih sistemov,
- pozna življenjski cikel razvoja informacijskih sistemov,
- pozna najpomembnejše modele in pristope za razvoj informacijskih sistemov,

Intended learning outcomes:**Students:**

- understand the key concepts and principles of the information systems development methodologies,
- know the information systems development life cycle,
- are familiar with the most important models and approaches for information systems development,

<ul style="list-style-type: none"> • pozna klasični in procesni pristop k modeliranju organizacije, • pozna in uporablja strukturne in objektne tehnike za analizo in modeliranje informacijskih sistemov, • pozna in uporablja tehnike za modeliranje poslovnih procesov, • pozna filozofijo, aktivnosti, izdelke strukturnih, objektnih in agilnih metodologij za razvoj informacijskih sistemov, • pozna aktivnosti strateškega načrtovanja informacijskih sistemov s poudarkom na razumevanju vloge strateškega načrtovanja za učinkovito delovanje informacijskega sistema, • razume pomen upravljanja, delovanja in vzdrževanja informacijskih sistemov, • razume koncept prenove informacijskih sistemov. 	<ul style="list-style-type: none"> • know the classical and process approach to organization modelling, • know and use structural and object techniques for information systems analysis and modelling, • know and use techniques for business processes modelling, • know the philosophy, activities and products of structural, object and agile methodologies for information systems development, • know the activities for information systems strategic planning with an emphasis on understanding the role of strategic planning for the efficient operation of the information system, • understand the importance of managing, operating and maintaining information systems, • understand the concept of information system renewal.
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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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Delež (v %)

Načini ocenjevanja:

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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