



## Subject card

Subject name and code	, PG_00062625						
Field of study	Civil Engineering						
Date of commencement of studies	October 2022	Academic year of realisation of subject			2023/2024		
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	Structural Mechanics Department -> Faculty of Civil and Environmental Engineering						
Name and surname of lecturer (lecturers)	Subject supervisor	dr hab. inż. Marcin Kujawa					
	Teachers	dr inż. Violetta Konopińska-Zmysłowska dr inż. Łukasz Smakosz dr hab. inż. Marcin Kujawa					
Lesson types and methods of instruction	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_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		
	[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			

Subject contents	principle of virtual work in the case of non-deformable and deformable bodies determination of displacements in statically determinable systems force 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		<p>Branicki C. (red.): Zadania z Mechaniki Budowli, Tom II, Układy statycznie niewyznaczalne, Skrypt PG, 1976.</p> <p>Chudzikiewicz A.: Statyka budowli. cz. 1, 2, Wyd. II, PWN, Warszawa 1975.</p> <p>Cywiński Z.: Mechanika budowli w zadaniach Tom II, PWN, 1984 (i wydania późniejsze).</p> <p>Dyłaż Z., Krzemińska-Niemiec E.: Mechanika budowli, Tom 2 i 3, Wyd. Pol. Białostockiej 1993 (i wydania późniejsze).</p> <p>Dąbrowski O., Kolendowicz T.: Poradnik inżyniera i technika budowlanego mechanika budowli. Tom 3, ARKADY, Warszawa, 1998.</p> <p>Niezdziński T.: <i>Mechanika ogólna.</i>, WN PWN Warszawa 2002.</p> <p>Nizioł J.: <i>Metodyka rozwiązywania zadań z mechaniki</i>, WNT Warszawa 2002.</p> <p>Misiak J.: <i>Mechanika techniczna. Statyka i wytrzymałość materiałów.</i> WNT, Warszawa 1977.</p> <p>Kolendowicz T.: <i>Mechanika budowli dla architektów.</i> Arkady, Warszawa 1996.</p> <p>Pyrak S., Szulborski K.: <i>Mechanika konstrukcji. Przykłady obliczeń.</i> Arkady, Warszawa 2001.</p> <p>Chmielewski T., Nowak H.: <i>Mechanika budowli.</i> WNT. Warszawa, 1996.</p> <p>Przewłócki J., Górski J.: <i>Podstawy Mechaniki Budowli</i>, Arkady, 2006 (i wydania późniejsze).</p>
	Supplementary literature		n/a
	eResources addresses		Adresy na platformie eNauczenie: Mechanika Budowli - 2024 - Moodle ID: 35872 <a href="https://enauczanie.pg.edu.pl/moodle/course/view.php?id=35872">https://enauczanie.pg.edu.pl/moodle/course/view.php?id=35872</a>
Example issues/ example questions/ tasks being completed	analysis of statically indeterminate systems calculation of critical forces calculation of ultimate loads		
Work placement	Not applicable		