GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	BASIS OF COMPOSITE STRUCTURES OF STEEL AND CONCRETE, PG_00044254		
Field of study	Civil Engineering		
Date of commencement of studies	October 2021	Academic year of realisation of subject	2024/2025
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	4.0
Learning profile	general academic profile	Assessment form	assessment
Conducting unit	Department of Engineering Structures -> Faculty of Civil and Environmental Engineering		
Name and surname of lecturer (lecturers)	Subject supervisor	dr inż. Witold Knabe	
	Teachers	dr inż. Witold Knabe dr inż. Natalia Korcz-Konkol	

Lesson types and methods of instruction

Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
Number of study hours	15.0	15.0	0.0	15.0	0.0	45

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	45	5.0	50.0	100

Subject objectives

To acquire basic knowledge and skills in the design and calculation of building constructions made of steel-concrete composite members .

Learning outcomes

Course outcome	Subject outcome	Method of verification
[K6_W06] knows the rules of constructing and dimensioning of building elements of: steel, reinforced concrete, wood, masonry.	The student knows the principles of designing and dimensioning elements of slabs, beams and columns of composite steel-concrete structures	[SW2] Assessment of knowledge contained in presentation [SW3] Assessment of knowledge contained in written work and projects
[K6_U04] can correctly choose tools (analytical or numerical) to solve engineering problems in design of structures or construction process	The student has basic knowledge of the field of construction and the specialty of Composite Steel-Concrete Structures	[SU3] Assessment of ability to use knowledge gained from the subject

Subject contents

Lecture - Introduction to the subject: "Composite structures". Overview of design principles for beams, slabs and composite columns calculating. Composite buildings. Execution of composite structures.

Project - implementation of a multi-storey composite building design of a frame structure, comprising: a preliminary project design, load evaluation, calculation of the static steel frame , calculation of the composite static framework (the second order theory) and the dimensioning of a continuous composite beam and composite column.

Exercise - calculation of simple components of composite structures: beams, slabs and columns.

Prerequisites and co-requisites

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
class	60.0%	33.33%
project	60.0%	33.34%
Lecture	60.0%	33.33%

Recommended reading

Basic literature

1. Kucharczuk W.,Labocha S.: *Konstrukcje zespolone stalowo-betonowe budynków*. Arkady Warszawa 2007
2. EN 1994-1-1; Eurocod 4: Design of composite steel and conrete structures-Part 1-1: General rules for buildings

Supplementary literature

1. Bródka J. , Kozłowski A.: *Stalowe budynki szkieletowe*, OWPR 2003

	eResources addresses	Adresy na platformie eNauczanie:
Example issues/ example questions/ tasks being completed	Draw and describe the methods of joining a steel element with a concrete slab in a composite structure Give the formula for the section resistance of a tubular composite column Draw and describe one exemplary method of determining the location of the plastic neutral axis and the cross-sectional capacity of a composite beam Draw a method of experimental determination of the load capacity of pin connectors	
Work placement	Not applicable	

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