

## **Image Processing using Matlab**

Matlab is high level language and interactive environment for exploring and visualizing your ideas into actions. With the assistance of Matlab programming you can do just about everything from little program to making a picture. In this program will provide you knowledge of software on different applications.

### **Introduction to Matlab**

- Introduction to Matlab environment
- Industrial use of Matlab
- Matlab Installation
- Basic Commands on command window in Matlab
- Data Types
- File Management
- How to write M file

### **Matrix operation using Matlab**

- Arithmetic Operations
- Entering Matrices
- Mathematical operation on Matrices
- Magic Matrices

### **2D Plotting using Matlab**

- Types of Plots
- Creating a 2D and 3D Plots
- Plotting Multiple Data Sets in One Graph
- Specifying lines style and color
- Plotting Lines and Makers
- Adding Axis Labels and Titles
- Saving Figures

### **Image Processing**

- Introduction to image processing
- Types of Images
- Creating Images using Matrices
- Import of images
- Display and Exploration of images

### **Image Acquisition**

- Introduction to Image Acquisition
- Installation of Image Acquisition device
- Acquired image data
- Image Acquisition with Matlab GUI

### **Live Projects**

- Calculator using MATLAB GUI
- Password window using MATLAB GUI
- Live video recording
- Red object detection

### **Query Session**

After completing workshop there will be a query session which will help students to clear all their doubts.

### **Competition**

After the hand on theory and practical experience from the workshop, Competition will be conducted for the participants.

### **Certificate Distribution**

Participants will get Participation Certificate and winners will get winning Certificates.