GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Computer aided design, PG_00055755		
Field of study	Mechanical and Medical 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	Full-time studies	Mode of delivery	at the university
Year of study	2	Language of instruction	Polish
Semester of study	4	ECTS credits	4.0
Learning profile	general academic profile	Assessment form	exam
Conducting unit	Institute of Mechanics and Machine Design -> Faculty of Mechanical Engineering and Ship Technology		
Name and surname of lecturer (lecturers)	Subject supervisor	prof. dr hab. inż. Michał Wasilczuk	
	Teachers	dr inż. Rafał Gawarkiewicz	

Lesson types and methods of instruction

Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
Number of study hours	30.0	0.0	0.0	30.0	0.0	60

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	60	5.0	35.0	100

Subject objectives

Acquisition of knowledge and design skills with the use of CAD systems.

Learning outcomes

Course outcome	Subject outcome	Method of verification
[K6_U05] he/she is able to use analytic and modelling methods to formulate and solve engineering tasks related to the mechanical-medical area	Student uses CAD tools that use the finite element method, kinematic analysis, dimensional analysis, evaluation of the technological efficiency of elements, etc.	[SU1] Assessment of task fulfilment [SU3] Assessment of ability to use knowledge gained from the subject
[K6_W07] he/she is able to design, manufacture and utilize machine parts and technical devices, he/she can prepare a technical documentation	Student uses CAD tools that enable 3D design, creating 3D documentation, creating 2D documentation. The student uses program libraries and external databases.	[SW2] Assessment of knowledge contained in presentation
[K6_W09] he/she has basic knowledge related to numerical methods and engineering software used to analyze, model and design a given mechanical system	Student uses CAD tools that use the finite element method, kinematic analysis, dimensional analysis, evaluation of the technological efficiency of elements, etc.	[SW2] Assessment of knowledge contained in presentation
[K6_U03] he/she is able to use information-communication skills to solve typical engineering tasks related to design, production and utilization	Student uses CAD tools that enable 3D design, creating 3D documentation, creating 2D documentation. The student uses program libraries and external databases.	[SU1] Assessment of task fulfilment [SU3] Assessment of ability to use knowledge gained from the subject

Subject contents

Familiarization with CAD software (Inventor or Solidworks or others) in the field of creating 2D and 3D technical documentation, FEM strength analysis, kinematic analysis, 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). Getting acquainted with AutoCAD software in the field of creating flat technical documentation.

Prerequisites and co-requisites

Engineering Drawing, Strength of Materials, Fundamentals of Machine Design, basics of using CAD programs

Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Exam	60.0%	40.0%
	Task III	60.0%	15.0%
	Task II	60.0%	15.0%
	Task I	60.0%	15.0%
	Task IV	60.0%	15.0%
Recommended reading	Basic literature	Tutorials (help systems) for Inventor, Solidworks, AutoCad, etc.	
	Supplementary literature	Any literature for Inventor, Soli Dworks, AutoCad, etc.	
	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 CAD program. Perform a kinematic simulation of the proposed solution.Perform a strength analysis for selected elements from the first task using the CAD programDesign, using the CAD program, the schematic functional layout by selecting elements from the program library and external databases.		
Work placement	Not applicable		

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