



UČNI NAČRT PREDMETA / SUBJECT SPECIFICATION

Predmet:	Didaktika matematike
Subject Title:	Didactics of mathematics

Študijski program Study programme	Študijska smer Study field	Letnik Year	Semester Semester
Matematika		1	1 ali 2
Mathematics		1	1 or 2

Univerzitetna koda predmeta / University subject code:

Predavanja Lectures	Seminar Seminar	Sem. vaje Tutorial	Lab. vaje Labor work	Teren. vaje Field work	Samost. delo Individ. work	ECTS
60	0	0			240	10

Nosilec predmeta / Lecturer:

Alenka Lipovec

Jeziki /
Languages:

Predavanja / Lecture: Slovenski / Slovene
Vaje / Tutorial: Slovenski / Slovene

Pogoji za opravljanje študijskih obveznosti:

Znanje osnovnih pojmov iz didaktike matematike.

Prerequisites:

Basic knowledge of fundamental notions in didactics of mathematics.

Vsebina:

Didaktika matematike kot znanstvena disciplina.
Koncepti sodobne didaktike matematike.
Pedagoško raziskovanje in metodologija. Analiza sodobnih raziskav s področja didaktike matematike.
Teorije učenja. Učenje matematike. Učno okolje.
Znanstvene paradigme in sodobne teorije.
Sodobne teorije reševanja problemov. Metodologije raziskovanja sposobnosti reševanja problemov.
Izobraževanje učiteljev. Prepričanja in odnos do matematike. Profesionalna rast učitelja.
Odprti problemi. Prioritete v mednarodnih raziskavah pouka matematike.

Content (Syllabus outline):

Didactics of mathematics as a scientific discipline.

Concepts in modern didactics of mathematics.

Research design and methodology. Analysis of contemporary research in didactics of mathematics,

Learning theories. Learning mathematics. Learning environment.

Scientific paradigms and modern theories.

Contemporary problem solving theories. Research design for exploring problem solving abilities.

Teacher training. Attitudes toward and beliefs about mathematics. Teachers' professional development.

Nekatere izmed teh tem so obdelane podrobneje, druge pa le na osnovni ravni. Pri izboru se upoštevajo interesi in raziskovalne usmeritve študentov.

Open problems. Priorities in international didactics of mathematics research.

Some of these topics are treated in greater detail and the others only at a basic level. The selection depends on students' interests and their research orientation.

Temeljna literatura in viri / Textbooks:

- Handbook of International Research in Didactics of Mathematics. LEA, 2002
- P. Clakson, N. Presmeg (Ur.), Critical Issues in Mathematics Education. Springer, 2008.
- D. De Bock, W. Van Dooren, D. Janssens, L. Verschaffel, The Illusion of Linearity. Springer, 2007.
- J. Mason, Fundamental Constructs in Mathematical Education. Rutledge, 2004.
- F.-L. Lin, T.J. Cooney, (Ur.), Making Sense of Mathematics Teacher Education. Kluwer Academic Publishers, 2001.
- A. Orton, Learning Mathematics: Issues, Theory and Classroom Practice, Third Edition. Continuum, 2004.

Cilji:

- študenta seznaniti z osnovnimi področji sodobne didaktike matematike;
- pripraviti podlago za poglobljeni študij nekaterih tem s področja didaktike matematike;
- razvijati sposobnosti študenta za samostojno reševanje problemov in raziskovalno delo na tem področju.

Objectives:

- to get students acquainted with fundamental topics of modern didactics of mathematics;
- to give students a basis for the advanced study of some special topics from didactics of mathematics;
- to develop student's skills for solving problems and for research in topology.

Predvideni študijski rezultati:

Znanje in razumevanje:

- poznavanje osnovnih področij didaktike matematike;
- razumevanje osnovnih pojmov didaktike matematike.

Prenesljive/ključne spretnosti in drugi atributi:

- podlaga za raziskovalno delo na področju didaktike matematike;
- spretnosti komuniciranja; uporaba informacijske tehnologije; delo v skupini.

Intended learning outcomes:

Knowledge and understanding:

- knowledge of basic topics in didactics of mathematics;
- understanding fundamental concepts of didactics of mathematics.

Transferable/Key Skills and other attributes:

- a basis for research in didactics of mathematics;
- communication skills; use of information technology; team work.

Metode poučevanja in učenja:

- predavanja;
- priprava seminarja;
- konzultacije;
- samostojni študij.

Teaching and learning methods:

- lectures;
- seminar work;
- consultations;
- self-study.

Načini ocenjevanja:

Način (pisni izpit, ustno izpraševanje, naloge, projekt):

- seminarsko predavanje;
- pisni izdelek;
- ustni izpit.

Delež (v %) /
Weight (in %)

20 %
30 %
50 %

Assessment methods:

Type (examination, oral, coursework, project):

- seminar talk;
- written work;
- oral examination.

Opomba:

Navedene sestavine so obvezna sestavina učnega načrta predmeta kot ga določajo Merila za akreditacijo visokošolskih zavodov in študijskih programov v 7. členu (Ur. l. RS, št. 101/2004).