

# One week Short Course/FDP

on

## " Robotics and Embedded Systems "

Under the aegis of

**Electronics & ICT Academy  
IIT Roorkee**



Recognized by AICTE at par with  
QIP for recognitions/credits

April 02-06, 2019

Experts from Academia/Industry

Prof. P.M.Pathak  
IIT Roorkee

Prof. B.P.Das  
IIT Roorkee

Mr. Vipul Shahi  
Diginique TechLabs,  
Gurugram

Supported by

Ministry of Electronics & Information  
Technology  
Government of India

Certificates to participants by  
E&ICT Academy IIT Roorkee

Venue

E&ICT Smart Classroom(N-316), ECE  
Department IIT Roorkee

## Why Robotics and Embedded Systems?

Robotics and Embedded systems have been prevailing for over two decades, hidden in diverse systems such as automotive, industrial, medical, 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. Being robotics as the fastest growing field in the modern age, designing of embedded systems is required to implement it into the field of robots. The course is aimed to provide the necessary theoretical background of these topics followed by practical sessions to carry out experiments, thereby providing the ability to understand the course and curriculum in totality.

### Objective of the Course

- Designed to bridge the gap by providing an opportunity to the participants, so that they can write robotics and embedded programs to interface different types of input/output devices with the Microcontroller to do different projects.
- Making own bot, working on Arduino kit, understand the robot configuration and sub-systems.

### 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.
- Recognized by AICTE at par with QIP for recognitions/credits.

Coordinator

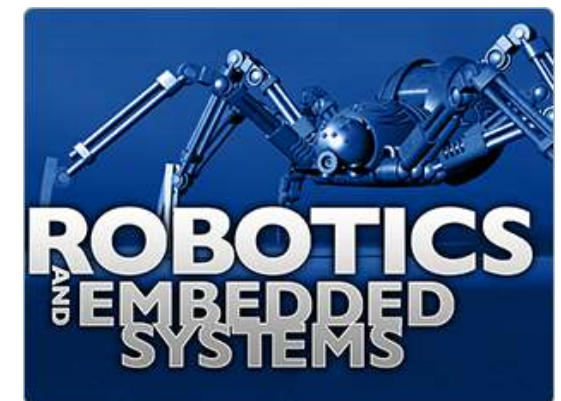
• Dr. Sanjeev Manhas Principal Investigator  
E&ICT Academy IIT Roorkee

## Focus Areas

- Introduction to Embedded System and industrial automation systems.
- Introduction to Atmega16/644/2560 and Embedded C programming.
- Types of Sensors.
- Concepts of Motors.
- Understanding embedded using different robotic forms i.e. Line Follower Robot, Edge Avoidance Robot, Light Searching Robots.
- DTMF (Dual Tone Multiple Communication) and its interfacing.
- Understanding mechanical system.
- Interfacing of Multiplexed SSDs and Matrix LED Display.

### Benefits and Outcomes of the Course

- Understanding of fundamental embedded systems design paradigms, architectures, possibilities and challenges, both with respect to software and hardware.
- Deep state-of-the-art theoretical knowledge in the areas of real-time systems, artificial intelligence, learning systems, sensor and measuring systems, and their interdisciplinary nature needed for integrated hardware/software development of embedded systems.
- Ability to analyze a system both as whole and in the included parts, to understand how these parts interact in the functionality and properties of the system



## 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: ₹ 1,000/-

Research scholars: ₹ 1,000/-

Persons from Industry: ₹ 1,500/-

## 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](http://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 :  
March 26, 2019**

## 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.

One week Short Course/FDP

## on Robotics and Embedded Systems



## 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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