Study programmes: PhD studies – Mathematics – Analysis and differential equations			
Course name: **3M162 Nonlinear Functional Analysis**			
Lecturers: Nebojša Lažetić			
Status: Optional			
ECTS: 9			
Attendance prerequisites: -			
Course aims: Mastering of notions and methods of nonlinear functional analysis.			
Course outcome: Student should understand and be able to apply notions and techniques of nonlinear functional analysis.			
Course content: Theory of degree of mappings. Monotone operators and applications. Theory of implicit functions. Theory of fixed point. Methods of approximations of solutions of equations. Extremal problems. Bifurcation theory.			
Literature: 1. Klaus Deimling, Nonlinear Functional Analysis, Springer-Verlag, 1985. 2. Melvin S. Berger, Nonlinearity and Functional Analysis, Academic Press, 1977.			
Number of hours: 10	**Lectures:** 4	**Research:** 6	
Teaching and learning methods: Frontal / Individual / Research			
Assessment (maximal 100 points)			
Course assignments	**Points**	**Final exam**	**points**
Lectures		Written exam	
Exercises / Tutorials	50	Oral exam	50
Colloquia		Written-oral exam	
Essay / Project			