GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Computer Aided Design (CAD), PG_00061194
Field of study	Mechanical Engineering

Date of commencement of studies	October 2023	Academic year of realisation of subject	2024/2025
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	assessment

Conducting unit	Institute of Mechanics and Machine Design -> Faculty of Mechanical Engineering and Ship Technology

Name and surname of lecturer (lecturers)	Subject supervisor	prof. dr hab. inż. Michał Wasilczuk
	Teachers	

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	Acquisition of knowledge and design skills with the use of CAD systems.

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[K6_W08] possesses knowledge including the methodology of designing machine parts, mechanical devices, selection of construction materials, manufacturing and operation, with the lifetime cycle	Student is acquainted with the CAD methodology	[SW1] Assessment of factual knowledge
	[K6_W11] possesses knowledge on design, technology and manufacturing of machine parts, metrology, and quality control; knows and understands methods of measuring and calculating values describing the operation of mechanical systems, knows calculating methods applied to analyse the results of experiments	this subject does not cover this effect - AMchine design is a relevant courser	[SW1] Assessment of factual knowledge
	[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	Student uses CAD tools that enable 3D design, creating 3D documentation, creating 2D documentation. Student uses engineering algorithms of various levels of advancement.	[SU1] Assessment of task fulfilment [SU3] Assessment of ability to use knowledge gained from the subject
	[K6_U07] is able to design a typical construction of a mechanical device, component or a testing station using appropriate methods and tools, adhering to the set usage criteria	Student uses CAD software tools that enable 3D design. Student uses CAD tools that use the finite element method, kinematic analysis, dimensional analysis, etc.	[SU1] Assessment of task fulfilment [SU3] Assessment of ability to use knowledge gained from the subject

Subject contents	Familiarization with CAD software (Inventor or Solidworks or others) in the field of creating 2D and 3D technical documentation, FEM strength analysis, kinematic analysis, dimensional analysis, familiarization with available databases of machine elements (both from the program library and from external sources, e.g. database of suppliers of machine components). Getting acquainted with AutoCAD software in the field of creating flat technical documentation.
Prerequisites and co-requisites	Engineering Drawing, Strength of Materials, Fundamentals of Machine Design, basics of using CAD programs

Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Design task II	100.0%	0.0%
	Exam	60.0%	100.0%
	Design task I	100.0%	0.0%

Recommended reading	Basic literature	Tutorials (help systems) for Inventor, Solidworks, AutoCad, etc.
	Supplementary literature	Any literature for Inventor, SolidWorks, AutoCad, etc.
	eResources addresses	Adresy na platformie eNauczanie:

Example issues/ example questions/ tasks being completed	Design a system that converts rotary motion to reciprocating motion for specific assumptions using the CADprogram. Perform a kinematic simulation of the proposed solution.Perform a strength analysis for selectedelements from the first task using the CAD programDesign, using the CAD program, the schematicfunctional layout by selecting elements from the program library and external databases.
Work placement	Not applicable

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