



## Subject card

Subject name and code	Plastic Materials Technology, PG_00046534						
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	Department of Theory and Ship Design -> 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	10.0	10.0	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	3.0		27.0		50
Subject objectives	Provide student with general knowledge regarding materials and manufacturing procedures of marine plastic and composite structures as well as principles of structural calculations of boat hulls,						
Learning outcomes	Course outcome	Subject outcome			Method of verification		
	[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 is able to formulate a task regarding the development of the technological process of a vessel made of polymer composites based on the principles of designing reinforced structures and the relationship between the structure and the manufacturing process			[SU1] Assessment of task fulfilment		
	[K6_W05] has an organized knowledge on design, construction and operation of ocean technology objects and systems	Knows the purpose and course of technological processes carried out during the construction of polymeric materials reinforced with organic and inorganic fibers			[SW1] Assessment of factual knowledge		
Subject contents	Materials used in boat building; Principal nomenclature used in composite engineering; Structure of polymers, thermoplasts and duroplasts; Properties of polymers, selection and modification. Reinforced plastic composites; Polymeric resin matrices and curing processes; Reinforcing fibres, organic and mineral; Technology of structural composites, hand-aying of laminates and vaccum supported processes. Structural elements of a hull. Dimensinning of a hull elements; Adhesives and gluing technology in hull structure assembly. Standards and classification rules regarding materials and technology of composite structures.						
Prerequisites and co-requisites	No requirements						
Assessment methods and criteria	Subject passing criteria	Passing threshold			Percentage of the final grade		
	Short tests during lessons	60.0%			100.0%		

Recommended reading	Basic literature	<p>1. Dobrosz K., Matysiak A., Tworzywa sztuczne Warszawa WSZIP 1985</p> <p>2. Kłosowska-Wałkowicz Z., Królikowski W., Penczek P., Żywice i laminaty poliestrowe. Warszawa WNT 1980</p> <p>3. Kozłowski J., Wilczopolski M., Materiałoznawstwo okrętowe czIII Okrętowe Tworzywa Polimerowe. Gdynia WSMW 1982</p> <p>4. Królikowski W., Tworzywa wzmocnione i włókna wzmacniające. Warszawa WNT 1988</p> <p>5. Spychaj T., Spychaj D., Farby i kleje wodorozcieńczalne Warszawa WNT 1996</p> <p>6. Żuchowska D., Polimery konstrukcyjne. Warszawa WNT 1995</p>
	Supplementary literature	1. Błędzki A.K. i inni: Recykling materiałów polimerowych, Wydawnictwa Naukowo Techniczne, Warszawa, 1997.
	eResources addresses	Adresy na platformie eNauczenie:
Example issues/ example questions/ tasks being completed		
Work placement	Not applicable	