National Institute of Electronics and Information Technology, Calicut

CDS/CA/7.5.1/F 40/R4

COURSE PROSPECTUS

Name of the Group : **VLSI Design Group**

Name of the Course : **Certificate Program on MATLAB® Fundamentals**

Course Code : **VL100**

Starting Date : **Custom Batches can be arranged upon request**

Duration : **One Week (2 Hours Daily).**

Preamble :

This course on MATLAB fundamentals shows how to get started with using MATLAB as a language and platform. It covers the basics of MATLAB syntax, explains computational mechanisms including work with arrays and matrices, shows means of data visualization and demonstrates the use of object-oriented principle

Objective of the Course:

The Certificate Program on MATLAB Fundamentals will enable Electronics graduates/post graduates/Final year/ Pre-final Year graduates or working engineers in electronic industries to provides a comprehensive introduction to the MATLAB technical computing environment.
The main objectives are:

- understanding the MATLAB environment
- being able to do simple calculations using MATLAB
- being able to carry out simple numerical computations and analyses using MATLAB

This is offered to bridge the gap in competencies required to design digital systems in Matlab. This course enables students to have industry oriented training before they graduate from their colleges.

Outcome of the Course :

Upon successful completion of this course, the student should be able to:

- understand the main features of the MATLAB development environment
- use the MATLAB GUI effectively
- design simple algorithms to solve problems
- write simple programs in MATLAB to solve scientific and mathematical problems, know where to find help

Course Structure :

This course is structured to provide an insight into MATLAB and its Tool Boxes

The course will be on a 2 Hour/Day basis with equal emphasis on theory and hands on sessions.

Other Contents

a. **Course Fees** : *1500 plus Service Tax*.*
Service Tax as per govt of India norms.

Eligibility : Graduate/Final Year and Pre-final year students of B.E/B.Tech/B.Sc/MSc/Engineering Graduates in Electrical/Electronics/Electronics and Communication/Bio-Medical Engineering/Medical Electronics/Electronics & Instrumentation/Computer Science and allied branches.

b. Number of Seats : *20*

c. How to Apply :

Students are advised to apply in the prescribed Application Form available with the course brochure/course prospectus or downloaded from our website. Filled-in application forms along with payment proof of fees have to be forward to "Training Officer", NIELIT Calicut, NIT Campus Post, PB No.5 Calicut 673601. The application can also be handed over in person to Front office counselor.

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Modes of Payment: *The course fee can be paid by one of the following methods as per convenience*

1 (Pay in – slip)	*Through any branch of SBI (where this format is accepted) using the pay in slip available in our web site. The **original counterfoil** should reach here before the last date to apply.*
2 (Online Bank-Transfer)	*The fees can be paid directly into our account from any bank where core banking facility is available. The details required for direct payment are as given below.* • *Savings Account No: **31329537747*** • *Bank Name: SBI, NIT Chathamangalam* • *Bank Code: 2207* • *IFSC No: SBIN0002207* • *MICR : **673002012*** *The depositor should obtain the UTR Number/Journal No from the branch while depositing cash directly into our account. Depositor should also obtain the counterfoil duly filled up and signed by the staff with seal of the bank through which the amount was deposited. The following details should reach here before the last date to apply.* 1. *Name of the Depositor* 2. *Name of the Student* 3. *Date of Payment* 4. *Amount Deposited* 5. *Name of Bank/branch through which amount deposited* 6. *Purpose – Course ID – Advance Deposit/Hostel Rent/Installment Fee etc.* 7. *Proof of Deposit (counterfoil/acknowledgement **in original**)* 8. *UTR Number*
3 (State Bank Collect)	*The fees can be paid through the **State Bank collect** Payment Gateway as well (www.onlinesbi.com)* 1. *Please click the SBI Collect hyper link to enter the payment gateway.* 2. *Select State of Corporate/Institution as Kerala* 3. *Select Type of Institution Educational Institutions and click on Go button* 4. *Select Educational Institutions Name as NIELIT and click Submit button* 5. *Select Payment Category as Course Fee* 6. *Enter all the fields including amount payable and follow the instructions*

