



Univerza v Mariboru

Fakulteta za naravoslovje
in matematiko

UČNI NAČRT PREDMETA / COURSE SYLLABUS

Predmet:	Programiranje I
Course title:	Programming I

Študijski program in stopnja Study programme and level	Študijska smer Study field	Letnik Academic year	Semester Semester
Matematika, 1. stopnja		3.	5. ali 6.
Mathematics, 1 st degree		3.	5. or 6.

Vrsta predmeta / Course type

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
45		45			120	7

Nosilec predmeta / Lecturer:

Aleksander VESEL

Jeziki /

Languages:

Predavanja /

Lectures:

SLOVENSKO/SLOVENE

Vaje / Tutorial: SLOVENSKO/SLOVENE

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

Jih ni.

Prerequisites:

There are none.

Vsebina:

Vsebina predmeta se prilagaja aktualnim potrebam in razvoju.

predmetno usmerjeno programiranje; navidezni računalnik; byte koda; prevajanje in zagon; elementi programskega jezika Java; operatorji in kontrolne strukture programskega jezika Java; primitivni tipi; kaj je statično; osnove definiranja in uporabe razredov; razredi, objekti, metode, konstruktor; inicializacija, finalizacija; življenjski cikel objekta; smetar; JavaDoc dokumentni

Content (Syllabus outline):

The contents of this subject is adjusted to the current needs and development.

object oriented programming; virtual machine; byte code; Java language elements; compiling and running; Java language operators and control structures; primitive types; what is static; basics of defining and using classes; classes, objects, methods, constructor; initialization, finalization; object's life cycle; garbage collector; JavaDoc documentation system

sistem

dedovanje; polimorfizem; prekrivanje metod; vmesniki; pretvorba tipov; osnovni razredi System, String, StringBuffer, Math, itd.; ovojni razredi; polja; razumevanje paketov; omejevanje dostopnosti (private, public, protected, friendly); strukture za zbirke objektov (Vector, List, Set, HashMap, Map,...); lokalizacija, kodiranje teksta

inheritance; polymorphism; method overloading; interfaces; type casting; basic classes System, String, StringBuffer, Math, etc.; wrapper classes; arrays; understanding packages; limiting access (private, public, protected, friendly); structures for objects collections (Vector, List, Set, HashMap, Map,...); localization, text encoding

Temeljni literatura in viri / Readings:

U. Mesojedec, B. Fabjan, Java 2, temelji programiranja, ISBN 961-6361-30-9, Pasadena, 2004.

B. Eckel, Thinking in Java, The Definitive Introduction to Object Oriented Programming in the Language of the World Wide Web, ISBN 013-1872-48-6, Prentice Hall, 4th ed., 2006.

J. Bloch, Effective Java: Programming Language Guide, ISBN 020-1310-05-8, Addison-Wesley, 2001.

Cilji in kompetence:

Spoznati osnove in naprednejše pristope objektno orientiranega programiranja.

Spoznati jezikovno sintakso Jave, strukturo in platformo.

Spoznati orodja za razvoj aplikacij.

Objectives and competences:

Know basics and advanced approaches to object oriented programming.

Know Java language syntax, structure and platform.

Know tools for application development.

Predvideni študijski rezultati:

Znanje in razumevanje:

- spoznati pojme, koncepte, mehanizme platforme Java
- znati uporabljati orodja za razvoj aplikacij

Prenosljive/ključne spretnosti in drugi atributi:

- uporaba matematičnih pojmov v programskih aplikacijah
- uporaba ustreznih podatkovnih struktur pri implementaciji matematičnih algoritmov
- pridobljena znanja se prenašajo na druge z računalništvom povezane predmete

Intended learning outcomes:

Knowledge and Understanding:

- to know basic notions, concepts, mechanisms of Java platform
- operative knowledge with tools for application development

Transferable/Key Skills and other attributes:

- the usage of mathematical notions in applications
- the usage of appropriate data structures while implementing mathematical algorithms
- the obtained knowledge is transferable to the other computer science oriented subjects

Metode poučevanja in učenja:		Learning and teaching methods:	
<ul style="list-style-type: none"> • Predavanja • Praktične vaje 		<ul style="list-style-type: none"> • Lectures • Practical exercises 	
Načini ocenjevanja:		Assessment:	
<u>Sprotno preverjanje:</u> Pisni testi – teorija (3 do 5 pisnih testov na semester)	Delež (v %) / Weight (in %) 50%	<u>Mid-term testing:</u> Written tests – theory (from 3 to 5 written tests during the semester)	
<u>Izpit:</u> Pisni izpit – praktični del	50%	<u>Exams:</u> Written exam – practical part	
Vsaka izmed naštetih obveznosti mora biti opravljena s pozitivno oceno. Opravljene sprotne obveznosti so pogoj za pristop k izpitu.		Each of the mentioned commitments must be assessed with a passing grade. Passing grades of all mid-term testings are required for taking the exam.	
Reference nosilca / Lecturer's references:			
1. VESEL, Aleksander. Fibonacci dimension of the resonance graphs of catacondensed benzenoid graphs. <i>Discrete appl. math.</i> . [Print ed.], 2013, str. 1-11, doi: 10.1016/j.dam.2013.03.019 . 2. SHAO, Zehui, VESEL, Aleksander. A note on the chromatic number of the square of the Cartesian product of two cycles. <i>Discrete math.</i> . [Print ed.], 2013, vol. 313, iss. 9, str. 999-1001. 3. KORŽE, Danilo, VESEL, Aleksander. A note on the independence number of strong products of odd cycles. <i>Ars comb.</i> , 2012, vol. 106, str. 473-481. [COBISS.SI-ID 16138006] 4. TARANENKO, Andrej, VESEL, Aleksander. 1-factors and characterization of reducible faces of plane elementary bipartite graphs. <i>Discuss. Math., Graph Theory</i> , 2012, vol. 32, no. 2, str. 289-297, doi: 10.7151/dmgt.1607 . [COBISS.SI-ID 19104264] 5. SALEM, Khaled, KLAUVŽAR, Sandi, VESEL, Aleksander, ŽIGERT, Petra. The Clar formulas of a benzenoid system and the resonance graph. <i>Discrete appl. math.</i> . [Print ed.], 2009, vol. 157, iss. 11, str. 2565-2569. http://dx.doi.org/10.1016/j.dam.2009.02.016 . [COBISS.SI-ID 15142489]			