MATLAB SYLLABUS

I) Introduction To Matlab

1. Matlab as {best} calculator
2. Introduction to various toolbars and windows in matlab
3. **Operations with variables**
a) Naming
b) Checking existence
c) Clearing
d) Operations
4**. Matrices vectors and Scalars**
a) Columns and rows: creation and indexing
b) Size & length
c) Multiplication, division, power
d) Operations
5**. Writing script files**
a) Logical variables and operators
b) Flow control
c) Loop operators
6. Writing functions
a) Input/output arguments
b) Function visibility, path.
c) Example: Matlab startup
7.**Graphics**
a) Useful commands for 2D plotting
b) Figures and subplots
c)Stem plot
d)Bar plot
e)Histogram plot
8.Importing and exporting data through matlab

II) Digital Signal Processing in Matlab.

1. Plotting sine, cos, tan signals
2. Signal advancing, delaying
3. Addition, Subtraction, Multiplication and Division of signals
4. Formatting of the plot.

III) Introduction to Image Processing

1. Understanding Image types (RGB,Grayscale,Indexed,black and white)and their formats (JPEG, BMP)
2. Image import and export commands
3. Various image operations(Resizing ,Croping,rotating)
4. Resolving image into a 2D Matrix with single channel.
5. Resolving image into pages such as color channels
6. Detecting Red, Green, Blue Colors from image.
7. Detecting Intensity from Image and varing the intensity of image
8. Introduction to Edge Detection
9. Counting objects in an image with white background.

IV) Audio video analysis

1. Triggering webcam(Manual and Immediate)
2. Capturing image through webcam.
3. Preview using webcam
4. Audio recording commands.
5. Video recording commands.
6. Voice recognition algorithm