GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Engineering Design - group project I, PG_00048409						
Field of study	Ocean Engineering						
Date of commencement of studies	February 2023		Academic year of realisation of subject	2022/2023			
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	2.0			
Learning profile	general academic profile		Assessment form	assessment			
Conducting unit	Department of Theory and Ship Design -> Faculty of Mechanical Engineering and Ship Technology						
Name and surname of lecturer (lecturers)	Subject supervisor		dr hab. inż. Przemysław Krata				
	Teachers						
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	0.0	0.0	0.0	15.0	0.0	15
	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	15		5.0	30.0		50
Subject objectives	Acquiring the basic principles of working in a group, the ability to organize team work, as well as reporting and documenting completed tasks Motivation to acquire knowledge from other subjects, through the need to use it in practice. Developing skills in conceptual design and finding and analyzing information by performing state of the art research in a selected field.						

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[K7_W08] has knowledge necessary to understand economical, social and legal conditions and effects of engineering activities, knows general principles of initiating and develop forms of private entrepreneurship and has knowledge on the protection of industrial and intellectual property and on the copyrights	Student knows and understands deeply the fundamental dilemmas of modern civilization, the main development trends of scientific disciplines relevant to the field of education	[SW3] Assessment of knowledge contained in written work and projects
	[K7_U01] can obtain information from literature, databases and other sources, can verify and organize the obtained information, interpret them and form conclusions and justified opinions	The student is able to define detailed technical requirements on the basis of general rules contained in the regulations.	[SU5] Assessment of ability to present the results of task
	[K7_W09] has organized, widened knowledge on the principles of sustainable development	The student knows and applies the criteria of sustainable development during the implementation of the project	[SW3] Assessment of knowledge contained in written work and projects
	[K7_K04] can properly define the priorities for the realization of a specified objective or task, can correctly identify and solve dilemmas associated with the job	The student defines the strategic and detailed goals for the selected project task, and the methods of their implementation.	[SK5] Assessment of ability to solve problems that arise in practice
	[K7_U06] when forming and solving design tasks can see their non-technical aspects, including environmental, economical and legal ones. Applies HSE rules and regulations	The student defines and applies the economic and safety criteria for the project.	[SU2] Assessment of ability to analyse information
	[K7_U08] can manage the work of a team, coordinate the conducting of a design or research task	The student separates and plans detailed tasks included in the project and correctly reports and documents the work done.	[SU5] Assessment of ability to present the results of task
Subject contents	**1. Analysis of the needs, requirements engineering** **2. Analysis of the state of the art and dominant solutions** **3. Suggestions for several concepts and choosing one to implement** **4. Technical design (the level of detail depends on the topic, the size of the group - is determined by the teacher)** **a. Task selection (components ready for purchase and for design)** **b. Organization of group work (IT infrastructure) and task allocation** **c. Selection of tools (2D / 3D, CAE, CAM)** **d. Project implementation (up to the teachers decision)** **5. Patent application (optional)** **6. Public presentation** **7. Physical implementation of the project (next semester, optional - at the discretion of the lecturer)**		
Prerequisites and co-requisites	**Not applicable, the trainer can define his own requirements (e.g. ability to use CAD / CAE software, specific licenses - e.g. diving, welding, motorboat), depending on selected topic.**		

Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Teacher's subjective judgement	50.0%	25.0%
	Public presentation of the project	50.0%	25.0%
	Delivery of prpoject report	75.0%	50.0%
Recommended reading	Basic literature	**According to the topic of the project, given by the teacher**	
	Supplementary literature	**According to the topic of the project, given by the teacher**	
	eResources addresses	Adresy na platformie eNauczanie:	
Example issues/ example questions/ tasks being completed	1. Concept design of a power plant based on fuel cells. 2. Concept design of a merchant ship for self-navigation in the Arctic zone (icebreaker function) 3. Optimization of ship and yacht propulsion and control elements, such as: • rudder blade • keel shape • hull form • hydrofoil airfoils • propeller • ...		
Work placement	Not applicable		