Predmet:	Individualni študij 1
Course title:	Individual study 1

Študijski program in stopnja **Study programme and level**	Študijska smer **Study field**	Letnik **Academic year**	Semester **Semester**
Doktorski študijski program Matematika in fizika	Matematika	1	prvi in drugi
Doctoral study programme Mathematics and Physics	Mathematics	1	first and second

Vrsta predmeta / Course type	obvezni / compulsory

Univerzitetna koda predmeta / University course code:	M3127

Predavanja **Lectures**	Seminar **Seminar**	Vaje **Tutorial**	Klinične vaje **work**	Druge oblike študija	Samost. delo **Individ. work**		ECTS
					180		6

Nosilec predmeta / Lecturer:	prof. dr. Matej Brešar, prof. dr. Primož Potočnik, prof. dr. Alexander Simpson

Jeziki / **Languages:**	**Predavanja /** **Lectures:**	slovenski / Slovene, angleški / English
	Vaje / Tutorial:	slovenski / Slovene, angleški / English

Pogoji za vključitev v delo oz. za opravljanje študijskih obveznosti:	**Prerequisites:**
Vpis v letnik študija.	Enrolment in the programme.
Vsebina:	**Content (Syllabus outline):**

Študent samostojno preštudira obsežnejšo temo s svojega ožjega raziskovalnega področja. Temo in literaturo mu določi mentor.	The student independendly learns a major topic from his specific research field. The topic and literature is determined by the mentor.

Temeljni literatura in viri / Readings:

Študent literaturo izbere v sodelovanju s svojim mentorjem.

The literature is chosen in cooperation with the mentor.

Cilji in kompetence:

Študent usvoji specialno znanje, ki je potrebno za poglobljeno raziskovalno delo na svojem ožjem raziskovalnem področju.

Objectives and competences:

The student learns a specific topic, needed for the in-depth research work in his or her research field.

Predvideni študijski rezultati:

Znanje in razumevanje: Poglobljena seznanitev s ključnimi izsledki ter prijemi ožjega raziskovalnega področja na nivoju, ki omogoča njihovo uporabo pri originalnih problemih.

Uporaba: Usvojeno znanje in veščine bo študent uporabljal pri svojem raziskovalnem delu in na njih gradil dokaze novih matematičnih dognanj.

Refleksija: Pridobljeno znanje bo študent ustrezno reflektiral.

Intended learning outcomes:

Knowledge and understanding: The student will get acquainted with the key results in his specific research area on the level that facilitates their usage when tackling original research problems.

Application: The acquired knowledge and skills will be used in original research and proving new results.

Reflection: The acquired knowledge will be appropriately reflected.

Prenosljive spretnosti: Sposobnost razumevanja najzahtevnejših matematičnih dokazov ter načinov uporabe klasičnih rezultatov pri originalnih raziskovalnih problemih.	Transferable skills: The skill of understanding deep mathematical arguments and the usage of classical results in original research work.

Metode poučevanja in učenja: **Learning and teaching methods:**

Samostojni študij in konzultacije.	Individual study and consultations.

Načini ocenjevanja:	Delež (v %) / Weight (in %)	**Assessment:**
Domače naloge in ustni izpit. Ocene: opravil, ni opravil.	100%	Homework and oral exam. Grades: pass, fail.

Reference nosilca / Lecturer's references:

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

Alexander Simpson:
AWODEY, Steve, BUTZ, Carsten, SIMPSON, Alex, STREICHER, Thomas. Relating first-order set theories, toposes and categories of classes. Annals of pure and applied Logic, ISSN 0168-0072. [Print ed.], 2014, vol. 165, iss. 2, str. 428-502. [COBISS.SI-ID 17089881]
EGGER, Jeff, MØGELBERG, Rasmus Ejlers, SIMPSON, Alex. The enriched effect calculus: syntax and semantics. Journal of logic and computation, ISSN 0955-792X, 2014, vol. 24, iss. 3, str. 615-654. [COBISS.SI-ID 17090137]
SIMPSON, Alex. Measure, randomness and sublocales. Annals of pure and applied Logic, ISSN 0168-0072. [Print ed.], 2012, vol. 163, iss. 11, str. 1642-1659. [COBISS.SI-ID 17091161]

Primož Potočnik:
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]

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]