

UČNI NAČRT PREDMETA / COURSE SYLLABUS						
<b>Predmet:</b>	Preddoktorski izpit					
<b>Course title:</b>	Predoctoral exam					
<b>Študijski program in stopnja</b> <b>Study programme and level</b>	<b>Študijska smer</b> <b>Study field</b>		<b>Letnik</b> <b>Academic year</b>	<b>Semester</b> <b>Semester</b>		
3MaFi	Matematika		1	prvi ali drugi		
3MaFi	Mathematics		1	first or second		
<b>Vrsta predmeta / Course type</b>				obvezni		
<b>Univerzitetna koda predmeta / University course code:</b>				M3126		
<b>Predavanja</b> <b>Lectures</b>	<b>Seminar</b> <b>Seminar</b>	<b>Vaje</b> <b>Tutorial</b>	<b>Klinične vaje</b> <b>work</b>	<b>Druge oblike</b> <b>študija</b>	<b>Samost. delo</b> <b>Individ.</b> <b>work</b>	<b>ECTS</b>
					<b>180</b>	<b>6</b>
<b>Nosilec predmeta / Lecturer:</b>				prof. Matej Brešar, prof. Miran Černe, prof. Primož Potočnik		
<b>Jeziki /</b> <b>Languages:</b>	<b>Predavanja /</b> <b>Lectures:</b>	slovenski/Slovene, angleški/English				
	<b>Vaje / Tutorial:</b>	slovenski/Slovene, angleški/English				
<b>Pogoji za vključitev v delo oz. za opravljanje študijskih obveznosti:</b>				<b>Prerequisites:</b>		
<b>Vsebina:</b>				<b>Content (Syllabus outline):</b>		

<p>Obnovitev temeljnih matematičnih pojmov s področij analize, algebre, diskretna matematika, teoretičnega računalništva in verjetnosti.</p>	<p>Revision of basic mathematical notions from the fields of analysis, algebra, discrete mathematics, theoretical computer science and probability.</p>
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**Temeljni literatura in viri / Readings:**

S. Lang, "Undergraduate Algebra", Springer, New York, 2005.

S. Lang, "Undergraduate Analysis, 2nd edition", Springer, New York, 1997.

W. Rudin, "Principles of Mathematical Analysis, 3rd edition", McGraw-Hill, New York-Auckland-Düsseldorf, 1976.

J. H. van Lindt, R.M. Wilson, "A course in combinatorics", Cambridge University Press, Cambridge, 1992.

D. Stirzaker, "Probability and Random Variables, A beginner's guide", Cambridge University Press, 1999.

Michael Sipser, Introduction to the Theory of Computation, Cengage Learning (2013).

**Cilji in kompetence:**

Cilj predmeta je študentom priskrbeti temeljno znanje, ki je potrebno za spremljanje naprednejših predmetov in za raziskovalno delo.

**Objectives and competences:**

The goal of the course is to provide the students with the background material needed for following the advanced classes and for mathematical research.

**Predvideni študijski rezultati:**

**Intended learning outcomes:**

Študenti obnovijo osnovno matematično znanje, potrebno za njihovo nadaljne delo.

The students revise some basic background material needed for their future work.

**Metode poučevanja in učenja:**

Samostojni študij in konzultacije.

**Learning and teaching methods:**

Individual learning and consultations.

**Načini ocenjevanja:**

Pisni izpit; ocene: opravil, ni opravil.

Delež (v %) /

Weight (in %)

**Assessment:**

Written exam; grades: pass, fail.

100%

**Reference nosilca / Lecturer's references:**

Matej Brešar:

– BREŠAR, Matej, ŠPENKO, Špela. Functional identities of one variable. Journal of algebra, ISSN 0021-8693, 2014, vol. 401, str. 234-244 [COBISS.SI-ID 16842329]

– BREŠAR, Matej. Algebras in which non-scalar elements have small centralizers. Linear and Multilinear Algebra, ISSN 0308-1087, 2015, vol. 63, no. 9, str. 1864-1871 [COBISS.SI-ID 17160537]

– BREŠAR, Matej. Functional identities on tensor products of algebras. Journal of algebra, ISSN 0021-8693, 2016, vol. 455, str. 108-136. [COBISS.SI-ID 17625945]

Miran Černe:

– ČERNE, Miran, ZAJEC, Matej. Boundary differential relations for holomorphic functions on the disc. Proceedings of the American Mathematical Society, ISSN 0002-9939, 2011, vol. 139, no. 2, str. 473-484 [COBISS.SI-ID 15710553]

– ČERNE, Miran, FLORES, Manuel. On Beurling's boundary differential relation. Israel journal of mathematics, ISSN 0021-2172, 2014, vol. 199, iss. 2, str. 831-840 [COBISS.SI-ID 17144153]

– ČERNE, Miran. Beurling's boundary differential relations on multiply connected domains. *Journal of mathematical analysis and applications*, ISSN 0022-247X. [Print ed.], 2015, vol. 428, iss. 1, str. 544-562 [COBISS.SI-ID 17270873]

Primož Potočnik:

– POTOČNIK, Primož, WILSON, Stephen. Linking rings structures and semisymmetric graphs: Cayley constructions. *European journal of combinatorics*, ISSN 0195-6698, 2016, vol. 51, str. 84-98. [COBISS.SI-ID 17462361]

– POTOČNIK, Primož, SPIGA, Pablo, VERRET, Gabriel. Bounding the order of the vertex-stabiliser in 3-valent vertex-transitive and 4-valent arc-transitive graphs. *Journal of combinatorial theory. Series B*, ISSN 0095-8956, 2015, vol. 111, str. 148-180. [COBISS.SI-ID 1537132228]

– BERČIČ, Katja, POTOČNIK, Primož. Two-arc-transitive two-valent digraphs of certain orders. *Ars mathematica contemporanea*, ISSN 1855-3966. [Tiskana izd.], 2016, vol. 11, no. 1, str. 127-146. [COBISS.SI-ID 1538308036]