GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Thermodynamics II, PG_00040056		
Field of study	Mechanical Engineering		
Date of commencement of studies	October 2021	Academic year of realisation of subject	2022/2023
Education level	first-cycle studies	Subject group	Obligatory subject group in the field of study Subject group related to scientific research in the field of study
Mode of study	Part-time studies	Mode of delivery	blended-learning
Year of study	2	Language of instruction	Polish
Semester of study	4	ECTS credits	3.0
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 inż. Marcin Jewartowski	
	Teachers	dr inż. Marcin Jewartowski mgr inż. Piotr Jasiukiewicz dr hab. inż. Michał Klugmann dr inż. Waldemar Targański	

Lesson types and methods of instruction

Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
Number of study hours	8.0	0.0	8.0	0.0	0.0	16

E-learning hours included: 8.0

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	16	4.0	55.0	75

Subject objectives

Students acquire basic knowledge of thermodynamics in the dimension of theory and practice

Learning outcomes

Course outcome	Subject outcome	Method of verification
[K6_W09] possesses basic knowledge within the range of thermodynamics and fluid mechanics, construction and operation of heat generating devices, process equipment, including renewable energy sources, cooling and air conditioning	The student has knowledge of thermodynamics in the field of vapors, vapour and steam processes and cycles.	[SW1] Assessment of factual knowledge
[K6_U06] is able to use mathematical and physical models for analysing the processes and phenomena occurring in mechanical devices within the range of material strength, thermodynamics and fluid mechanics	The student is able to perform the energy balance of thermal devices and analyze the obtained results.	[SU4] Assessment of ability to use methods and tools

Subject contents

LECTURE: Steam and steam properties. Thermodynamic steam processes. Rankine Cycle. Efficiency of steam power plant. Linde Cycle. LABORATORY: Energy balance of heat pump. Thermal analysis of refrigerator. Analysis of compressor.

Prerequisites and co-requisites

Knowledge from course of Thermodynamics I

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
Reports and oral or written test from laboratories	56.0%	50.0%
Written test	56.0%	50.0%

Recommended reading	Basic literature	1. Pudlik W., Termodynamika. Wyd. PG, 1998. 2. Pudlik W. (red.), Termodynamika - zadania i przykłady obliczeniowe. Wyd. PG, 2000. 3. Pudlik W. (red.), Termodynamika - Laboratorium I miernictwa cieplnego. Wyd. PG, 1993. 4. Pudlik W. (red.), Termodynamika - Laboratorium II badania maszyn i urządzeń. Wyd. PG, 1991.
	Supplementary literature	1. Wiśniewski S., Termodynamika techniczna. WNT, 2005
	eResources addresses	Adresy na platformie eNauczanie: Termodynamika II, W, MiBM niestacjonarne, sem.04, letni 22/23 - Moodle ID: 28973 https://enauczanie.pg.edu.pl/moodle/course/view.php?id=28973 Termodynamika II, W, MiBM niestacjonarne, sem.04, letni 22/23 - Moodle ID: 28973 https://enauczanie.pg.edu.pl/moodle/course/view.php?id=28973
Example issues/ example questions/ tasks being completed	Describe Rankine Cycle. Describe Linde Cycle.	
Work placement	Not applicable	