

Study Programme: Architecture			
Course Unit Title: Analysis and simulations based on performance of the environment			
Course Unit Code: A935			
Name of Lecturer(s): Bajšanski Ivana			
Type and Level of Studies: Doctorate			
Course Status (compulsory/elective): elective			
Semester (winter/ summer): winter			
Language of instruction: english			
Mode of course unit delivery (face-to-face/distance learning): face-to-face			
Number of ECTS Allocated: 10			
Prerequisites: none			
Course Aims: Investigation of different methods for analysis and simulations of environment performance on various aspects of architectural objects and urban areas based on influences of the environment.			
Learning Outcomes: To apply acquired knowledge in further investigation process and development of the novel methods in practical and scientific work in architecture and urban planning.			
Syllabus. Introduction, definition and clarification of the analysis and simulation concepts in order to obtain architectural or urban performance based design. Application of simulation of insolation, outdoor and indoor thermal comfort, CFD simulations of various types of fluids (e.g. air, water, dust), acoustical analysis and simulation of fabrication in order to optimize design. Application of software packages for parametric modelling and genetic algorithms for interactive digital technologies and dynamical simulations in the field of performance based design.			
Required Reading: Relevant literature in English, tbd			
Weekly Contact Hours: 2	Lectures: 4	Practical work:	
Teaching Methods: Lectures, consultations, workshops and discussion.			
Knowledge Assessment (maximum of 100 points):			
Pre-exam obligations	points	Final exam	points
Attendance			
Computer exercises			
Tests (4x)			

