



Subject card

Subject name and code	Computer-aided design, PG_00055059						
Field of study	Management and Production 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			5.0		
Learning profile	general academic profile	Assessment form			exam		
Conducting unit	Institute of Manufacturing and Materials Technology -> Faculty of Mechanical Engineering and Ship Technology						
Name and surname of lecturer (lecturers)	Subject supervisor	dr inż. Tomasz Seramak					
	Teachers	dr inż. Tomasz Seramak					
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		60.0	125
Subject objectives	Acquainting with the basics of designing with the use of specialized CAD software. Preparing for practical use of selected CAD class programs. Showing dependencies between CAD and CAM softwares.						

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[K6_U04] is able to develop documentation in the area of preparation, implementation and control of production processes in Polish and in a foreign language considered basic for scientific fields, is able to identify and formulate the basic objectives of quality management in the product life cycle, is able to use information and communication techniques appropriate to the implementation of tasks typical in engineering activities including preparation, production and supervision of the manufacturing process	He knows the rules of creating a technical drawing and knows how to use them when creating a drawing in the CAD system.	[SU1] Assessment of task fulfilment [SU3] Assessment of ability to use knowledge gained from the subject
	[K6_W09] knows the general principles of creating and developing forms of individual entrepreneurship and stimulating employee creativity, using knowledge in the field of design, production and operation of machinery and technical devices	Can estimate the cost of manufacturing a part by measuring the mass of a solid file in the CAD system and by analyzing the execution time in the CAM system.	[SW1] Assessment of factual knowledge [SW3] Assessment of knowledge contained in written work and projects
	[K6_K01] feels the need for self-realization by learning throughout life, is looking for modern and innovative solutions in their actions, is able to think creatively and act in an entrepreneurial way	Can work in several CAD systems and make changes to files created in other CAD software.	[SK2] Assessment of progress of work [SK5] Assessment of ability to solve problems that arise in practice
	[K6_W03] has knowledge of the design record (the record structure) for the preparation of the manufacturing process documentation and basic knowledge of the implementation and management of production systems, including the principles of designing machine parts and manufacturing technologies using information techniques	He can draw and apply the industry marking system of fixturing and is able to apply in an appropriate way.	[SW1] Assessment of factual knowledge [SW2] Assessment of knowledge contained in presentation
	[K6_W07] has knowledge of methods, errors and measurement uncertainty, product geometry specifications and assessment of their accuracy	He knows the rules of describing workpieces with the help of markings of shape tolerances, dimensions and work surface quality and knows how to apply them in an appropriate way.	[SW2] Assessment of knowledge contained in presentation [SW1] Assessment of factual knowledge
	[K6_U09] can use analytical techniques as well as computer simulation and numerical analysis methods in solving specific problems in the field of production engineering, is able to carry out simple engineering tasks related to the production of typical machine parts using widely understood techniques and computer tools, is able to select and apply appropriate methods of project planning and control courses with the use of computer aided means	Is able to prepare a 3D solid simulation of the assembly movement in the CAD system and perform a simple simulation of manufacturing in the CAM system	[SU1] Assessment of task fulfilment [SU2] Assessment of ability to analyse information
Subject contents	LECTURE: Introduction to computer aided design. Creating simple drawing objects. Location of points. Basic editing commands. Complex editing commands. Text input. Create 3D solid features of a part and assembly. LABORATORY Introduction. Creating simple drawing objects: lines, circles and arcs, polylines. Location of points. Basic editing commands. Complex editing commands. Text input. Object dimensioning. Reminder of the rules of creating of engineering drawings on the example of a manufactured workpiece. Reminding the principles of machine drawing on the example of an executive drawing. Creating of 3D solids of parts and assemblies in CAD system..		
Prerequisites and co-requisites	Knowledge of the basics of technical drawing, knowledge of the basics of computer operating systems, the ability to manage the system of files and directories (folders), ability to use office software.		

Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Preparing of presentation	60.0%	50.0%
	Project	60.0%	50.0%
Recommended reading	Basic literature	User instructions	
	Supplementary literature	Scientific articles discussing the issue of CAD systems.	
	eResources addresses		
Example issues/ example questions/ tasks being completed	<p>Describe the use of CAD systems in various applications.</p> <p>Describe the methodology of preparing a production drawing.</p> <p>Describe the elements used on a machine technical drawing.</p> <p>Draw the indicated element in the CAD system (e.g. of crankshaft).</p>		
Work placement	Not applicable		