GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	, PG_00056088						
Field of study	Mechanical and Medical Engineering						
Date of commencement of studies	October 2022		Academic year of realisation of subject	2024/2025			
Education level	first-cycle studies		Subject group				
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	2.0			
Learning profile	general academic profile		Assessment form	assessment			
Conducting unit	Zakład Konstrukcji Maszyn i Inzynierii Medycznej -> Institute of Mechanics and Machine Design -> Faculty of Mechanical Engineering and Ship Technology						
Name and surname of lecturer (lecturers)	Subject supervisor		dr inż. Rafał Gawarkiewicz				
	Teachers						
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	0.0	0.0	0.0	30.0	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		0.0	0.0		30
Subject objectives	Skills of advanced design development with use of CAD software with particular emphasis on strength and stiffness and modal analyses.						

Learning outcomes

Course outcome	Subject outcome	Method of verification
[K6_W09] he/she has basic knowledge related to numerical methods and engineering software used to analyze, model and design a given mechanical system	The student uses CAD program tools that use the finite element method.	[SW1] Assessment of factual knowledge
[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 identifies phenomena in elements of machines. Student creates computational models used in machine design. Student analyses and selects suitable computational models of separable and inseparable joints. Student identifies loadings and stress states at critical places of analyzed machine elements, and estimates their safety.	[SU1] Assessment of task fulfilment
[K6_U08] he/she is able to assess whether proposed methods and tools can be used in practice to solve simple engineering task related to machine design, manufacturing and utilization	Student identifies phenomena in elements of machines. Student creates computational models used in machine design. Student analyses and selects suitable computational models of separable and inseparable joints. Student identifies loadings and stress states at critical places of analyzed machine elements, and estimates their safety.	[SU3] Assessment of ability to use knowledge gained from the subject
[K6_U07] he/she is able to identify the problem and list simple engineering tasks to solve this problem in practice, he/she is able to critically analyze the proposed technical solutions and conclude whether these solutions can be implemented to solve problems related to design of mechanical devices and mechanical-medical devices	Student identifies phenomena in elements of machines. Student creates computational models used in machine design. Student analyses and selects suitable computational models of separable and inseparable joints. Student identifies loadings and stress states at critical places of analyzed machine elements, and estimates their safety.	[SU1] Assessment of task fulfilment
[K6_W07] he/she is able to design, manufacture and utilize machine parts and technical devices, he/she can prepare a technical documentation	Student identifies phenomena in elements of machines. Student creates computational models used in machine design. Student analyses and selects suitable computational models of separable and inseparable joints. Student identifies loadings and stress states at critical places of analyzed machine elements, and estimates their safety. Student draws engineering drawings with the help of the CAD software.	[SW1] Assessment of factual knowledge

Subject contents

Development of skills of using of advanced tools available in CAD software (Inventor - in the field of creating 2D and 3D technical documentation, strength and modal analyses; the possibility of using predefined machine elements from the program library. AutoCAD - in the field of creating 2D technical documentation).

Prerequisites and co-requisites

Engineering graphics, Mechanics, Strength of materials, Mechanical design and basic skills of using CAD software like Inventor and AutoCAD programme.

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
Test of the qualifying I	50.0%	50.0%
Test of the qualifying II	50.0%	50.0%

Recommended reading

Basic literature	Help system of used CAD software.
Supplementary literature	Any literature concerning used CAD programmes.
eResources addresses	Adresy na platformie eNauczanie:

Example issues/ example questions/ tasks being completed

Work placement

Not applicable