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 2021	Academic year of realisation of subject	2023/2024
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. Grzegorz Rotta	
	Teachers	mgr inż. Marek Łubniewski dr inż. Grzegorz Rotta	

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						
	Additional information: in the event of a pandemic via ZOOM						

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_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
	[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_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_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_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
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 II	50.0%	50.0%
	Test of the qualifying I	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: Zaawansowane metody projektowania urządzeń medycznych - Moodle ID: 34671 https://enauczanie.pg.edu.pl/moodle/course/view.php?id=34671	
Example issues/ example questions/ tasks being completed			
Work placement	Not applicable		

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