GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Structural Design, PG_00072568		
Field of study	Civil Engineering		
Date of commencement of studies	October 2026	Academic year of realisation of subject	2026/2027
Education level	second-cycle studies	Subject group	Obligatory subject group in the field of study Subject group related to scientific research in the field of study
Mode of study	Full-time studies	Mode of delivery	at the university
Year of study	1	Language of instruction	English
Semester of study	1	ECTS credits	4.0
Learning profile	general academic profile	Assessment form	assessment
Conducting unit	Department of Building Engineering -> Faculty of Civil and Environmental Engineering -> Faculties of Gdańsk University of Technology		
Name and surname of lecturer (lecturers)	Subject supervisor	dr inż. Farzin Kazemi	
	Teachers		

Lesson types

Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
Number of study hours	15.0	30.0	0.0	0.0	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	4.0	51.0	100

Subject objectives

Upon completion of this course, students will be able to understand the fundamental principles of structural mechanics and construction materials, identify and evaluate structural systems and load paths, analyse axial tension and compression, determine geometrical properties of cross-sections, calculate simple and diagonal bending stresses, understand structural connections, and assess the load-bearing capacity and stability of structural elements, including buckling and failure conditions.

Learning outcomes

Course outcome	Subject outcome	Method of verification
[K7_W01] identifies in-depth the phenomena related to the field of study and the theories describing them, indicating reliable sources of knowledge and information relevant to the issues analysed		
[K7_U04] prepares and presents the results of calculations, research and analysis in a coherent and logical manner, together with an in-depth interpretation		

<table>
<tr><td>Subject contents</td><td>Course content – lecture
Introduction, Constructional Materials

Structural Systems and Load Paths

Lateral Load-Resisting Systems

Structural Stability and Buckling

Trusses and Long-Span Structures

Composite Structures

Course content – exercises
Stress Definition-Axial Tension and Compression

Geometrical Characteristics of Section

Simple Bending

Diagonal Bending

Connections of Structural Elements

Load-bearing Capacity Limit</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></td><td>60.0%</td><td>100.0%</td></tr></table></td></tr>
<tr><td>Recommended reading</td><td><table><tr><td>Basic literature</td><td>Mechanics of Materials, 11th edition, Published by Pearson (28 January 2022) 2023, Russell C. Hibbelerics.

Mechanics of Materials, Enhanced 9th Edition 2021, Barry J. Goodno, James M. Gere.

Structural and Stress Analysis, 4th Edition 2019, T.H.G. Megson.</td></tr><tr><td>Supplementary literature</td><td>Lord, James K., Richardson, Amy, Davison, Sneha, and Dillard, David A., Strength of Materials / James K. Lord, Amy Richardson, Sneha Davison, and David A. Dillard (https://engineeringmechanicsoer.github.io/StrengthBook/?utm_source=chatgpt.com)

Anahita Khodadadi, Basic Concepts of Structural Design for Architecture Students, 2021.

Felix Udoeyo, Structural Analysis (https://tupress.temple.edu/open-access/north-broad-press/structural-analysis?utm_source=chatgpt.com)</td></tr><tr><td>eResources addresses</td><td></td></tr></table></td></tr>
<tr><td>Example issues/ example questions/ tasks being completed</td><td></td></tr>
</table>

Practical activites within the subject	Not applicable

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