



Subject card

Subject name and code	Mechatronics devices and drivers internal combustion engines and hybrid, PG_00024856						
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					
Mode of study	Full-time studies	Mode of delivery			at the university		
Year of study	3	Language of instruction			Polish		
Semester of study	6	ECTS credits			2.0		
Learning profile	general academic profile	Assessment form			assessment		
Conducting unit	Department of Energy and Industrial Apparatus -> Faculty of Mechanical Engineering and Ship Technology						
Name and surname of lecturer (lecturers)	Subject supervisor	dr hab. inż. Zbigniew Kneba					
	Teachers	dr inż. Sławomir Makowski dr hab. inż. Zbigniew Kneba					
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	30.0	0.0	0.0	0.0	0.0	30
	E-learning hours included: 0.0						
	Urządzenia mechatroniczne silników i napędów spalinowych i hybrydowych - W, Mechatronika, sem. 06, letni 22/23 (PG_00024856) - Moodle ID: 30560 https://enauczanie.pg.edu.pl/moodle/course/view.php?id=30560						
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	30	0.0		0.0	30	
Subject objectives	To provide basic knowledge of engines and their automation						
Learning outcomes	Course outcome	Subject outcome			Method of verification		
	K6_U05	Compares different types of vehicle drives			[SU3] Assessment of ability to use knowledge gained from the subject		
	K6_W11	He knows the basic diagrams of the control systems of internal combustion drive systems of cars			[SW1] Assessment of factual knowledge		
	K6_U06	Selects elements of engine accessories on the basis of their catalog data and engineering calculations of the processes taking place.			[SU4] Assessment of ability to use methods and tools		
K6_W08	He knows the characteristics of sensors and actuators of engine control systems.			[SW1] Assessment of factual knowledge			
Subject contents	Basics of the construction and operation of internal combustion engines. Processes inside the cylinder. Work supply system, ignition, cooling and lubrication. The characteristics of engine. Engine auxiliary.						
Prerequisites and co-requisites	Theoretical mechanics, electrical						
Assessment methods and criteria	Subject passing criteria	Passing threshold			Percentage of the final grade		
	written test	50.0%			100.0%		
Recommended reading	Basic literature	nie dotyczy					
	Supplementary literature	nie dotyczy					
	eResources addresses						
Example issues/ example questions/ tasks being completed	LPG system diagram fourth generation of						
Work placement	Not applicable						