Matlab

SYLLABUS

COVERAGE

- MATLAB Basics
- Research Activities using MATLAB
- Error Solving Techniques
- Coding techniques for fast execution
- Interfacing with different software languages
- 2D and 3D plotting
- Graphical User Interface design
- File export and import with MATLAB workspace
- Use of power system, control system & communication system tool box
- Use of signal processing & soft computing toolbox
- Use of MATLAB tools for fast computation
- Creating MATLAB libraries
- Simulation model design using MATLAB-Simulink
- Interactive session for VLSI domain students

SYLLABUS IN DETAILS

Introduction
- Why MATLAB?
- History
- Its strengths
- Weaknesses
- Competitors
- Starting MATLAB, Using MATLAB as a calculator, Quitting MATLAB

Basics
- Familiar with MATLAB windows
- Basic Operations
- MATLAB-Data types
- Rules about variable names
- Predefined variables

Programming-I
- Vector
- Matrix
- Array Addressing
- Built-in functions
- Mathematical Operations
- Dealing with strings(Array of characters)
- Array of array(cell) concept

Programming-II
- Script file
- Input commands
- Output commands
- Structure of function file
- Inline functions
- Feval command
- Comparison between script file and function file

Conditional statements and Loop
- Relational and Logical Operators
- If-else statements
- Switch-case statements
- For loop

- While loop
- Special commands(Break and continue)
- Import data from large database
- Export data to own file or database

2D Plotting
- In-built functions for plotting
- Multiple plotting with special graphics
- Curve fitting
- Interpolation
- Basic fitting interface

3D Plotting
- Use of meshgrid function
- Mesh plot
- Surface plot
- Plots with special graphics

GUI
- Creating menu window for providing input
- Creating graphical user interface table
- Modifying table content
- Creating a database

Simulink
- Model design
- Simulation
- Know your MATLAB tool (Branch specific)
- Interactive session for VLSI domain students
- Create application specific IC for Xillinx
- Project