האוניברסיטה העברית בירושלים THE HEBREW UNIVERSITY OF JERUSALEM



The Hebrew University of Jerusalem

Syllabus

MATLAB FOR EARTH SCIENCES - 76628

Last update 31-08-2022

HU Credits: 2

Degree/Cycle: 1st degree (Bachelor)

Responsible Department: Programming Instruction Unit

Academic year: 0

Semester: 2nd Semester

<u>Teaching Languages:</u> Hebrew

Campus: E. Safra

Course/Module Coordinator: Dr. Roie Knaanie

Coordinator Email: roie.knaanie@gmail.com

Coordinator Office Hours: see moodle

Teaching Staff:

Dr. Roie Knaanie

Course/Module description:

Learning Matlab data and control structures, functions, and other tools and their practical use, in order to provide the ability to solve computable mathematical problems.

Course/Module aims:

The course goal is to present the main features of the Matlab software in order to enable a working knowledge of practical mathematical processing

Learning outcomes - On successful completion of this module, students should be able to:

Ability to use different tools of Matlab, in order to practically solve computable mathematical problems

<u>Attendance requirements(%):</u>

none

Teaching arrangement and method of instruction: Frontal lectures and exercises in computers labs

Course/Module Content:

Matlab environment M- Files , Scripts, variables, Matlab Control Flow if & loops **Functions** Structured Data Types File Input Output Defining functions Graphics, 2D & 3D Plotting in Matlab Linear Algebra with Matlab Solving a system of linear equations Data Analysis & Statistics Solving differential equations- solve, dsolve Polynomial functions Interpulation cftool

Numerical Methods

<u>Required Reading:</u> NA

<u>Additional Reading Material:</u> Matlab - שלזינגר אריה ר"ד / טיולים מדריך

MATLAB : an introduction with applications / by Gilat, Amos

Mastering MATLAB 2012 Edition Duane Hanselman & Bruce R. Littlefield

<u>Course/Module evaluation:</u> End of year written/oral examination 85 % Presentation 0 % Participation in Tutorials 0 % Project work 0 % Assignments 15 % Reports 0 % Research project 0 % Quizzes 0 % Other 0 % In case a class exam is not possible, a h

Additional information:

Submission of 9 exercises with a score of "passing" is a condition for eligibility to be tested in the final exam at the end of the course, And earns 15 points in the final score.

The weight of the final exam in the final grade is 85%. Written exam, two hours. Written or printed reference material is permitted to be used.

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