

Short Term Courses – NIELIT

Certificate Course in Embedded System Design using ARM/ Cortex Microcontroller

Course Objective :

This course aims to make students to get the skills of programming the microcontroller, interfacing of external peripherals to microcontroller and troubleshooting of microcontroller based embedded electronic systems/products.

Learning Outcomes:

After the end of the course the student will be able to complete a significant ARM/ Cortex Microcontroller project having a set of objective criteria and design constraints.

Expected Job Roles: Embedded Engineer

Duration of the Course : 80 hours
(in hours)

Fees (INR): Rs.10,000/-(+GST as applicable)

Minimum Eligibility: Engineering Graduates (Undergoing also)

Course Outline:

S.No	Topic	Minimum No of Hours
1.	Embedded C	15
2.	ARM /Cortex Architecture	15
3.	ARM/Cortex Peripherals	25
4.	Interfacing ARM/ Cortex to peripheral devices	25
Theory / Lecture Hours:		20
Practical / Tutorial / Lecture Hours:		60
Total Hours		80

Books recommended: ARM System Developer's Guide: Designing and Optimizing System Software 1st Edition (Designing and Optimizing System Software)
Publisher: Morgan Kaufmann Publishers
ISBN: 9788181476463, 8181476468
Edition: 1st, 2011

QUALIFICATION FILE – Certificate Course in Embedded System Design using ARM/ Cortex Microcontroller

Annexure - I

Course Curriculum

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Course Description

Element	Course Description	Theory Hrs	Practical Hrs
Module1: Embedded C	Introduction to Embedded systems Introduction to C and Embedded C Introduction to Keil uVision	5	10
Module2: ARM /Cortex Architecture	Introduction to ARM/Cortex family microcontrollers Developing programs with ARM/Cortex microcontrollers. Simulating programs on Keil IDE	5	10
Module3: ARM/Cortex Peripherals (Timers/Interrupts/Serial port)	Introduction to Timers and interface with ARM/Cortex microcontroller Introduction to Interrupts and interface with ARM/Cortex microcontroller Introduction to Serial Port and interface with ARM/Cortex	5	20

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	microcontroller		
Module4: Interfacing ARM/ Cortex to peripheral devices(LCD, Stepper motor, Keypad etc)	Introduction to external peripherals	5	20
	Interfacing ARM/Cortex microcontroller with LCD		
	Interfacing ARM/Cortex microcontroller with key board		
	Interfacing ARM/Cortex microcontroller with stepper motor		
		20	60
Total		80	

Reference

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Placement Details

<p>Certificate Course in Embedded System Design using ARM/ Cortex Microcontroller</p>
<p>This course helps the students to get placement in three ways.</p> <ol style="list-style-type: none"> 1. Campus placement 2. Job referral programs where we direct our previous batch students to various companies 3. Students apply directly. The theory, practical done during the course enables the students to pass the screening test and helps in the

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interview.

5. Students are encouraged to take up entrepreneurship/ self-employment in line with Government of India initiatives like Make In India, ESDM etc

List of students selected recently : NA (New Course)