



Course Title:

Building Interactive Applications in MATLAB

Course Purpose:

This one-day course demonstrates how to create an interactive user interface for your applications in MATLAB®. Attendees will learn about user interface controls, such as push buttons and text boxes, and how to use them to create a robust and user-friendly interface to your MATLAB application. No prior experience of programming graphical interfaces is required. Topics include:

- MATLAB graphics objects
- User interface controls
- Callback functions
- Graphical user interface development environment (GUIDE)
- Application deployment

Pre- requisites:

MATLAB Fundamentals



- ✓ One 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: 5 **Email:** training@systematics.co.il

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



Course Objective:

Graphics Objects

Objective: Review graphics concepts and manipulate graphics objects programmatically.

- Graphics objects
- Object properties and values
- Object hierarchy
- Current axes and figures

Components of an Interface

Objective: Create functional user interface controls on a MATLAB figure window.

- uicontrol objects
- Object position
- Callbacks
- Event execution
- Edit boxes

Programming Considerations for Interactive Applications

Objective: Apply programming techniques to build robust, self-contained applications, and to organize application data.

- Function callbacks
- Local application data
- Data organization
- Callback data

Creating Interfaces Using GUIDE

Objective: Use GUIDE to interactively design an application interface.

- GUIDE workflow
- GUIDE layout
- Object properties
- GUIDE code template

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Programming Applications Using the GUIDE Template

Objective: Modify the callback function stubs created by GUIDE to create a fully functional application.

- Application data
- Application data additions and modifications
- Graphical interfaces to existing functions

Deploying Applications

Objective: Generate a standalone executable from a MATLAB application that can be shared with others.

- Deployment overview
- Deployment project setup
- Standalone executable files

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