



Subject card

Subject name and code	Ship Structurse 3, PG_00046543						
Field of study	Ocean Engineering, Ocean Engineering						
Date of commencement of studies	October 2020		Academic year of realisation of subject		2022/2023		
Education level	first-cycle studies		Subject group				
Mode of study	Part-time studies		Mode of delivery		at the university		
Year of study	3		Language of instruction		Polish		
Semester of study	6		ECTS credits		2.0		
Learning profile	general academic profile		Assessment form		assessment		
Conducting unit	Faculty of Ocean Engineering and Ship Technology						
Name and surname of lecturer (lecturers)	Subject supervisor		dr inż. Krzysztof Wołoszyk				
	Teachers		dr inż. Krzysztof Wołoszyk				
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	20.0	0.0	0.0	0.0	0.0	20
	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	20		4.0		26.0	50
Subject objectives	<p>The following problems are discussed:</p> <p>- the detailed structural requirements of popular ship types;</p> <p>- rebuilding/modification of ships;</p> <p>- methods to ensure sufficient fatigu lives of ship hull structures;</p> <p>- examples of damages of ship hulls and repairing methods.</p>						

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[K6_W06] has an organized knowledge on engineering methods and design tools allowing the conducting of projects within the construction and operation of ocean technology objects and systems	Student knows structures of typical floating objects and understands restrictions indicating from criteria to be fulfilled (stability, strength, technological aspects) and knows basic methods of strength analysis.	[SW1] Assessment of factual knowledge
	[K6_U05] can formulate a simple engineering task and its specification within the range of design, construction and operation of ocean technology objects and systems	Student understands influence of international conventions and classification rules requirements concerning stability, ability to float in flooded conditions, strength of hull structure and characteristics of materials used – on arrangement and scantlings of elements composing a floating object structure and understands restrictions related to technological aspects. Student understands influence of design solutions applied on durability of the floating object.	[SU2] Assessment of ability to analyse information
	[K6_K03] understands non-technical aspects and effects of operation as an engineer, its influence on the environment and is aware of the responsibilities for the decisions taken	Student understands that technical properties of designed floating objects may cause degradation of natural environment and may be dangerous for people.	[SK5] Assessment of ability to solve problems that arise in practice
	[K6_W05] has an organized knowledge on design, construction and operation of ocean technology objects and systems	Student understands influence of requirements concerning functionality, stability, ability to float in flooded conditions, properties of propulsion system, sea keeping properties and characteristics of materials used – on hull structure, safety of the floating objects and protection of sea environment. Student understands problem of strength of hull structures and its basic equipment (predicting stress values, buckling and fatigue strength analysis). Student is able to make sketches of selected floating objects hull structures and their important equipment items. Student knows selected methods for computing stress values in the structure.	[SW1] Assessment of factual knowledge
Subject contents	<p>Problems discussed during the lectures:</p> <ul style="list-style-type: none"> - structure of popular ship types; - problems of ship modifications; - problems of obtaining sufficiently long fatigue life of ship hulls; - examples of ship hulls damages and repaiaring methods. 		
Prerequisites and co-requisites	Student should have some knowledge on theory of ships, technical mechanics, design materials and technical drawings. Knowledge gathered during previous lectures on Ship Structures I and Ship Structures II is also required.		
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Test in written form	60.0%	100.0%

Recommended reading	Basic literature	<p>1. M.Bogdaniuk, Lectures on Ship Structures III (in polish language only).</p> <p>2. Robert Taggart(Editor), <i>Ship Design and Construction</i>, The soc. Of Nav. Arch. And Marine Eng., New York,1980.</p> <p>3. D.J. Eyres: Ship construction. Elsevier, 5ed.</p> <p>4. Polski Rejestr Statków, Rules for classification and building of sea-going ships, Part II Hull, Gdańsk, 2019.</p> <p>4. Polski Rejestr Statków, Rules for classification and building of small sea-going ships, Part II Hull, Gdańsk, 2019.</p> <p>5. IACS, Common Structural Rules for Bulk Carriers and Oil Tankers, 2018.</p>
	Supplementary literature	1.IACS, Container Ships Guidelines for Survey, Assessment and Repair of Hull Structure, 2005.
	eResources addresses	<p>Adresy na platformie eNauczanie:</p> <p>Konstrukcja Okrętu III, W, Oce, sem. 06, letni 22/23 (O:098006n) - Moodle ID: 29348</p> <p>https://enauczanie.pg.edu.pl/moodle/course/view.php?id=29348</p>
Example issues/ example questions/ tasks being completed	<p>1. Make some scetches and descriptions of structure of popular ship types.</p> <p>2. Present typical examples of ship modifications and describe problems of ensuring sufficient strength of the modified ship hulls.</p> <p>3. Give some examples of ship hull structure detailed designs of sufficiently long fatigue life.</p> <p>4. Present examples of ship hull structuresdamages and propose repairing methods.</p>	
Work placement	Not applicable	