

A SHORT-TERM COURSE
ON
Control System and Signal Processing: Solutions to Biomedical Problems
(3-4 June 2019)

Course Coordinators
Dr. Abhinoy Kumar Singh
Dr. Ram Bilas Pachori



Indian Institute of Technology Indore

About this Course

The application of Control systems and Signal processing is growing very fast in developing advanced technologies for treatment of several deadly and/or traumatic diseases. A simple example can be considered as processing of electroencephalogram (EEG) and electrocardiography (ECG) signals to diagnose brain and heart related disorders in automated way. A wider and more impactful example is underdeveloped artificial pancreas which requires the application of control systems and signal processing at multiple steps. The artificial pancreas can be an effective solution in treatment of diabetes problem. A WHO article recently published on global diabetes problem reported 8.5% of world adult population suffering with diabetes in 2014. The same article reported the diabetes as direct cause for 1.5 million deaths and an indirect cause for 2.2 million deaths across the world in 2012. This short-term course will discuss about some applications of control system and signal processing in enhancing the technology for treatment of these problems.

Course Contents:

The **lectures** will cover following topics:

- Efficient processing of EEG and/or ECG signals using signal processing
- Effective detection of abnormality in EEG and/or ECG signals
- Diagnosis of some diseases from detected abnormality in EEG and/or ECG signals
- Need of continuous glucose monitoring in efficient diabetes management
- Introduction to an underdeveloped continuous glucose monitoring (CGM) system

- Introduction to an artificial pancreas composed of a CGM system and an external insulin control system.

PROFILE OF THE SPEAKERS:

FACULTY	AREA OF EXPERTISE
Dr Abhinoy Kumar Singh INSPIRE Faculty, IIT Indore	Estimation and filtering, Continuous glucose monitoring, Artificial pancreas
Dr Ram Bilas Pachori Professor, IIT Indore	Non-stationary signal processing, Biomedical Signal Processing, Speech signal processing

COURSE FEE:

Rs. 3000 (for industry personnel)

Rs. 2000 (for faculty members)

Rs. 1500 (for students)

The course fee includes service tax, study material, breakfast, lunch, and tea for the entire course duration.

Group discount: 25% group discount on total fees will be given if more than two participants come from same organization.

MODE OF PAYMENT: Through demand draft drawn in favor of **Registrar, IIT Indore** or through online payment/ bank transfer.

For Online payment/ Bank Transfer

Bank Name: State Bank of India

Branch: Khandwa Road, Indore

Account number: 31702151577

IFS Code: SBIN0011779

NUMBER OF SEATS: Limited

IMPORTANT DATES:

The completely filled registration form along with proof of payment for the course fee should be sent to the following address on or before **25 May 2017**.

No TA/DA will be provided for attending this course..

Address for correspondence

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REGISTRATION FORM

Name :

Designation:

Institution/Organization:

Address:

E-mail id:

Phone/Mobile No.:

Payment details

Cheque / Demand Draft no. _____ dated _____ bank _____ amount in Rs. _____ drawn at _____

Signature of the applicant with date