GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Computer aided design (CAD), PG_00055891					
Field of study	Power Engineering, Power Engineering, Power Engineering					
Date of commencement of studies	October 2023		Academic year of realisation of subject		2024/2025	
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	Full-time studies		Mode of delivery		at the university	
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	Institute of Mechanics and Machine Design -> Faculty of Mechanical Engineering and Ship Technology					
Name and surname of lecturer (lecturers)	Subject supervisor		dr hab. inż. Michał Wodtke			
	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	30.0	0.0	45
	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	45	3.0	27.0	75

Subject objectives	Aquisition of knowledge and design skills with the use of CAD (Computer-Aided Design) systems.

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[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	Student uses CAD tools that use engineering algorithms of various advancement levels. Student uses program libraries and external databases.	[SU5] Assessment of ability to present the results of task [SU4] Assessment of ability to use methods and tools
	[K6_U04] is able to design a simple device structure and prepare the accompanying technical documentation, conduct a basic technical and economic analysis of energy systems, including technologies using renewable and pro-ecological energy sources as well as conventional and nuclear energy, design energy installations for them and their basic elements (including electric lighting)); select, operate and control the most commonly used electrical devices and drive systems.	Student uses CAD tools that enable 3D design, creating 3D dosumentation, creating assembly and manufacturing 2D drawings.	[SU3] Assessment of ability to use knowledge gained from the subject [SU1] Assessment of task fulfilment
	[K6_K02] is able to work in a group taking different roles in it, can think and act in an entrepreneurial way, is aware of responsibility for their own work and responsibility for teamwork	Student plans and solves steps of an assigned task, taking into account cooperation in a project group, he/she is able to cooperate with other members of the group while solving the given problem.	[SK1] Assessment of group work skills [SK3] Assessment of ability to organize work

Subject contents	Familiarization with CAD 3D software (Inventor or Solidworks or others) in the field of creating 2D and 3D technical documentation, dimensional analysis, familiarization with available databases of machine elements (both from the program library and from external sources, e.g. database of suppliers of machine components).
Prerequisites and co-requisites	Engineering graphics, Strength of Materials, basic of using CAD systems

Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Task II	60.0%	20.0%
	Task I	60.0%	20.0%
	Task III	60.0%	60.0%

Recommended reading	Basic literature	Tutorials (help systems) for 3D CAD software
		Dobrzański T.: Rysunek Techniczny Maszynowy, WNT Warszawa 2005
	Supplementary literature	Any literature for CAD software, e.g. . Jaksulski A. :Autodesk Inventor 2020 wyd. Helion.
	eResources addresses	Adresy na platformie eNauczanie:

Example issues/ example questions/ tasks being completed	Design a system that converts rotary motion to reciprocating motion for specific assumptions using the CADprogram. Perform a kinematic simulation of the proposed solution. Design, using the CAD program, the schematic functional layout by selecting elements from the program library and external databases.

Work placement	Not applicable