



Subject card

Subject name and code	Structure of Ocean Engineering Objects, PG_00045082						
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	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	Katedra Mechaniki Konstrukcji -> Faculty of Ocean Engineering and Ship Technology						
Name and surname of lecturer (lecturers)	Subject supervisor	dr inż. Krzysztof Wołoszyk					
	Teachers	dr inż. Wojciech Puch					
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	To give students basic information on ships hull structures and offshore structures; in particular: - requirements of international conventions and classification rules; - arrangement of basic types of ships hulls and offshore structures - loads on ship hulls and offshore structures; - stresses in ship hull structures, offshore structures and criteria of strength; - materials for ship hulls and offshore structures; - welded connections; - design of particular ship hull structure regions (bottom, sides, decks, bulkheads, fore and aft parts) and basic types of offshore structures.						

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_W08] has knowledge of the principles of sustainable development	Student rozumie wpływ wymagań międzynarodowych norm, konwencji i przepisów klasyfikacyjnych dotyczących stateczności, niezatapialności, wytrzymałości kadłuba lub obiektu oceanotechnicznego, cech napędowych i morskich statku oraz cech wykorzystanych materiałów - na bezpieczeństwo statku (załogi, pasażerów, ładunku) lub obiektu oceanotechnicznego i ochronę środowiska morskiego.	[SW1] Assessment of factual knowledge [SW3] Assessment of knowledge contained in written work and projects
Subject contents	<p>Problems discussed during the lectures:</p> <ul style="list-style-type: none"> - requirements of international conventions, classification rules and international standards for offshore systems; - basic definitions and terms concerning ship hull and offshore systems; - basic properties of ship hull structure and offshore structures; - arrangement of basic types of ships hulls and offshore systems; - loads on ship hulls and offshore structures; - stresses in ship hull structures and offshore structures; - criteria of strength (stress level, buckling, fatigue); - materials for ship hulls and offshore structures; - protection of structures against corrosion and corrosion additions; - welded connections between structures items; - design of particular ship hull structure regions (bottom, sides, decks, bulkheads, fore and aft parts) and offshore systems. 		
Prerequisites and co-requisites	Student should have some knowledge on theory of ships, technical mechanics, design materials and technical drawings.		
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	test (written form)	50.0%	100.0%

Recommended reading	Basic literature	<p>1. M.Bogdaniuk, Lectures on Offshore Structures (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. Polski Rejestr Statków, <i>Publication 105/P – Marine Units. Fixed Offshore Platforms and Equipment Rules for the Construction and Survey</i>, 2018.</p> <p>4. Polski Rejestr Statków, Rules for classification and building of sea-going ships, Part II – Hull, Gdańsk, 2019.</p> <p>5. Mohamed A. El-Reedy, <i>Offshore Structures – design, Construction and Maintenance</i>, Elsevier, 2012.</p>
	Supplementary literature	1. IACS, Common Structural Rules for Bulk Carriers and Oil Tankers, 2018.
	eResources addresses	Adresy na platformie eNauczenie:
Example issues/ example questions/ tasks being completed	<p>1. What is the influence of international conventions requirements on ship hull structure?</p> <p>2. What is the scope of classification societies activities?</p> <p>3. Show arrangement of the hull of a bulker, tanker, container ship or Ro-Ro ship.</p> <p>4. Show arrangement of a typical self-elevating or semisubmersible platform.</p> <p>5. Describe loads on ship huli or offshore structures.</p> <p>6. Describe the methods applied to analyse longitudinal, local or zone strength of ship hull structure/ offshore structure.</p> <p>7. What methods are used to prevent ship structures/offshore structures from fatigue cracking?</p>	
Work placement	Not applicable	