

Study programmes: PhD – Mathematics				
Course name: Discrete differential geometry				
Lecturers: Miroslava Antić, Mirjana Đ. Đorić, Srđan N. Vukmirović, Zoran P. Rakić				
Status: Optional				
ECTS: 9				
Attendance prerequisites: -				
Course aims: Acquisition of general and specific knowledge in discrete differential geometry. Preparing student for individual scientific work: studying of literature in this theory and gradually including student for individual research work.				
Course outcome: Upon completion of the course, the student has necessary knowledge about: basic notions of discrete differential geometry and their application in computer sciences. 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: Simplicial complexes. Discrete Gauss and mean curvature. Discrete geodesic, asymptotic curves and geodesic flow. Parallel transport on discrete surfaces. Discrete minimal surfaces. Approximation of smooth surface by discrete surface. Applications in computer science.				
Literature:				
1. Konrad Polthier, Polyhedral Surfaces of Constant Mean Curvature, 2002, Habilitationsschrift, TU-Berlin, 1-212.				
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			