Subject information sheet

University: Alexander Dubček University of Trenčín	

Faculty: Faculty of special technology	

Course unit code: KSI/1-87/d/17	**Course unit title:** Applied Informatics

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: 4

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. The student can apply stadard programming logic including condition and cylcles usage. He can also colve matematical problem connected with using of linear regression analysis, differential and integral calculations.

Brief course unit content:
1. Review of Scilab (Matlab) fundamentals
2. Advanced graphs creations – creations of graph from imported values
3. Advanced graphs creations – logarithmic axes
4. Basic programming – user input and data entry
5. Basic programming – conditions
6. Basic programming – cycles
7. Working with functions – user defined functions without/with input parameters
8. Numerical derivation and integration
9. Linear Regression
10. Knowledge summarizing and some practical examples
11. Semestral Task: Matlab Program creation
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: 10

A	B	C	D	E	Fx
100.0	0.0	0.0	0.0	0.0	0.0

Teachers: doc. Ing. Igor Barényi, PhD.

Last modification date: 27.09.2022

Approved by: