

	UČNI NAČRT PREDMETA/COURSE SYLLABUS
Predmet	Situacijski inženiring razvojnih metodologij
Course title	Situational Engineering of Development Methodologies

Študijski program in stopnja Study programme and level	Študijska smer Study field	Letnik Academic year	Semester Semester
Poslovna ekonomija in upravljanje	Upravljanje in razvoj informacijskih sistemov	1.	2.
Business Economics and Management	Management and Development of Information Systems	1 st	2 nd

Vrsta predmeta/Course type

temeljni predmet smeri / fundamental subject in study field

Univerzitetna koda predmeta/University course code

3_PEU_TPS_UN2_URIS

Predavanja Lectures	Seminar Seminar	Sem. vaje Tutorial	Lab. vaje Laboratory work	Teren. vaje Field work	Samost. delo Individ. work	ECTS
20	10				420	15

Nosilec predmeta/Lecturer:

doc. dr. Sebastian Lahajnar

Jeziki/ Predavanja/Lectures:
Languages:

slovenski/Slovenian

Vaje/Tutorial:

slovenski/Slovenian

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

Prerequisites:

<ul style="list-style-type: none"> Pogoj za vključitev v delo je vpis v prvi letnik študijskega programa. Študent mora pred izpitom pripraviti in predstaviti raziskovalno nalogo. 	<ul style="list-style-type: none"> The prerequisite for participation is enrolment in the first year of study. Student has to prepare, present and defend a research paper before the examination.
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Vsebina:

Content (Syllabus outline):

<ul style="list-style-type: none"> <i>Uvod:</i> pregled osnov situacijskega inženiringa metodologij za razvoj programske opreme: deli metodologij, meta-modeli, situacijski kontekst, prilagajanje metodologij, podpora orodij, terminologija. <i>Kosi, fragmenti in komponente metodologij:</i> predstavitev posameznih 	<ul style="list-style-type: none"> <i>Introduction:</i> overview of the situational engineering methodology basics for the software development: parts of methodology, meta-models, situational context, method adaptation, tool support, terminology. <i>Methodology chunks, fragments and components:</i> presentation and comparison of individual concepts,
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<p>konceptov, primerjava le-teh, dimenzije in vidiki, raven abstrakcije.</p> <ul style="list-style-type: none"> • <i>Inženiring metodologij v praksi</i>: metodologije kot znanje o aktivnostih, deležniki inženiringa metodologij, smiselnost uporabe, primer evolucijskega pristopa, usmerjenost k uporabniku. • <i>Formalni opis</i>: ozadje in zgodovina, koraki k formalizaciji, standardizacija meta-modela metodologij, pregled alternativnih pristopov, procesni modeli situacijskega inženiringa metodologij, uporaba ontologij. • <i>Identifikacija in izgradnja delov metodologij</i>: izgradnja na podlagi obstoječih metodologij, izgradnja od začetka, izgradnja na podlagi znane vsebine repozitorija, identifikacija ponovno uporabljivih delov. • <i>Kreiranje nove metodologije</i>: vrste pristopov, opredelitev zahtev, identifikacija delov metodologije, sestavljanje. • <i>Prilagajanje metodologije</i>: proces konfiguracije, prilagajanje zaradi izboljšanja procesa, podpora orodij. • <i>Ocena kakovosti</i>: ogrodje za ocenjevanje kakovosti metodologij, kakovost konceptualnega modela, kakovost posameznih delov, kakovost izdelane metodologije. 	<p>dimensions and aspects, level of abstraction.</p> <ul style="list-style-type: none"> • <i>Engineering methodologies in practice</i>: methodologies as activity knowledge, methodology stakeholders, rationality of application, the example of evolutionary approach, user orientation. • <i>Formal description</i>: background and history, steps towards formalization, standardiation of meta-model methodologies, review of alternative approaches, process models of situational methodology engineering, the use of ontologies. • <i>Identification and construction of methodology parts</i>: construction based on existing methodologies, construction from scratch, construction based on known repository content, identification of reusable parts. • <i>Creation of a new methodology</i>: types of approaches, definition of requirements, identification of methodology parts, assembly. • <i>Methodology customisation</i>: configuration process, process improvement adaptation, tool support. • <i>Quality assessment</i>: a quality assessment framework, quality of conceptual model, quality of individual parts, the overall quality of developed methodology.
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Literatura in viri/Readings:

Temeljna literatura/Basic literature

- Henderson-Sellers B., Ralyté J., Agerfalk P. J., Rossi M. (2014). *Situational method engineering*. Springer.
- Wieringa R. J. (2014). *Design Science Methodology for Information Systems and Software Engineering*. Springer.

Priporočljiva literatura/Recommended literature

- Ahmed T. et al (2014). *Developing Information Systems: Practical guidance for IT professionals*. BCS, The Chartered Institute for IT.
- Henderson-Sellers B., Ralyté J. (2010). *Situational Method Engineering: State-of-the-Art Review*. J. UCS, 16(3), str. 424-478.
- Tilley, S., Rosenblatt, H. J. (2016). *Systems Analysis and Design, 11th Edition*. Cengage Learning.
- Ingeno, J. (2018). *Software Architect's Handbook: Become a successful software architect by implementing effective architecture concepts*. Packt Publishing Ltd.

