

。 GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Introduction to Ship Design, PG_00060587								
Field of study	Design and Construction of Yachts								
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 de	Mode of delivery		at the university			
Year of study	2		Language of instruction			Polish For interested students, it is possible to choose an individual topic for the design of a vessel other than a multi-purpose general cargo ship.			
Semester of study	3		ECTS credits			7.0			
Learning profile	general academic profile		Assessmer	Assessment form			assessment		
Conducting unit	Institute of Ocean Engineering and Ship Technology -> Faculty of Mechanical Engineering and Ship Technology								
Name and surname	Subject supervisor		dr inż. Cezary Żrodowski						
of lecturer (lecturers)	Teachers		dr inż. Ewelina Ciba						
			dr inż. Cezary Żrodowski						
			dr inż. Artur Karczewski						
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Projec	t	Seminar	SUM	
	Number of study hours	45.0	0.0	0.0	30.0		0.0	75	
	E-learning hours included: 0.0								
	Additional information: Possible credit based on the projects of watercraft carried out as part of the work of the scientific club KSTO KORAB								
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	75		8.0		92.0		175	
Subject objectives	Introduction to:								
	 Ship design theory, Practical implementation of the design process, 								
	3. Professional vocabulary in Polish and English								
	4. Most important software tools								
	Implementation of a parametric project at the concept level.								

Learning outcomes	Course outcome	Subject outcome	Method of verification			
	[K6_W05] has well-organised knowledge in the field of design, construction, and operation of yachts	The student knows and implements the ship design process, described by the Evans spiral and hers younger derivatives (V-model)	[SW3] Assessment of knowledge contained in written work and projects			
	[K6_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 analyze the constrains of the shipping route of the designed vessel, based on independently selected, publicly available sources.	[SU2] Assessment of ability to analyse information [SU4] Assessment of ability to use methods and tools [SU5] Assessment of ability to present the results of task			
	[K6_W06] has well-organised knowledge of engineering methods and design tools enabling the conducting of projects in the field of construction and operation of yachts	The student is able to choose the appropriate CAD program for the implementation of the indicated phase of the design process, and describe its advantages and disadvantages in relation to other available solutions.	[SW2] Assessment of knowledge contained in presentation			
	[K6_U05] able to formulate a simple engineering task and its specification in the field of yacht design, construction, and operation	The student is able to formulate equations of basic design balances, based on descriptive functional requirements.	[SU3] Assessment of ability to use knowledge gained from the subject [SU1] Assessment of task fulfilment			
Subject contents	1. Genesis of ship design theory methods and design evaluation criteria.					
	2. Mathematical modelling, idealization of problems and algorithmization of the methodology of the ship design process.					
	3. Tools useful to support design work.					
	4. Iterative nature of the initial design process of ships design spiral stages of parametric and geometric design.					
	5. Professional terminology used in the Polish shipbuilding industry, defining basic concepts and parameters used in ship design.					
	6. Principles of ship design calculations, units of measurement, mathematical structural and non-structural models, clear presentation of calculations and charting.					
	7. Selected physical laws, theoretical and empirical analytical relationships used in the methodology of preliminary design of ships and yachts.					
	8. Introduction to the issues of determining design solutions that meet the criteria of functionality and technical safety of ships and yachts.					
	9. Formulation of basic balance equations and design constraints for cargo ships and recreational yachts.					
	10. Designing the main parameters of the ship on the example of a multipurpose general cargo ship.					
	11. Principles of dividing the hull interior into compartments.					
	12. Calculations checking the buoyancy, initial stability and registered tonnage of the designed ship.					

Prerequisites and co-requisites	Basic ability to use MS Office programs (Word and Excel) and the ability to make a drawing of the General Plan in any CAD program. Knowledge of one of the parametric 3D CAD systems recommended					
Assessment methods	Subject passing criteria	Passing threshold	Percentage of the final grade			
and criteria	Project	75.0%	50.0%			
	Written test passing the lecture	50.0%	50.0%			
Recommended reading	Basic literature	 Papanikolaou A.: Ship Design, Methodologies of Preliminary Design, Springer Netherlands, 2014 Michalski J.P.: Podstawy teorii projektowania okrętów. Wydawnictwo PG, 2013 Staszewski J., Paczesniak J.: Projektowanie Okretów, I, II, II skrypt Politechniki Gdańskiej. Buczkowski L.: Podstaw Budownictwa Okrętowego, I, II, III t skrypt Politechniki Gdańskiej. Milewski J.: Projektowanie i budowa jachtów żaglowych. Go 1998 				
	Supplementary literature eResources addresses	 Watson D.: Practical ship design , Amsterdam, Elsevier, 1998 Schneekluth H.: Ship design for efficiency and economy, London,Butterworths, 1987. Piskorz-Nałecki J.: Projektowanie statków morskich. Szczecin, Wyd. PS, 1982. Semenov I., Sanecka K.: Teoria projektowania statków, Szczecin, Wyd. PS, 2001. Adresy na platformie eNauczanie: Podstawy projektowania okrętów, W, P, OKM, PBiJ, sem.03, zimowy 				
		24/25 - Moodle ID: 39638 https://enauczanie.pg.edu.pl/moodle/course/view.php?id=39638				
Example issues/ example questions/ tasks being completed	Test: 1. Podaj definicję i nazwę w języku angielskim: owrężą, tonażu rejestrowego, podoblenia. 2. Jaki wpływ ma kształt dziobu na dzielnośc morksą statku? 3. Co projektant może zrobić w przypadku braku/nadmiaru wolnej burty?					
Work placement	Not applicable					

Document generated electronically. Does not require a seal or signature.