AICTE Sponsored Short Term Course

on

Smart Sensors and Systems: From Simple Sensing to Internet of Things (IoT) & Cyber Physical Systems (CPS)

Oct. 22-27, 2018

Course Coordinator

Dr. N. S. Rajput

Organized by

Department of Electronics Engineering, IIT(BHU), Varanasi-221005

Quality Improvement Program Center
Indian Institute of Technology (BHU)
Varanasi – 221005, (U.P.)

Phone: 0542 - 2369434
Email: coordinator.qip@itbhu.ac.in

About the Course

In the modern hi-tech society, extreme engineering is spreading its hold to make our lives healthier, faster, easier and safer. Its users are the whole world population counting to 7.6 Billions, in one or the other way. In order to cater to such a diverse community, it essentially needs customized solutions, yet, tailored to adapt to the choices of individual users for providing absolute consumer satisfaction.

It is where intelligent systems play the key role. The user choices and the ambient conditions are sensed using variety of sensors. Actuation is then planned using intelligent agents by optimizing the perception-action cycle. Such decisions can be taken on-board or at a remote data-center, brining in the concept of distributed/ cloud computing. At times, its only the machines which communicate with each other and take optimized decisions intelligently. Such solutions fall within the ambit of Internet of Things (IoT). Further, when such systems operate in real-time and autonomously, with high speed and accuracy, it becomes a cyber physical system (CPS). The basic objective of this short-term course is to introduce the higher education faculty with various sensors and actuators with their real-life applications. We will also use popular single board controllers and micro-computers to interface such sensing and actuation systems, for developing active master and slave nodes. We would also work on several case studies for making such systems smarter and intelligent.

Course Content

The tentative list of topics to be covered in this course are:

- ✓ Sensors and Actuators
- ✓ Single Board Controllers e.g. Arduino Board etc.
- ✓ Single Board Computers e.g. Raspberry Pi etc.
- ✓ Interfacing methods for developing sensor systems
- ✓ Use cases for Artificial Intelligence
- ✓ Use cases for Internet of Things (IoT)
- ✓ Use cases for Cyber Physical Systems (CPS)

Course Coordinator

Dr. N. S. Rajput
Department of Electronics Engineering
IIT(BHU), Varanasi-221005
Mobile: +91-9415390577
E-mail: nsrajput.ece@iitbhu.ac.in

Course Website:

https://sites.google.com/view/smartsensorsandsystems

Last date for on-line registration

Oct. 08, 2018

Abridged List of ST Courses during 2018-19

S No	Department	Course Coordinator	Title of Short Term Course	Duration
1.	Biochemical	Prof. Subir Kundu	Cell Processing Technology and Engineering- A New Paradigm	13-18 Aug, 2018
2.	Metallurgy	Dr. Kaushik Chattopadhyay	Mechanical Properties and Deformation Behavior of Structural Materials	27 Aug-01 Sept, 2018
3.	Biomedical	Prof. Nira Misra	Polymers as Biomaterials	01-07 Sept, 2018
4.	Civil	Dr. Ankit Gupta, Dr. Nikhil Sahoo	Recent Development in Pavement Analysis and Design	17-22 Sept, 2018
5.	Civil	Dr. Anurag Ohri, Dr. Medha Jha, Dr. Shishir Gaur	Principles and Applications of GIS	24-29 Sept, 2018
6.	Mechanical	Prof. S.P.Tewari	Recent Advances in Casting and Welding	01-07 Oct, 2018
7.	Mechanical	Dr. Cherian Samuel	Supply Chain Mgt.	08-13 Oct, 2018
8.	Electronics	Dr. N.S. Rajput	Smart Sensors and Systems	22-27 Oct, 2018
9.	Mechanical	Dr. Jahar Sarkar	Efficient Energy Conversion in Harmony with Environment	29 Oct – 02 Nov, 2018
10.	Mining	Prof. S.K.Sharma	Sustainable Development vis-à-vis Technology	25 Nov-01 Dec, 2018
11.	Computer Sc	Dr. Pratik Chattopadhyay	Machine Learning in Image & Video Analytics	3-9 Dec, 2018
12.	Computer Sc	Dr. Tanima Dutta, Prof. K. K. Shukla	Deep Learning : Theory and Practice	10-22 Dec, 2018
13.	Mathematics	Dr. Sunil Kumar	Computational Methods for Integral and Differential Equations	10-16 Dec, 2018
14.	SMST	Dr. Akhilesh Kumar, Dr. Chandan Upadhyay	Material Characterization for Engineers	24-29 Dec, 2018
15.	Metallurgy	Dr. G.S Mahobia	Metallurgical Failures	11-16 Feb, 2019