The Institute will not be responsible for any mistakes done by either the bank concerned or by the depositor while remitting the amount into our account.

a. Selection of candidates : Students interested to learn MATLAB subject to availability of seats.

b. Test/Interview (if applicable) : *Not Applicable for this course*

d. Counseling/Admission : Counseling/Admission will be on the date of the commencement of the course.

c. Admission Procedure :
Students selected for the course has to report to the Institute on the prescribed day before 4:00PM along with the following
1. Copy of the ID card of the Institute in which student is studying/Degree Certificate if the student has completed the degree.
2. Two photographs.
3. Fee Payment Proof.
The students on reaching the Institute are required to meet the Front Office Councilor (FOC). The FOC then directs the student to the Course Coordinator. The student gets the enrollment form verified by the Course Coordinator .The Course Coordinator shall recommend the names of student to Training officer for admission. A student is thus admitted.

d. Discontinuing the course: No fees under any circumstances shall be refunded in the event of a student discontinuing the course.

e. Course Timings: *4.30 PM to 6.30 PM (Proposed).*

f. Location and how to reach :
NIELIT Calicut is located very close to NIT campus and is about 22Kms from the Calicut (Kozhikode) city. A number of buses (Buses to NIT via Kunnamangalam) are available from "Palayam Bus Stand and KSRTC Bus Stand". The bus stop at our Institute is called "CEDTI" and is one stop before NIT. The bus fare is around *Rs.17/-* from Calicut City to NIELIT.

Calicut (Kozhikode) is well connected by Rail, Road and Air form different parts of the country. The maximum and minimum temperatures range between 35^0C and 20^oC.

g. Course enquiries :
Students can enquire about the various courses either on telephone or by personal contact between 9.15 A.M. to 5.15 P.M. (Lunch time 1.00 pm to 1.30 pm).

Contact Details	
VL100 Course Coordinator	**9447769756**/0495-2287266-222
Course Coordinator's email	**Sreejeesh@nielit.gov.in**
Training Officer	0495 – 2287266/ 2287268
Training Officer's E-mail:	**trng@calicut.nielit.in**
Office Fax	0495 - 2287168

h. Important Dates (if applicable) : *NA*

i. Placement : *NA*

j. Hostel facilities : *Not Applicable for this Course*

k. Canteen facilities :
The Institute has a canteen functioning at the main campus and food at reasonable rates is available for breakfast, lunch, and dinner

l. Lab Facilities :

Altera & Xilinx Development Boards & Trainer Kits
Xilinx ISE, Altera Quartus II, NIOS II Trainer Kits
ASIC Design & Verification tools from Cadence.
Complete range of Simulation, Synthesis Tools from Mentor Graphics
FPGA Design and Verification Tools
Hardware-Software Co-verification Tools
IC Nanometer Design Tools (Back end tools)
System Modeling Tools
Digital Storage & Mixed Signal Oscilloscopes
Logic Analyser & SMD Reworkstation

m. Course Contents :

Reading data from files, Saving and loading variables
Plotting data, Customizing plots
Exporting graphics for use in other applications, Entering commands
Creating numeric variables Creating character variables,
Making and annotating plots Getting help
Accessing and modifying values in variables, Performing calculations with vectors
Creating multiple plots, Using the Command History
Creating script files, Running scripts
Dividing code into sections, Publishing scripts Creating and manipulating matrices
Performing calculations with matrices, Calculating statistics with matrix data
Visualizing matrix data, Representing dates and durations
Performing calculations with dates and durations
Plotting with dates, Extracting numeric components of dates and durations
Storing data as a table, operating on tables
Extracting data from tables, Modifying tables
Logical operations and variables, Finding and counting
Logical indexing, Programming constructs
User interaction, Flow control Loops, creating functions
Calling functions Setting the MATLAB path, Creating and using structures
Debugging with the MATLAB Editor Using breakpoints