

Workshop course content on MATLAB

Objective: MATLAB (matrix laboratory) is a multi-paradigm numerical computing environment and fourth-generation programming language. MATLAB allows matrix manipulations, plotting of functions and data, implementation of algorithms, creation of user interfaces

DAY1

Session1:

- Matlab basic operation
- Matrix operations
- Array operations

Session 2:

- Plotting commands
- Graph functions
- X-Y plot and annotations
- Logarithmic and polar plots
- Scatter plots

Session3:

- Control systems
- For loops
- Nested loops
- If statements
- Nested if statements
- Input output commands

Session4:

- Mini projects
- Filter design
- Modulator and demodulators design
- Rectifiers

DAY2:

Session5:

- Fundamentals of writing, reading, displaying images
- Types of images and conversion
- Intensity transformation function
- Histogram processing
- Linear spatial filtering

Session 6:

- Frequency domain processing
- Low pas frequency pass filter
- Basic high pass filtering
- Noise models
- Image restoration

Session7:

- Special topic
- Wavelets in the image processing
- SVD in the image processing
- JPEG image compression
- Image segmentation
- Color image processing

Session8:

- Final project
- Prize distribution