



Subject card

Subject name and code	Construction of Metal Hull, PG_00060612						
Field of study	Design and Construction of Yachts						
Date of commencement of studies	October 2024		Academic year of realisation of subject		2026/2027		
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 delivery		at the university		
Year of study	3		Language of instruction		Polish		
Semester of study	5		ECTS credits		2.0		
Learning profile	general academic profile		Assessment form		assessment		
Conducting unit	Zakład Mechaniki Konstrukcji Oceanotechnicznych -> Institute of Ocean Engineering and Ship Technology -> Faculty of Mechanical Engineering and Ship Technology						
Name and surname of lecturer (lecturers)	Subject supervisor		dr inż. Wojciech Puch				
	Teachers						
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	30.0	0.0	0.0	0.0	0.0	30
	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	30		3.0		17.0	50
Subject objectives	Getting acquainted with the form of metal construction of yacht hulls, strength principles of shaping the structure and regulatory requirements.						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	[K6_W02] has knowledge in the field of technical mechanics, fluid mechanics, strength of materials, necessary to understand the basic physical phenomena occurring in ocean engineering		Student is able to identify the loads acting on the yacht's hull and strength phenomena leading to the degradation of the structure.		[SW1] Assessment of factual knowledge [SW3] Assessment of knowledge contained in written work and projects		
	[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 use the regulations of the Classification Societies to assess the correctness and strength safety yacht hull structure.		[SW1] Assessment of factual knowledge [SW3] Assessment of knowledge contained in written work and projects		
	[K6_U06] able to perform basic engineering tasks in the field of yacht design, construction and operation according to the formulated specification, using appropriate methods and tools		Student is able to determine the stresses in the plating and stiffeners and solve relevant design issues.		[SU3] Assessment of ability to use knowledge gained from the subject [SU5] Assessment of ability to present the results of task		
Subject contents	Strength properties of structural metal materials. Physical phenomena leading to the degradation of the strength properties of the material and structure. Standardization of material properties in rules and regulations. The form of the construction of the metal hull of the yacht. Technologies of joining construction elements. Operational and emergency loads. Strength models of structural elements. Requirements and structure of regulations of Classification Societies. Typical connections of structural elements; unification. Fastening the masts and rigging to the hull. Preparation of the hull for launching and moving ashore. Special issues; steel-aluminium alloy connections.						
Prerequisites and co-requisites	Basic technical English. Basic knowledge of Strength of Materials. Basic knowledge of Finite Element Analysis.						

Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Test	50.0%	100.0%
Recommended reading	Basic literature	Rules for the Classification and Construction of Sea-going Yachts. Polish Register of Shipping Rules for the Classification and Construction of Small Sea-going Ships. Polish Register of Shipping L.Larsson, R.E.Eliasson, M.Orych: Podstawy projektowania jachtów. Almapress, 2017 D.Gerr: Boat strength for builders, designers and owners. International Marine/McGraw-Hill, 2000 E.H.Sims: Aluminium boatbuilding. Sheridan House, 2000	
	Supplementary literature	Nordic Boat Standard; Commercial Boats less than 15 metres. 1990 Nordic Boat Standard; Materials and Components for Boats less than 15 metres. 1990 S.Huebbe: Designing and building a houseboat. 2020	
	eResources addresses	Adresy na platformie eNauczanie:	
Example issues/ example questions/ tasks being completed	Determine the minimum required thickness of the plating, taking into account the given dimensions and load. The required geometric characteristics of the stiffener cross-section should be determined, having the given dimensions and load. Sketch, describe and roughly dimension the different types of keels found on small ships.		
Work placement	Not applicable		