



Subject card

Subject name and code	Modelling in machine design, PG_00057377						
Field of study	Mechanical Engineering, Space and Satellite Technologies						
Date of commencement of studies	February 2024		Academic year of realisation of subject		2023/2024		
Education level	second-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	1		Language of instruction		English		
Semester of study	1		ECTS credits		4.0		
Learning profile	general academic profile		Assessment form		assessment		
Conducting unit	Faculty of Mechanical Engineering						
Name and surname of lecturer (lecturers)	Subject supervisor		prof. dr hab. inż. Michał Wasilczuk				
	Teachers		prof. dr hab. inż. Michał Wasilczuk 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		10.0		30.0	100
Subject objectives	Aim of the course is presenting information and teaching skills applied in creating models in design problems						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	[K7_U03] is able to prepare construction, technological and operational documentation in compliance with appropriate standards, including technical drawings in CAD 2D and 3D systems		Student prepares parts of technical documentation during his project		[SU1] Assessment of task fulfilment		
	[K7_W05] possesses profound knowledge on the operation of complex systems and mechanical devices, including process equipment		Student analyses the operation of mechanical systems		[SW1] Assessment of factual knowledge		
	[K7_U06] when solving engineering problems on design, technology and operation of machines is able to assess and classify typical methods and tools, define systemic and ex-technical aspects using modern calculating methods and design tools or modifying the current ones		Student uses contemporary analytical tools during execution of the task		[SU4] Assessment of ability to use methods and tools		
Subject contents	Calculation models od machine elements - comparison of traditional engineering models with their equivalents in FEM						
Prerequisites and co-requisites	Mechanics, strength of materials, machine design, technical drawing						
Assessment methods and criteria	Subject passing criteria		Passing threshold		Percentage of the final grade		
	FEM laboratory		50.0%		40.0%		
	laboratory		100.0%		10.0%		
	lecture - exam		50.0%		50.0%		

Recommended reading	Basic literature	Shigley - Handbook of Machine Design
	Supplementary literature	TA Stolarski Tribology in Machine Design
	eResources addresses	Adresy na platformie eNauczanie: Modelling in machine design (PG_00057377) - Moodle ID: 37547 https://enauczanie.pg.edu.pl/moodle/course/view.php?id=37547
Example issues/ example questions/ tasks being completed	compare te results obtained by enginnering calculations with the results of FEM calculations	
Work placement	Not applicable	