



## Subject card

Subject name and code	Diploma Seminar, PG_00042079						
Field of study	Mechanical Engineering, Mechanical Engineering						
Date of commencement of studies	October 2020	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	4	Language of instruction			English		
Semester of study	7	ECTS credits			3.0		
Learning profile	general academic profile	Assessment form			assessment		
Conducting unit	Department of Control and Power Engineering -> Faculty of Ocean Engineering and Ship Technology						
Name and surname of lecturer (lecturers)	Subject supervisor	dr hab. inż. Mariusz Deja					
	Teachers	dr hab. inż. Mariusz Deja					
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	0.0	0.0	0.0	0.0	15.0	15
	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	15	3.0	32.0	50		
Subject objectives	knowledge enlargement of heat and power engineering contemporary problems						
Learning outcomes	Course outcome	Subject outcome	Method of verification				
Subject contents	technical and economic role of power engineering on land and sea; criteria and methods of heat and power production; new technologies in power engineering on land and sea; onshore and offshore wind power plants; hydrogen application in energy conversion; ecological aspects of power engineering						
Prerequisites and co-requisites	fundamentals of fluid mechanics, thermodynamics, mechanics, and mechanical engineering						
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade				
	lecture presentation	50.0%	100.0%				
Recommended reading	Basic literature	1. Steam and Gas Turbines - Principles of Operation and Design, ed. by K. Kosowski. Alstom, France, Switzerland, United Kingdom, Poland, 2007, 2. Weedy B.M., Cory B.J.: Electric Power Systems. John Wiley & Sons, Chichester, New York, Weinheim, Brisbane, Singapore, Toronto, 1998, 3. Manwell J.F., McGowan J.G., Rogers A.L.: Wind Energy Explained, Theory, Design and Application. John Wiley & Sons, LTD, Chichester, 2002					
	Supplementary literature	ASME Proceedings, Turbomachinery, PEI, Power Engineer, HRW, Applied Energy, Maritime Reporter and Engineering News, Polish Maritime Research					
	eResources addresses	Adresy na platformie eNauczanie: Diploma Seminar (PG_00042079) D&PE 2023 Winter Semester - Moodle ID: 34520 <a href="https://enauczanie.pg.edu.pl/moodle/course/view.php?id=34520">https://enauczanie.pg.edu.pl/moodle/course/view.php?id=34520</a>					

Example issues/ example questions/ tasks being completed	1. waste energy utilization, 2. role of solar and wind energy conversion in global warming problem, 3. geothermal energy utilization, 4. low and high temperature nuclear reactors application in power engineering and ship building, 5. potential role of hydrogen in decarbonized energy system, 6. heat and power cogeneration, 7. combined cycle power plants in power engineering and ship building, 8. supercritical power plants, 9. energy storage role
Work placement	Not applicable