



Subject card

Subject name and code	Fundamentals of Designing of Ships , PG_00043693						
Field of study	Ocean Engineering, Ocean Engineering						
Date of commencement of studies	October 2020		Academic year of realisation of subject		2020/2021		
Education level	first-cycle studies		Subject group				
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		2.0		
Learning profile	general academic 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. Cezary Żrodowski				
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						
	Address on the e-learning platform: https://enauczanie.pg.edu.pl/moodle/course/view.php?id=1247						
	Adresy na platformie eNauczanie: Podstawy projektowania okrętów 2021 - Moodle ID: 13803 https://enauczanie.pg.edu.pl/moodle/course/view.php?id=13803						
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		2.0		18.0	50
Subject objectives	Introduction to ship design theory, presentation of ship design process, basic tools and professional vocabulary.						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	[K6_W05] has an organized knowledge on design, construction and operation of ocean technology objects and systems		The student knows and carries out the course the ship design process, described by Evans' spiral and her younger derivatives.		[SW1] Assessment of factual knowledge		
	[K6_U04] has self-education skills in order to improve professional qualifications, is ready to work in industrial environment, adheres to HSE rules and regulations		The student is able to find and analyze the regulations of classification societies and international conventions in the context of the project.		[SU1] Assessment of task fulfilment		
Subject contents	History of ship design methods. Mathematical modelling, problem idealization and algorithm development for design process. Tools for improvement of design process. Design spiral. Stages of parametric and geometric design. Professional language. Rules for design calculations: measurement units, mathematical models, presentation and explanation of calculation results. Physical phenomena, theoretical and empirical design relationships. Functional and safety criteria. Buoyancy equation. Calculation of main design parameters on example of general cargo ship. Compartmentalization. Calculation of buoyancy, stability and register tonnage.						
Prerequisites and co-requisites							
Assessment methods and criteria	Subject passing criteria		Passing threshold		Percentage of the final grade		
	Lecture exam		100.0%		50.0%		
	Project		60.0%		50.0%		

Recommended reading	Basic literature	<p>1. Buczkowski L.: Podstaw Budownictwa Okrętowego, I, II, III tom, skrypt Politechniki Gdańskiej.</p> <p>2. Milewski J.: Projektowanie i budowa jachtów żaglowych. Gdynia 1998.</p> <p>3. Staszewski J., Paczesniak J.: Projektowanie Okrętów, I, II, III tom, skrypt Politechniki Gdańskiej.</p> <p>4. Marchaj C.A.: Teoria żeglowania, aerodynamika żagla. Almaress. 2001.</p> <p>5. Michalski J.P.: Podstawy teorii projektowania okrętów. Wydawnictwo PG, 2013</p>
	Supplementary literature	<p>1. Watson D.: Practical ship design , Amsterdam, Elsevier, 1998.</p> <p>2. Schneekluth H.: Ship design for efficiency and economy, London, Butterworths, 1987.</p> <p>3. Piskorz-Nalecki J.: Projektowanie statków morskich. Szczecin, Wyd. PS, 1982.</p> <p>4. Semenov I., Sanecka K.: Teoria projektowania statków, Szczecin, Wyd. PS, 2001.</p> <p>5. Nogid L.M: Teoria projektowania okrętu, Gdynia Wydawnictwo Morskie, 1962.</p>
	eResources addresses	Podstawy projektowania okrętów 2021 - Moodle ID: 13803 https://enauczanie.pg.edu.pl/moodle/course/view.php?id=13803
Example issues/ example questions/ tasks being completed	Project of Multipurpose Cargo vessel.	
Work placement	Not applicable	