



Subject card

Subject name and code	Mechatronic 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						
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		Adresy na platformie eNauczanie: 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				
Example issues/ example questions/ tasks being completed	LPG system diagram fourth generation of						

Work placement	Not applicable
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