



## Subject card

Subject name and code	, PG_00057302						
Field of study	Ocean Engineering						
Date of commencement of studies	February 2023	Academic year of realisation of subject			2023/2024		
Education level	second-cycle studies	Subject group			Optional subject group Subject group related to scientific research in the field of study		
Mode of study	Part-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	Zakład Projektowania Okrętów i Robotyki Podwodnej -> Institute of Ocean Engineering and Ship Technology -> Faculty of Mechanical Engineering and Ship Technology						
Name and surname of lecturer (lecturers)	Subject supervisor		dr hab. inż. Lech Rowiński				
	Teachers		dr hab. inż. Lech Rowiński				
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	9.0	0.0	0.0	9.0	0.0	18
	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	18	5.0		27.0	50	
Subject objectives	Acquainting with the basic materials and technologies used for the production of vessel structures made of polymer composites						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	[K7_U07] in compliance with a formulated specification and with the aid of appropriate tools and methods, is able to complete an advanced engineering task within the range of design, construction and operation of ocean technology objects and systems				[SU3] Assessment of ability to use knowledge gained from the subject		
	[K7_W06] has an organized, widened knowledge on engineering methods and design tools allowing the conducting of advanced projects within the construction and operation of ocean technology objects and systems				[SW1] Assessment of factual knowledge		
[K7_W05] has an organized, widened knowledge on design, construction and operation of ocean technology objects and systems				[SW2] Assessment of knowledge contained in presentation			
Subject contents	Lectures: Review and selection of non-metallic materials used in shipbuilding. The relationship of construction with technology in composite structures. Review of structural nodes and principles of their design. Basic construction calculations. Technological process of composite structures. Technologies of forming structural elements from composites. Technological equipment and tools. Technological materials. Organization of the technological process. Research on the effectiveness of the technological process. Construction of thermoplastic structures. Assembly of structural elements and finishing works. Design and technological requirements resulting from the regulations of classification societies and standards.						
Prerequisites and co-requisites							
Assessment methods and criteria	Subject passing criteria		Passing threshold		Percentage of the final grade		
			40.0%		100.0%		

Recommended reading	Basic literature	<ol style="list-style-type: none"> <li>Berger M. i inni: Poliestry wzmacnione w budownictwie okrętowym, Wydawnictwo Morskie, Gdynia, 1961.</li> <li>Kozłowski J., Wilczopolski M., Wituszyński K.: Konstrukcje okrętowe z kompozytów polimerowych; Wydawnictwo Morskie, Gdańsk, 1982.</li> <li>Przepisy klasyfikacji i budowy jachtów morskich (JAC), Część II, Kadłub 1996/1998</li> </ol> <p>Przepisy klasyfikacji i budowy łodzi motorowych (MOT), Część II, Kadłub 1996/1998</p>
	Supplementary literature	<ol style="list-style-type: none"> <li>Jan Rabek, Współczesna wiedza o polimerach, wyd PWN, Warszawa 2009</li> </ol> <p>Jan Pielichowski, "Technologia tworzyw sztucznych", Wydawnictwo Naukowo-Techniczne, wyd VI, 2003</p>
	eResources addresses	
Example issues/ example questions/ tasks being completed		
Work placement	Not applicable	