

MODULE- MATLAB

➤ Introduction to MATLAB.

- What is MATLAB?
- Why we used MATLAB?
- ADVANTAGE OF MATLAB?

➤ Introduction to MATLAB Software.

➤ MATLAB Environment

- Command window
- Current Directory
- Workspace
- Command History

➤ Introduction of Array.

➤ Introduction of Vector.

➤ Introduction of Matrix.

➤ Mathematical operation

- Addition
- subtraction
- Multiplication
- Division
- Inverse of matrix.

➤ Introduction of plotting

- Plotting of vector in 2D form
- Plotting of vector in 2D form
- Plotting of sin function
- Plotting of cos function
- Plotting of pi function in 2D form
- Plotting of pi function in 2D form

➤ Introduction of image processing

- What is image processing?
- Why we use image processing?
- Advantages of image processing?

➤ Type of Image

- RGB Image
- Gray Image
- Binary Image

➤ Formats of image.

➤ Image Processing toolboxes.

- Reading the image
- Writing the Image

➤ Arithmetical operation on Image

- Addition of Image.
- Subtraction of Image
- Multiplication of Image

➤ Division of Image

➤ Image Conversion

- RGB Image to Gray Image
- Gray Image to Binary Image
- RGB Image to Binary Image

➤ Editing of Image

- Resize image
- Rotate the image
- Add the Title of Image
- Subplotting of Image.

➤ **Morphological operations**

- Dilation and Erosion
- Opening and Closing
- Boundary Extraction
- Filling

➤ **Introduction of Image Acquisition Toolbox**

- Check the camera adaptor and supported format.
- Initialize the Camera.
- Take the photo from camera in MATLAB.
- Motion Detection

➤ **Introduction of Graphics user interface (GUI)**

- What is GUI?
- Why we use GUI?
- Advantages of GUI?

➤ **Starting the Design of GUI.**

➤ **Basic Calculator**

➤ **Advance Calculator**

➤ **Stop watch**

➤ **Digital clock**

➤ **Table Convertor**

➤ **Temperature Convertor**

➤ **MAIL Sender**

➤ **Puzzle Game**

➤ **Slide show**

➤ **Data base**

➤ **COLOR DETECTION**

➤ **Object detection**

➤ **Introduction of actxserver**

➤ **How to use power point in Matlab**

➤ **How to use window media player**

➤ **Object control power point**

➤ **Object control media player**

➤ **Serial communication using Matlab**

➤ **Ball follower robot**

➤ **Introduction of Simulink**

- Integrator
- Derivative
- Low pass filter
- High pass filter
- Band pass filter
- Band stop filter

Number of Projects Covered in MODULE:-

- **Basic Calculator**
- **Advance Calculator**
- **Temperature convertor**
- **Stop watch**
- **Digital Clock**
- **Table Convertor**
- **MAIL Sender**
- **Puzzle Game**
- **Slideshow**
- **Data base**
- **GUI based Image arithmetic**