

UČNI NAČRT PREDMETA / COURSE SYLLABUS						
<b>Predmet:</b>		Proseminar A				
<b>Course title:</b>		Introductory seminar A				
<b>Študijski program in stopnja</b> Study programme and level		<b>Študijska smer</b> Study field		<b>Letnik</b> Academic year	<b>Semester</b> Semester	
Univerzitetni študijski program Matematika		ni smeri		1	prvi in drugi	
First cycle academic study programme Mathematics		none		1	first and second	
<b>Vrsta predmeta / Course type</b>				izbirni		
<b>Univerzitetna koda predmeta / University course code:</b>				M0206		
<b>Predavanja</b> Lectures	<b>Seminar</b> Seminar	<b>Vaje</b> Tutorial	<b>Klinične vaje</b> work	<b>Druge oblike</b> študija	<b>Samost. delo</b> Individ. work	<b>ECTS</b>
30		60			30	4
<b>Nosilec predmeta / Lecturer:</b>		prof. Jakob Cimprič, prof. Peter Šemrl				
<b>Jeziki / Languages:</b>		<b>Predavanja / Lectures:</b> slovenski/Slovene				
		<b>Vaje / Tutorial:</b> slovenski/Slovene				
<b>Pogoji za vključitev v delo oz. za opravljanje študijskih obveznosti:</b>				<b>Prerequisites:</b>		
<b>Vsebina:</b>				<b>Content (Syllabus outline):</b>		
Elementarne funkcije: pregled (polinomi, racionalne, algebraične, eksponentne in logaritemske, kotne in krožne, hiperbolične in area funkcije), lastnosti, računanje, risanje				Elementary functions: an overview (polynomials, rational, algebraic, exponential and logarithmic, trigonometric and inverse trigonometric, hyperbolic and inverse		

<p>grafovo, reševanje enačb in neenačb.</p> <p>Analitična geometrija v ravnini: premice, stožnice, medsebojne lege, polarne koordinate.</p> <p>Linearna algebra: vektorji v ravnini in prostoru, računске operacije, majhni sistemi enačb in neenačb.</p> <p>Kompleksna števila: računanje, reševanje enačb in sistemov enačb, polarni zapis.</p> <p>Algebra polinomov: računanje s polinomi, realna in kompleksna faktorizacija, parcialni ulomki.</p>	<p>hyperbolic functions), properties, computation, graphing, solving equations and inequalities.</p> <p>Analytic geometry in the plane: a straight line, conic sections, mutual position, polar coordinates.</p> <p>Linear algebra: vectors in plane and space, computational operations, small systems of linear equations and inequalities.</p> <p>Complex numbers: arithmetic, solving equations and systems of equations, polar form.</p> <p>Algebra of polynomials: computation with polynomials, real and complex factorization, partial fractions.</p>
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#### Temeljni literatura in viri / Readings:

<p>Srednješolski učbeniki matematike.</p> <p>K. Cvetko Vah, D. Dolžan: Učbenik za proseminar, Učbeniki in priročniki 19, DMFA založništvo, Ljubljana, 2014.</p> <p>A. Cedilnik: Matematični priročnik, 2. izdaja, Didakta, Radovljica, 1997.</p>
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#### Cilji in kompetence:

<p>"Študent ponovi, utrdi in nadgradi vsebine iz srednješolske matematike, ki so potrebne za normalno sodelovanje pri drugih predmetih 1. letnika.</p>
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#### Objectives and competences:

<p>Student revises, consolidates and upgrades the contents of high school mathematics, which are necessary for following the courses in the first year.</p>
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#### Predvideni študijski rezultati:

<p>Znanje in razumevanje: Študent temeljito obvlada računanje z elementarnimi funkcijami, reševanje enačb in neenačb, računanje s kompleksnimi števili in osnove ravninske geometrije.</p> <p>Uporaba: Predmet je predpriprava za Analizo 1</p>
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#### Intended learning outcomes:

<p>Knowledge and understanding: A thorough knowledge of calculus of elementary functions, solving equations and inequalities, calculating with complex numbers, and basic knowledge of plane geometry.</p> <p>Application: This is preparatory course for</p>
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in Algebro 1.

Refleksija: Razumevanje pojmov elementarne matematike, ki so nujni za nadaljnji študij.

Prenosljive spretnosti – niso vezane le na en predmet: Študent se nauči prebrati in razumeti matematično trditev, razločiti predpostavke od posledic in razumeti utemeljitev oziroma dokaz.

Analysis 1 and Algebra 1.

Reflection: Understanding of basic mathematical concepts that are necessary for further studies.

Transferable skills: Student learns to read and understand a mathematical statement, distinguish assumptions from conclusions, and understand the deduction or proof.

**Metode poučevanja in učenja:**

Predavanja, skupinsko in seminarsko delo

**Learning and teaching methods:**

Lectures, group and seminar work

Delež (v %) /

**Načini ocenjevanja:**

Weight (in %)

**Assessment:**

<p>izpit ali dva kolokvija namesto izpita</p> <p>Ocene: 6-10 pozitivno, 5 negativno (v skladu s Statutom UL)</p>	<p>100%</p>	<p>exam or two midterm tests</p> <p>Grading: 6-10 pass, 5 fail (according to the Statute of UL)</p>
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**Reference nosilca / Lecturer's references:**

Jakob Cimprič:

Peter Šemrl:

– ŠEMRL, Peter. Applying projective geometry to transformations on rank one idempotents. Journal of functional analysis, ISSN 0022-1236, 2004, vol. 210, no. , str. 248-257 [COBISS.SI-ID 13012825]

– ŠEMRL, Peter. Comparability preserving maps on bounded observables. Integral equations and operator theory, ISSN 0378-620X, 2008, vol. 62, no. 3, str. 441-454 [COBISS.SI-ID 15005273]

- ŠEMRL, Peter. A characterization of normed spaces among metric spaces. Rocky Mountain journal of mathematics, ISSN 0035-7596, 2011, vol. 41, no. 1, str. 293-298 [COBISS.SI-ID 15865177]