COURSE PROSPECTUS

Name of the Group: *Embedded System Group*

Name of the Course: Certificate course Mobile Hardware and Architecture

Course Code: MC300

Starting Date: 10th April 2018

Duration: *4 Weeks*

Preamble:

In India, the design aspect is still new but thanks to Government initiatives like the 'Make in India', the demand for hardware designers is growing dramatically.

Hardware design in handset industry, especially integration of key components is lacking in India. And without the right knowledge, a designer may face lot of challenges:

To better compete in the global market, successful companies are finding that investments in hardware and software are no longer enough. Human elements with specialized engineering and design skills have become the essential part of equation.

Objective of the Course:

To mould fresh electronics engineers and to retrain working engineers into High Caliber professionals by enhancing their knowledge and skills in various hardware and software design aspects of Mobile phone hardware . This course offers a range of topics of immediate relevance to industry and makes the students get brief idea for industries engaged in Mobile hardware design and development. This course is also an excellent preparation for those wishes to engage in application research in this rapidly developing area. Also the course offers the idea of how to develop products specific to Indian needs in the domains.

Outcome of the Course:

On completion of the Course, the Participants

- Gain basic and intermediate picture for mobile hardware architecture

- Acquire basic capability to choose key component

- Understand and exhibit intermediary role through integration of components

Course Structure: *This course contains total three modules.*

ED	Module Name	Weeks
MC301	Mobile Hardware Basics	1
MC302	*Embedded Bus protocols and interfacing*	1
MC303	*Operating Systems Fundamentals for Mobile Phones*	1
MC304*	*Case study (Mobile Handset Assembly and Mini project)*	1
	Total	4

Other Contents

a. **Course Fees** :

General Candidates:

1. Course fee is **Rs 7500** + GST 18% , (for Three weeks)

2.* *Fee for Mobile Handset Assembly and case study: **Rs.5000 + GST 18% ,*** (for one week). This is an o*ptional module : All Candidates (Including SC/ST Reservation candidates) interest to attend MC304 module need to pay additional amount. They will be allowed to carry the kit.*

SC/ST Candidates: Tuition Fees/Examination fees are waived for SC/ST students admitted under SCSP/TSP. However they are required to remit an amount of Rs. **1000/- as Advance caution/security deposit**. This amount will be considered as caution/security deposit and will be refunded after successful completion of the course. If the student fails to complete the course successfully this amount along with any other caution/security deposits by the student will be forfeited.

Modular wise Course Fee: Not Applicable for this course.

b. **Registration Fee:** An amount of Rs 1000/- should be paid at the time of registering for the course. The same will be considered as caution deposit on student joining the course. This advance deposit will not be refunded for a selected candidate who does not join the course.

c. **Course Fee Installment Structure**:

Students can pay the full fees of **Rs 7500/-** + GST 18% in advance

Fees	*Amount for General Candidates	Amount for SC/ST Candidates	Due Date (on or before)
** Fee For Three weeks	Rs. 8850 /-	**Rs 1000/-** (refundable after successful completion of course)	*10/04/2018*
Fee for Mobile Handset Assembly and case study- Optional Module	Rs. 5900/-	Rs. 5900/-	*17/04/2017*

* Above fees is inclusive GST 18% and revision if any will be applicable at the time of payment.

d. **Eligibility:**

   i. *M.E./M.Tech (Passed out or final Year students) or B.E./B.Tech (Passed out or final Year students) in Electronics/ Electronics & Communication/ Electrical/ Electrical and Electronics/Instrumentation/ Biomedical /Computer Science/Information Technology or MSc. (Passed out or final Year students) in Electronics/ Instrumentation/ Computer Science/Information Technology or Diploma in Electronics/CS/IT/EEE/EI or BSc in CS/Electronics or MCA*

   ii. *Candidates who have appeared or studying in final Year in the qualifying examination and awaiting results may also apply.*

   iii. *On the date of counseling/admission, the candidate must produce the original mark lists up to the last semester/year of examination.*

e. **Number of Seats :** *25*

f. **How to Apply :**

Students are advised to apply online @http://nielit.gov.in/content/online-registration. Payment towards advance fee of Rs.1,000/- *may be paid the SBI Collect Payment Gateway* @http://nielit.gov.in/calicut/content/mode-payments-0

Rs.1000/- will be considered as refundable caution deposit on student joining the course, which will be refunded on successful completion of course. This advance deposit will not be refunded for a selected candidate who does not join the course.

SBI Collect Payment Gateway:

1. Please click the SBI Collect hyper link to enter the payment gateway.
2. Select Payment Category as *Course Fee*
3. Enter all the fields including amount payable and follow the instructions

The following details should reach here before the due dates.

