



## Subject card

Subject name and code	Pipelines and auxiliary equipment of energy installations (WM), PG_00042086						
Field of study	Power Engineering, Power Engineering						
Date of commencement of studies	October 2021		Academic year of realisation of subject		2023/2024		
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		English		
Semester of study	6		ECTS credits		4.0		
Learning profile	general academic profile		Assessment form		assessment		
Conducting unit	Institute of Energy -> Faculty of Mechanical Engineering and Ship Technology						
Name and surname of lecturer (lecturers)	Subject supervisor		dr hab. inż. Zbigniew Kneba				
	Teachers						
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	15.0	0.0	0.0	0.0	15.0	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		5.0		65.0	100
Subject objectives	The aim is to familiarize students with pipeline systems in industry and municipal economy						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	[K6_U14] can use properly selected methods and devices for hydraulics and hydrology, enabling determination of basic parameters characterizing the flow of medium in channels, pipelines and flow objects and can design installations, networks in the field of sanitary engineering						
	[K6_U08] can design the basic parameters of the selected technology related to energy conversion and select auxiliary devices and evaluate the project in terms of technical and economic						
	[K6_U07] is able to use basic knowledge of fluid flow machines and methods related to their design in an analytical and numerical approach to the preliminary design of an energy installation						
	[K6_W14] has a theoretical knowledge in the field of chemistry, biology, physics and mathematics including knowledge necessary to understand the technological processes related to water treatment, wastewater treatment, waste management in energy facilities, circular economy						
Subject contents	Fluids in installations. Piping materials. Pipeline connections. Seals, fittings, Examples of combustion engine installations. Installation automation						
Prerequisites and co-requisites	Fluid mechanics, thermodynamics						

Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	written test	50.0%	100.0%
Recommended reading	Basic literature	Rivero Miguel G.: Pipelines Design Applications and Safety Nova Science Publishers 2012	
	Supplementary literature	Bai Yong: Pipelines and rises Elsievres	
	eResources addresses	Adresy na platformie eNauczanie:	
Example issues/ example questions/ tasks being completed	Propose detachable connection for 3.0MPa 200C steam pipeline.Sketch a diagram of the city's gas supply system, marking the pressures in the pipelines		
Work placement	Not applicable		