UČNI NAČRT PREDMETA / COURSE SYLLABUS			
Predmet:	Izbrana poglavja iz analize		
Course title:	Topics in analysis		

Študijski program in stopnja **Study programme and level**	**Študijska smer** **Study field**	**Letnik** **Academic year**	**Semester** **Semester**
3MaFi	Matematika	1 ali 2	prvi ali drugi
3MaFi	Mathematics	1 or 2	first or second

Vrsta predmeta / Course type	izbirni
Univerzitetna koda predmeta / University course code:	M3125

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

Nosilec predmeta / Lecturer:	prof. Barbara Drinovec Drnovšek, prof. Franc Forstnerič, prof. Jasna Prezelj, prof. Miran Černe, prof. Peter Šemrl, prof. Roman Drnovšek

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:**
Vsebina:	**Content (Syllabus outline):**

Izbrane bodo nekatere standardne teme iz podiplomske analize. Možna poglavja so kompleksna analiza, harmonična analiza, globalna analiza, navadne in parcialne diferencialne enačbe, funkcionalna analiza, teorija operatorjev itd. Izbira je odvisna od interesov in raziskovalne usmeritve študentov.	The content consists of a selection of standard topics in graduate analysis. Possible themes include complex analysis, harmonic analysis, global analysis, ordinary and parcial differential equations, functional analysis, operator theory etc. The choice may depend on students' research interests.

Temeljni literatura in viri / Readings:

N. Dunford, J. T. Schwartz: Linear operators, Parts I, II, III. Wiley Classics Library, John Wiley & Sons, New York 1988.

L. C. Evans: Partial Differential Equations, American Mathematical Society, Providence, 1998.

L. Grafakos: Classical and Modern Fourier Analysis, Pearson/Prentice Hall, 2004.

L. Hörmander: An introduction to complex analysis in several variables, Third edition., 7. North-Holland Publishing Co., Amsterdam, 1990.

T. W. Palmer: Algebras and Banach algebras, Cambridge Univ. Press, 1994.

R. O. Wells: Differential Analysis on Complex Manifolds, Springer, New York, 1980.

Cilji in kompetence:	**Objectives and competences:**
Namen predmeta je seznaniti študente z nekaterimi pomembnimi temami analize.	The main goal of the course is to provide students with some important topics in analysis.

Predvideni študijski rezultati:	**Intended learning outcomes:**
Znanje in razumevanje predstavljenih konceptov. Sposobnost uporabe pridobljenega znanja in spretnosti.	Knowledge and comprehension of presented concepts. Ability to use acquired knowledge and skills.

Metode poučevanja in učenja:	Learning and teaching methods:
Predavanja, konzultacije, reševanje problemov	Lectures, consultations, problem sessions

Načini ocenjevanja:	Delež (v %) / Weight (in %)	Assessment:
Pisni izpit (domače naloge), ustni izpit. Ocene: 1-5 (negativno), 6-10 (pozitivno) (po Statutu UL)	100 %	Writen exam (homeworks), oral exam. Grading: 1-5 (fail), 6-10 (pass) (according to the Statute of UL)

Reference nosilca / Lecturer's references:

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]

Barbara Drinovec Drnovšek:

– DRINOVEC-DRNOVŠEK, Barbara, FORSTNERIČ, Franc. Disc functionals and Siciak-Zaharyuta extremal functions on singular varieties. V: Proceedings of Conference on Several Complex Variables on the occasion of Professor Józef Siciak's 80th birthday : July 4-8, 2011, Kraków, Poland, (Annales Polonici Mathematici, ISSN 0066-2216, Vol. 106). Warsaw: Institute of Mathematics, Polish Academy of Sciences, 2012, str. 171-191 [COBISS.SI-ID 16436057]

– DRINOVEC-DRNOVŠEK, Barbara, FORSTNERIČ, Franc. The Poletsky-Rosay theorem on singular complex spaces. Indiana University mathematics journal, ISSN 0022-2518, 2012, vol. 61, no. 4, str. 1407-1423 [COBISS.SI-ID 16679257]

– DRINOVEC-DRNOVŠEK, Barbara, KUZMAN, Uroš. Lelong functional on almost complex manifolds. Complex variables and elliptic equations, ISSN 1747-6933, 2015, vol. 60, iss. 2, str. 168-180 [COBISS.SI-ID 16979289]

Roman Drnovšek:

– DRNOVŠEK, Roman. An irreducible semigroup of idempotents. Studia Mathematica, ISSN 0039-3223, 1997, let. 125, št. 1, str. 97-99 [COBISS.SI-ID 7436633]

– DRNOVŠEK, Roman. Common invariant subspaces for collections of operators. Integral equations and operator theory, ISSN 0378-620X, 2001, vol. 39, no. 3, str. 253-266 [COBISS.SI-ID 10597721]

– DRNOVŠEK, Roman. Invariant subspaces for operator semigroups with commutators of rank at most one. Journal of functional analysis, ISSN 0022-1236, 2009, vol. 256, iss. 12, str. 4187-4196 [COBISS.SI-ID 15167321]

Franc Forstnerič:

– ALARCÓN, Antonio, FORSTNERIČ, Franc. Null curves and directed immersions of open Riemann surfaces. Inventiones Mathematicae, ISSN 0020-9910, 2014, vol. 196, iss. 3, str. 733-771 [COBISS.SI-ID 16655705]

– ALARCÓN, Antonio, FORSTNERIČ, Franc. Every bordered Riemann surface is a complete proper curve in a ball. Mathematische Annalen, ISSN 0025-5831, 2013, vol. 357, iss. 3, str. 1049-1070 [COBISS.SI-ID 17142617]

– FORSTNERIČ, Franc, RITTER, Tyson. Oka properties of ball complements. Mathematische Zeitschrift, ISSN 0025-5874, 2014, vol. 277, iss. 1-2, str. 325-338 [COBISS.SI-ID 17142873]

Jasna Prezelj:

– PREZELJ-PERMAN, Jasna. A relative Oka-Grauert principle for holomorphic submersions over 1-convex spaces. Transactions of the American Mathematical Society, ISSN 0002-9947, 2010, vol. 362, no. 8, str. 4213-4228 [COBISS.SI-ID 15641433]

– PREZELJ-PERMAN, Jasna, SLAPAR, Marko. The generalized Oka-Grauert principle for 1-convex manifolds. Michigan mathematical journal, ISSN 0026-2285, 2011, vol. 60, iss. 3, str. 495-506 [COBISS.SI-ID 16134745]

– PREZELJ-PERMAN, Jasna. Positivity of metrics on conic neighborhoods of 1-convex submanifolds. International journal of mathematics, ISSN 0129-167X, 2016, vol. 27, no. 5, 1650047 [str. 1-24] [COBISS.SI-ID 17704537]

Peter Šemrl:

– ŠEMRL, Peter. Symmetries of Hilbert space effect algebras. Journal of the London Mathematical Society, ISSN 0024-6107, 2013, vol. 88, part 2, str. 417-436 [COBISS.SI-ID 16756569]

– ŠEMRL, Peter. The optimal version of Hua's fundamental theorem of geometry of rectangular matrices. Memoirs of the American Mathematical Society, ISSN 0065-9266, 2014, vol. 232, no.

1089, str. 1-74 [COBISS.SI-ID 16947545]

– PLEVNIK, Lucijan, ŠEMRL, Peter. Maps preserving complementarity of closed subspaces of a Hilbert space. Canadian journal of mathematics, ISSN 0008-414X, 2014, vol. 66, no. 5, str. 1143-1166 [COBISS.SI-ID 17137753]