ÓBUDA UNIVERSITY
JOHN VON NEUMANN FACULTY OF INFORMATICS

Software Engineering Institute			Semester 1. of the curriculum 2024-25-1			
Name of the subject:	Code of the subject:	Credits:	Weekly hours:			
				lec	sem	lab
Introduction to MATLAB programming	NSXBM1EMNF	4	full-time	0	0	2
Responsible person for the subject: Dr. SERGYÁN Szabolcs			Classification: associate professor			
Subject lecturer(s): Dr. LÉKA Zoltán						
Prerequisites:						
Way of the assessment:	mid-term grade					

Course description	
Goal:	Acquiring the fundamental knowledge and applications related to MATLAB. It serves the dual purpose of teaching computer programming and providing a background in MATLAB.
Course description:	Variables, arrays, vectors and matrices; MATLAB functions, loops, decisions in MATLAB. Linear algebra with MATLAB; basics of 2-D plots, data visualization: frequencies, bar charts and histograms. File input/output operations.

Lecture schedule	
Education week	Topic
1.	Introduction to MATLAB: variables and the workspace
2.	Arrays: vectors and matrices
3.	Operators, expressions and statements
4.	Functions
5.	Loops, repeating with *for*
6.	Decisions, selections
7.	1st midterm exam
8.	File input/output
9.	Elements of linear algebra with MATLAB
10.	Advanced matrix operations
11.	Introduction to graphics: 2-D graphs
12.	Frequencies, bar charts and histograms
13.	2nd midterm exam
14.	Summary, evaluation

Mid-term requirements	
Conditions for obtaining a mid-term grade/signature	Two midterms + 50% homeworks

Assessment schedule	
Education week	Topic
7	Elements of MatLab
13	Linear algebra and basic graphics
14	Rewriting a classroom test

Method used to calculate the *mid-term grade* (to be filled out only for subjects with mid-term grades)

89-100%: excellent (5)
76-88%: good (4)
63-75%: satisfactory (3)
51-62%: pass (2)
0-50%: fail (1)

Type of the replacement	
Type of the replacement of written test/mid-term grade/signature	One of the midterms can be replaced in the final week.
Type of the exam (to be filled out only for subjects with exams)	
Calculation of the exam mark (to be filled only for subjects with exams)	
Final grade calculation methods:	
References	
Obligatory:	J. Michael Fitzpatrick, Á. Lédeczi - Computer Programming with MATLAB, ebook, 2013.
Recommended:	B. Hahn and D. Valentine, Essential MATLAB for Engineers and Scientists, Elsevier, 2002.
Other references:	https://elearning.uni-obuda.hu/