UČNI NAČRT PREDMETA / COURSE SYLLABUS

Predmet:	Razvoj in upravljanje programskih sistemov
Course title:	Software systems development and management

Študijski program in stopnja Study programme and level	Študijska smer Study field	Letnik Academic year	Semester Semester
Izobraževalno računalništvo (dvopredmetno), 2. stopnja **Educational Computer Science (two discipline programme), 2nd Degree**		**2**	**3**

Vrsta predmeta / Course type   Obvezni

Univerzitetna koda predmeta / University course code:

Predavanja Lectures	Seminar Seminar	Sem. vaje Tutorial	Lab. vaje Laboratory work	Teren. vaje Field work	Samost. delo Individ. work	ECTS
30		**2**	**28**		**60**	**120 / 4**

Nosilec predmeta / Lecturer: red. prof. dr. KOKOL PETER

Jeziki / Languages:	Predavanja / Lectures:	slovenščina / Slovenian
	Vaje / Tutorial:	slovenščina / Slovenian

Pogoji za vključitev v delo oz. za opravljanje študijskih obveznosti:	Prerequisits:
Osnovno znanje programiranja.	Basics of computer programming.

Vsebina:	Content (Syllabus outline):
Modeli življenjskega cikla razvoja programskega sistema. Faze življenjskega cikla oblikovanja in razvoja programov. Opis zahtev in sistemska analiza. Načrtovanje programskega sistema in prehod v implementacijo. Verifikacija in validacija programskega sistema in njegovo vzdrževanje. Kriteriji vrednotenja kvalitete	Life cycle models. Phases of software development. Requirements analysis. Architecture and implementation. Verification, validation and maintenance. Software quality and metrics. Documenting the software. CASE tools. Organisational aspect of software development. Cost benefit analysis and cost

programske opreme in programske metrike. Izdelava dokumentacije za programski sistem. Orodja za računalniško podprto programsko inženirstvo (CASE). Organizacijski vidiki oblikovanja programskih sistemov. Ocena stroškov in "cost-benefit analiza" programskega sistema. Upravljanje v tehničnem okolju. Vodenje človeških virov. Upravljanje s konflikti. Upravljanje s časom. Računalniški pripomočki za vodenje projektov.	models. Technical Environment and Management. Resource management. Conflict management. Time management. Computer support to management.

Temeljni literatura in viri / Readings:

- V. Steenis: How to plan, Develop and use of Information Systems. Dorset, Workingham, 1990.
- R. S. Pressman: Software Engineering - A Practitioner's Approach, Sixth Edition, McGraw-Hill, New York, 2005.
- Sommerville, P. Sawyer: Requirements engineering. John Wiley and Sons, Chichester, 1997.
- J. S. Murray; C. R. McVinney, A. K. Decom: Engineering Management. People and Projects, Battelle Press, Columbus, 1995.

Cilji in kompetence:	**Objectives and competences:**
• Spoznavanje študentov z naprednimi koncepti razvoja, oblikovanja in upravljanja kompleksnih programskih sistemov • Študent bo pridobil znanja in kompetence za vodenja večjih programskih projektov. • Študent bo pridobil znanja o zagotavljanju kakovosti programskih sistemov	To introduce advanced concepts of project management and the basics of development of large and complex software systems. To get knowledge about the quality assurance concepts and processes of large software systems

Predvideni študijski rezultati:	**Intended learning outcomes:**
Znanje in razumevanje: • Po zaključku tega predmeta bo študent sposoben - analizirati, načrtovati, voditi, verificirati in validirati večje programske projekte. Prenosljive/ključne spretnosti in drugi atributi: • Spretnosti komuniciranja: z naročniki in izvajalci projektov. Uporaba informacijske tehnologije: za pomoč pri vodenju projektov. Organizacijske spretnosti: pri vodenju projektov. Reševanje problemov: ki nastajajo pri izvajanju projektov.	Knowledge and understanding: • On completion of this course the student will be able to - analyse, plan, manage, verify and validate large software systems. Transferable/Key skills and other attributes: • Communication skills: communicating with clients and team members. Use of information technology: for managing project resources. Organisation skills: in project management. Problem solving: in the process of project execution.

Metode poučevanja in učenja:	**Learning and teaching methods:**

• predavanja,		• lectures,
• projekt.		• project.

Načini ocenjevanja:	Delež (v %) / Weight (in %)	Assessment:
• ustni izpit,	50%	• oral examination,
• projekt.	50%	• project.

Reference nosilca / Lecturer's references:

HROVAT, Goran, ŠTIGLIC, Gregor, KOKOL, Peter, OJSTERŠEK, Milan. Contrasting temporal trend discovery for large healthcare databases. *Computer methods and programs in biomedicine*, ISSN 0169-2607. [Print ed.], Available online 16 September 2013, str. 1-24, doi: 10.1016/j.cmpb.2013.09.005. [COBISS.SI-ID 17171222]

ŠTIGLIC, Gregor, KOKOL, Peter. Discovering subgroups using descriptive models of adverse outcomes in medical care. *Methods of information in medicine*, ISSN 0026-1270, 2012, vol. 51, no. 4, str. 348-352, doi: 10.3414/ME11-02-0040. [COBISS.SI-ID 1837988]

ŠTIGLIC, Gregor, KOCBEK, Simon, PERNEK, Igor, KOKOL, Peter. Comprehensive decision tree models in bioinformatics. *PloS one*, ISSN 1932-6203, 2012, vol. 7, iss. 3, str. [1-14], e33812. http://www.plosone.org/article/info%3Adoi%2F10.1371%2Fjournal.pone.0033812, doi: 10.1371/journal.pone.0033812. [COBISS.SI-ID 1788068]

KOKOL, Peter, POHOREC, Sandi, ŠTIGLIC, Gregor, PODGORELEC, Vili. Evolutionary design of decision trees for medical application. *Wiley interdisciplinary reviews, Data mining and knowledge discovery*. [Print ed.], May 2012, vol. 2, iss. 3, str. 237-254, doi: 10.1002/widm.1056. [COBISS.SI-ID 15997462]

KOCBEK, Simon, SAETRE, Rune, ŠTIGLIC, Gregor, KIM, Jin-Dong, PERNEK, Igor, TSURUOKA, Yoshimasa, KOKOL, Peter, ANANIADOU, Sophia, TSUJII, Jun-ichi. AGRA: analysis of gene ranking algorithms. *Bioinformatics*, ISSN 1367-4803, 2011, vol. 27, no. 8, str. 1185-1186, ilustr. http://bioinformatics.oxfordjournals.org/content/27/8/1185.full.pdf, doi: 10.1093/bioinformatics/btr097. [COBISS.SI-ID 1676708]