Application Form for
QIP SHORT TERM COURSE
on
Smart Sensors and Systems:
From Simple Sensing to Internet of Things (IoT)
& Cyber Physical Systems (CPS)
Oct. 22-27, 2018

1. Name (block letters):

2. Designation & pay scale:

3. Organization:

4. Address for communication with pin code:
Mobile No.: E-mail:

5. Highest Academic Qualification:

6. Specialization:

7. Experience (in years):
(a) Teaching: (b) Industrial:

8. Amount of TA for to-and-fro III AC railway fare (only for the AICTE approved college teachers):

9. Whether Accommodation (to be provided strictly on sharing basis) is required:

Please register me for the course on "**Smart Sensors and Systems: From Simple Sensing to Internet of Things (IoT) & Cyber Physical Systems (CPS)**" to be held at IIT (BHU) Varanasi during **Oct. 22-27, 2018.**

Place:
Date: **Signature of the applicant**

SPONSORSHIP

Prof./Dr./Mr./Ms./Mrs./_____ is an employee of our AICTE approved institute and his/her application is hereby sponsored. The applicant will be permitted to attend the short-term course on **Smart Sensors and Systems: From Simple Sensing to Internet of Things (IoT) & Cyber Physical Systems (CPS)** at IIT (BHU) Varanasi during **Oct. 22-27, 2018** of the Short Term Course, if selected.

Date: **Signature of Sponsoring Authority**
Designation: **(Official Seal)**

Refundable Security Deposit Details:
*DD No.: Date:
Bank:
Amount: **₹ 2000/-**

Signature of the Applicant

*DD should be drawn in favor of the **Registrar, IIT(BHU), Varanasi-221005** payable at the **SBI, IT Branch (Code:11445), BHU, Varanasi**.

Participation Certificate

Certificate of participation will be issued to all the participants only after completion of the course.

Important Dates

Last date for on-line registration (at website)
Oct.08, 2018
Last date for receiving application (at IITBHU)
Oct. 10, 2018
Confirmation of Participation
Oct. 11, 2018

Contact Details

Dr. N. S. Rajput
Department of Electronics Engineering
IIT(BHU), Varanasi-221005
Tel: 0542-2366638; Mobile: +91-9415390577
E-mail: nsrajput.ece@iitbhu.ac.in
qipstc.ece@gmail.com

REGISTRATION

Registration for QIP Sponsored Teachers from AICTE approved Institutions: Participants should bring a letter of nomination from their head of institution stating that they are being deputed for the course. There is no registration/ accommodation fee. However, a Demand Draft of INR 2,000/- (drawn in favor of "Registrar, IIT(BHU), Varanasi") should be enclosed with the application form which will be refunded to the participants attending the course. Total reserved seats for QIP candidates is 30 which will be awarded on first-cum-first served basis. The refund amount will not be returned to those who will be absent.

ABOUT THE DEPARTMENT

Department of Electronics Engineering came into existence as an offshoot of Electrical Engineering Department in the year 1971 (when Banaras Engineering College, College of Mining and Metallurgy and College of Technology had been amalgamated to form the Institute of Technology in its present form). The intake every year of the Department is 79 in the B.Tech. level and 47 in the M.Tech. level. Besides teaching students of our own discipline (Electronics Engineering), we also offer the basic courses in Electronics Engineering to almost all the Departments of the Institute, we also teach advanced-level courses to the students of Electrical Engineering and Computer Engineering Departments. We have a training and placement section in the Institute through which most of our students are professionally placed in various jobs.

HOW TO REACH

Varanasi Railway Station is well connected to almost all parts of the India. IIT (BHU) is also well connected to Mughal Sarai and Manduadih Railway Stations by regular auto and taxi services. The Lal Bahadur Shastri International Airport, Babatpur, Varanasi is also well connected via Air to Delhi, Mumbai, Kolkata, Hyderabad, and Bengaluru. There are frequent flight services from New Delhi. The Institute is located in the extreme south of the Varanasi city and about 7 km away from Varanasi Railway Station and 30 km from the Babatpur (Varanasi) airport. Pre-paid Taxis and Auto-Ricksaw can be hired from the airport and rail way stations.