

SDAŃSK UNIVERSITY 的 OF TECHNOLOGY

Subject card

Subject name and code	Fundamentals of Ma	Fundamentals of Machine Design, PG_00041670							
Field of study	Transport and Logistics, Transport and Logistics								
Date of commencement of studies	October 2020		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			at the university			
Year of study	2		Language of instruction			English			
Semester of study	4		ECTS credits			4.0			
Learning profile	general academic profile		Assessmer	nt form	assessment				
Conducting unit	Faculty of Ocean Engineering and Ship Technology								
Name and surname of lecturer (lecturers)	Subject supervisor		dr hab. inż. Wojciech Litwin						
	Teachers		dr inż. Magdalena Kunicka						
			dr hab. inż. Wojciech Litwin						
Lesson types and methods	Lesson type	Lecture	Tutorial	Laboratory	Projec	t	Seminar	SUM	
of instruction	Number of study hours	30.0	15.0	0.0	0.0	0.0		45	
	E-learning hours included: 0.0								
	Address on the e-learning platform: https://enauczanie.pg.edu.pl/moodle/ Adresy na platformie eNauczanie:								
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	45		10.0		45.0		100	
Subject objectives	Student should have principles knowledge in Machine Elements Design								

Learning outcomes	Course outcome	Subject outcome	Method of verification			
	[K6_U05] can formulate a simple engineering task and its specification within the range of design, construction and operation of means and systems of transport	The student explains the phases and the course of the design and construction process. The student describes the basic types of machining and plastic working used in the construction of machines. Describes the construction and explains the principle of operation of detachable and non-detachable connections. The student calculates the basic types of detachable and non-detachable connections. Describes the design and calculates the shaft-hub connections.	[SU3] Assessment of ability to use knowledge gained from the subject			
	[K6_W03] has a basic knowledge on hydromechanics, thermodynamics, machine construction, ecology, materials science and electronics necessary to understand the construction and operation principles of means of marine transport	The student recognizes and calculates rolling bearings. The student recognizes and lists the types of sliding bearings. The student distinguishes between hydrostatic and hydrodynamic bearings. The student recognizes the types of mechanical transmissions. Describes the construction and explains the principle of operation of the discussed types of transmissions. The student describes and explains the construction of chain and belt transmissions	[SW1] Assessment of factual knowledge			
,	 Design, types and calculations of permanent fastening machine elements. 2. Design, types and calculations of screw joints. 3. Design, types and calculations of hub and shaft fastening. 4. Design of shafts and axles. 5. Springs. 6. Design, types and calculations of ball and roller bearings. 7. Sliding bearings. 8. Gears. 9. Angular, planetary and worm gears. 10. Chain gears. 11. Belt gears. 					
Prerequisites and co-requisites	Principles knowledge of technical drawing and mechanics.					
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade			
	test	60.0%	100.0%			
Recommended reading	Basic literature	1. Dietrich M.: Podstawy Konstrukcji Maszyn, tomy 1,2 i 3 2. Kochanowski M.: Wybrane zagadnienia z Podstaw Konstrukcji Maszyn, skrypt PG 2002r. 3. Dobrzański J.: Rysunek Techniczny Maszynowy 4. Spotts M. F., Design of Machine Elements, Prentice Hall				
	Supplementary literature	no				
	eResources addresses					
	 Ball and roller bearings, drawing, types, calculations method. Sliding bearings, drawing, types, explain P, V, PV, calculations procedure, PV diagram. Gears types. Planetary gears, description and drawing. Worm gear, properties, description, schematic. 					
Work placement	Not applicable					