GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	CDIO project II, PG_00050285						
Field of study	Mechanical Engineering						
Date of commencement of studies	October 2023		Academic year of realisation of subject	2025/2026			
Education level	first-cycle studies		Subject group	Optional subject group			
Mode of study	Full-time studies		Mode of delivery	at the university			
Year of study	3		Language of instruction	English			
Semester of study	6		ECTS credits	4.0			
Learning profile	general academic profile		Assessment form	assessment			
Conducting unit	Division of Mechanical Vehicles and Military Technology -> Institute of Mechanics and Machine Design -> Faculty of Mechanical Engineering and Ship Technology -> Faculties of Gdańsk University of Technology						
Name and surname of lecturer (lecturers)	Subject supervisor	dr hab. inż. Piotr Mioduszewski					
	Teachers	dr hab. inż. Piotr Mioduszewski					
Lesson types	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		5.0	65.0	100	
Subject objectives	Learning the skills necessary for designing, building, testing, implementing, and operating real products (machines and devices). Gaining technical knowledge, communication skills, teamwork, and problemsolving. Verification of the theoretical and practical approach in the design process.						

Learning outcomes

Course outcome	Subject outcome	Method of verification
[K6_U02] is able to work in a team and individually, also in multi-disciplinary teams, is able to draw a plan of completing a construction or technological design, shows self-learning abilities	The student is able to create a project team, organize the work of the team and efficiently manage it. In particular: define roles in the project, establish competences, tasks and set goals and distribution of work.	[SU1] Assessment of task fulfilment
[K6_K01] is aware of the need for complementing the knowledge throughout the whole life, is able to select proper methods of teaching and learning, critically assesses the possessed knowledge; is aware of the importance of professional conduct and following the rules of professional ethics; is able to show resourcefulness and innovation in the realisation of professional projects	The student is aware of the need for lifelong learning, improving professional, personal and social competences resulting from the changing reality and the diversity of projects carried out. The student is ready to undertake work related to design.	[SK5] Assessment of ability to solve problems that arise in practice [SK1] Assessment of group work skills [SK3] Assessment of ability to organize work
[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	The student is able to discuss the subsequent phases and tasks of the project life cycle. Is able to create technical documentation for individual project tasks. The student knows what computer programs can be used to support the creation of individual documentation elements.	[SU3] Assessment of ability to use knowledge gained from the subject [SU4] Assessment of ability to use methods and tools
K6_U01	The student is able to independently obtain information from various sources necessary to solve the problems posed in the project.	[SU2] Assessment of ability to analyse information [SU3] Assessment of ability to use knowledge gained from the subject
K6_U09	The student is able to develop a technological process for manufacturing typical structures and mechanical parts and estimate its costs.	[SU1] Assessment of task fulfilment [SU5] Assessment of ability to present the results of task

Subject contents

Course content – project
Design and production stages: adopting a team project plan, determining the necessary resources and how to obtain them. Designing in accordance with the principles of the design thinking process: empathy, defining the problem, generating ideas, building prototypes and testing. Evaluating designs and presentations.

Prerequisites and co-requisites

Knowledge of basic issues in the field of product modeling in CAD, machine manufacturing processes including mechanical processing technologies and 3D printing for their components, and information techniques.

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
Physical model of the energy system	50.0%	30.0%
Multimedia presentation	100.0%	30.0%
Teamwork	50.0%	40.0%

Recommended reading

Basic literature	Dietrich M.: Podstawy konstrukcji maszyn. Wydawnictwo NaukowoTechniczne, Warszawa, 1999 Edward Crawley, Johan Malmqvist, Sören Östlund, Doris Brodeur: Rethinking Engineering Education, The CDIO Approach, 2007. Verganti Roberto: Design Driven Innovation: Changing the Rules of Competition by Radically Innovating What Things Mean, 2009. Tim Brown: Change by Design: How Design Thinking Transforms Organizations and Inspires Innovation, 2009.
Supplementary literature	Chrościcki Zbigniew: Zarządzanie projektem zespołami zadaniowymi, Wyd. C.H. Beck, Warszawa 2001. Trocki Michał: Metodyki zarządzania projektami, Bizarre, Warszawa 2011.
eResources addresses	

Example issues/ example questions/ tasks being completed	Design and implementation of a functional model of a device, machine or vehicle. Presentation of a multimedia presentation describing the design, construction and principle of operation.
Practical activites within the subject	Not applicable

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