



Subject card

Subject name and code	Steel Structures I, PG_00048194						
Field of study	Civil Engineering						
Date of commencement of studies	October 2020		Academic year of realisation of subject		2022/2023		
Education level	first-cycle studies		Subject group		Optional subject group Subject group related to scientific research in the field of study		
Mode of study	Part-time studies		Mode of delivery		blended-learning		
Year of study	3		Language of instruction		Polish		
Semester of study	6		ECTS credits		7.0		
Learning profile	general academic profile		Assessment form		exam		
Conducting unit	Department of Engineering Structures -> Faculty of Civil and Environmental Engineering						
Name and surname of lecturer (lecturers)	Subject supervisor		dr inż. Aleksander Perliński				
	Teachers		dr inż. Dariusz Kowalski dr inż. Jacek Haras dr inż. Tomasz Falborski dr inż. Natalia Lasowicz dr inż. Aleksander Perliński dr inż. Witold Knabe dr hab. inż. Piotr Iwicki				
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	30.0	0.0	10.0	15.0	0.0	55
	E-learning hours included: 30.0						
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	55		6.0		114.0	175
Subject objectives	Presentation of the topics related to the design and manufacturing of the steel building structures.						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	[K6_W11] Knows selected software supporting the calculation and design of construction as well as construction management		The student knows software for static calculations.		[SW3] Assessment of knowledge contained in written work and projects		
	[K6_W06] knows the rules of constructing and dimensioning of building elements of: steel, reinforced concrete, wood, masonry.		The student knows the principles os simple members design like beams, columns, welded and bolted joints.		[SW3] Assessment of knowledge contained in written work and projects		
	[K6_U01] can evaluate and list the loads acting on constructions		The student knows the code assumptions for loads acting on structures.		[SU1] Assessment of task fulfilment		
Subject contents	LECTURE Bolted connections: bolts tension, shear and bearing carrying capacity. Bearing capacity of lap shear and tension connections. Welded connections: fillet and butt welds. Steel properties. Steel assortment. Steel designing according to the limit state design. Rolled and plated beams, columns. CLASS EXERCISES Calculating of bolted and welded connections. Design of tension and axially compressed members. Steel members in bending. LABORATORY Metallurgy of welding processes, weldability of steel, welding techniques, manual training.						
Prerequisites and co-requisites							

Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Design task with different stages.	60.0%	35.0%
	Written lecture examination.	60.0%	50.0%
	Written test of the laboratory.	60.0%	15.0%
Recommended reading	Basic literature	1. Łubiński M., Filipowicz A., Żółtowski W.: Konstrukcje metalowe. Część 1. Arkady , Warszawa 2000. 2. red. A. Kozłowski.: Konstrukcje stalowe, Przykłady obliczeń według PN-EN 1993-1, Rzeszów 2010. 3. J. Goczek, Ł. Supeł, M Gajdzicki.: Przykłady obliczeń konstrukcji stalowych, Politechnika Łódzka 2011. 4. Rykaluk K. Konstrukcje stalowe. Podstawy i elementy. D.W.E., Wrocław 2001. 5. PN-EN 1993-1-1. Eurokod 3. Projektowanie konstrukcji stalowych, część 1-1: Reguły ogólne i reguły dla budynków,. 6. Pn-EN 1993-1-8, Eurokod 3: Projektowanie konstrukcji stalowych, część 1-8: projektowanie węzłów.	
	Supplementary literature	7. Bogucki W., Żybertowicz M.: Tablice do projektowania konstrukcji metalowych. Arkady, Warszawa.	
	eResources addresses	Adresy na platformie eNauczanie: Konstrukcje metalowe I - studia niestacjonarne (2022/23) - Moodle ID: 29470 https://enauczanie.pg.edu.pl/moodle/course/view.php?id=29470	
Example issues/ example questions/ tasks being completed	Draw the pin joint between a truss girder and a column. Check the ULS and SLS of the steel beam. Check the load-bearing capacity of the welded connection. Draw the section of the butt weld.		
Work placement	Not applicable		