



Subject card

Subject name and code	, PG_00056255						
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	4	ECTS credits			3.0		
Learning profile	practical 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. Maciej Kahsin					
	Teachers	dr inż. Maciej Kahsin					
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	15.0	15.0	15.0	0.0	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		5.0		25.0	75
Subject objectives	Scope of topics presented aims towards illustration of design methods concerning thin walled composite structures.						
Learning outcomes	Course outcome	Subject outcome			Method of verification		
	K6_W03	Student can conduct Multiphysics FE simulations.			[SW3] Assessment of knowledge contained in written work and projects [SW1] Assessment of factual knowledge		
	K6_W05	Student is capable of using Classical Laminate Theory (CLT) during yacht design process.			[SW3] Assessment of knowledge contained in written work and projects [SW1] Assessment of factual knowledge		
	K6_U05	Student is able to choose appropriate physical problem formulation and suitable solving tools.			[SU3] Assessment of ability to use knowledge gained from the subject [SU4] Assessment of ability to use methods and tools [SU2] Assessment of ability to analyse information [SU1] Assessment of task fulfilment		
Subject contents	Material characteristics of laminates, mixture law, stiffness matrix of single generally oriented lamina, stiffness matrix of laminate, load-deformation coupling analysis, buckling of laminates, solution of dynamics problems.						
Prerequisites and co-requisites	Mechanics, Strength of Materials, Numerical Methods.						
Assessment methods and criteria	Subject passing criteria	Passing threshold			Percentage of the final grade		
	Test	50.0%			40.0%		
	Report valuation	50.0%			60.0%		

Recommended reading	Basic literature	<p>1. J. Reddy: An Introduction to The Finite Element Method, McGraw-Hill, New York, 2005</p> <p>2. D. Chapelle, K. Bathe: The Finite Element Analysis of Shells Fundamentals, Springer-Verlag Berlin Heidelberg 2011</p> <p>3. Carlsson, L. A., Gillespie, J. W., (eds.), Delaware Composites Design Encyclopedia, Technomic Publishing Company, Lancaster, PA</p> <p>4. Gere, J. M., Timoshenko, S. P., Mechanics of Materials, II ed., PWS-Kent Publishing Company, Boston, 1984.</p>
	Supplementary literature	John D. Fenton, Numerical methods, Institute of Hydraulic Engineering and Water Resources Management Vienna University of Technology, 2019
	eResources addresses	
Example issues/ example questions/ tasks being completed	Generate code computing laminates stiffness matrix, Compute ABD matrix and present conclusions concerning load-deflection coupling, Compute first 10 eigen modes of laminated yacht hull, Analyse behaviour of laminated structure operating in undulation condition.	
Work placement	Not applicable	