GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Heat Exchangers, PG_00055494		
Field of study	Mechanical Engineering		
Date of commencement of studies	October 2023	Academic year of realisation of subject	2025/2026
Education level	first-cycle studies	Subject group	Optional 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	3	Language of instruction	Polish
Semester of study	5	ECTS credits	3.0
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	prof. dr hab. inż. Dariusz Mikielewicz	
	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	15.0	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	8.0	37.0	75

Subject objectives

To acquaint the student with the methods of determining the required heat transfer surface in exchangers and their different types

Learning outcomes

Course outcome	Subject outcome	Method of verification
[K6_W11] possesses knowledge on design, technology and manufacturing of machine parts, metrology, and quality control; knows and understands methods of measuring and calculating values describing the operation of mechanical systems, knows calculating methods applied to analyse the results of experiments	Student is able to construct exchanger performance characteristics and evaluate it in terms of different aspects	[SW3] Assessment of knowledge contained in written work and projects
[K6_W09] possesses 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	knows the application of different types of heat exchangers for various applications	[SW1] Assessment of factual knowledge
[K6_U03] is able to identify, formulate and develop the documentation of a simple design or technological task, including the description of the results of this task in Polish or in a foreign language and to present the results using computer software or other aiding tools	Performed the heat exchanger design with required calculations and drawings	[SU3] Assessment of ability to use knowledge gained from the subject [SU4] Assessment of ability to use methods and tools

<table>
<tr><td>Subject contents</td><td>1. Classification of heat exchangers

2. Applications of heat exchangers in engineering practice

3, Procedures for determining the heat transfer area using the mean logarithmic temperature difference and epsilon-NTU method

4, Mini-channel heat exchangers

5. development of performance characteristics of exchangers</td></tr>
<tr><td>Prerequisites and co-requisites</td><td>Thermodynamics, fluid mechanics, engineering graphics</td></tr>
<tr><td>Assessment methods and criteria</td><td>
<table>
<tr><th>Subject passing criteria</th><th>Passing threshold</th><th>Percentage of the final grade</th></tr>
<tr><td>projekt</td><td>60.0%</td><td>50.0%</td></tr>
<tr><td>lecture - test</td><td>60.0%</td><td>50.0%</td></tr>
</table>
</td></tr>
<tr><td rowspan="3">Recommended reading</td><td>Basic literature</td><td>1. Lecture notes</td></tr>
<tr><td>Supplementary literature</td><td>Every book from the area of heat exchangers.</td></tr>
<tr><td>eResources addresses</td><td>Adresy na platformie eNauczanie:</td></tr>
<tr><td>Example issues/ example questions/ tasks being completed</td><td></td></tr>
<tr><td>Work placement</td><td>Not applicable</td></tr>
</table>

Document generated electronically. Does not require a seal or signature.