

UČNI NAČRT PREDMETA / COURSE SYLLABUS

Predmet:	Modeli procesov v organizaciji z UML
Course title:	Process Modelling within Organisation using UML

Študijski program in stopnja Study programme and level	Študijska smer Study field	Letnik Academic year	Semester Semester
Računalništvo in spletne tehnologije, visokošolski strokovni študijski program prve stopnje	-	Drugi ali tretji	Četrta ali šesta
Computer Science and Web Technologies, first cycle Professional Study Programme	-	Second or third	Fourth or sixth

Vrsta predmeta / Course type Izbirni / Elective

Univerzitetna koda predmeta / University course code: 2-RST-VS-IP- MPzUML -2020-05-14

Predavanja Lectures	Seminar Seminar	Vaje Tutorial	Klinične vaje work	Druge oblike študija	Samost. delo Individ. work	ECTS
30	-	45	-	-	105	6

Nosilec predmeta / Lecturer: prof. dr. Nadja Damij

Jeziki / Languages: **Predavanja / Lectures:** Slovenski / Slovenian, Angleški / English
Vaje / Tutorial: Slovenski / Slovenian, Angleški / English

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

Študent/študentka mora pred pristopom k izpitu pripraviti in zagovarjati seminarsko nalogo.

Prerequisites:

Prior to the exam, the student has to prepare and defend the seminar work.

Vsebina:

- Uvod
 - Procesi
 - Tipi procesov
 - Procesni model
 - Modeliranje procesov
- Aktivnosti povezane z načrtovanjem
 - Sistemsko načrtovanje
 - Načrtovanje arhitekture
 - Ogrodja
 - Načrtovanje vzorcev

Content (Syllabus outline):

- Introduction
 - Processes
 - Various process identification
 - Process model
 - Process modelling
- Design activities
 - System design
 - Architecture design
 - Frameworks
 - Design patterns

<ul style="list-style-type: none"> o Načrtovanje objektov • UML <ul style="list-style-type: none"> o Uvod o Use class diagram o Razredni diagram o Collaboration diagram o Objektni diagram o Aktivnostni diagram o Dinamični diagram

<ul style="list-style-type: none"> o Object design • UML <ul style="list-style-type: none"> o Introduction o Use class diagram o Class diagram o Collaboration diagram o Object diagram o Activity diagram o Dynamic diagram
--

Temeljni literatura in viri / Readings:

<ul style="list-style-type: none"> • Seidl, M., Scholz, M., Huemer, M., Huemer, C. & Kappel, G. (2015). <i>UML @ Classroom: An Introduction to Object-Oriented Modeling</i>. Springer. • Hay, D. (2011). <i>UML and Data Modeling: A Reconciliation</i>. Technics publications, LLC. • Rumbaugh, J., Jacobson, I. & Booch, G. (2005). <i>The Unified Modeling Language User Guide Front Cover</i>. Addison-Wesley.

Cilji in kompetence:

<p><i>Učna enota prispeva k razvoju naslednjih splošnih in predmetno-specifičnih kompetenc:</i></p> <p><i>Splošne kompetence:</i></p> <ul style="list-style-type: none"> • usposobljenost za izvajanje vseh faz razvoja spletnih in mobilnih aplikacij: načrtovanje, razvoj, zagon, prodaja, vzdrževanje • poznavanje osnov računalništva in informacijske tehnologije • poznavanje in razumevanje procesov, ki jih je mogoče informacijsko podpreti z uporabo spletnih tehnologij, ter sposobnost za njihovo analizo, sintezo in predvidevanje rešitev ter njihovih posledic • zmožnost skupinskega dela v vseh fazah razvoja spletnih in mobilnih rešitev • poznavanje in razumevanje interakcij med informacijsko komunikacijsko tehnologijo in posameznikom • sposobnost fleksibilne uporabe znanja v praksi <p><i>Predmetno-specifične kompetence:</i></p> <ul style="list-style-type: none"> • razumevanje objektno-orientiranega procesa razvoja programske opreme • testiranje programske opreme kot sestavnega dela procesa • razumevanje objektno-orientirane paradigme
--

