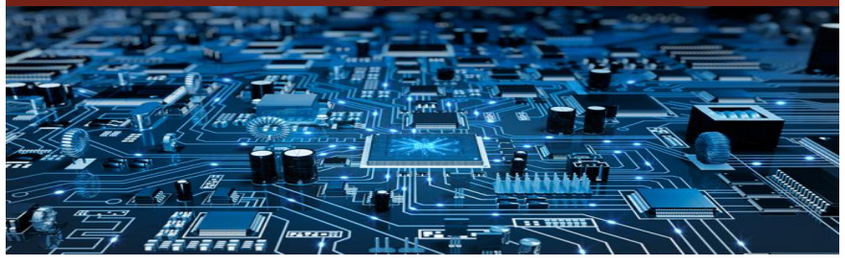
Electronics & ICT (E&ICT) Academy, IIT Roorkee, Uttarakhand 247667
An Initiative of Ministry of Electronics & Information Technology (MeitY), Govt. of India

Short Course on ARM Cortex-M4 based Embedded Systems



Organized by
Electronics and ICT Academy IIT Roorkee

Experts from Academia/Industry

- **Prof. S. K. Sinha (IISc, Bangalore)**
- **Prof. D. Vasavada (Guest Faculty IISc, Bangalore)**
- **Dr. B.P. Das (IITR)**
- **Dr. Sanjeev Manhas (PI IITR)**

Course Date: Jan 17-22, 2017

Last Date for Registration: **Jan 10, 2017**
(onsite registration subject to availability)

Venue: ECE Dept IIT Roorkee

Supported By
Ministry of Electronics and Information Technology (MeitY), Government of India

Objective and Outcomes of the Course

To provide foundation in the embedded system design with ARM Cortex™-M4 based TIVA Microcontroller using Keil S/W. The program stresses on extensive hands on training examples relevant to the current industry requirements.

At the end of the program, participants will be able to:

- Understand ARM Cortex-M3/4 architecture
- Program off-chip I/O devices such as sensors connected over I2C bus.
- Understand basics of a multi-tasking system with an RTOS (real time operating systems)
- TI (Texas Instruments) agreed to provide one ***TIVA LauchPad (TM4C123G)*** to each faculty/scientist participants.

Course Program

- The program is split into lectures and labs/hands-on sessions.
- Course evaluation by quizzes and project work
- Certificates with grades to participants by E&ICT Academy IITR.

Course Contents:

- Overview of embedded systems
- ARM Cortex-M3/M4 architecture
- Compiler tool chain – compiler, linker and debugger
- Software architecture of an OS less system
- Introduction to RTOS (real time operating systems)
- Programming on-chip and off-chip I/O devices

Contact Hours: Six days (Theory, Hands-on, Tutorials)

Lab Platform

- Start-of-the-art embedded programming tool – ARM Keil
- Embedded board - TIVA LauchPad (TM4C123G).
- Processor – Cortex M4

Hands On session and Deliverable

- Familiarization with start-of-the-art embedded programming tool – ARM Keil
- Familiarization with TIVA LauchPad (TM4C123G) and Cortex M4 processor
- C-Programming in TIVA LauchPad (TM4C123G)
- Assembly language programming in TIVA LauchPad (TM4C123G)
- Trouble-shooting in TIVA LauchPad based embedded system
- Familiarization with compiler tool chain – compiler, linker and debugger
- Controlling off-chip peripherals using the GPIO of TIVA LauchPad (TM4C123G)
- Design of music player using TIVA LauchPad (TM4C123G) board
- Familiarization/Implementation with real time operating system (RTOS)

Electronics & ICT (E&ICT) Academy, IIT Roorkee, Uttarakhand 247667
An Initiative of Ministry of Electronics & Information Technology (MeitY), Govt. of India

About E&ICT Academy

- Electronics and Information Communication Technology (E&ICT) Academy is an initiative of DeitY, Ministry of Communications and IT, Govt. of India for quality improvement of faculty members, research scholars and post-graduate students.
- E&ICT Academy IITR is one of the seven such academies at various IITs and NITs approved by Govt. of India.
- E&ICT Academy IITR aims to bring in depth erudition in the form of theoretical and practical exposure to the trainees.
- Academy has planned short term training programmes on fundamental and advanced topics in IT, Electronics & Communication, Product Design, Manufacturing with hands on training and project work using latest software tools and systems.
- Promote development of entrepreneurship adeptness and facilitation of start-ups.

Eligibility

The short course is open to faculty members/scientists, research scholars and research professionals in academia and industry. Limited number of M.Tech., B.Tech (Final Year) students in ECE/EE/CS/IT disciplines are allowed subject to availability of seats.

Perspective participants are advised to register by **January 10, 2017** as seats are limited (30 numbers only).

How To Apply

Online: The participant may log on to the E&ICT academy IITR (website: http://eict.iitr.ac.in) and fill-up the application form.

By Email: Send scanned copy of the filled-in application form duly endorsed by the forwarding authority to E&ICT Academy IITR (Email: eict@iitr.ac.in, eictiitr@gmail.com).

Registration form in this brochure can also be downloaded from academy website.

Registration Fee

Rs 2500 (without food and accommodation) for IIT students

Rs 5000 (with food and accommodation) for participants from academia and research organization

Rs 7000 (with food and accommodation) from Industry

Mode of Payment: Demand Draft in the name of **"DEAN SRIC IIT ROORKEE"**

Contact Details

For more details please log on to E&ICT academy IITR (website: http://eict.iitr.ac.in)

Course Coordinator: Dr. B.P. Das, ECE Dept IITR

Email: eict@iitr.ac.in, eictiitr@gmail.com

Phone No: +91-1332-286457,

Mob No: +91-7078627392

Registration Form

Affix stamp size photograph

Name of the Applicant (first, last): ……

Name of the Course:……...

Gender: ……...

Date of Birth (DD/MM/YY):……..….

Designation: …….....

Branch:…….....

Name and Address of the Organization/Institute: ……...

City/town:……..….

Email:……...

Phone Number:…….

Mobile Number:…….

Do you need accommodation? (Yes/No): ……

Details of Demand Draft

Amount: ……

DD Number: ……...

Date: ……...

Issuing Bank: ……..……..

Payable at: ……..…….

Signature of the Applicant:……

Date: ……

I hereby agree to relieve Mr./Ms./Dr. ……

In case she/he is selected to attend the programme.

Signature and Seal of the Forwarding Authority

Name: .....

Designation:.....