

## SDAŃSK UNIVERSITY 的 OF TECHNOLOGY

## Subject card

Subject name and code	, PG_00058647							
Field of study	Power Engineering, Power Engineering, Power Engineering							
Date of commencement of studies	February 2023		Academic year of realisation of subject			2023/2024		
Education level	second-cycle studies		Subject group					
Mode of study	Full-time studies		Mode of delivery			at the university		
Year of study	1		Language of instruction			Polish		
-	2					- 3.0		
Semester of study	2 general academic profile		ECTS credits					
Learning profile	general academic profile		Assessment form			assessment		
Conducting unit	Technology	i	stitute of Energy -> Faculty of Mechanical Engineering and Ship					
Name and surname	Subject supervisor		dr hab. inż. Marian Piwowarski					
of lecturer (lecturers)	Teachers							
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	t	Seminar	SUM
	Number of study hours	30.0	0.0	0.0	15.0		0.0	45
	E-learning hours included: 0.0							
Learning activity and number of study hours	Learning activity	Participation i classes includ plan				Self-study SUM		SUM
	Number of study hours	45	8.0			22.0		75
Subject objectives	The purpose of the co the power system bro systems, boilers, gen	ken down into						
Learning outcomes	Course outcome		Subject outcome			Method of verification		
	[K7_W07] knows the environmental effects of energy technologies used; is familiar with the issues of effective energy management and use of renewable energy sources, has a broad and well-established knowledge of the processes of energy production and use		Students are able to assess the impact of the use of various energy technologies on the environment; they are familiar with the issues of efficient energy management and the use of renewable energy sources; They have knowledge of energy production and use processes			[SW3] Assessment of knowledge contained in written work and projects		
	l energy production ar	nd use	production an	d use processe	s			
	[K7_U05] is able to in technical and econou of the use of various technologies, includi technologies using ru energy sources and and nuclear energy	nd use ntegrate mic analysis energy ng enewable	production an Students are technical and of the use of technologies, technologies	d use processe able to perform economic anal /arious energy including using renewabl es and convent	ysis e		Assessment of a second	of ability to
	[K7_U05] is able to in technical and econor of the use of various technologies, includi technologies using ro energy sources and	nd use ntegrate nic analysis energy ng enewable conventional extended power nostics of	production an Students are t technical and of the use of v technologies, technologies energy source and nuclear e Students are reliability of po	d use processe able to perform economic anal /arious energy including using renewabl es and convent	ysis e ional e t and	analyse	e information	
Subject contents	[K7_U05] is able to in technical and econor of the use of various technologies, includi technologies using re energy sources and and nuclear energy [K7_W06] knows the issues of reliability of equipment and diagr	nd use ntegrate nic analysis energy ng enewable conventional extended f power oostics of nent power system t exchangers, e Modeling and er power system	production an Students are a technical and of the use of w technologies, technologies, technologies a energy source and nuclear e Students are a reliability of po fault diagnosis with a descript tec. Issues of m dynamics of rot m components	d use processe able to perform economic anal various energy including using renewables and conventi- nergy familiar with the power equipments in such equip- tion of its main is odeling, simula- tating machiner and subsyster	ysis e ional t and ment subsyste tition and y, powe ns. Ana	[SW1] [SW1] knowle ems, i.e d dynar r boiler lysis of	Assessment of dge	of factual nes, gas if power , steam
Subject contents Prerequisites and co-requisites	[K7_U05] is able to in technical and econor of the use of various technologies, includi technologies using re energy sources and and nuclear energy [K7_W06] knows the issues of reliability of equipment and diagr defects in this equipr Characteristics of the turbines, boilers, hear system components. superheaters and oth	nd use ntegrate nic analysis energy ng enewable conventional extended f power oostics of nent power system t exchangers, e Modeling and er power system	production an Students are a technical and of the use of w technologies, technologies, technologies a energy source and nuclear e Students are a reliability of po fault diagnosis with a descript tec. Issues of m dynamics of rot m components	d use processe able to perform economic anal various energy including using renewables and conventi- nergy familiar with the power equipments in such equip- tion of its main is odeling, simula- tating machiner and subsyster	ysis e ional t and ment subsyste tition and y, powe ns. Ana	[SW1] [SW1] knowle ems, i.e d dynar r boiler lysis of	Assessment of dge	of factual nes, gas if power , steam
Prerequisites	[K7_U05] is able to in technical and econor of the use of various technologies, includi technologies using re energy sources and and nuclear energy [K7_W06] knows the issues of reliability of equipment and diagr defects in this equipr Characteristics of the turbines, boilers, hear system components. superheaters and oth	nd use ntegrate mic analysis energy ng enewable conventional extended f power oostics of nent power system t exchangers, e Modeling and o er power system it exchangers, e	production an Students are a technical and of the use of v technologies, technologies, technologies a energy source and nuclear e Students are a reliability of po fault diagnosis with a descript tec. Issues of m dynamics of rot m components power plants. R	d use processe able to perform economic anal various energy including using renewables and conventi- nergy familiar with the power equipments in such equip- tion of its main is odeling, simula- tating machiner and subsyster	ysis e ional t and ment subsyste tition and y, powe ns. Ana	[SW1] knowle ems, i.e d dynar r boiler lysis of of powe	Assessment of dge	of factual nes, gas if power , steam avior of
Prerequisites and co-requisites	[K7_U05] is able to in technical and econor of the use of various technologies, includi technologies using re energy sources and and nuclear energy [K7_W06] knows the issues of reliability of equipment and diagr defects in this equipp Characteristics of the turbines, boilers, hear system components. superheaters and oth rotating machines, boo	nd use ntegrate mic analysis energy ng enewable conventional extended f power oostics of nent power system t exchangers, e Modeling and o er power system it exchangers, e	production an Students are a technical and of the use of v technologies, technologies, technologies a energy source and nuclear e Students are a reliability of po fault diagnosis with a descript tec. Issues of m dynamics of rot m components power plants. R	d use processe able to perform economic anal various energy including using renewables and conventi- nergy familiar with the ower equipmen s in such equip tion of its main is in such equip atting machiner and subsyster regulation and o	ysis e ional t and ment subsyst tition and y, powe ns. Ana control c	[SW1] knowle ems, i.e d dynar r boiler lysis of of powe	e information Assessment o dge e. steam turbi nic analysis c s, generators transient beh r plants.	of factual nes, gas if power , steam avior of

Recommended reading	Basic literature	<ol> <li>Machowski J., Bialek J.W., Bumby J. R. Power System Dynamics, Stability and Control Second Edition, John Wiley &amp; Sons Ltd, , Chichester, United Kingdom, 2008;</li> </ol>				
	Supplementary literature	-				
	eResources addresses	Adresy na platformie eNauczanie:				
Example issues/ example questions/ tasks being completed	<ol> <li>Simulation model of a steam boiler</li> <li>Simulation model of steam turbine</li> <li>Simulation model of a power generator</li> </ol>					
Work placement	Not applicable					