GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	MAINTENANCE AND REVALORIZATION OF STEEL STRUCTURES, PG_00044253		
Field of study	Civil Engineering		
Date of commencement of studies	October 2020	Academic year of realisation of subject	2023/2024
Education level	first-cycle studies	Subject group	Optional subject group
Mode of study	Full-time studies	Mode of delivery	at the university
Year of study	4	Language of instruction	Polish
Semester of study	7	ECTS credits	2.0
Learning profile	general academic profile	Assessment form	assessment
Conducting unit	Department of Metal Structures -> Faculty of Civil and Environmental Engineering		
Name and surname of lecturer (lecturers)	Subject supervisor	dr inż. Dariusz Kowalski	
	Teachers	dr inż. Dariusz Kowalski dr inż. Aleksander Perliński	

Lesson types and methods of instruction

Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
Number of study hours	15.0	0.0	0.0	15.0	0.0	30

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	30	5.0	15.0	50

Subject objectives

Introduction to rules related to proper maintenance, refit amd modernization of steel building objects

Learning outcomes

Course outcome	Subject outcome	Method of verification
[K6_U11] knows and applies rules of construction law; can estimate risk of construction works and implement proper security routines; obeys the rules of occupational safety and health	The student learned the legal conditions relating to the operation and maintenance of buildings. The student learned the methods of safety assessment of the exploited metal structures.	
[K6_W16] Has deeper and adequate knowlege of civil engineering, within offered specialization	The student learned about the problems of operation and maintenance of building structures, especially those made of metal	
[K6_U12] knows rules of manufacturing and application of building materials, is able to properly choose tchem; is able to make simple laboratory experiments for judging quality of building materials	The student learned the research methods in the field of assessing the correctness of the construction, in particular, welded joints and anti-corrosion coatings	
[K6_W09] knows the principles of determining of loads acting on basic constructions (e.g. general, industrial, bridge, water, marine, transport objects) and rules of its constructing	The student learned the rules for determining the loads on the structures of building objects, in particular those made of steel. The student became acquainted with the principles of constructing objects that have changed over the years of development of steel construction	

<table>
<tr><td>Subject contents</td><td>Lecture: Activities performed before the decision about the repair or refurbishment of building object. Use of steel structures for concrete and masonry structures refurbishment. Maintenace and revalorization of monument buildings. Buildings relocation. Revalorization of public buildings. Revalorization of halls. The use of helicopters for repair and revalorization of buildings and engineering structures.

Exercises: Strengthening the structure. Anticorrosive maintenance of the structure. Design basics in terms of anti-corrosion protection. Construction cleaning. Paint and metallization coatings.</td></tr>
<tr><td>Prerequisites and co-requisites</td><td></td></tr>
<tr><td>Assessment methods and criteria</td><td>
<table>
<tr><th>Subject passing criteria</th><th>Passing threshold</th><th>Percentage of the final grade</th></tr>
<tr><td>projects results</td><td>60.0%</td><td>40.0%</td></tr>
<tr><td>written lecture test</td><td>60.0%</td><td>60.0%</td></tr>
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<tr><td>Recommended reading</td><td>
<table>
<tr><td>Basic literature</td><td>1. Bródka J.: "Przebudowa i utrzymanie konstrukcji stalowych", Mostostal-Projekt S.A., Politechnika Łódzka, Łódź 1995

2. Praca zbiorowa pod red. prof. Mariana Abramowicza: "Remonty i modernizacje budynków. Poradnik dla administratorów i zarządców nieruchomości oraz firm remontowo-budowlanych" Wyd. Verlag Dashofer, Warszawa 2003 (wydawnictwo stale aktualizowane)

3. Masłowski E., Spiżewska D.: "Wzmacnianie konstrukcji budowlanych ", Wyd. Arkady, Warszawa 2000

4. Ziółko J.: "Utrzymanie i modernizacja konstrukcji stalowych", Wyd. Arkady, Warszawa 1991</td></tr>
<tr><td>Supplementary literature</td><td>1. Agocs Z., Ziółko J., Vican J., Brodniansky J.: "Assessment and Refurbishment of Steel Structures", London, New York, Bratislava 2005

2. Magazin "Inżynieria i Budowsnictwo" (papers from the last 10 years)

3. Magazin "Stahlbau" (papers from the last 10 years)</td></tr>
<tr><td>eResources addresses</td><td>Adresy na platformie eNauczanie:</td></tr>
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<tr><td>Example issues/ example questions/ tasks being completed</td><td></td></tr>
<tr><td>Work placement</td><td>Not applicable</td></tr>
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