Cilji in kompetence:

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

- usposobljenost za poglobljeno razumevanje najsodobnejših področij računalništva in informatike,
- usposobljenost za kreativno in samostojno znanstveno raziskovalno in razvojno delo, reševanje zahtevnih in kompleksnih problemov in vodenje raziskovalnih in razvojnih projektov,
- usposobljenost za samostojno in timsko raziskovalno in razvojno delo v razvojnih in interdisciplinarnih skupinah, za uporabo znanstvenih pristopov pri delu in za obvladanje sodobnih razvojnih postopkov na področju računalništva in informatike,
- temeljito poznavanje in razumevanje upravljanja in razvoja informacijskih sistemov,
- sposobnost za reševanje poslovnih problemov z uporabo znanstvenih metod in postopkov,
- temeljito poznavanje in sposobnost za uporabo najsodobnejših kvantitativnih in kvalitativnih raziskovalnih metod,
- sposobnost za samostojno načrtovanje in izvedbo raziskovalnega dela, analizo in interpretacijo podatkov, oblikovanje in utemeljitev mnenj, stališč in predlogov ter pripravo raziskovalnega poročila,
- sposobnost načrtovanja prilagojenih razvojnih metodologij glede na specifične projekte in organizacije.

Objectives and competences:

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

- the ability to gain a deeper understanding of the most modern areas of computer science and informatics,
- the ability to carry out creative and independent scientific research and development work, to solve demanding and complex problems and to manage research and development projects,
- the ability to carry out independent and team-based research and development work in development and interdisciplinary groups, to apply scientific approaches to work and to master modern development processes in the fields of computer science and informatics,
- thorough knowledge and understanding of the management and development of information systems,
- the ability to solve business problems with scientific methods and procedures,
- thorough knowledge and the ability to apply the most modern quantitative and qualitative research methods,
- the ability to plan and conduct research work independently, to analyse and interpret data, to formulate and justify opinions, positions and proposals and to prepare a research report,
- the ability to plan customized development methods according to the specifics of the project and the organization.

Predvideni študijski rezultati:

Študent/študentka:

- pozna in uporablja postopke, tehnike in orodja za situacijski inženiring razvojnih metodologij,
- koncipira nove razvojne metodologije za analizo in izgradnjo programske opreme ter informacijskih sistemov,
- analizira poslovni kontekst organizacije in razvije ustrezen metodološki pristop k informatizaciji,

Intended learning outcomes:

Students:

- know and use procedures, techniques and tools for situational engineering of development methodologies,
- conceptualize new software and information systems development methodologies,
- analyse the business context of the organisation and develop an

<ul style="list-style-type: none"> • kritično oceni obstoječe pristope k razvoju programske opreme v organizaciji in zasnuje potrebne izboljšave, • prilagaja temeljne razvojne metodologije specifičnim projektnim karakteristikam, • oceni kakovost celovitih metodologij kot tudi posameznih delov glede na vzpostavljeno ocenjevalno ogrodje, • zasnuje nabor komponent razvojnih metodologij za ponovno uporabo, • vrednoti splošno uveljavljene razvojne metodologije z vidika njihove uporabnosti v posameznih situacijah. 	<p>appropriate methodological approach to informatisation,</p> <ul style="list-style-type: none"> • critically evaluate existing approaches to software development in the organization and design the necessary improvements, • adapt basic development methodologies to specific project characteristics, • assess the quality of comprehensive methodologies as well as individual parts in relation to the established evaluation framework, • design a set of reusable development methodologies components, • evaluate commonly accepted development methodologies in terms of their applicability to individual situations.
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Metode poučevanja in učenja:

<ul style="list-style-type: none"> • predavanja z aktivno udeležbo študentov (razlaga, diskusija, vprašanja, primeri, reševanje problemov), • projektni seminar, • individualne in skupinske konsultacije (diskusija, dodatna razlaga, obravnava specifičnih vprašanj), • oblikovanje portfolija in samostojen študij (motiviranje, usmerjanje, samoopazovanje, samouravnavanje, refleksija, samoocenjevanje).
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Learning and teaching methods:

<ul style="list-style-type: none"> • lectures with active student participation (explanation, discussion, questions, examples, problem solving,) • project work seminar, • individual and group consultations (discussion, further explanation, addressing specific issues), • designing a portfolio and independent study (motivating, directing, self-observation, self-regulation, reflection, self-assessment).

Načini ocenjevanja:

Delež (v %)

Weight (in %)

Assessment:

<p>Načini:</p> <ul style="list-style-type: none"> • izpit • temeljna/aplikativna raziskovalna naloga z zagovorom (obseg najmanj 30.000 znakov) <p>Ocenjevalna lestvica: uspešno, neuspešno.</p>	<p>60 %</p> <p>40 %</p>	<p>Types:</p> <ul style="list-style-type: none"> • exam • basic/applied research assignment with defence (at least 30,000 characters) <p>Grading scheme: successful, unsuccessful.</p>
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