



Univerza v Mariboru
University of Maribor

Fakulteta za naravoslovje in
matematiko / Faculty of Natural
Sciences and Mathematics



OPIS PREDMETA / SUBJECT SPECIFICATION

Predmet:	Izobraževalni programski jeziki
Subject Title:	Educational programming languages

Študijski program Study programme	Študijska smer Study field	Letnik Year	Semester Semester
Izobraževalna matematika, enopredmetni študij, 2.stopnja		2	1

Univerzitetna koda predmeta / University subject code:

Predavanja Lectures	Seminar Seminar	Sem. vaje Tutorial	Lab. Vaje Lab. Work	Teren. vaje Field work	Samost. delo Individ. work	ECTS
30			15		45	3

Nosilec predmeta / Lecturer:

Aleksander VESEL

Jeziki / Predavanja / Lecture: slovenski / Slovenian

Languages: Vaje / Tutorial: slovenski / Slovenian

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

Jih ni.

Vsebina:

Osnovnih elementi in koncepti programskih jezikov.

Zgodnje učenje programskih jezikov.

Programski jeziki glede na starostna obdobja, stopnjo razvoja in predznanje.

Koncepti postopnega nadgrajevanja izobraževalnih programskih jezikov.
Različni primeri postopnega nadgrajevanja: Java, SmallTalk, Lisp.

Izobraževalni programski jeziki in programski vzorci.

Primeri izobraževalnih programskih jezikov.

Prerequisites:

There are none.

Contents (Syllabus outline):

Basic programming languages' elements and concepts.

Early learning of programming languages.

Programming languages by age, stage of developments and background knowledge.

Koncepts with sequences of programming languages where a student takes a course from easy to understand to complex environment.
Various examples: Java, SmallTalk, Lisp.

Educational programming languages and programming paradigms.

Examples of educational programming languages.

Temeljni študijski viri / Textbooks:

Michael Kolling, Introduction to Programming with Greenfoot: Object-Oriented Programming in Java with Games and Simulations, Prentice Hall, 2009.

Jerry Lee Ford, Jr., Scratch Programming for Teens, Course Technology PTR, 2008.

Jerry Lee Ford, Jr., Program Programming for the Absolute Beginner, Course Technology PTR, 2008.

Warren Sande, Carter Sande, Hello World! Computer Programming for Kids and Other Beginners, Manning Publications, 2009.

Cilji:

- spoznati koncepte izobraževalnih programskih jezikov
- spoznati primere izobraževalnih programskih jezikov

Objectives:

- to know concepts from educational programming languages
- to know examples of educational programming languages

Predvideni študijski rezultati:**Znanje in razumevanje:**

- Poznavanje elementov programskih jezikov.
- Razumevanje pomena zgodnjega učenja programskih jezikov
- Poznavanje konceptov postopnega nadgrajevanja

Prenesljive/ključne spretnosti in drugi atributi:

- Prenos znanja na druga področja izobraževanja (naravoslovje, tehnika, matematika,...)

Metode poučevanja in učenja:

- Predavanja
- Računalniške in teoretične vaje

Intended learning outcomes:**Knowledge and Understanding:**

- Knowing programming languages' elements.
- Understanding the importance of early learning of programming languages.
- Knowing concepts of learning paths for educational programming languages.

Transferable/Key Skills and other attributes:

- Transfer of knowledge to other areas education (science, technology, mathematics, , ...)

Learning and teaching methods:

- Lectures
- Computer and theoretical exercises

Načini ocenjevanja:Delež (v %) /
Weight (in %)**Assessment:**

- Pisni izpit – problem
- Pisni izpit – teorija

50%
50%

- Written exam – problems
- Written exam – theory

Materialni pogoji za izvedbo predmeta :

- Predavalnica
- Laboratorij

Material conditions for subject realization

- Lecture hall
- Laboratory

Obveznosti študentov:*(pisni, ustni izpit, naloge, projekti)*

- Pisni izpit – problem
- Pisni izpit – teorija

Students' commitments:*(written, oral examination, coursework, projects):*

- Pisni izpit - problemi
- Pisni izpit – teorija