GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Designing architecture of vessels, PG_00064997		
Field of study	Transport and Logistics		
Date of commencement of studies	February 2026	Academic year of realisation of subject	2026/2027
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. szt. Paweł Gełesz	
	Teachers	dr hab. szt. Paweł Gełesz	

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 focus is on design activities relating to the architecture of waterborne transport systems (ships), bringing together interdisciplinary knowledge from the field of engineering. The programme includes: design experiments, the method of successive approximations, the synthesis of results (e.g. through group work) and an original design proposal. An important feature of the programme is the development of students' analytical and creative skills. Course objectives: To develop new concepts in the field of the architecture of waterborne transport systems.

Learning outcomes

Course outcome	Subject outcome	Method of verification
[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 project implementation process. They consciously select and apply analytical and creative methods	[SU1] Assessment of task fulfilment [SU4] Assessment of ability to use methods and tools
[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 a basic understanding of creative work, particularly as carried out within a small project team.	[SU3] Assessment of ability to use knowledge gained from the subject
[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	The student has developed in-depth skills in organising and planning the design process, taking into account its multifaceted nature	[SU1] Assessment of task fulfilment [SU5] Assessment of ability to present the results of task
[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	The student has a basic understanding of creative work, particularly as carried out within a small project team.	[SW3] Assessment of knowledge contained in written work and projects

<table>
<tr><td>Subject contents</td><td>Course content – lecture

A ship, a vessel considered in contexts that go beyond the typical – technical – approach, e.g. as a component of a multimodal transport system.

Course content – project

A conceptual (ideational) study defining the key characteristics of an innovative structure that may serve as the basis for further design work.
The architecture of a floating structure as a field for exploring one’s own methods of organising and implementing the
design process, an original approach to the chosen topic, teamwork, an information report, a progress report.
Conceptual design drawing, virtual model, teamwork, simple technical drawing, description</td></tr>
<tr><td>Prerequisites and co-requisites</td><td>Students commencing the course should be enrolled in the second year of a second-cycle degree programme. The requirements in terms of
knowledge, skills and competences are based on the completion of the required modules; in particular, the following are expected:
- advanced knowledge of design methods (including teamwork),
- competences relating to analytical skills and the ability to communicate the results of one’s work using various information technologies,
- the ability to critically assess one’s own knowledge and skills and to recognise the importance of</td></tr>
<tr><td>Assessment methods and criteria</td><td>
<table>
<tr><th>Subject passing criteria</th><th>Passing threshold</th><th>Percentage of the final grade</th></tr>
<tr><td>project presentation</td><td>50.0%</td><td>50.0%</td></tr>
<tr><td>final report (process documentation)</td><td>50.0%</td><td>50.0%</td></tr>
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<tr><td>Recommended reading</td><td>
<table>
<tr><td>Basic literature</td><td>A.Papanikolaou, Ship Design - Methodologies of Preliminary Design, ISBN: 978-94-017-8750-5

Micheli, P., Wilner, S.J.S., Bhatti, S.H., Mura, M., Beverland, M.B. (2019). Doing Design Thinking: Conceptual Review, Synthesis, and Research Agenda. Journal of Product Innovation Management, 36(2), 124-148.</td></tr>
<tr><td>Supplementary literature</td><td>A.Lerch. Architektura statków niepasażerskich. Inspiracje projektowe, ISBN 83-908796-4-6</td></tr>
<tr><td>eResources addresses</td><td></td></tr>
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<tr><td>Example issues/ example questions/ tasks being completed</td><td>An unconventional vessel: a key component of a unique transport system. Objectives of the task: a) a multi-faceted
and preliminary conceptual study of a vessel adapted to local transport needs,
b) a preliminary study of the key (desired) fundamental performance characteristics
of a potential system, which is to form the basis for further design work.</td></tr>
<tr><td>Practical activites within the subject</td><td>Not applicable</td></tr>
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