National Institute of Electronics and Information Technology, Aurangabad

COURSE PROSPECTUS

Name of the Group: VLSI & Embedded System
Name of the Course: Certificate course on MATLAB
Starting Date: 8 may 2017
Course Duration: 5 days
Time: 5 hours per day (10 AM-1 PM) & (2:30 PM-4:30 PM)

Preamble: Given the growing demand for skilled professionals, and the rapid changes in technology, there is an increasing need to keep the academia abreast of the skill set requirement of the industry. The course has been designed to meet this requirement. This job-oriented course is designed with a proper balance of theory with practice, so that students get enough hands on experience.

Objective of the course: < The objective of this course is to provide the student with an expertise in MATLAB Programming. On completion of course, the student will be able to develop, design and maintain MATLAB-based enterprise applications effectively.

Outcome of the course: The participants will be able to understand, compile and debug MATLAB code. They will be able to develop algorithm for MATLAB based projects.

Contents

4. VECTORS, MATRICES AND ARRAYS OPERATION USING MATLAB

- Row, column vectors
- Vector operations- Addition, Subtraction, multiplications etc.
- Transpose, conjugate, determinant and inverse of a Matrix
- Multidimensional Arrays ,sorting array etc

5. COLON NOTATION, NUMBERS, STRINGS AND FUNCTIONS IN MATLAB

- Conversion to Various Numeric Data Types
- Smallest and Largest Integers, floating point no's
- String Functions in MATLAB
- Combining Strings into a Cell Array

6. DATA INPUT AND OUTPUT, PLOTTING AND GRAPHICS IN MATLAB

- Import and export Text Data Files
- Adding Title, Labels, Grid Lines, and Scaling on the Graph
- Drawing Multiple Functions and sub plotting
- Setting Colors, Axis Scales
- Drawing Bar Charts, contours and 3D plots

7. ENGINEERING MATHEMATICS USING MATLAB

- Algebra
- Calculus
- Differential
- Integral
- Polynomials
- Elementary Transforms

8. SIMULINK, DSP AND ITS APPLICATIONS

- Basics of Simulink
- Blocks designing in Simulink
- Basic of DSP
- Filter designs applications

Course Structure

Module Name & Contents	Duration Hrs (Day)
1. OVERVIEW, ENVIRONMENT AND BASIC SYNTAX 0F MATLAB	**02 (day 1)**
2. VARIABLES, COMMANDS AND M-FILES OF MATLAB	**03 (day 1)**
3. DATA TYPES AND OPERATORS OF MATLAB	**03 (day 2)**
4. VECTORS , MATRICES AND ARRAYS OPERATION USING MATLAB	**02 (day 2)**

5. COLON NOTATION, NUMBERS, STRINGS AND FUNCTIONS IN MATLAB	**05(day 3)**
6. DATA INPUT AND OUTPUT, PLOTTING AND GRAPHICS IN MATLAB	**05 (day 4)**
7. ENGINEERING MATHEMATICS USING MATLAB	**02 (day 5)**
8. SIMULINK, DSP AND ITS APPLICATIONS	**03 (day 5)**

Lab Facilities: MATLAB 9.0

Other Contents

a. **Course Fees**: 2,500/- service tax extra.
b. **Eligibility**: B.E./ B. Tech. candidates with basic knowledge of programming.
c. **Number of Seats** : 20
d. **Selection of candidates:** The selection of candidates is based on the qualification subject to eligibility and availability of seats.