

Subject information sheet

University: Alexander Dubček University of Trenčín	
Faculty: Faculty of special technology	
Course unit code: KSTM/3-72/d/14	Course unit title: Introduction to the Numerical Modelling in MATLAB I.
Type, scope and method of educational activities: Types of education: Lecture / Practical / Laboratory practical Recommended duration of education (in hours): Per week: 0 / 0 / 2 For the whole period of study: 0 / 0 / 24 Study method: present	
Number of credits: 6	
Recommended semester/trimester of study:	
Degree of study: N	
Prerequisites:	
Conditions for the accomplishment of the course unit: 100% participation in lectures and seminar exercises. Successful completion of tasks assigned during exercises. Successful completion of the final test, given in the form of script programming according to the specified conditions.	
Learning outcomes: The student can program a simple script for solving basic mathematical and technical problems, process experimental data according to the required outputs and subsequently in the form of user-defined graphs.	
Brief course unit content: 1. Matlab's Workspace, Basic operation in Command prompt 2. Creation and Editing of Matlab's scripts: M-files 3. Declaration of variables, vectors and matrixes. Basic mathematics operations and functions. 4. Matrix functions, manipulations with matrix elements 5. Polynomials, manipulations with polynomials – roots, coefficients 6. Figure Object - graphic functions of Matlab. 7. Creation of basic x-y graph, setting and adjusting of graph properties 8. Manipulations with graphs: two data series in one graph, two graphs in one figure object, axes definition 9. Creation of various 2D and 3D graphs types – bar, pie, area, stem and others 10. Semestral task: Creation of user script. 11. Semestral task: Creation of user script. 12. Final test	
Recommended Literature: [1] Matlab help center: https://www.mathworks.com/help/matlab/ [2] YAKIMENKO, O. A.: Engineering Computations and Modeling in MATLAB/SIMULINK. American Institute of Aeronautics and Astronautics, Reston, Virginia, 2011, ISBN 978-1-60086-781-1. [3] DUFFY, D. G.: Advance Engineering Mathematics with MATLAB. Chapman & Hall/CRC, NY, 2003, ISBN 1-58488-349-9.	

[4] BARTKO, R., MILLER, M.: MATLAB I. Algoritmizácia a riešenie úloh. Digital Graphics, Trenčín, 2000, ISBN 80-968337-3-1.

[5] WILSON, H. B., TURCOTTE, L. H., HALPERN, D.: Advanced Mathematics and Mechanics Applications Using MATLAB, Chapman & Hall/CRC, NY, 2003, ISBN 1-58488-262-X.

Language which is necessary for accomplishment of the course unit:

English language.

Notes:

Course evaluation passed/failed

Number of evaluated students: 18

A	B	C	D	E	Fx
83.33	16.67	0.0	0.0	0.0	0.0

Teachers: doc. Ing. Igor Barényi, PhD.

Last modification date: 27.09.2022

Approved by: