

## SHORT TERM COURSE

# Matlab<sup>®</sup> and Simulink<sup>®</sup> for Control Systems and Signal Processing

Dr. Amod. C. Umarikar, Dr. Srivathsan Vasudevan and Dr. Ram Bilas Pachori

March 20-21 2014

Indian Institute of Technology Indore.

## Syllabus of the Course

### Course Objectives

Control Systems is an integral part of an Electrical Engineering course. The main reason is that every industry be it electronics, electrical, mechanical or robotics utilizes different forms of control either in analog or digital domain. However, there is a definite gap between what has been taught in theory and what has been applied in practice. This course aims to build this gap where MATLAB and Simulink is used as a tool to design different control mechanisms for real-time applications. These controller design examples would be taught practically utilizing the techniques like Root Locus, Bode plots to achieve the specifications of feedback control systems.

Signal processing plays a significant role in the modern telecommunication engineering and information processing systems. It has a large number of applications in mobile communication, biomedicine, radar, sonar, decision making systems, robotics, audio processing, image and video processing, weather forecasting, economic forecasting etc. This course is aimed to introduce the signal processing concepts like signal representation, time and frequency domain analysis, signal transforms, filter design with applications using MATLAB.

### Control Systems:

Review of control theory, control specifications, Root Locus and Bode plots. Case studies of compensator design for real-time applications using MATLAB and Simulink as a tool.

### Signal Processing:

Signal representation, time and frequency domain analysis, signal transforms, filter design with their applications in MATLAB.

## Save the Date! Seats are Limited!

To attend, send a Demand Draft in favour of “**Registrar IIT Indore**” for the course fee along with the registration form (Page 2) to Dr. Amod. C. Umarikar, Assistant Professor, Electrical Engineering, Indian Institute of Technology Indore. [stc.consig@gmail.com](mailto:stc.consig@gmail.com). Phone: +91-7324-240734.

Shortlisted candidates would be informed through email.

### Date

March 20-21 2014

Venue: IIT Indore -  
PACL Campus,  
Mhow Road,  
Indore.

### Course Fee

**Industry Participant: Rs. 10000**

**Academic Faculty: Rs. 8000**

**Student Participant: Rs. 5000**

Fees includes registration, lecture materials, breakfast, lunch for the entire course duration.

**COURSE REGISTRATION FORM**  
(WRITE EVERYTHING IN CAPITAL LETTERS)

1. Name:.....
2. Designation:.....(Students and Academic Participants must send copy of Identity card of their Institute)
3. Name of the Department / Centre: .....
4. University / Organization: .....
5. Mailing Address: .....  
.....  
.....
6. Mobile number: .....
7. Email: .....

Payment Details

8. Date..... For Rupees .....
9. Paid by .....
10. Demand Draft Number / Online Transaction Number: .....
11. Name of the Bank .....

Date: .....

Signature

Complete this form and send it to the course co-ordinator. You may choose any of the options below

<p>Option 1: Submit the form with DD to: Dr. Amod. C. Umarikar, Coordinator Discipline of Electrical Engineering Indian Institute of Technology Indore, PACL Campus (Opp. Veterinary College), Village Harnia Khedi, Mhow Road, Indore, Madhya Pradesh, INDIA - 453 441</p>	<p>Option 2: For those doing an online transfer, you may send a scanned copy of the form along with the soft copy to stc.consig@gmail.com</p>
---	---