



Subject card

Subject name and code	Structural Analysis , PG_00044389						
Field of study	Civil Engineering						
Date of commencement of studies	October 2021		Academic year of realisation of subject			2022/2023	
Education level	first-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	Part-time studies		Mode of delivery			blended-learning	
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 hab. inż. Marcin Kujawa dr inż. Łukasz Smakosz				
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: 30.0						
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		7.0		133.0	200
Subject objectives	Understanding of the behavior of statically indeterminate structure, differences in behavior of statically determinate and indeterminate rod structures. Ability to determine the influence lines in statically determinate systems. Ability to determine the internal forces in statically indeterminate systems.						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	[K6_U03] can analyze simple rod constructions in scope of: calculations of constructions statically determined and undetermined; determining of modal frequencies; calculations of linear stability and bearing capacity in critical and boundary states						
	[K6_W04] has knowledge of general mechanics, strength of materials and general rules of construction						
	[K6_W05] knows laws of mechanics used in rod constructions in scope of statics and stability, has an elementary knowlege on dynamics						

Subject contents	<ul style="list-style-type: none">• Determination of influence lines for statically determinate systems• Basic theorems in Structural Mechanics - the principle of virtual work for rigid and deformable body.• Fundamentals of behaviour of statically indeterminate bar structures• Force method		
Prerequisites and co-requisites	Completion of courses: General Mechanics, Strength of Materials		
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	exam	50.0%	40.0%
	project	50.0%	20.0%
	tests	50.0%	40.0%
Recommended reading	Basic literature	1. Branicki C.(red.): Zadania z Mechaniki Budowli, Tom II, Układy statycznie niewyznaczalne, Skrypt PG, 1976. 2. Cywiński Z.: Mechanika budowli w zadaniach Tom II, PWN, 1984 (i wydania późniejsze). 3. Dyląg Z., Krzemińska-Niemiec E.: Mechanika budowli, Tom 2 i 3, Wyd. Pol. Białostockiej 1993 (i wydania późniejsze). 4. Przewłocki J., Górski J.: Podstawy Mechaniki Budowli, Arkady, 2006 (i wydania późniejsze). 4. Praca zbiorowa: Mechanika Budowli z elementami ujęcia komputerowego, Tom 1 i 2, Arkady, 1984 (i wydania późniejsze). 5. Praca zbiorowa: Mechanika Budowli ujęcie komputerowe, Tom 1 i 2, Arkady, 1991/1992 (i wydania późniejsze).	
	Supplementary literature	not specified	
	eResources addresses	Adresy na platformie eNauczanie:	
Example issues/ example questions/ tasks being completed	<ul style="list-style-type: none">- influence lines of in statically determinate bar structures (straight beams, frames, trusses, mixed systems)- use the force method in static analysis of indeterminate systems- theory test concerning the material covered in class		
Work placement	Not applicable		