



Subject card

Subject name and code	Fundamentals of Machine Design III, PG_00040190						
Field of study	Mechanical Engineering, Mechanical Engineering						
Date of commencement of studies	October 2020	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	3	Language of instruction			English None		
Semester of study	5	ECTS credits			3.0		
Learning profile	general academic profile	Assessment form			assessment		
Conducting unit	Department of Machine Design and Vehicles -> Faculty of Mechanical Engineering and Ship Technology						
Name and surname of lecturer (lecturers)	Subject supervisor	dr inż. Grzegorz Rotta					
	Teachers	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						
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	6.0		39.0	75	
Subject objectives	Learning the methodology of designing simple mechanical devices Extending the knowledge and skills to use basic calculation methods for typical machine elements and the methods of selecting catalog parts for the designed technical device Learning how to effectively create technical documentation using theoretical knowledge and CAD software						

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[K6_U03] is able to identify, formulate and develop the documentation of a simple design or technological task, including the description of the results of this task in Polish or in a foreign language and to present the results using computer software or other aiding tools	Is able to identify, formulate and develop the documentation of a simple design or technological task, including the description of the results of this task in Polish or in a foreign language and to present the results using computer software or other aiding tools	[SU5] Assessment of ability to present the results of task [SU1] Assessment of task fulfilment
	K6_U07	Is able to design a simple structure, mechanical device, subassembly or test rig using appropriate methods and tools, taking into account the given design criteria	[SU1] Assessment of task fulfilment
	K6_U11	Is able to analyze the operation of devices and compare design solutions using safety, environmental, economic and legal criteria	[SU1] Assessment of task fulfilment
	K6_W08	Has basic knowledge of the methodology of designing machine parts, mechanical devices, selection of construction materials, manufacturing and operation, including their life cycle	[SW3] Assessment of knowledge contained in written work and projects
K6_W04	Has knowledge of mechanics, including the process of modeling mechanical systems, statics, kinematics and dynamics of rigid bodies as well as basic knowledge in the field of vibrations	[SW3] Assessment of knowledge contained in written work and projects	
Subject contents	<p>Main aim is to design a simple machine that performs one simple operation. The designed machine may include such elements as: screw connections, welded connections, shafts and axles, couplings, gears, brakes, bearings, flexible elements.</p> <p>The project will require basic engineering calculations for typical machine elements</p> <p>As part of the project, it will also be necessary to prepare drawing documentation, i.e. assembly drawing and 3-5 working drawings</p> <p>Everything is to be documented in a single report</p>		
Prerequisites and co-requisites	The content of lectures, computational and computer exercises as well as a structural design in Fundamentals of Machine Design I and Fundamentals of Machine Design II subjects		
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Final report submitted	50.0%	40.0%
	Weekly assessment of current work progress	50.0%	60.0%
Recommended reading	Basic literature	A set of scripts from the Fundamentals of Machine Design published by the Gdańsk University of Technology	
		The content of lectures, computational and computer exercises as well as a structural design in Fundamentals of Machine Design I and Fundamentals of Machine Design II subjects	
	Supplementary literature	- A set of books "Fundamentals of Machine Design" published by PWN, Warsaw-PKM, edited by M. Dietrich, PWN, Warsaw - Any works on Fundamentals of Machine Design in Polish and in English	
	eResources addresses		

Example issues/ example questions/ tasks being completed	<ul style="list-style-type: none">- Development of various device concepts - Choosing the best concept - Design and verification calculations - Preparation of drawing documentation - assembly drawing and executive drawings
Work placement	Not applicable