GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	, PG_00062625		
Field of study	Civil Engineering		
Date of commencement of studies	October 2024	Academic year of realisation of subject	2025/2026
Education level	first-cycle studies	Subject group	
Mode of study	Part-time studies	Mode of delivery	at the university
Year of study	2	Language of instruction	Polish
Semester of study	4	ECTS credits	8.0
Learning profile	general academic profile	Assessment form	exam
Conducting unit	Department of Structural Mechanics -> Faculty of Civil and Environmental Engineering -> Faculties of Gdańsk University of Technology		
Name and surname of lecturer (lecturers)	Subject supervisor	dr hab. inż. Marcin Kujawa	
	Teachers		

Lesson types

Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
Number of study hours	30.0	20.0	0.0	10.0	0.0	60

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	60	0.0	0.0	60

Subject objectives

the analysis of statically indeterminate structures

Learning outcomes

Course outcome	Subject outcome	Method of verification
[K6_W02] Demonstrate knowledge and understanding of the processes and established methods of analysis / solution of engineering issues & problems in the field of civil engineering and of their limitations.	the student correctly defines the tasks of static and stability analysis	[SW2] Assessment of knowledge contained in presentation [SW3] Assessment of knowledge contained in written work and projects [SW1] Assessment of factual knowledge
[K6_U01] Apply knowledge and understanding of mathematics as well as sciences and engineering disciplines underlying civil engineering to solve engineering problems and issues.	the student is able to apply knowledge from basic subjects such as mathematics or physics to the subject of structural mechanics	[SU4] Assessment of ability to use methods and tools [SU1] Assessment of task fulfilment
[K6_U02] Analyse & solve engineering issues & problems in the field of civil engineering by applying appropriate and relevant established analytical, numerical and experimental methods.	the student calculates internal forces and displacements in a given statically indeterminate system	[SU5] Assessment of ability to present the results of task [SU4] Assessment of ability to use methods and tools [SU3] Assessment of ability to use knowledge gained from the subject [SU2] Assessment of ability to analyse information [SU1] Assessment of task fulfilment
[K6_U05] Conducts research (obtaining information, simulations, experimental methods) in the field of construction in order to solve specific tasks and report research results.	the student independently obtains additional information related to the subject	[SU2] Assessment of ability to analyse information

Subject contents	Course content – lecture principle of virtual work in the case of non-deformable and deformable bodiesdetermination of displacements in statically determinable systemsforce method slope and deflection method symmetry in analysis theorems to compute deflections in redundant systems stability of bar systems limit loads of bar systems
Prerequisites and co-requisites	engineering mechanics, strength of materials

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
project	50.0%	40.0%
exam	50.0%	60.0%

Recommended reading

Basic literature	Branicki C. (red.): Zadania z Mechaniki Budowli, Tom II, Układy statycznie niewyznaczalne, Skrypt PG, 1976. Chudzikiewicz A.: Statyka budowli. cz. 1, 2, Wyd. II, PWN, Warszawa 1975. Cywiński Z.: Mechanika budowli w zadaniach Tom II, PWN, 1984 (i wydania późniejsze). Dyląg Z., Krzemińska-Niemiec E.: Mechanika budowli, Tom 2 i 3, Wyd. Pol. Białostockiej 1993 (i wydania późniejsze). Dąbrowski O., Kolendowicz T.: Poradnik inżyniera i technika budowlanego mechanika budowli. Tom 3, ARKADY, Warszawa, 1998. Niezgodziński T.: *Mechanika ogólna.,* WN PWN Warszawa 2002. Nizioł J.: *Metodyka rozwiązywania zadań z mechaniki*, WNT Warszawa 2002. Misiak J.: *Mechanika techniczna. Statyka i wytrzymałość materiałów.* WNT, Warszawa 1977. Kolendowicz T.: *Mechanika budowli dla architektów*. Arkady, Warszawa 1996. Pyrak S., Szulborski K.: *Mechanika konstrukcji. Przykłady obliczeń.* Arkady, Warszawa 2001. Chmielewski T., Nowak H.: Mechanika budowli. WNT. Warszawa, 1996. Przewłócki J., Górski J.: Podstawy Mechaniki Budowli, Arkady, 2006 (i wydania późniejsze).
Supplementary literature	n/a
eResources addresses	

Example issues/ example questions/ tasks being completed	analysis of statically indeterminate systemscalculation of critical forcescalculation of ultimate loads
Practical activites within the subject	Not applicable

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