

COURSE PROSPECTUS

**Name of the Group:***Embedded System Group*

**Name of the Course:***Certificate Course on Embedded C and ARM Cortex  
Microcontrollers*

**Course Code:***ED501*

**Starting Date:** *19<sup>th</sup> February 2020*

**Duration:** *4 Weeks (140 Hours)*

**Course Coordinator:***ShoukathCherukat, 9447423306*

**Preamble:**C is the most widely used programming language for embedded processors. Assembly is also used but mainly to implement those portions of the code where very high timing accuracy, code size and efficiency are the key requirements. Embedded C is an extension to C programming language that provides support for developing efficient programs for embedded devices.

An ARM processor is one of a family of CPUs based on the RISC (reduced instruction set computer) architecture developed by Advanced RISC Machines (ARM). The ARM Cortex-M is a group of 32-bit RISC ARM processor cores licensed by Arm Holdings. They are intended for microcontroller use, and have been shipped in tens of billions of devices.

**Objective of the Course:**The objective of the course is to introduce the embedded system concepts, ARM Microcontrollers and Embedded C Programming. This course covers the advanced topics in 'C' such as Memory management, Pointers, Data structures which are of high relevance in embedded software is considered in depth. This module makes use of KEIL C Compiler along with ARM Cortex Microcontrollers.

This module covers the architecture of the popular ARM Microcontroller. The ARM Cortex processor is the industry-leading 32-bit processor for highly deterministic real-time applications, specifically developed to enable partners to develop high-performance low-cost platforms for a broad range of devices including microcontrollers, automotive body systems, industrial control systems and wireless networking and sensors.

**Outcome of the Course:**After successful completion of the course, the student shall be able to:

- Develop Embedded application using Embedded C Programming
- Use ARM Cortex M with Embedded C Programming for Application Development

**Course Structure:** *Certificate Course with duration of 4 Weeks.*

**Expected Job Roles:** Trainee Engineer.

**Course Structure:**

Sl. No	Contents	Duration (Hours)			Credit	
		Theory	Lab	Total	Theory	Lab
1	<b>Embedded Concepts</b>	60	80	140	3	2
2	<b>'C' and Embedded C</b>					
3	<b>Introduction to ARM Cortex Architecture</b>					
4	<b>Cortex M3 Microcontrollers &amp; Peripherals</b>					
<b>Total Duration/Credit</b>		<b>60</b>	<b>80</b>	<b>140</b>	<b>5</b>	

*Other Contents*

a. **Course Fees:**

**General Candidates:** Course fee is Rs. 16,800/- + all taxes as applicable

**SC/ST Candidates :** Tuition Fees are waived for SC/ST students admitted under SCSP/TSP. However they are required to remit an amount of Rs. 2,000/- 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/- (including all taxes as applicable)(nonrefundable) should be paid at the time of registering for the course.

This fee shall be considered as part of course fee, if the student joins the course. If a student register and pay for more than one course and join for any one course, all such amount will be adjusted against the course fee payable.

If the student does not join for the registered course / any of the registered courses, fee paid shall be forfeited.

**For SC/ST candidates, the registration fee is Rs.500/-** and will be considered as part of caution/security deposit and will be refunded after successful completion of the course. If the candidate does not join or fails to complete the course the amount will be forfeited

However above the registration fee shall be refunded on few special cases as given below

- Course postponed and new date is not convenient for the student
- Course cancelled in advance, well before the admission date
- c. **Course Fee Installment Structure:***Not applicable for this course.*
- d. Eligibility:
  - i. *3 year Diploma in Electronics or B.E./B.Techor M.E./M.Tech in Electronics/ Electronics & Communication/ Electrical/ Electrical and Electronics/Instrumentation/ Biomedical /Computer Science/Information Technology or MSc in Electronics/ Instrumentation/ Computer Science/Information Technology.*
  - ii. *Candidates who have appeared in the qualifying examination and awaiting results may also apply.*
- e. Number of Seats : 15
- f. Selection of candidates :
  - i. *Selection of candidates will be based on their marks in the qualifying examination subject to eligibility and availability of seats.*
  - ii. *Knowledge in C Programming and Basic Electronics is a pre-requisite of this course.*
  - iii. *The Provisionally Selected Candidates will be intimated on 04/02/2020 by email only.*
- g. Test/Interview:*Not applicable for this course.*
- h. Counseling/Admission:*All candidates **provisionally selected** will have to be present personally for **counseling and admission on 17<sup>th</sup> or 18<sup>th</sup> February 2020** 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.*
- i. Important Dates (if applicable) :

Intimation of selection:	04 <sup>th</sup> February 2020
Admission & Commencement of Classes:	19 <sup>th</sup> February 2020
- j. 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 12.30 pm and 1.30 pm to 4.30 pm Monday to Friday.*
- k. Placement :*Not applicable for this course.*
- l. Lab Facilities: <http://nielit.gov.in/calicut/content/embedded-system-group>
- m. Course Contents : [Syllabus](#)

[Click here for General Terms and Conditions – Applicable to all courses](#)