

MATLAB

Course Name : MATLAB

Certification : By **UVSoftsTechnologies Pvt. Ltd.**

Projects: 14 Projects Covered in 30 Days.

Introduction:-

Theory:-

- Introduction to MATLAB.
 - What is MATLAB?
 - Why we used MATLAB?
 - ADVANTAGE OF MATLAB?

Theory:-

- Introduction to MATLAB Software.
- MATLAB Environment
 - Command window
 - Current Directory
 - Workspace
 - Command History

Theory:-

- Introduction of Array.
- Introduction of Vector.
- Introduction of Matrix.

Theory & Practical:-

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

Theory & Practical:-

- 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

Theory:-

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

Theory & Practical:-

- Type of Image
 - RGB Image
 - Gray Image
 - Binary Image
- Formats of image.

Theory & Practical:-

- Image Processing toolboxes.
 - Reading the image
 - Writing the Image

Theory & Practical:-

- Arithmetical operation on Image
 - Addition of Image.
 - Subtraction of Image
 - Multiplication of Image
 - Division of Image

Theory & Practical:-

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

Theory & Practical:-

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

Theory & Practical:-

- Morphological operations
 - Dilation and Erosion
 - Opening and Closing

Theory & Practical:-

- Morphological operations
 - Boundary Extraction
 - Filling

Theory & Practical:-

- Introduction of Image Acquisition Toolbox

Theory & Practical:-

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

Theory & Practical:-

- Motion Detection

Theory & Practical:-

- Introduction of Graphics user interface (GUI).
 - What is GUI?
 - Why we use GUI?
 - Advantages of GUI?

Theory :-

- Starting the Design of GUI.

Practical:-

- Basic Calculator
- Advance Calculator
- Stop watch
- Digital clock
- Table Convertor
- Temperature Convertor
- Phonebook
- Puzzle Game
- Slide show
- Data base

Theory:-

- Introduction of microcontroller
 - Atmega-8
 - Atmega-16 & AVR Family
- Introduction of embedded C

Theory:-

- Introduction of real time practicals
 - LED
 - Motor
 - L293D

Theory:-

- Introduction of serial communication
- USART
- Introduction to serial communication in MATLAB
- Working with COM ports in MATLAB

Practical:-

- GUI based Image arithmetic.

Practical:-

- LED Animation with MATLAB
- Motor Control through MATLAB

Practical:-

- Line follower robot with LabVIEW

Number of Projects Covered in BASIC MODULE:-

- Basic Calculator
- Advance Calculator
- Temperature convertor
- Stop watch
- Digital Clock
- Table Convertor
- MAIL Sender
- Puzzle Game
- Slideshow

- Data base
- GUI based Image arithmetic.
- Motor Control through in MATLAB
- LED Animation with MATLAB
- Line follower robot with MATLAB.