

Study Programme: Civil Engineering			
Course Unit Title: Concrete and steel bridges design			
Course Unit Code: GK701			
Name of Lecturer(s): Rašeta Andrija, Džolev Igor			
Type and Level of Studies: master			
Course Status (compulsory/elective): elective			
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: Acquiring knowledge necessary for the design of concrete and steel bridges.			
Learning Outcomes: Qualifying students for the design of concrete and metal bridges. The acquired knowledge is applied in engineering practice.			
Syllabus. Principles of bridge design. General terms, terminology and bridge types. Elements of road, rail and pedestrian bridges. Actions on bridges. Girder bridges. Superstructure: reinforced concrete, pre-stressed, steel and coupled (concrete - steel). Substructure: Abutments, piers, approach slabs, wing walls, embankment and pillars foundation: shallow on the ground and in the water and deep on the wells and piles. Bridges equipment: bearings, joints, pavement passes, hiking trails, fencing paths, reflex fences, wreaths, curbs, pavement board elements, hydroinsulation, drainage, utility installations and bridges maintenance equipment. Frame bridges. Integral bridges. Arch bridges. Cable stayed bridges. Suspension bridges. Mobile bridges. Bridges made of corrosion resistant steel. Construction of bridges: fixed, portable and movable scaffolding, cantilever construction, gradual suppression, monolithic, prefabricated-monolithic and prefabricated construction. Bridge management system.			
Required Reading: Relevant literature in English, tbd			
Weekly Contact Hours:2	Lectures: 2	Practical work: 2	
Teaching Methods: Lectures. Auditing and computer exercises. Consultations. Presentation of the project.			
Knowledge Assessment (maximum of 100 points):			
Pre-exam obligations	points	Final exam	points
Attendance			
Computer exercises			
Tests (4x)			