Objectives and competences:

<p><i>The instructional unit contributes to the development of the following general and subject-specific competences:</i></p> <p><i>General competences:</i></p> <ul style="list-style-type: none"> • 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 • familiarity with and understanding of processes allowing information-aided use of web technologies, and the ability to analyse and synthesize them as well as predict solutions and their consequences • ability to operate within a team during all phases of development of web and mobile solutions • familiarity and understanding of interactions existing between the information and communication technology and the individual • ability to use the acquired knowledge in practice in a flexible manner <p><i>Subject-specific competences:</i></p> <ul style="list-style-type: none"> • understand the (object-oriented) software development process • treat software testing as an integral part of the process

- sposobnost uporabe standardizirane predstavitve za oblikovanje: Unified Modelling Language (UML)
- ugotavljanje, katera merila omogočajo ocenjevanje kakovosti načrtovanega modela
- razumevanje strukturiranega razvoja od načrta modela do razvoja kode
- uporaba načrtovalskih vzorcev za visoko-nivojsko oblikovanje za potrebe ponovne uporabe

- understand the object-oriented paradigm
- be able to use standardized representations for design: the unified modelling Language (UML)
- determine which criteria allow one to assess the quality of a design
- understand how to go from design to code in a structured (and possibly automated) fashion
- apply design patterns for high-level design re-use

Predvideni študijski rezultati:

Znanje in razumevanje:

Študent/študentka:

- se seznaniti z najbolj sodobnim jezikom za modeliranje, ki ga uporabljajo skoraj pri vsakem podjetju tako po Sloveniji kot po svetu

Intended learning outcomes:

Knowledge and understanding:

The student:

- will learn about one of the most applied modelling language that is used by a vast number of companies all over Slovenia and abroad

Metode poučevanja in učenja:

- *predavanja* z aktivno udeležbo študentov (razlaga, diskusija, vprašanja, primeri, reševanje problemov)
- *vaje in laboratorijske vaje*
- *individualne in skupinske konzultacije* (diskusija, dodatna razlaga, obravnava specifičnih vprašanj)

Learning and teaching methods:

- *lectures* with active student participation (explanation of study materials, discussion, questions, examples, problem solving)
- *tutorials and lab work*
- *individual and group consultations* (discussions, additional explanation, addressing concrete questions)

Delež (v %) /

Načini ocenjevanja:

Weight (in %)

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 	50	<ul style="list-style-type: none"> • written exam • presentation of seminar work
<ul style="list-style-type: none"> • seminarska naloga s poročili seminarskega dela in eksperimentalnih vaj ter predstavitev naloge 	50	

Reference nosilca / Lecturer's references:

- DAMIJ, Nadja, DAMIJ, Talib. Process management: a multi-disciplinary guide to theory, modeling, and methodology, (Progress in IS). Berlin; Heidelberg: Springer, cop. 2014. XVI, 213 str., ilustr. ISBN 978-3-642-36638-3, doi: 10.1007/978-3-642-36639-0.
- ČEHOVIN ZAJC, Luka, DAMIJ, Nadja, HAFNER, Ana, MODIC, Dolores, WATANABE, Yuka. Challenges of information retrieval in first phases of technology transfer process. V: Zbornik radova. Prva mednarodna naučna konferencija o digitalnoj ekonomiji

DIEC 2018, Visoka škola "Internacionalna poslovno-informaciona akademija" Tuzla, maj 2018. Tuzla: Off-set d.o.o., 2018. Str. 35-45, ilustr.

