Course Unit Descriptor

Study Programme: Civil Engineering
Course Unit Title: Metal structures 2
Course Unit Code: GG35
Name of Lecturer(s): Jovanović Đorđe, Starčev-Ćurčin Anka
Type and Level of Studies: bachelor
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: 5
Prerequisites: none
Course Aims:. Acquiring knowledge in the field of design and construction of steel structures in civil engineering – building construction.
Learning Outcomes: Enabling students to analyse, calculate, dimension, and constructively model metal structures in building construction.
Syllabus. Introduction with the program and work organization on course. Application metal constructions in buildings. The basics of design and working of the layout for portal frame buildings. Design of the purlins. Design of the bracings and stiffeners. Design of the main structural elements of the single-span and multi-span industrial buildings (the structural static system: frames with hinged connection between roof member and columns, frames with hinged supports columns, frames with fixed and hinged column bases, calculation and design). Design of the crane girders. Buckling- theoretical analysis, effective width concept. Effective cross section for cross section class 4 – buckling resistance due to axial compression stress. Calculation of buckling resistance due to direct stresses, shear stresses and their interaction. Welded girders- design of cross-sections, moment resisting reinforcement, ultimate limit state and serviceability limit state. Exercises: Numerical examples which are processed on exercises completely follow the content of the course.
Required Reading: Relevant literature in English, tbd

Weekly Contact Hours:2	**Lectures: 2**	**Practical work: 2**

Teaching Methods: Lectures. Auditory and graphic practice. Consultations.
Knowledge Assessment (maximum of 100 points):

Pre-exam obligations	points	**Final exam**	points
Attendance			
Computer exercises			
Tests (4x)			