GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Information Techniques, PG_00042002		
Field of study	Power Engineering, Power Engineering, Power Engineering, Power Engineering, Power Engineering		
Date of commencement of studies	October 2020	Academic year of realisation of subject	2020/2021
Education level	first-cycle studies	Subject group	Obligatory subject group in the field of study
Mode of study	Full-time studies	Mode of delivery	at the university
Year of study	1	Language of instruction	Polish
Semester of study	2	ECTS credits	3.0
Learning profile	general academic profile	Assessment form	assessment
Conducting unit	Information Technology Unit -> Faculty of Ocean Engineering and Ship Technology		
Name and surname of lecturer (lecturers)	Subject supervisor	mgr inż. Danuta Łutowicz	
	Teachers	dr inż. Jerzy Kapcia mgr inż. Danuta Łutowicz dr inż. Andrzej Augusiak dr inż. Alicja Lenarczyk dr Andrzej Marmołowski	

Lesson types and methods of instruction

Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
Number of study hours	0.0	0.0	45.0	0.0	0.0	45

E-learning hours included: 0.0

Adresy na platformie eNauczanie:

Technologie informatyczne EXCEL ACCESS (PG_00042002)ENERGETYKA 2020_2021 - Moodle ID: 9711 https://enauczanie.pg.edu.pl/moodle/course/view.php?id=9711

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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	45	5.0	25.0	75

Subject objectives

The aim of subject is enchancing students' qualifications in usage of basic computer tools so as they could use them during other classes on the upper years of study.

Learning outcomes

Course outcome	Subject outcome	Method of verification
K6_K01	The student learns the basics of working with spreadsheets (Excel type). He learns the basics of working in the Matlab environment	[SK2] Assessment of progress of work [SK1] Assessment of group work skills [SK5] Assessment of ability to solve problems that arise in practice
K6_U04	He can perform numerical data analysis in spreadsheets. Learn about the design of simple algorithms in the Matlab environment.He is able to implement mathematical functions in the Matlab environment	[SU4] Assessment of ability to use methods and tools [SU3] Assessment of ability to use knowledge gained from the subject [SU2] Assessment of ability to analyse information [SU1] Assessment of task fulfilment

Subject contents	MATLAB Design and implementation of basic algorithms in Matlab, writing and running scripts, making graphs of one and two variables, numerical solving of basic linear algebra problems. EXCEL Defining and editing of valid expressions with numerals, texts, operators, cell addresses and predefined functions in MS Excel. Creating and editing charts. Using array formulas to solve the set of linear equations. Using built-in tool GOAL SEEK to solve one variable function equations. Using built-in tool SOLVER for optimization many variable function with given constraints. Calculating numerical integration of a given analytical function using rectangular, trapezoidal and Simpson's rules. Creating and runnig macro. ACCESS Design the tables and relationships between them, identifying the types and field properties, setting primary keys. Creating the forms, placing and updating data. Constructing complex search criteria of the information in queries, creating calculated fields. Parametric, cross and functional queries. Text boxes,labels, drop-down lists, groups of options, graphics and button with macros assigned to them added on forms. Design raports and creating macros.
Prerequisites and co-requisites	Basic computer skills. Knowledge of mathematics (high school level).

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
Practical assignments	60.0%	100.0%

Recommended reading

Basic literature	1. MATLAB i Simulink. Poradnik użytkownika, Bogumiła Mrozek i Zbigniew Mrozek, Helion 2. Arkusze kalkulacyjne, Kopertowska Mirosława, Wydawnictwo Naukowe PWN 3. Access 2007, MacDonald 2007, Helion 2007 4. Funkcje w Excelu, Mirosława Kopertowska, Witold Sikorski, Wyd II, Wydawnictwo Naukowe PWN 2012 5. Excel w obliczeniach naukowych i inżynierskich, Maciej Gonet, Wyd. 2 Helion 2011
Supplementary literature	1. Metody optymalizacji z MATLAB. Ćwiczenia laboratoryjne. Aleksander Ostanin, Nakom 2. MATLAB7 dla naukowców i inżynierów, PWN 3. Excel 2007 Pl .Biblia, Jon Walkenbach, Wydawnictwo Helion 2007 4. Makropolecenia w Excelu.Opis języka VBA na przykładach, A.Snarska Wyd I, Wydawnictwo Naukowe PWN 2007 5 Excel w biurze i nie tylko, Sergiusz Flanczewski, Wyd II, Helion 2010 6 Excel 2007 w analizach i finansach, Andrzej Tor, Tortech 2010
eResources addresses	Technologie informatyczne EXCEL ACCESS (PG_00042002)ENERGETYKA 2020_2021 - Moodle ID: 9711 https://enauczanie.pg.edu.pl/moodle/course/view.php?id=9711 Technologie informatyczne EXCEL ACCESS (PG_00042002)ENERGETYKA 2020_2021 - Moodle ID: 9711 https://enauczanie.pg.edu.pl/moodle/course/view.php?id=9711 Technologie informatyczne EXCEL ACCESS (PG_00042002)ENERGETYKA 2020_2021 - Moodle ID: 9711 https://enauczanie.pg.edu.pl/moodle/course/view.php?id=9711

Example issues/ example questions/ tasks being completed	
Work placement	Not applicable