



Subject card

Subject name and code	, PG_00056248						
Field of study	Design and Construction of Yachts						
Date of commencement of studies	October 2021	Academic year of realisation of subject			2022/2023		
Education level	first-cycle studies	Subject group			Obligatory subject group in the field of study Subject group related to practical vocational preparation		
Mode of study	Full-time studies	Mode of delivery			at the university		
Year of study	2	Language of instruction			Polish		
Semester of study	3	ECTS credits			2.0		
Learning profile	practical profile	Assessment form			assessment		
Conducting unit	Department of Theory and Ship Design -> Faculty of Mechanical Engineering and Ship Technology						
Name and surname of lecturer (lecturers)	Subject supervisor		dr inż. Cezary Żrodowski				
	Teachers		dr inż. Artur Karczewski dr inż. Cezary Żrodowski				
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	0.0	0.0	30.0	0.0	0.0	30
	E-learning hours included: 0.0						
Additional information: The lecture can be provided in remote mode in case of necessity.							
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	4.0	16.0	50		
Subject objectives	Familiarization with modern CAD software used in yachting industry and achieving of basic usage skills, presented on selected exemplary problems.						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	K6_U05		The student correctly defines the needs of the task and selects CAD / CAE tools to the technical problems posed in the field of design and construction		[SU1] Assessment of task fulfilment [SU4] Assessment of ability to use methods and tools		
	K6_U06		The student is able to make a simple project in the field of 3D model and 2D drawing.		[SU1] Assessment of task fulfilment [SU4] Assessment of ability to use methods and tools		
K6_W05		The student correctly selects CAD / CAE tools to the technical problems posed in the field of yacht design.		[SW3] Assessment of knowledge contained in written work and projects			
Subject contents	<ol style="list-style-type: none"> CAD/CAM/CAE software for maritime industry, functionality, requirements, comparison of available programs. Modeling of parametric hull shape and propeller Modeling of hull compartmentation Calculation of ship hydrostatics and stability Hydrodynamic resistance simulation (CFD) Strength simulations (MES) Optimization of parametric shape with MDO software Generating od 2D documentation on the basis of 3D model. 						
Prerequisites and co-requisites							
Assessment methods and criteria	Subject passing criteria		Passing threshold		Percentage of the final grade		
	Presentation of selected subject		50.0%		30.0%		
	Realsation of ongoing exercises		50.0%		70.0%		

Recommended reading	Basic literature	Manuals for programs: <ol style="list-style-type: none"> 1. Siemens NX 2. AVEVA Marine 3. Maat Hydro 4. Star-CCM+ 5. PolyCAD 6. Delft Ship 7. NAPA 8. FORAN 9. Maxsurf 10. Inventor 11. SolidWorks Carl Machover: "C4"
	Supplementary literature	<ol style="list-style-type: none"> 1. CAD Forum (https://cad.pl/) 2. Machine Design (https://www.machinedesign.com/)
	eResources addresses	
Example issues/ example questions/ tasks being completed	<ul style="list-style-type: none"> • Parametric model of hull form. • Associative model of hull assembly. • CFD simulation of propeller • FEA simulation of simple structure.. 	
Work placement	Not applicable	