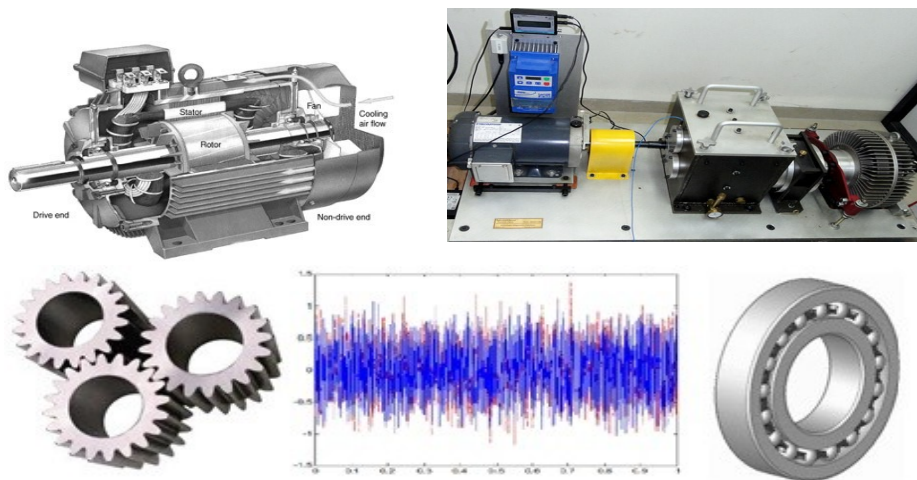


A SHORT TERM COURSE  
ON  
**Advanced Signal Processing Techniques for Fault  
Detection of Mechanical and Electrical Systems  
(10-11 March 2018)**



**Course Coordinators**

**Dr. Anand Parey  
Dr. Ram Bilas Pachori**



**Indian Institute of Technology Indore**

**About this Course**

The demand is increasing day by day for increasing the load carrying capacity, enhancing the performance and service life of mechanical systems. Failure of machines causes huge monetary losses. Fault diagnosis of mechanical and electrical systems can help in preventing the catastrophic failure thereby saving downtime and monetary losses. Various techniques are available for fault diagnosis of mechanical and electrical systems e.g. acoustic emission, wear debris analysis, thermography etc. Vibration monitoring is one of the most successful techniques used for fault detection of mechanical and electrical systems. Advanced signal processing of vibration signals is very important for fault diagnosis of machines. This short-term course is aimed at providing the sound fundamental knowledge to the participants on various signal processing aspects like time domain, frequency domain, time-frequency domain analysis of vibration signals. MATLAB is one of the tool for signal processing implementation. Participants will be given hands on opportunity to explore MATLAB for fault diagnosis of mechanical and electrical systems using advanced signal processing techniques.

**Course Contents:**

The lectures will cover following topics:

- Basics of fault diagnosis techniques like vibration, noise, acoustic emission, wear debris analysis and thermography.
- Fault diagnosis of various mechanical and electrical systems like gearbox, bearings, motors etc.
- Time, frequency and time-frequency domain based analysis
- Advanced signal processing techniques
- Detection and classification of faults
- MATLAB implementation of advanced signal processing techniques

**Training/Demonstration and Hands-on Sessions:** A hands-on sessions of total 3 hours duration will be conducted on fault diagnosis of electrical and mechanical systems.

**PROFILE OF THE SPEAKERS:**

FACULTY	AREA OF EXPERTISE
<p><b>Dr Anand Parey</b> Professor, Discipline of Mechanical Engineering IIT Indore</p>	<p>Gear fault diagnosis, dynamic modelling of gear boxes, signal processing of gear vibrations.</p>
<p><b>Dr Ram Bilas Pachori</b> Professor, Discipline of Electrical Engineering IIT Indore</p>	<p>Signal processing, Time-frequency analysis, Non-stationary signal processing, MATLAB implementation for signal processing</p>

**WHO SHOULD ATTEND?**

- Condition monitoring Engineer/ Manager/ Supervisors.
- Maintenance Engineer/Manager/Supervisor.
- Electrical Engineer/Manager/Supervisor.
- Professionals working in R & D organizations.
- Faculty from Engineering/Polytechnic colleges.
- Research scholars, post graduate and undergraduate students working in the field of noise, vibration and condition monitoring.

**COURSE FEE:**

Rs. 20,000 (for industry personnel)  
Rs. 15,000 (for faculty members)  
Rs. 8,000 (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

**ACCOMMODATION:** Accommodation can be arranged, if required, in hostel/guest house @ Rs.250 per day subject to the availability. Limited seats are available. Participants will be selected on first-come-first serve basis. Please send request for hostel accommodation to the course coordinator.

**NUMBER OF SEATS:** Limited

**IMPORTANT DATES:**

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

**Address for correspondence**

**Dr. Anand Parey**  
Mechanical Engineering Discipline  
**Indian Institute of Technology Indore**  
**Khandwa Road, Simrol, Indore, MP.**  
**E-mail:** anandp@iiti.ac.in; anandparey@hotmail.com  
**Phone:** 09425053943(M)

**APPLICATION FORM FOR HOSTEL ACCOMMODATION**

**REGISTRATION FORM**

**Name :**

**Designation:**

**Institution/Organization:**

**Address:**

**Name of the candidate:** \_\_\_\_\_

**Name of course:** Advanced Signal Processing Techniques for fault detection of Mechanical and Electrical Systems

Sex (Male/Female) : \_\_\_\_\_

Age: \_\_\_\_\_

Period From \_\_\_/\_\_\_/\_\_\_: \_\_\_ am/pm to \_\_\_/\_\_\_/\_\_\_: \_\_\_ am/pm  
(DD/MM/YY: am/pm)

Email-ID : \_\_\_\_\_

Mobile No. : \_\_\_\_\_

Booked

by \_\_\_\_\_

**E-mail id:**

**For office use only**

**Phone/Mobile No.:**

**Course/conference coordinator**

**Confirmation of booking**

**Accommodation Required: Yes / No ( if yes please fill the form)**

**(Hostel supervisor)**

**Payment details**

Cheque / Demand Draft no. \_\_\_\_\_ dated \_\_\_\_\_

bank \_\_\_\_\_ amount in Rs. \_\_\_\_\_ drawn at \_\_\_\_\_

**Signatur**

**e of the applicant with date**

**Hostel Guideline**

- Most important: All the guest needs to carry photo id card.
- Candidate or course coordinator can fill this form and send to [hostel@iiti.ac.in](mailto:hostel@iiti.ac.in)
- Hostel will provides twin sharing room with cot, mattress, RO, Geyser (Additional facilities like bed sheet, pillow, blanket, etc will be provided on the basis of availability at nominal charges).
- Candidates need to pay in cash INR 250/- per day per person on arrival. Charges may vary based on institute guidelines.
- This does not include dining charges.  
Current dining charges (in INR) are as follows:  
Breakfast: 25/- Lunch: 40/-Hi Tea: 16/-Dinner: 45/-
- Candidates need to report to hostel office (address above) on arrival.
- All the candidates are required to follow hostel rules and code of conduct.

