



Course Title:

Processing Big Data with MATLAB

Course Purpose

This one-day course focuses on adapting existing algorithms to work with a collection of data files or a single file that is too big to fit in memory. Learn to represent big data in MATLAB®, adjust existing code to work efficiently with it, and scale up the analysis to take advantage of your own computing resources or a cloud. Topics include:

- Introduction
- Creating datastores to read from data sources
- Representing and manipulating big data using tall arrays
- Importing custom data formats and applying custom functions to tall arrays
- Working with clusters of computers and cloud environments
- Conclusion

Pre- requisites

MATLAB for Data Processing and Visualization



- ✓ 1 training day
- ✓ Hours: 09:00-17:00
- ✓ Total training hours: 8

Teaching method

The course combines lectures, demonstrations, and practical exercises in MATLAB, using original training books from MathWorks. The course is in Hebrew, but the training materials are in English.

עמוד מס' 1

Training Center Systematics - Contact information:

Phone number: 03-7660111 Ext: 6 **Email:** training@systematics.co.il

Website: <http://www.systematics.co.il/courses/mathworks/details/>



Course Objective:

Introduction

Objective: Understand MathWorks products, a brief company history (The MathWorks & Systematics Limited), and course schedule.

Prototyping Big Data Algorithms

Objective: Applying existing algorithms to data sets that do not fit into memory.

- Importing data using datastores
- Creating tall arrays
- Running algorithms on tall arrays
- Optimizing code for tall arrays
- Reading data from cloud environments

Handling Custom Data and Algorithms

Objective: Importing custom formatted data and applying algorithms that are not implemented for tall arrays

- Importing custom formatted data using file datastores and custom datastores
- Partially importing single files
- Applying transformations, reductions, and moving window operations to tall arrays

Working with Clusters and Clouds

Objective: Run big data algorithms on a cluster of computers or on cloud environments.

- Local and remote clusters
- Cluster discovery and connection
- Setup of a cluster on a cloud environment
- File access considerations

עמוד מס' 2

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