GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Informatics, PG_00041636		
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	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	4.0
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	dr inż. Marcin Życzkowski	
	Teachers	mgr inż. Danuta Łutowicz dr inż. Jerzy Kapcia	

Lesson types and methods of instruction

Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
Number of study hours	15.0	0.0	45.0	0.0	0.0	60

E-learning hours included: 0.0

Adresy na platformie eNauczanie:

Informatyka (PG_00041636) EXCEL ACCESS OCEANOTECHNIKA 2020_2021 - Moodle ID: 9731
https://enauczanie.pg.edu.pl/moodle/course/view.php?id=9731

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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	60	5.0	35.0	100

Subject objectives

The aim of the course is to familiarize students with the possibilities of the programs and procedures of in laboratory classes and of design of mechanical, electrical , and in later years of study specialized classes.

Learning outcomes

Course outcome	Subject outcome	Method of verification
[K6_U01] can obtain information from literature, databases and other sources, can verify and organize the obtained information, interpret them and form conclusions and justified opinions	The student learns the basics of working with spreadsheets (Excel type). Learns the basics of working in a Matlab environment	[SU1] Assessment of task fulfilment [SU4] Assessment of ability to use methods and tools
[K6_W04] has a basic knowledge in IT, electronics, automation and control, computer graphics useful to understand the possibilities of their application in ocean technology	Can perform numerical data analysis in spreadsheets. Learns the knowledge of designing simple algorithms in Matlab. can implement mathematical functions in Matlab environment	[SW2] Assessment of knowledge contained in presentation [SW3] Assessment of knowledge contained in written work and projects

Subject contents	MATLAB Data types: numbers, strings, scalars, vectors, matrices - they define. Operators and arithmetic functions, operators, and logical functions - used in the sample programs. Random number generators - application examples. 2D charts. Charts feature set for the selected vectors of parameters, graphs of polynomials, polynomial interpolation. Use the GUI module - forms design and development of programs. Expressions symbolic computing elements, differentiation and integration, plotting a function of its integral and derivative for the entered pattern. Fourier series, and the use of a simple inverse FFT signal analysis. Functions of a complex variable, transfer functions, plotting the amplitude and phase characteristics. Writing and reading variables MATLAB files. 3D graphics, plotting curves, surfaces, and solids geometry described matrices. Calculate the volume and surface area. Matrix operations of rotation, scaling and offset of plane figures - animation. 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 Simpsons 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	knowledge of the terminology of programming in English

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
Precence, activity	50.0%	100.0%

Recommended reading

Basic literature	1.MATLAB - obliczenia numeryczne i ich zastosowania, A. Zalewski, R. Cegieła: 2.Programowanie w MATLAB, J. Brzózka, L. Dorobczyński 3 MATLAB i Simulink. Poradnik użytkownika, Bogumiła Mrozek i Zbigniew Mrozek, Helion 4. Arkusze kalkulacyjne, Kopertowska Mirosława, Wydawnictwo Naukowe PWN 5. Access 2007, MacDonald 2007, Helion 2007 6. Funkcje w Excelu, Mirosława Kopertowska, Witold Sikorski, Wyd II, Wydawnictwo Naukowe PWN 2012 7. Excel w obliczeniach naukowych i inżynierskich, Maciej Gonet, Wyd. 2 Helion 2011
Supplementary literature	1.The Student Edition of MATLAB-The Language of Technical Computing-Ver
eResources addresses	Informatyka (PG_00041636) EXCEL ACCESS OCEANOTECHNIKA 2020_2021 - Moodle ID: 9731 https://enauczanie.pg.edu.pl/moodle/course/view.php?id=9731 Informatyka (PG_00041636) EXCEL ACCESS OCEANOTECHNIKA 2020_2021 - Moodle ID: 9731 https://enauczanie.pg.edu.pl/moodle/course/view.php?id=9731 Informatyka (PG_00041636) EXCEL ACCESS OCEANOTECHNIKA 2020_2021 - Moodle ID: 9731 https://enauczanie.pg.edu.pl/moodle/course/view.php?id=9731

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