

on

"Embedded System Design- A Practical Approach"

Under the aegis of

**Electronics & ICT Academy
IIT Roorkee**



Nov. 26-30, 2018

Experts from Academia/Industry

Prof. D. Vasavada
Guest Faculty
IISc Bangalore

Dr. B.P.Das
IIT Roorkee

Supported by

Ministry of Electronics & Information
Technology
Government of India

Venue



**Indian Institute of Technology
Roorkee**

Why Embedded System Design-A Practical Approach?

Embedded systems have been prevailing for over two decades, hidden in diverse systems such as automotive, industrial, medical, robotics and power electronics to name a few. With the rise of IoT technology, deeply embedded systems are likely to proliferate, providing the last meter connectivity to sensors and actuators. Designing embedded systems requires the ability to integrate knowledge from multiple disciplines such as computer architecture, operating systems and electronics. The course is aimed to provide the necessary theoretical background of these topics followed by practical sessions to carry out experiments, thereby providing ability to understand the embedded systems in totality.

Objective 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.

Program Features

- The program is split into lectures and labs/hands-on sessions.
- Hands-on experience on basic and advanced-level topics.
- Interaction & learning with experts from academia & industry.
- Certificates to participants by E&ICT Academy IIT Roorkee.

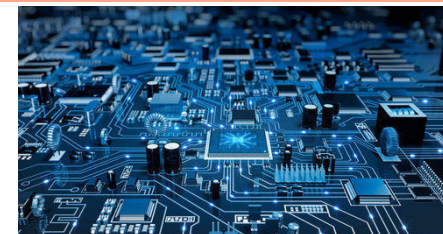
Coordinator

Dr. Sanjeev Manhas
Principal Investigator
E&ICT Academy
IIT Roorkee

Dr. B. P. Das
Course Coordinator
E&ICT Academy
IIT Roorkee

Focus Areas

- Introduction to microprocessor system: memory, I/O, interrupt, debug, clock and power management.
- Fetch-decode-execute pipeline, registers, instruction set and exceptions.
- Interfacing IO devices: GPIO, timers, ADC, UART, interfacing devices over I2C.
- Introduction to sensors and actuators.
- Software architecture: vector table, exception handlers and startup code.
- Embedded C programming.
- RTOS Multitasking: Task creation, task priority, scheduling, Mutual exclusion, synchronization, message queues.
- Hands-on session on ADC, stepper motor, temperature sensor, UART, task creation, scheduling and task priorities, mutual exclusion, synchronization, message queues.



Benefits and Outcomes of the Course

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

Who Can Attend ?

Program is open to faculty members/research scholars/PG students from colleges/universities, and industry personnel working in the concerned/allied discipline.

Registration Fee

Faculty members: ₹ 2,500/-

Research scholars: ₹ 2,500/-

Persons from Industry: ₹ 3,000/-

How to make payment

Offline: DD in favor of "Dean SRIC IIT Roorkee"
payable at Roorkee
"OR"

Online: (<https://www.onlinesbi.com/prelogin/icollecthome.htm?corpID=365641>)

Read the instruction for payment before filling the online registration form.

How to Apply

Step 1: Participants may fill the registration form available on the link "Register Online" for the relevant course on eict.iitr.ac.in

Step 2: Make Payment

OR

Step 3: Send a duly filled-in registration form along with Demand Draft to Academy address.

Mr. Prateek Sharma, EICT Academy, ECE
Department, IIT Roorkee-247667

Important Dates

**Last Date For Online
Registration :
November 15, 2018**

EICT Academy IITR

Electronics and ICT Academy (E&ICT) at IIT Roorkee (funded by Ministry of Electronics and Information Technology) aims to enrich and upgrade teaching and research competences of engineering faculties of institutes/colleges by conducting courses and workshops in fundamentals as well as emerging areas of E&ICT and enabled areas. The programs are conducted by well-known industry partners, resource persons from leading academia and experts from renowned R&D organizations.



Activities of the Academy

- Specialized training on basic and advanced level topics with hands-on experience in the emerging areas of Electronics & ICT.
- Setup the activity centers to conduct FDPs locally at institutes/colleges.
- Curriculum development for the industry.
- Continuing Education Programme for students/working professionals.
- Design, develop and delivery of specialized modules for specific research areas in industry.

Faculty Development Program

on

Embedded System Design- A Practical Approach



REGISTRATION FORM

Applicant Name _____

Gender: _____

Category (GEN/OBC/SC/ST): _____

Designation: _____

Name and Address of the
Organizatio/Institute: _____

City/Town: _____

Email: _____

Phone Number: _____

Do you need Accommodation?
(Yes/No): _____

DD Number: _____

Date: _____

Issuing Bank: _____

Payable at: _____

Signature of the Applicant

Contact Us

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