



Subject card

Subject name and code	Steel Structures II, PG_00065725						
Field of study	Civil Engineering						
Date of commencement of studies	October 2023	Academic year of realisation of subject				2025/2026	
Education level	first-cycle studies	Subject group					
Mode of study	Full-time studies	Mode of delivery				at the university	
Year of study	3	Language of instruction				Polish	
Semester of study	6	ECTS credits				5.0	
Learning profile	general academic profile	Assessment form				assessment	
Conducting unit	Department of Engineering Structures -> Faculty of Civil and Environmental Engineering -> Faculties of Gdańsk University of Technology						
Name and surname of lecturer (lecturers)	Subject supervisor		dr inż. Aleksander Perliński				
	Teachers						
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	30.0	0.0	10.0	25.0	0.0	65
	E-learning hours included: 0.0						
Learning activity and number of study hours	Learning activity	Participation in didactic classes included in study plan		Participation in consultation hours		Self-study	SUM
	Number of study hours	65		0.0		0.0	65
Subject objectives	Presentation of the issues related to the building steel structures design, fabrication, assembly, fire and anticorrosion protection. Preparation of design documentation of the simple steel hall structure.						
Learning outcomes	Course outcome	Subject outcome			Method of verification		
	[K6_W03] Demonstrate knowledge and understanding of the processes, established standards and design methods in the civil engineering subject area and of their limitations.	Demonstrates basic knowledge of the design, fabrication and assembly of steel structures.			[SW1] Assessment of factual knowledge [SW3] Assessment of knowledge contained in written work and projects		
	[K6_W07] Understand the investment's impact on the environment and the interrelationships and dependencies between the building structure and the natural environment	Understands the effects of environmental factors on steel buildings.			[SW1] Assessment of factual knowledge [SW3] Assessment of knowledge contained in written work and projects		
	[K6_U07] Design and build engineering structures in a sustainable manner, with care for the natural environment and a minimum carbon footprint	Designs selected elements of steel halls with simple static schemes.			[SU1] Assessment of task fulfilment [SU4] Assessment of ability to use methods and tools		
	[K6_U03] Design engineering objects and details, processes and engineering systems by applying appropriate standards and methods of design.	Designs joints of steel hall elements using relevant standards and procedures.			[SU1] Assessment of task fulfilment [SU4] Assessment of ability to use methods and tools		
Subject contents	<p>Course content – lecture Lectures: Truss girders. Hall buildings - structural layouts, loads, joints. Bracings. Cladding systems. Steel-concrete composite structures. Fabrication and assembly of steel structures. Corrosion and anticorrosion protection. Fire resistance and fire safety solutions for steel structures. steel structures review - tall buildings, masts, towers, chimneys, tanks, silos and pipelines.</p> <p>Project and laboratory: Design of a hall consisting of purlin, truss girder, columns - loads and load combinations, static analysis using CAD tools, dimensioning of the main structural elements and joints, preparation of the structural drawings</p>						

Prerequisites and co-requisites			
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Hall project (Project)	60.0%	25.0%
	Written test (Laboratory)	60.0%	25.0%
	Written examination (Lecture)	60.0%	50.0%
Recommended reading	Basic literature	1. Łubiński M., Filipowicz A., Żółtowski W.: Konstrukcje metalowe. Część I. Arkady, Warszawa 2007. 2. Łubiński M., Żółtowski W.: Konstrukcje metalowe. Część II. Arkady, Warszawa 2008. 3. Biegus A.: Stalowe budynki halowe, Arkady, Warszawa 2010 4. Bródka J., Broniewicz M.: Konstrukcje stalowe z rur. Arkady, Warszawa 2001. 5. Rykaluk K.: Konstrukcje stalowe. Podstawy i elementy. DWE, Wrocław 2001. 6. Praca zbiorowa: Budownictwo ogólne, tom 5, Arkady, Warszawa 2010. 7. Praca zbiorowa pod red. A. Kozłowskiego: Konstrukcje stalowe. Przykłady obliczeń według PN-EN 1993-1. Część trzecia. Hale i wiaty, Oficyna Wydawnicza Politechniki Rzeszowskiej, Rzeszów 2015 8. PN-EN 1993-1-1 Eurokod 3: Projektowanie konstrukcji stalowych. Część 1-1: Reguły ogólne i reguły dla budynków 9. PN-EN 1993-1-8 Eurokod 3: Projektowanie konstrukcji stalowych. Część 1-8: Projektowanie węzłów	
	Supplementary literature	1. Bogucki W., Żybertowicz M.: Tablice do projektowania konstrukcji metalowych. Arkady, Warszawa 2007. 2. Bogucki W.: Budownictwo stalowe. Arkady, Warszawa 1976. 3. W. Knabe: Przykłady obliczeń połączeń śrubowych i spawanych. Wydawnictwo Politechniki Gdańskiej. Gdańsk 2000.	
	eResources addresses		
Example issues/ example questions/ tasks being completed	Check the ULS and SLS of the roof purlin. Calculate the resistance of the top chord of the truss girder. Check the capacity of the truss girder node. Calculate the tensile force of the bracing tie and check its capacity.		
Practical activities within the subject	Not applicable		

Document generated electronically. Does not require a seal or signature.