



Subject card

Subject name and code	Ship Theory, PG_00060462						
Field of study	Mechanical and Naval Engineering						
Date of commencement of studies	October 2024		Academic year of realisation of subject		2025/2026		
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	Part-time studies		Mode of delivery		at the university		
Year of study	2		Language of instruction		Polish		
Semester of study	4		ECTS credits		5.0		
Learning profile	general academic profile		Assessment form		assessment		
Conducting unit	Institute of Ocean Engineering and Ship Technology -> Faculty of Mechanical Engineering and Ship Technology						
Name and surname of lecturer (lecturers)	Subject supervisor		dr inż. Michał Krężelewski				
	Teachers						
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	18.0	18.0	0.0	0.0	0.0	36
	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	36		8.0		81.0	125
Subject objectives	The introduction to the basic issues of the Ship Theory. Uses the laws and methods of Ship Theory and can apply them to practical problems.						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	[K6_U12] can formulate a simple engineering task and its specification within the range of design, construction and operation of ocean technology objects and systems		can formulate a simple engineering task and its specification within the range of design and operation of ocean technology objects and systems		[SU3] Assessment of ability to use knowledge gained from the subject		
	[K6_W13] has an organized knowledge on design, construction and operation of ocean technology objects and systems		has an organized knowledge on design, construction and operation of ocean technology objects and systems		[SW1] Assessment of factual knowledge		
	[K6_W12] has a knowledge on hydromechanics, thermodynamics, machine construction, ecology, materials science and electronics necessary to understand the construction and operation principles of ocean technology objects and equipment		has a knowledge on hydromechanics to understand the construction and operation principles of ocean technology objects and equipment		[SW1] Assessment of factual knowledge		

Subject contents	Lecture: Basic propulsion task. Fundamentals of experiment in shipbuilding. Ship resistance: components of resistance, methods of determination. Fundamentals of wing theory. Ship propulsors. Ideal propeller theory. Geometry of the ship propeller. Hydrodynamic characteristics of the ship propeller. Hull and propeller interaction. Manoeuvring characteristics of a ship. Manoeuvring tests. Steering devices. Selection of the classical rudder. Introduction to seakeeping. Exercises: Ship statics and stability: theory, regulations, practical examples and exercises.		
Prerequisites and co-requisites			
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Tutorial - test	60.0%	50.0%
	Lecture - test	60.0%	50.0%
Recommended reading	Basic literature	Dudziak J. Teoria okrętu, Fundacja Promocji Przemysłu Okrętowego i Gospodarki Morskiej, Gdańsk 2008 Frąckowiak M. Statyka okrętu, skrypt PG, Gdańsk 1983 Wełnicki W. Mechanika ruchu okrętu, skrypt PG, Gdańsk 1989	
	Supplementary literature	Wilson P. A. Basic Naval Architecture: Ship Stability, Springer 2018 Rawson K.J. Tupper E.C. Basic Ship Theory, vol. 1 and 2, Butterworth-Heinemann Oxford 2001 Lee B.S. Hydrostatics and Stability of Marine Vehicles: Theory and Practice, Springer 2019 Molland A.F. The Maritime Engineering Reference Book - a Guide To Ship Design, Construction And Operation, Butterworth-Heinemann Oxford 2008	
	eResources addresses	Adresy na platformie eNauczanie:	
Example issues/ example questions/ tasks being completed	Why do we design ship propellers to have the highest possible efficiency? List the components of total ship resistance. Why do we consider the theory of the ideal propeller? Basic geometrical parameters of a ship propeller. Hydrodynamic characteristics of the ship propeller. Geometrical characteristics of the ship's rudder. How is the influence of the ship's hull on the operation of the ship propeller taken into account? List the manoeuvring tests whose parameters are standardised by IMO.		
Work placement	Not applicable		