



## Subject card

Subject name and code	Experimental Methods in Strength of Mechanics, PG_00044008						
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	Full-time studies		Mode of delivery		at the university		
Year of study	2		Language of instruction		Polish		
Semester of study	4		ECTS credits		1.0		
Learning profile	general academic profile		Assessment form		assessment		
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. Marcin Krajewski  dr inż. Marcin Zmuda Trzebiatowski  dr hab. inż. Agnieszka Tomaszewska				
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	0.0	0.0	15.0	0.0	0.0	15
	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	15		2.0		8.0	25
Subject objectives	The purpose of the laboratory is an verification of theory of structural mechanics using model testing.						

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[K6_K02] is responsible for reliability of obtained results of research and its interpretation, formulates conclusions and describes results of own work	The student has adequate knowledge, skills, and competence to evaluate the results of his work and formulate appropriate final conclusions.	[SK5] Assessment of ability to solve problems that arise in practice [SK4] Assessment of communication skills, including language correctness [SK2] Assessment of progress of work
	[K6_W05] knows laws of mechanics used in rod constructions in scope of statics and stability, has an elementary knowledge on dynamics	The student has adequate knowledge and skills in the application of basic structural mechanics in practice.	[SW3] Assessment of knowledge contained in written work and projects [SW1] Assessment of factual knowledge
	[K6_K05] can work on his own and in a team to solve a problem	The student is competent to work both independently and in a group.	[SK5] Assessment of ability to solve problems that arise in practice [SK4] Assessment of communication skills, including language correctness [SK3] Assessment of ability to organize work [SK2] Assessment of progress of work [SK1] Assessment of group work skills
	[K6_W04] has knowledge of general mechanics, strength of materials and general rules of construction	The student has basic knowledge of structural design.	[SW3] Assessment of knowledge contained in written work and projects [SW1] Assessment of factual knowledge
Subject contents	The experiments on statistically determinant and undeterminant structures like beams, trusses and frames are individually carried out and analysed.		
Prerequisites and co-requisites	Courses: Engineering Mechanics (BSP012), Strength of Materials (BSP015) should be completed. Course Structural Analysis (BSP020) should be taken. Precondition to the executing of experiments is acquaintance with the Ref. [1].		
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Test	60.0%	30.0%
	Defences of reports (oral or written)	60.0%	70.0%
Recommended reading	<p>Basic literature</p> <p>[1] Praca zbiorowa: <i>Metody Doświadczalne w Mechanice Budowli</i>. Materiały pomocnicze do laboratorium, Gdańsk 2017</p> <p>[2] W. Nowacki: <i>Mechanika Budowli</i>, Tom 1 i 2, PWN, Warszawa 1964</p> <p>[3] A. Chudzikiewicz: <i>Statyka budowli</i>. Tom 1 i 2, PWN, Warszawa 1976</p> <p>[4] J. Przewłocki, J. Górski: <i>Podstawy Mechaniki Budowli</i>, Arkady, 2006 (i wydania późniejsze)</p> <p>[5] Z. Dyląg, E. Krzemińska-Niemiec, F. Filip: <i>Mechanika budowli</i>. Tom 1 i 2, PWN 1986</p> <p>[6] E. Bielewicz: <i>Wytrzymałość materiałów</i>, Gdańsk 2006</p> <p>[7] M. Banasiak: <i>Ćwiczenia laboratoryjne z wytrzymałości materiałów</i>. PWN, Warszawa 2000</p> <p>[8] J. Koronacki, J. Mielniczuk: <i>Statystyka dla studentów kierunków technicznych i przyrodniczych</i>. Wydawnictwo Naukowo-Techniczne, Warszawa 2001</p> <p>[9] W. Klonecki: <i>Statystyka dla inżynierów</i>. PWN, Warszawa 1999.</p>		

	Supplementary literature	Górski J., Kreja I., Skowronek M.: Support materials for lectures of Engineering Mechanics. Electronic version available for download from <a href="http://www.okno.pg.gda.pl">www.okno.pg.gda.pl</a> WILiŚ PG
	eResources addresses	Adresy na platformie eNauczanie:
Example issues/ example questions/ tasks being completed	<ul style="list-style-type: none"> <li>- discuss experiment, data preparation and support reaction determining for undetermined beam;</li> <li>- discuss methods of displacements determination in different systems, solve a given task;</li> <li>- elastic support influence on structural behaviour, experiment and theory;</li> <li>- experimental and theoretical determination of: bimoments, buckling force of a frame.</li> </ul>	
Work placement	Not applicable	