Course Unit Descriptor

Study Programme: Architecture			
Course Unit Title: Geometry and visualization of free form surfaces			
Course Unit Code: A183			
Name of Lecturer(s): Štulić Radovan			
Type and Level of Studies:Bachelor Level			
Course Status (compulsory/elective): compulsory			
Semester (winter/ summer): summer			
Language of instruction:english			
Mode of course unit delivery (face-to-face/distance learning): face-to-face			
Number of ECTS Allocated:4			
Prerequisites:none			
Course Aims: Development of the ability to visualize space, introduction of chosen geometric forms in two-dimensional (2D) view of parallel projection			
Learning Outcomes: Ability to identify and interpret spatial relationships of the examined spatial shapes in the corresponding 2D views, as well as the knowledge of their geometric structures. Ability to define optimal approximations of general forms for their constructive realization			
Syllabus: Geometric structures and visualization of free 3D forms. Spatial and plane curves as directrices or generatrices in surfaces' generation. Bezier's and B-spline curves and surfaces- Ruled and developable surfaces. Curvature and smoothness of surfaces. Toroidal surfaces: the torus and the toroid. Convolute surface. Partial developable surfaces with plane and spatial curves in general position as directrices. Generation surfaces of general form. Decomposition and approximation of general forms. Mesh– based methods.			
Required Reading: Farin, G.Curves and Surfaces for CAGD-A Practical Guide, 5th edition, 2002 Morgan Kaufmann Pottmann, Asperl, Hofer, Kilian, Architectural Geometry, 2007,Bentley Institute Press			
Weekly Contact Hours:1	**Lectures:1**	**Practical work:0**	
Teaching Methods: Lectures. Computer-auditory Practice. Tutorials.			
Knowledge Assessment (maximum of 100 points): 100			
Pre-exam obligations	points	**Final exam**	points
Test	10	Final exam part one	15
Test	10	Final exam part two	15
Graphic paper	20		
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Lectures attendance	5		
Computer exercise	5		

attendance			
The methods of knowledge assessment may differ; the table presents only some of the options: written exam, oral exam, project presentation, seminars, etc.			