UČNI NAČRT PREDMETA / COURSE SYLLABUS

Predmet:	Programiranje 2
Course title:	Programming 2

Študijski program in stopnja Study programme and level	Študijska smer Study field	Letnik Academic year	Semester Semester
Univerzitetni študijski program Matematika	ni smeri	2	drugi
First cycle academic study programme Mathematics	none	2	second

Vrsta predmeta / Course type	izbirni

Univerzitetna koda predmeta / University course code:	M0218

Predavanja Lectures	Seminar Seminar	Vaje Tutorial	Klinične vaje work	Druge oblike študija	Samost. delo Individ. work	ECTS
30		30			90	5

Nosilec predmeta / Lecturer:	prof. Andrej Bauer

Jeziki / Languages:	Predavanja / Lectures:	slovenski/Slovene
	Vaje / Tutorial:	slovenski/Slovene

Pogoji za vključitev v delo oz. za opravljanje študijskih obveznosti:	Prerequisites:
Opravljen predmet Uvod v programiranje.	Completed course Introduction to programming.

Vsebina:	Content (Syllabus outline):

Modularno programiranje, načrtovanje in organizacija izvorne kode (specifikacija, dokumentacija in testiranje). Napredna programerska orodja (integrirana razvojna okolja, sistemi za kontrolo verzij). Izbrane teme iz programiranja: dogodkovno programiranje, uporabniški grafični vmesniki, hkratno in vzporedno programiranje, mrežne in spletne aplikacije, strežniki in odjemalci.	Modular programming, planning and organization of source code (specification, documentation and testing). Advanced programming tools (integrated development environments, revision control systems). Selected topics in programming: event-driven programming, graphical user interfaces, parallel and concurrent programming, network and web applications, servers and clients.

Temeljni literatura in viri / Readings:

Priročniki in učbeniki o programiranju v izbranem programskem jeziku in podatkovni bazi.

Manuals and textbooks on programming in selected programming language and database server.

Cilji in kompetence:	**Objectives and competences:**
Študent spozna tehnike programiranja na specifičnih področjih, ki se uporabljajo v računalniških in informacijskih tehnologijah.	A student gets familiar with programming techniques in specific fields used in computer and information technologies.

Predvideni študijski rezultati:	**Intended learning outcomes:**
Znanje in razumevanje: Modularizacija programov, osnovna uporaba podatkovnih zbirk, programiranje uporabniških vmesnikov in preprostih mrežnih aplikacij ter procesiranje strukturiranih dokumentov. Uporaba: Naprednejše programerske sposobnosti študent uporabi pri reševanju problemov pri predmetih iz področja računalništva in numeričnih metod. Refleksija: Raznovrstnost konceptov in orodij v programiranju zahteva širok spekter znanja in	Knowledge and understanding: Modular design of programs, basic use of programming libraries, programming user interface and simple network applications, structured documents processing. Application: A student can use advanced programming capabilities at problem solving at courses related to computer science and numerical methods. Reflection: Variety of concepts and tools for programming requires a wide spectrum of knowledge and continuous refreshing.

njegovo nenehno osveževanje.

Prenosljive spretnosti – niso vezane le na en predmet: Sposobnost načrtovanja večjih programskih enot in podatkovnih zbirk.

Transferable skills: Capability of designing larger programming units and data collections.

Metode poučevanja in učenja:

Learning and teaching methods:

Predavanja, vaje, domače naloge, konzultacije

Lectures, exercises, homework, consultations

Načini ocenjevanja:	Delež (v %) / Weight (in %)	**Assessment:**
domače naloge, kolokviji, projekti, pisni izpit, ustni izpit ocene: 5 (negativno), 6-10 (pozitivno) (po Statutu UL)		homework, midterm exams, projects, written exam, oral exam grading: 5 (fail), 6-10 (pass) (according to the Statute of UL)
	100%	

Reference nosilca / Lecturer's references:

Andrej Bauer:

– BAUER, Andrej, BIRKEDAL, Lars. Continuous functionals of dependent types and equilogical spaces. V: CLOTE, Peter G. (ur.). Computer science logic : 14th international workshop, CSL 2000, annual conference of the EACSL, Fischbachau, Germany, August 21-26, 2000 : proceedings, (Lecture notes in computer science, ISSN 0302-9743, 1862). Berlin [etc.]: Springer, 2000, vol. 1862, str. 202-216 [COBISS.SI-ID 10606681]

– BAUER, Andrej. Uvod v programiranje v Javi. Ljubljana: [A. Bauer], 2008. 1 optični disk (CD-ROM) [COBISS.SI-ID 14629977]

– BAUER, Andrej. Teorija programskih jezikov. Ljubljana: [A. Bauer], 2007. 100 str [COBISS.SI-ID 14630489]

– BAUER, Andrej, TAYLOR, Paul. The Dedekind reals in abstract Stone duality. Mathematical

structures in computer science, ISSN 0960-1295, 2009, vol. 19, iss. 4, str. 757-838 [COBISS.SI-ID 15322201]

– BAUER, Andrej, STONE, Christopher A. RZ: a tool for bringing constructive and computable mathematics closer to programming practice. Journal of logic and computation, ISSN 0955-792X, 2009, vol. 19, no. 1, str. 17-43 [COBISS.SI-ID 15325785]