

### Faculty of Civil Engineering / CIVIL ENGINEERING / STEEL STRUCTURES II

<b>Course:</b>	STEEL STRUCTURES II			
<b>Course ID</b>	<b>Course status</b>	<b>Semester</b>	<b>ECTS credits</b>	<b>Lessons</b> (Lessons+Exercises+Laboratory)
10904	Mandatory	6	5	2+1+1
<b>Programs</b>	CIVIL ENGINEERING			
<b>Prerequisites</b>	Construction materials, Strength of materials II			
<b>Aims</b>	Acquiring basic knowledge of designing steel structures.			
<b>Learning outcomes</b>	After passing this exam, the student will be able to: design plated girders with and without longitudinal stiffeners, to design cross-sections of class 4, to calculate the resistance for shear buckling and for the action of transverse forces, as well as for the interaction of bending and shear, then to design joints and splices of structural elements made with bolts and rivets or welded connections, especially structural joints connecting H or I sections (component method, decomposition into basic components and the resistances of each component) and to design hollow section joints.			
<b>Lecturer / Teaching assistant</b>	Dr Duško Lučić - professor Mr Petar Subotić - teaching associate			
<b>Methodology</b>	Lectures, exercises, laboratory exercises, assignments, consultations.			
<b>Plan and program of work</b>				
Preparing week	Preparation and registration of the semester			
I week lectures	Introductory remarks. Designing plated girders - first part. Introduction. Shear lag. Local buckling due to normal stresses. Resistance check. Class 4 cross-sections. Effective cross section for members without longitudinal stiffeners.			
I week exercises	Class 4 cross section. Effective characteristics of the cross section. Assignment 01.			
II week lectures	Designing plated girders - second part. Effective cross section for members with longitudinal stiffeners.			
II week exercises	Resistance check of a plated girder. Assignment 02			
III week lectures	Designing plated girders - third part. Shear buckling. Resistance to shear buckling. Web and flanges contribution. Resistance to transverse forces and to interaction of actions.			
III week exercises	Resistance check of a plated girder - continued			
IV week lectures	Designing joints and splices - the first part. Introduction. Basis of design. Mechanical fasteners. Screws. Rivets.			
IV week exercises	Resistance check of a plated girder - continued			
V week lectures	Designing joints and splices - part two. How are the fasteners loaded? Categories of bolted joints. Position of holes for bolts and rivets. Design resistance of bolts and rivets. Slip resistant joints. Design resistance for block tearing. Joints with pins			
V week exercises	Design of joints and splices made with mechanical fasteners. Assignment 03.			
VI week lectures				
VI week exercises				
VII week lectures				
VII week exercises				
VIII week lectures				
VIII week exercises				
IX week lectures				
IX week exercises				
X week lectures				
X week exercises				
XI week lectures				
XI week exercises				
XII week lectures				

XII week exercises						
XIII week lectures						
XIII week exercises						
XIV week lectures						
XIV week exercises						
XV week lectures						
XV week exercises						
<b>Student workload</b>						
<b>Per week</b>			<b>Per semester</b>			
<b>5 credits x 40/30=6 hours and 40 minuts</b> 2 sat(a) theoretical classes 1 sat(a) practical classes 1 excercises <b>2 hour(s) i 40 minuts</b> of independent work, including consultations			Classes and final exam: <b>6 hour(s) i 40 minuts x 16 =106 hour(s) i 40 minuts</b> Necessary preparation before the beginning of the semester (administration, registration, certification): <b>6 hour(s) i 40 minuts x 2 =13 hour(s) i 20 minuts</b> Total workload for the subject: <b>5 x 30=150 hour(s)</b> Additional work for exam preparation in the preparing exam period, including taking the remedial exam from 0 to 30 hours (remaining time from the first two items to the total load for the item) <b>30 hour(s) i 0 minuts</b> Workload structure: <b>106 hour(s) i 40 minuts (cources), 13 hour(s) i 20 minuts (preparation), 30 hour(s) i 0 minuts (additional work)</b>			
<b>Student obligations</b>						
<b>Consultations</b>						
<b>Literature</b>						
<b>Examination methods</b>						
<b>Special remarks</b>						
<b>Comment</b>						
<b>Grade:</b>	F	E	D	C	B	A
<b>Number of points</b>	less than 50 points	greater than or equal to 50 points and less than 60 points	greater than or equal to 60 points and less than 70 points	greater than or equal to 70 points and less than 80 points	greater than or equal to 80 points and less than 90 points	greater than or equal to 90 points