

表 GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Mechanics, PG_00038429							
Field of study	Electrical Engineering							
Date of commencement of studies	October 2021		Academic year of realisation of subject			2021/2022		
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			blended-learning		
Year of study	1		Language of instruction			Polish		
Semester of study	1		ECTS credits			3.0		
Learning profile	general academic profile		Assessment form			assessment		
Conducting unit	Department of Mechatronics and High Voltage Engineering -> Faculty of Electrical and Control Engineering						Engineering	
Name and surname	Subject supervisor	ubject supervisor dr inż. Łukasz Doliński						
of lecturer (lecturers)	Teachers		dr inż. Wiktor Waszkowiak					
			dr inż. Łukasz	z Doliński				
Lesson types and methods	Lesson type	Lecture	Tutorial	Laboratory	Projec	t	Seminar	SUM
of instruction	Number of study	30.0	15.0	0.0	0.0		0.0	45
	E-learning hours inclu	l Ided: 30.0						
	Adresy na platformie eNauczanie: MECHANIKA [2021/22] - Moodle ID: 16941 https://enauczanie.pg.edu.pl/moodle/course/view.php?id=16941							
Learning activity and number of study hours	Learning activity	Participation in classes includ plan	I didactic Participation ed in study consultation		n nours	Self-st	udy	SUM
	Number of study hours	45		4.0		26.0		75
Subject objectives	Obtaining of basic knowledge form mechanic and strength of materials							
Learning outcomes	Course outcome		Subject outcome			Method of verification		
	K6_W02					[SW1] Assessment of factual knowledge		
	K6_U02					[SU4] Assessment of ability to use methods and tools		
	K6_K01					[SK5] Assessment of ability to solve problems that arise in practice		
Subject contents	Basic concepts. The axioms of statics. Original concepts: force as a vector, zero two, the theorem on moving the vector along the acting line, resultant of two non-parallel forces in the plane, decomposition of force to the two components of given directions. The principle of action and reaction, types of bonds, equilibrium of convergent set of forces, different sets of forces. Analytical representation of force. Main vector. Conditions of equilibrium of convergent flat and spatial set of forces. Three forces theorem. A pair of forces. Moment of pair of forces with respect to the point and axis. Moment of a force with respect to the point and axis. Moment of a force with respect to the point (pole) and axis. Parallel moving forces theorem. Equilibrium of planar and spatial set of forces. Condition of planar and spatial set of forces. Centre of gravity. Centre of parallel forces. Centre of gravity of solids, plane figures and lines. Friction, static friction, the force of static friction, kinetic friction, string friction, rolling friction. Basic assumptions and hypotheses of the strength of materials, types of loads, deformations and stresses. Elements of elasticity theory. Loads classification. The de Saint-Venant principle. Fundamentals of designing structures. Moments of inertia of planar figures. Tension and compression of straight bars. Technological Shear. Torsion of rods. Bending. Strength. Bending with tension or compression. Bending and torsion. Fatigue strength. Basic concepts of fatigue strength, fatigue strength. Knowledge of algebra on secondary school level							
and co-requisites								

Assessment methods	Subject passing criteria	Passing threshold	Percentage of the final grade				
and criteria	Class tests	50.0%	50.0%				
	Midterm colloquium	50.0%	50.0%				
Recommended reading	Basic literature	 Krawczuk M.: Mechanika ciała stałego – wybrane zagadnienia. Wydawnictwo PG, Gdańsk, 2005. Niezgodziński T.: Mechaniak ogólna. WNT, Warszawa, 2008. Misiak J.: Mechanika techniczna. Statyka i wytrzymałość materiałów. WNT, Warszawa, 2006. 					
	Supplementary literature	 Bąk.R,.Stawinoga.A.: Mechanika dla niemechaników. WNT, Warszawa 2009. Niezgodziński M.E., Niezgodziński T.: Wytrzymałość materiałów. WNT, Warszawa, 2010. Osiński Z.: Mechanika ogólna. PWN, Warszawa, 1994. 					
	eResources addresses	MECHANIKA [2021/22] - Moodle ID: 16941 https://enauczanie.pg.edu.pl/moodle/course/view.php?id=16941					
Example issues/ example questions/ tasks being completed	Rigid body						
	Force systems						
	Strains/stresses						
	Constitutive equation						
	Torsion bending						
	Fatigue strentgth						
Work placement	Not applicable						