



Subject card

Subject name and code	Designing of energetical installations, PG_00064778						
Field of study	Power Engineering						
Date of commencement of studies	February 2025		Academic year of realisation of subject		2025/2026		
Education level	second-cycle studies		Subject group		Specialty subject group 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	1		Language of instruction		Polish		
Semester of study	2		ECTS credits		2.0		
Learning profile	general academic profile		Assessment form		assessment		
Conducting unit	Zakład Maszyn Przepływowych -> Institute of Energy -> Faculty of Mechanical Engineering and Ship Technology						
Name and surname of lecturer (lecturers)	Subject supervisor		dr hab. inż. Marian Piwowarski				
	Teachers						
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	0.0	0.0	0.0	30.0	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		7.0		13.0	50
Subject objectives	Gain knowledge of selected energy installations and how they can be used in the energy industry.						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	[K7_U04] creatively designs or modifies, either entirely or at least in part, energy systems, machines and devices, transmission grids and internal installations, considering both technical and non-technical aspects, estimating costs and utilizing design techniques appropriate for tasks within the scope of Power Engineering		The student is able to correctly select the relevant components of the designed energy installation		[SU1] Assessment of task fulfilment		
	[K7_U15] evaluates the feasibility of advanced methods and tools for solving complex engineering tasks of a practical nature, characteristic of the field of study, and selects and applies appropriate methods and tools for this purpose		The student is able to use appropriate tools for engineering design.		[SU4] Assessment of ability to use methods and tools		
	[K7_U03] identifies and formulates task specifications in the scope of energy systems, machines and devices, transmission grids, buildings and internal installations		Student potrafi zidentyfikować oraz sformułować zadania do wykonania właściwego projektu instalacji energetycznej		[SU2] Assessment of ability to analyse information		
	[K7_W03] demonstrates structured and theory supported knowledge encompassing key issues in the field of Power Engineering, enabling design of energy systems, machines and devices, transmission grids and internal installations		Student potrafi wykorzystać zdobytą wiedzę do zaplanowania i zaprojektowania wybranej instalacji energetycznej.		[SW1] Assessment of factual knowledge		
Subject contents	Review of the most important Industrial energetic installations. Including of the auxiliary equipment to the energetic installations. Steam-water installations. Oil and fuel installations. Construction of the energetic pipelines. Pumping installations. Pneumatic and ventilation installations. Application of the pumps and compressors to the energetic installations.						

Prerequisites and co-requisites	Knowledge on thermal turbines and their thermal cycles.		
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	project	50.0%	100.0%
Recommended reading	Basic literature	Kosowski K, <i>Ship Turbine Power Plans</i> , Wyd. PG Delft University, Gdańsk 2004 Kosowski K, <i>Introduction to the theory of marine turbines</i> , Wyd. PG Delft University, Gdańsk 2004	
	Supplementary literature	Worldwide technical journals	
	eResources addresses	Adresy na platformie eNauczanie:	
	Example issues/ example questions/ tasks being completed	Why condenser cooling water pumps of closed coolig systems has larger power need for pumping compared with such pumps in open cooling systems?	
Work placement	Not applicable		

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