



Univerza v Mariboru

Fakulteta za naravoslovje
in matematiko

UČNI NAČRT PREDMETA / COURSE SYLLABUS

Predmet:	Izbrana poglavja iz didaktike matematike
Course title:	Selected Topics in Didactics of Mathematics

Študijski program in stopnja Study programme and level	Študijska smer Study field	Letnik Academic year	Semester Semester
Matematika, 3. stopnja		1. ali 2.	1. ali 3. ali 4.
Mathematics, 3 rd cycle		1 st or 2 nd	1 st or 3 rd or 4 th

Vrsta predmeta / Course type

Univerzitetna koda predmeta / University course code:

Predavanja Lectures	Seminar Seminar	Vaje Tutorial	Klinične vaje work	Druge oblike študija	Samost. delo Individ. work	ECTS
30					150	6

Nosilec predmeta / Lecturer:

Jeziki / Languages: **Predavanja / Lectures:**
Vaje / Tutorial:

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

Jih ni.

Prerequisites:

There are none.

Vsebina:

- Izbrana so posebna poglavja didaktike matematike, ki posegajo na vsebinsko specifična področja, posebne metodične vidike, kognitivne, psihološke, kulturne in epistemoloških vidike oz. druga moderna didaktična področja. Izbira poglavij je odvisna od interesa in raziskovalne usmerjenosti študentov. Spodaj navedena literatura praviloma služi le kot osnova in je nadgrajena z bolj specializiranimi teksti.

Content (Syllabus outline):

- Special topics in content specific didactics of mathematics, special methodical approaches, cognitive, psychological, culturological and epistemological views in learning and teaching mathematics or some other area of contemporary mathematics education are chosen. The choice depends on students' interests and their research orientation. The literature below in principle serves only as a basis, and is combined with more specialized texts

Temeljni literatura in viri / Readings:

- English, Lyn D., and David Kirshner, eds. *Handbook of international research in mathematics education*. Routledge, 2015.
- Cai, Jinfan, et al. Improving the Impact of Educational Research." *Journal for Research in Mathematics Education* 48.1 (2017): 2-6.
- Miller, Emily, et al. "Large-Scale Data, Big Possibilities: A Review of Large-Scale Studies in Mathematics Education." (2017): 224-228.
- Liljedahl, Peter, and Markku S. Hannula. "Research on Mathematics-Related Affect." *The Second Handbook of Research on the Psychology of Mathematics Education*. Sense Publishers, 2016. 417-446.

Cilji in kompetence:

- Študentu predstaviti moderno didaktiko matematike, kar lahko služi kot uvod v raziskovalno delo.
- Doseči poglobljeno razumevanje teoretskih in metodoloških konceptov s področja didaktike matematike.
- Razviti sposobnost za samostojno reševanje najzahtevnejših problemov iz didaktike matematike.
- Razviti možnost kritične refleksije na področju didaktike matematike kot raziskovalnega področja.

Objectives and competences:

- to present a modern didactics of mathematics area, which can serve as an introduction to student's research work;
- to achieve a deeper understanding of theoretical and methodological concepts of didactics of mathematics;
- to develop the ability for solving the most challenging problems in didactics of mathematics;
- to develop ability of critical reflection in didactics of mathematics as a scientific field

Predvideni študijski rezultati:

Znanje in razumevanje:

poglobljeno znanje in razumevanje izbranih poglavij didaktike matematike kot znanstvene discipline didaktično matematičnega področja.

Intended learning outcomes:

Knowledge and understanding:

a deeper knowledge and understanding of selected topics in didactics of mathematics as scientific area.

Prenesljive/ključne spretnosti in drugi atributi: sposobnost reševanja raziskovalnih problemov; sposobnost znanstvene komunikacije.	Transferable/Key Skills and other attributes: ability to solve scientific problems; ability to communicate in research community.
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Metode poučevanja in učenja: predavanja; priprava seminarja; konzultacije; samostojni študij.	Learning and teaching methods: lectures; seminar work; consultations; self-study
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	Delež (v %) / Weight (in %)	Assessment:
Načini ocenjevanja: Način (pisni izpit, ustno izpraševanje, naloge, projekt): seminarsko predavanje; pisni izdelek; ustni izpit.	20 % 30 % 50 %	Type (examination, oral, coursework, project): seminar talk; written work; oral examination

Reference nosilca / Lecturer's references:

- ANTOLIN DREŠAR, Darja, LIPOVEC, Alenka. Mathematical experiences and parental involvement of parents who are and who are not mathematicians. *Irish educational studies*, ISSN 0332-3315, 2017, vol. 36, no. 3, str. 357-374, doi: [10.1080/03323315.2017.1333445](https://doi.org/10.1080/03323315.2017.1333445). [COBISS.SI-ID [23140872](#)], kategorija: 1A3; uvrstitev: Scopus (d)
- PODGORŠEK MESAREC, Manja, LIPOVEC, Alenka. Self-assessment ability of pre-service teachers. *The new educational review*, ISSN 1732-6729, 2017, vol. 48, no. 2, str. 213-223. http://www.educationalrev.us.edu.pl/dok/volumes/tner_2_2017.pdf. [COBISS.SI-ID [23324680](#)] kategorija: 1A3; uvrstitev: Scopus (d)
- LIPOVEC, Alenka, GREGORČIČ, Živa, ANTOLIN DREŠAR, Darja. Konceptualno znanje četrtošolcev po delu z interaktivnim učbenikom za matematiko. *Pedagoška obzorja : časopis za didaktiko in metodiko*, ISSN 0353-1392, 2015, letn. 30, [št.] 1, str. 60-74, ilustr. [COBISS.SI-ID [514126199](#)] kategorija: 1A3; uvrstitev: Scopus (d)
- BEZGOVŠEK VODUŠEK, Helena, LIPOVEC, Alenka. The square as a figural concept = O quadrado como conceito figural. *Bolema : boletim de educação matemática*, ISSN 1980-4415, 2014, vol. 28, no. 48, str. 430-448. <http://www.periodicos.rc.biblioteca.unesp.br/index.php/bolema/article/view/6527>, doi: [10.1590/1980-4415v28n48a21](https://doi.org/10.1590/1980-4415v28n48a21). [COBISS.SI-ID [20569608](#)] kategorija: 1A2; uvrstitev: Scopus (d)
- LIPOVEC, Alenka, ANTOLIN DREŠAR, Darja. Slovenian pre-service teachers' prototype biography. *Teaching in higher education*, ISSN 1356-2517. [Print ed.], 2014, vol. 19, iss. 2, str. 183-193, doi: [10.1080/13562517.2013.836090](https://doi.org/10.1080/13562517.2013.836090). [COBISS.SI-ID [20096520](#)] kategorija: 1A1; uvrstitev: Scopus (d)