GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Metal Science 2, PG_00044035		
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	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	Department of Ship Manufacturing Technology, Quality Systems and Materials Science -> Faculty of Mechanical Engineering and Ship Technology		
Name and surname of lecturer (lecturers)	Subject supervisor	dr inż. Milena Supernak	
	Teachers	mgr inż. Krzysztof Emilianowicz	

Lesson types and methods of instruction

Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
Number of study hours	0.0	0.0	20.0	0.0	0.0	20

E-learning hours included: 0.0

Adresy na platformie eNauczanie:

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

Familiarizing students with the construction of metals and their alloys. Determination and testing of the structure of metals. Study of mechanical and physical properties of metals and their alloys.

Learning outcomes

Course outcome	Subject outcome	Method of verification
[K6_W03] has a basic knowledge on hydromechanics, thermodynamics, machine construction, ecology, materials science and electronics necessary to understand the construction and operation principles of ocean technology objects and equipment	The student analyzes the relationship between the receipt, structure, properties and functionality of the material.	[SW2] Assessment of knowledge contained in presentation [SW3] Assessment of knowledge contained in written work and projects
[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	The student defines the properties of materials. Student identifies the basic properties of metallic materials. Student identifies types of crystal structure research: macroscopic and microscopic. Student defines phase and structural components of Fe-C alloys	[SU1] Assessment of task fulfilment [SU2] Assessment of ability to analyse information [SU3] Assessment of ability to use knowledge gained from the subject

Subject contents

Static Tensile Test

2. Impact test of steel

3. Macro and microscopic examinations

4. Analysis of iron-carbon structure structures

5. Tests of iron alloys (cast steel, cast iron, non-alloyed steels)

Prerequisites and co-requisites

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
Reports from laboratory classes	70.0%	50.0%
test of lectures	50.0%	50.0%

Recommended reading	Basic literature	1.Krzysztofowicz T.: Metaloznawstwo okrętowe-ćwiczenia laboratoryjne. WPG, Gdańsk, 2002 2. Dobrzański L.A.: Podstawy nauki o materiałach i metaloznawstwo.WNT, Warszawa, 2002.
	Supplementary literature	1. Głowacka M., Zieliński A.: Podstawy Materiałoznawstwa. WPG, Gdańsk 2011
	eResources addresses	
Example issues/ example questions/ tasks being completed	1. Static Tensile Test 2. Impact test of steel 3. Macro and microscopic examinations 4. Analysis of iron-carbon structure structures 5. Testing of iron alloys (cast steel, cast iron, non-alloyed steels)	
Work placement	Not applicable	