

Study programmes: PhD – Mathematics				
Course name: Analysis on manifolds				
Lecturers: Miroslava Antić, Mirjana Đ. Đorić, Srđan N. Vukmirović, Zoran P. Rakić				
Status: Optional				
ECTS: 9				
Attendance prerequisites: Riemannian geometry A				
Course aims: Acquisition of general and specific knowledge about operators (especially Laplacian) and differential forms on manifolds. Preparing student for individual scientific work: studying of literature in theory of complex manifolds and gradually including student for individual research work.				
Course outcome: Upon completion of the course, the student has necessary knowledge about: Laplacian on a Riemannian manifolds, Hodge theory, integration of differential forms, Stokes theorem, applications on heat equation. Student is qualified to individual understanding basic examples and solving problems from this area. Also, student is qualified for individual studying of scientific papers from this area.				
Course content: The Laplacian on a Riemannian manifold. The Hodge theory. Integration of differential forms. The Stokes theorem. Kernel of Laplacian. Heat equation.				
Literature:				
<ol style="list-style-type: none"> 1. S. Rosenberg, The Laplacian on a Riemannian Manifold, 1997, Cambridge University Press, New York – London. 2. S. I. Goldberg, Curvature and Homology, 1962, Academic Press, New York – London. 				
Number of hours: 10	Lectures: 4	Tutorials: -	Laboratory: -	Research: 6
Teaching and learning methods: Lectures/ Tutorials				
Assessment (maximal 100 points)				
Course assignments	points	Final exam		points
Lectures	-	Written exam		-
Exercises / Tutorials	20	Oral exam		60
Colloquia	-	Written-oral exam		-
Essay / Project	20			