- AGREŽ, Jernej, DAMIJ, Nadja. Intellectual property in E+ Sport project: management vs. dissemination. V: HAFNER, Ana (ur.), LEVNAJIĆ, Zoran (ur.). Book of Abstracts. Novo mesto: Faculty of Information Studies, 2018. Str. [6-7]. <http://itis.fis.unm.si/wp-content/uploads/2018/10/ITIS2018-Proceedings.pdf>.
- MODIC, Dolores, DAMIJ, Nadja. Towards intellectual property rights management: back-office and front-office perspectives. Cham: Palgrave Macmillan, 2018. XVII, 178 str., ilustr. ISBN 978-3-319-69010-0, ISBN 978-3-319-69011-7.
- MODIC, Dolores, DAMIJ, Nadja. Towards intellectual property rights management: back-office and front-office perspectives. Cham: Palgrave Macmillan, 2018. ilustr. ISBN 978-3-319-69011-7, ISBN 978-3-319-69010-0. DOI: 10.1007/978-3-319-69011-7.
- MODIC, Dolores, HAFNER, Ana, DAMIJ, Nadja, ČEHOVIN ZAJC, Luka. Innovations in intellectual property rights management: their potential benefits and limitations. *European journal of management and business economics*. 2019, vol. 28, no. 2, str. 189-203, ilustr. ISSN 2444-8494. DOI: 10.1108/EJMBE-12-2018-0139.
- DAMIJ, Nadja. Management poslovnih procesov : modeliranje, simuliranje, inovacija in izboljšanje. Ljubljana: Vega, 2009. 182 str., ilustr. ISBN 978-961-92649-5-9.
- MILEVA-BOSHKOSKA, Biljana, DAMIJ, Talib, JELENC, Franc, DAMIJ, Nadja. Abdominal surgery process modeling framework for simulation using spreadsheets. *Computer methods and programs in biomedicine*, ISSN 0169-2607. [Print ed.], 2015, vol. 21, iss. 1, str. 1-13, doi: 10.1016/j.cmpb.2015.05.001.
- AGREŽ, Jernej, DAMIJ, Nadja. Knowledge dynamics assessment in complex organizational systems: a missing person investigation case study. *Central European Journal of Operations Research*, ISSN 1435-246X, 2015, vol. 23, iss. 3, str. 527-545, doi: 10.1007/s10100-014-0368-1.
- DAMIJ, Nadja, LEVNAJIĆ, Zoran, REJEC SKRT, Vesna, SUKLAN, Jana. What motivates us for work? Intricate web of factors beyond money and prestige. *PloS one*, ISSN 1932-6203, 2015, vol. 10, no. 7, str. e0132641-1-e0132641-13, doi: 10.1371/journal.pone.0132641.
- DAMIJ, Nadja, DAMIJ, Talib, JELENC, Franc. Healthcare process analysis and improvement at the department of abdominal surgery, University medical centre Ljubljana = Analiza in izboljšanje zdravstvenega procesa v oddelku za abdominalno kirurgijo Univerzitetnega kliničnega centra Ljubljana. *Zdravniški vestnik*, ISSN 1318-0347. [Tiskana izd.], jan. 2015, letn. 84, št. 1, str. 26-37, ilustr.
- TASEVSKA, Frosina, DAMIJ, Talib, DAMIJ, Nadja. Project planning practices based on enterprise resource planning systems in small and medium enterprises - a case study from the Republic of Macedonia. *International journal of project management*, ISSN 0263-7863. [Print ed.], 2014, vol. 32, iss. 3, str. 529-538, doi: 10.1016/j.ijproman.2013.08.001.
- DAMIJ, Nadja, DAMIJ, Talib, GRAD, Janez, JELENC, Franc. A methodology for business process improvement and IS development. *Information and software technology*, ISSN 0950-5849. [Print ed.], 2008, vol. 50, str. 1127-1141, doi: 10.1016/j.infsof.2007.11.004.
- ARSHAM, Hossein, CIMPERMAN, Gašper, DAMIJ, Nadja, DAMIJ, Talib, GRAD, Janez. A computer implementation of the Push-and-Pull algorithm and its computational comparison with LP simplex method. *Applied mathematics and computation*, ISSN 0096-3003. [Print ed.], Nov. 2005, vol. 170, iss. 1, str. 36-63.