GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Designing architecture of vessels, PG_00064997		
Field of study	Projektowanie architektury środków transportu		
Date of commencement of studies	February 2025	Academic year of realisation of subject	2025/2026
Education level	second-cycle studies	Subject group	Specialty subject group 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	Polish
Semester of study	2	ECTS credits	3.0
Learning profile	general academic profile	Assessment form	assessment
Conducting unit	Division of Hydromechanics and Ship Design -> Institute of Naval Architecture -> Faculty of Mechanical Engineering and Ship Technology -> Faculties of Gdańsk University of Technology		
Name and surname of lecturer (lecturers)	Subject supervisor	dr hab. sztuki Paweł Gełesz	
	Teachers		

Lesson types

Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
Number of study hours	15.0	0.0	0.0	30.0	0.0	45

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	45	4.0	26.0	75

Subject objectives

The thematic area covers project activities within the broadly understood architecture of water transport systems (ships), aggregating interdisciplinary knowledge in the field of technology. The programme includes: design experiments, the method of successive approximations, research laboratories, synthesis of results (e.g. as part of team work) and a final original design proposal. An important feature of the programme is the development of students' analytical and creative skills. Course objectives: To create new concepts in the field of transport architecture (in particular ships) through the active use of design mindset, emphasising creative thinking, innovation and problem solving through the design process. A responsible attitude of a creator and coordinator of innovation in the field of transport architecture. Development of creative skills and attitudes in the field of transport (water) systems architecture.

Learning outcomes

Course outcome	Subject outcome	Method of verification
[K7_W13] explains the main principles of individual and teamwork organization, including various forms of entrepreneurship utilizing knowledge from the field of engineering and technical sciences and disciplines relevant to the course of study	Student has basic knowledge related to creative work carried out in particular in a small project team.	[SW3] Ocena wiedzy zawartej w opracowaniu tekstowym i projektowym
[K7_U03] identifies and formulates task specifications in the scope of transport systems and processes design, including non-standard problems and taking into consideration their non-technical aspects	Graduate with enhanced skills in organising and planning the design process, taking into account its multidisciplinary characteristics.	[SU5] Ocena umiejętności zaprezentowania wyników realizacji zadania [SU1] Ocena realizacji zadania
[K7_U15] evaluates the feasibility of advanced methods and tools for solving complex engineering tasks of a practical nature, characteristic of the field of study, and selects and applies appropriate methods and tools for this purpose	The student has advanced knowledge of the design process. They consciously select and apply analytical and creative methods.	[SU2] Ocena umiejętności analizy informacji [SU1] Ocena realizacji zadania
[K7_U13] evaluates the feasibility and potential for utilizing new technical and technological achievements in accomplishing tasks characteristic for the field of study	The student has basic competences related to the design of modern transport systems (in particular intermodal systems operating at the interface between land and water).	[SU4] Ocena umiejętności korzystania z metod i narzędzi [SU1] Ocena realizacji zadania

Subject contents

Course content – lecture
A ship, a floating object considered in contexts that extend the typical technical approach, e.g. as a component of a multimodal transport system.

Course content – project
Conceptual (ideological) study defining the key features of an innovative facility that could serve as a basis for further design work.

The architecture of a floating facility as a field for independent research, methods of organising and implementing the design process, an original approach to a selected issue, teamwork, 3D model, rendering, information report, progress report.

Conceptual design drawing, virtual model, teamwork, simple technical drawing, description.

Prerequisites and co-requisites

Students starting the course should be enrolled in the second year of their second-cycle studies. The requirements in terms of knowledge, skills and competences result from obtaining the required credits, in particular the following are expected:
- advanced knowledge of design methods (including teamwork),
- competences related to analytical skills and communicating the results of their work using various information techniques.

- critical assessment of their knowledge and skills and recognition of the importance of knowledge in solving advanced cognitive and practical problems, including consulting experts

- independent integration of acquired and continuously developed competences and experience in order to consciously shape a creative attitude enabling the formulation and solving of complex issues,

- fluent knowledge of Polish, both spoken and written.

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
final report (design process doc)	50.0%	50.0%
design presentation, speech	50.0%	50.0%

Recommended reading

Basic literature	A.Papanikolaou, *Ship Design - Methodologies of Preliminary Design* , ISBN: 978-94-017-8750-5 M. Nowak. *Metodyka postępowania jako kluczowy element projektowania architektury okrętowej. Na przykładzie projektu koncepcyjnego jednostki badawczej MEWO,* doctoral thesis (unpublished, available via the Academy of Fine Arts Library).
Supplementary literature	A.Lerch. *Architektura statków niepasażerskich. Inspiracje projektowe, ISBN 83-908796-4-6*
eResources addresses	

Example issues/ example questions/ tasks being completed

Conceptual design of a small container ship performing transport functions within short sea shipping. An attempt to define the technical characteristics of a ship adapted to transport INNO (www.innofreight.com) containers.

An unusual ship a key component of a unique transport system. The objectives of the task are: a) a multifaceted and preliminary conceptual design of a floating object adapted to local transport needs, b) a preliminary study of the key (desired) fundamental characteristics of the efficiency of the potential system, which will form the basis for further design work.

Practical activites within the subject	Not applicable

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