GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Fundamentals of Machine Design I, PG_00039484		
Field of study	Mechatronics, Mechatronics		
Date of commencement of studies	October 2020	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	3	Language of instruction	Polish
Semester of study	5	ECTS credits	4.0
Learning profile	general academic profile	Assessment form	exam
Conducting unit	Department of Machine Design and Vehicles -> Faculty of Mechanical Engineering and Ship Technology		
Name and surname of lecturer (lecturers)	Subject supervisor	dr hab. inż. Artur Olszewski	
	Teachers	mgr inż. Tomasz Żochowski mgr inż. Marek Łubniewski dr inż. Jacek Czyżewicz dr hab. inż. Artur Olszewski	

Lesson types and methods of instruction

Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
Number of study hours	15.0	15.0	0.0	30.0	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	6.0	34.0	100

Subject objectives

A student achieves basis of machine design, construction and maintenance.

Learning outcomes

Course outcome	Subject outcome	Method of verification
K6_U05	.	[SU4] Assessment of ability to use methods and tools
K6_U06	.	[SU5] Assessment of ability to present the results of task
K6_W04	.	[SW1] Assessment of factual knowledge
K6_U07	.	[SU4] Assessment of ability to use methods and tools

Subject contents

LECTURE Mechanical transmission and drive systems. Friction cluches and brakes. Sealings. Data bases. Basis of tribology: friction in machines - advantages and disadvantages. Holistic theory in phenomenas of tribological systems. Fluid lubrication. Sliding bearings. Basis of hydrostatic drive. Machine maintenance and reliability. Safety. Diagnostics. EXCERISES Mechanical transmissions and drive systems. Clutche and brakes. Sliding bearings. Optimalization. DESIGNING Designing of simple drive systems. Engineering calculations. Technical drawings. Optimalization.

Prerequisites and co-requisites

Knowledge in field of Engineering drawing Knowledge in field of Mechanics Knowledge in field of Strength of materials Knowledge in field of Metrology

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
Oral exam	50.0%	50.0%
Project	50.0%	25.0%
Practical exercise	50.0%	25.0%

Recommended reading

Basic literature	Knowledge in field of Engineering drawing Knowledge in field of Mechanics Knowledge in field of Strength of materials Knowledge in field of Metrology

	Supplementary literature	1. Fundamentals of machine design - lectures and problems - series of handbooks, edited by GUT 2. Kochanowski M.: Podstawy konstrukcji maszyn. Wybrane zagadnienia. Gdańsk: P. Gdańska 2002. 3. Pokojski J.: Systemy doradcze w projektowaniu maszyn. Warszawa: Wyd. N-T 2005.
	eResources addresses	Adresy na platformie eNauczanie:
Example issues/ example questions/ tasks being completed		
Work placement	Not applicable	