

<b>Study programmes:</b> PhD – Mathematics				
<b>Course name:</b> Stochastic differential geometry				
<b>Lecturers:</b> Mirjana Đ. Đorić				
<b>Status:</b> Optional				
<b>ECTS:</b> 9				
<b>Attendance prerequisites:</b> Riemannian geometry A				
<b>Course aims:</b> Acquisition of general and specific knowledge about stochastic differential geometry. Preparing student for individual scientific work: studying of literature from this theory and gradually including student for individual research work.				
<b>Course outcome:</b> Upon completion of the course, the student has necessary knowledge about: stochastic differential equations, stochastic line integrals, martingales on manifolds, Brownian motion on manifolds, stochastic completeness. 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.				
<b>Course content:</b> Stochastic differential equations. Stochastic line integrals. Martingales on manifolds and submanifolds. Brownian motion on manifolds. Brownian motion and heat equation. Stochastic completeness. Asymptotics.				
<b>Literature:</b>				
1. U. P. Hsu, Stochastic analysis on manifolds, 2002 AMS, Graduate Studies in Mathematics, Vol. 38.				
<b>Number of hours:</b> 10	<b>Lectures:</b> 4	<b>Tutorials:</b> -	<b>Laboratory:</b> -	<b>Research:</b> 6
<b>Teaching and learning methods:</b> Lectures/ Tutorials				
<b>Assessment (maximal 100 points)</b>				
<b>Course assignments</b>	<b>points</b>	<b>Final exam</b>		<b>points</b>
Lectures	-	Written exam		-
Exercises / Tutorials	20	Oral exam		60
Colloquia	-	Written-oral exam		-
Essay / Project	20			