1. Name of the Depositor

2. Name of the Student

3. Date of Payment

4. Amount Deposited

5. Purpose – Course Name:

6. UTR Number

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.

g. **Selection of candidates :** *The selection to the course shall be based on the following criteria:*

 i. *Selection of candidates will be based on their marks in the qualifying examination and subject to eligibility and availability of seats. Knowledge in C Programming and Basic Electronics is a pre-requisite of this course.*

 ii. *The First list of Provisionally Selected Students will be published in our website* http://nielit.gov.in/calicut/ *on* 7th **April 2018.**

 iii. *All candidates who appear in selection list may pay* Rs. 8850 /- *on counseling day ie, on* 10thApril 2018 *by* **direct payment into our account** *from any bank where core banking facility is available.*

h. **Counseling/Admission :** *All candidates* **provisionally selected** *and* **paid the fees** *will have to be present personally for* **counseling and admission** *on* **10thApril 2018** *with all the necessary documents (originals and attested copies). Working days are from Monday to Friday. Admission timings are from 9.30 am to 4.00 pm. Those who don't bring the necessary documents (originals and attested copies)* **by 10thApril 2018** *are not eligible for admission and counseling.*

i. **Spot Admission:** If spot admission is open, spot admission will close within 2 days of Counseling/Admission of a particular course. On spot admission

students should provide an undertaking saying that he/she is fully aware that he/she missed so much days of class and will not ask for extra classes or further extension of course.

j. **Admission Procedure :**

Students who have been selected for test/interview/counseling/admission are required to report to the Institute on the prescribed day by 9:30 hrs along with the following

1. Original and attested Copies of Proof of Age, Qualifications, etc

2. One passport size photograph and one stamp size photograph for identity card.

3. SC/ST Certificate (Original and attested copies, if applicable)

4. Income Certificate (Original and attested copy, if applicable)

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 certificates and enrollment form verified by the Course Coordinator and then meets the FOC who shall direct the student to the Accounts for payment of fees. A student is thus admitted, attested copies of all documents shall be handed over to the Course Coordinator.

k. **Discontinuing the course**: No fees (including the caution deposit) under any circumstances, shall be refunded in the event of a student discontinuing the course. No certificate shall be issued for the classes attended.

A student can however, be eligible for module certificates (applicable only for courses which provide for modular admission) which he has successfully completed provided, he/she has paid the entire course fees. This is not applicable to SC/ST candidates availing fee concession. SC/ST candidates availing fee concession are eligible for module certificates only after completing the full course with required attendance.

l. **Course Timings :**

This program is a practical oriented one and hence there shall be more lab than theory classes. The classes and labs are from 9.30 am to 12.45 pm and 1.30 pm to 5.15 pm Monday to Friday. During project work, the timings are from 9.15 am to 5.15 pm. The theory to lab proportion is 30:70.

m. 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 "Panthrand" and is one stop before NIT. The bus fare is around Rs17/- 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.

n. **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) Monday to Friday.

o. **Important Dates (if applicable) :**

10th April 2018 - **Counseling , Commencement of classes**

p. **Placement :** *We have a placement cell, which provides placement assistance to students who qualify our courses. The course improves the knowledge and skill of the students as it deals with the latest technologies and tools used in industries. This helps the student in getting a placement by*

a. *Campus placement*
b. *Placement by companies for whom we send the students bio data and they conduct interviews at their site.*
c. *Students themselves attend interview at different companies and the course helps in the interview.*

r. **Hostel facilities :**

Hostel accommodation is available for boys and girls on monthly or daily chargeable basis. The hostel fee varies from Rs.1,400 /- to Rs.1,500/-- per month depending on the type of accommodation. However, students are required to pay the hostel fees for the duration of the course for which they are seeking admission at the time of joining the course.

s. **Canteen facilities :**

Canteen & Mess facility is available for both boys & girls, students, those who avail mess facility should pay monthly mess fee @Rs.130/- per day. An amount of Rs.1,000/- should be paid as mess advance to the Canteen Contractor at the time of joining the mess which will be adjusted in the last month mess fee.

An amount of Rs.3,000/- should be paid as caution deposit (hostel & mess) at the time of joining the hostel which will be refunded/adjusted at the end of the course.

t. **Lab Facilities**

q. Lab Facilities

We have state-of-the-art lab facility in embedded systems which include,

- *32-bit ARM Microcontroller Development Systems – ARM Cortex-M3/M4 STM32, ATMEL ARM9 EK & CIRRUS LOGIC EDB9315*

- *Friendly ARM, Rasberry PI , Intel Galileo and Arduino Boards*

- *8-bit &16-bit Microcontroller Dev. Systems - Intel 8051, 80C196, MPLAB for PIC 16 & 18 series, Cygnal etc*

- *IoT application development tools - Contiki OS, mbedOS, GNS3, Cooja, Wireshark*

- *GSM/GPRS/GPS/Zigbee/Bluetooth/WiFi/sub1GHz Modems and Modules.*

- *VxWorks, RTLinux & ChibiOS/RT RTOS, FreeRTOS*

- *Wireless Network Simulators expertise in Glomosim, NS2, NS3, etc.*

- *SPI/I2C/CAN Protocol Analyzers*

- *Xilinx ISE FPGA Design Tools, Model Sim Simulator*

- *'C' compiler for 8051 (KEIL 'C' Development IDE), PIC (CCS), 80C196 (Tasking), ARM Developer Suite (ADS v1.)*

- *Matlab, Simulink, TI 'C6000 target for Matlab, LabView, Wireless LAN*

- *Universal DATA I/O programmer, PC Based EDA tools (ORCAD)*

- *Digital Storage & Mixed Signal Oscilloscopes (500, 350, 300, 100 MHz)*

- *EMI Test Setup, Logic Analyzer, SMD Rework station*

u. **Course Contents :**

Please click here to see the Course Syllabus