UNIVERSITY OF PANNONIA

COURSE DATASHEET

Semester:	2014/15/2
Course:	Computer Science for Engineers I.
Code:	VEMKFOB333S
Responsible department:	Department of Process Engineering
Department code:	MKFO
Responsible instructor:	Zsolt Ulbert

Course objectives:

The modern IT skills and their effective application have indispensable role in the engineering practice and research work. This course aims to provide a wide range of theoretical knowledge in basic IT and to develop student"s problem solving and thinking skills by solving algorithm and software development tasks. Students will gain their practical skills in using a spreadsheet application, and get to know an engineering development environment and related structured programming fundamentals.

Course content:

Theoretical knowledge:

Computers and internet history, operating systems, computer networks, algorithms.

Practical topics:

Introduction to MS Excel spreadsheet:

processing and display of data, drawing functions graphs, calculation of sequences and series, calculation of recursive sequences, using mathematical and logical functions.

Introduction to MATLAB development environment:

Data types, elementary mathematical functions, array and matrix operations, drawing function graphs, solution of algebraic equations.

Introduction to structured programming in MATLAB environment:

Relational operators, conditional statements, loop control statements, using function handles.

Requirements, evaluation and grading:

During the semester students must write two written final examinations on the topics of MS Excel and Matlab skills, one examination during the semester and one at the end of it. The results of these examinations contribute to the final mark by weight of 24% and 36%. In addition to the final examinations, every week an 10-15 minute examination is written on the topics of the previous week"s practical lesson. The aggregate result of these examinations contributes to the final mark by weight of 40%.

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Requirements, evaluation and grading:

The final mark is determined according to following table based on the weighted average of the examinations (Excel examination 24%, Matlab examination 36%, aggregate of weekly examinations 40%):

above 80 excellent (5)

70-79 good (4)

60-69 medium (3)

50-59 pass (2)

below 50 fail (1)

Replacement of written examination is not possible, in this case written examination contributes to the final mark by weight of 0%. The Excel and Matlab written examinations can be improved one time in the first week of exam period.

Conditions for teacher's signature:

The absences from practical lessons will not exceed the 35% of total number of practical lessons and in the aggregate of weekly examinations at least 50% result to be achieved.

Required and recommended readings:

WalkenbachJ. Excel 2010 Bible, Wiley, 1 edition (May 10, 2010)

Gisbert Stoyan, MATLAB - updated edition, WW Norton Publishing, 2011

Garold J. Pepper, Numerical methods with MATLAB, PWS Pub. Co., 1996

Adrian Biran, MATLAB for Engineers, Prentice Hall, 2002

Katsuhiko Ogata, control engineering Solving Problems with MATLAB, Prentice Hall, 1993