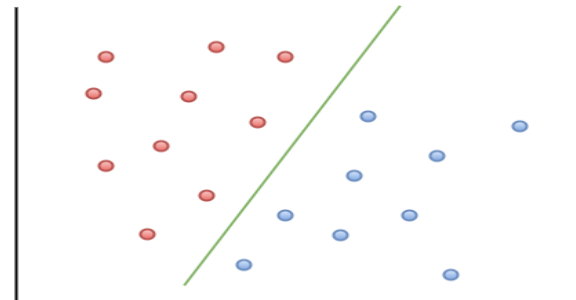
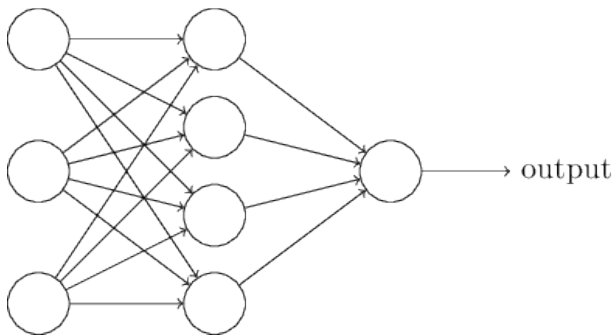
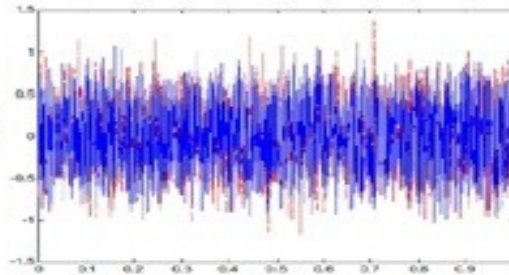
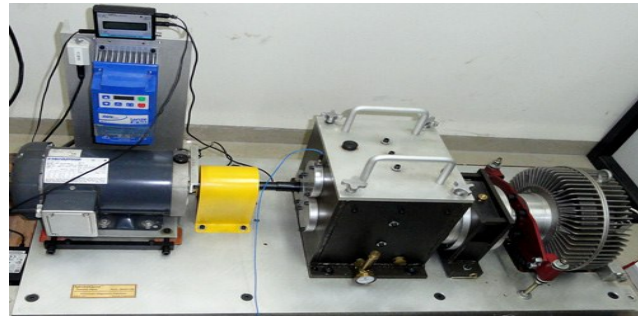
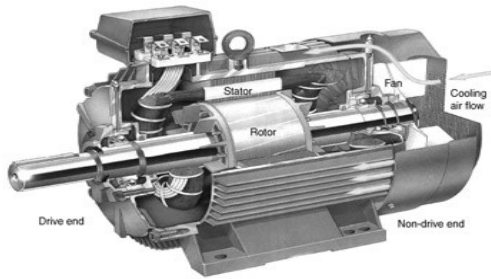


A SHORT TERM COURSE  
ON  
**Artificial Intelligence and Advanced Signal Processing Techniques for  
Engineering Applications**  
(05-07 October 2018)



**Course Coordinators**  
**Prof. Anand Parey**  
**Prof. Ram Bilas Pachori**



**Indian Institute of Technology Indore**

## About this Course

In many engineering applications automated decision making process is required. In the development of such automated systems the advance signal processing techniques and machine learning algorithms play very important role. The advance signal processing techniques help to provide suitable feature space which can be used by machine learning algorithms for automated decision making system. The examples of such expert systems include automated fault diagnosis of gearbox, bearings, electrical machines, civil structures, and computer aided medical diagnosis. This short-term course is aimed at providing the sound fundamental knowledge to the participants on various machine learning algorithms like neural networks, support vector machines, genetic algorithms etc. It will also cover signal processing aspects like time domain, frequency domain, time-frequency domain analysis of mechanical and electrical signals. MATLAB based implementation of the signal processing algorithms and artificial intelligence techniques will be covered.

## Course Contents:

The lectures will cover following topics:

- Basics of artificial intelligence
- Machine learning algorithms
- Time, frequency and time-frequency domain based analysis
- Advanced signal processing techniques
- Detection and classification of signals
- MATLAB implementation of advanced signal processing techniques and machine learning algorithms
- Case studies on engineering applications

**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 using advance signal processing techniques and artificial intelligence techniques.

## PROFILE OF THE SPEAKERS:

FACULTY	AREA OF EXPERTISE
<b>Dr Anand Parey</b> Professor, Discipline of Mechanical Engineering IIT Indore	Gear fault diagnosis, dynamic modelling of gear boxes, signal processing of gear vibrations.
<b>Dr Ram Bilas Pachori</b> Professor, Discipline of Electrical Engineering IIT Indore	Signal processing, Time-frequency analysis, Non-stationary signal processing, MATLAB implementation for signal processing
<b>Dr. Ritunesh Kumar</b> Associate Professor Discipline of Mechanical Engineering IIT Indore	Desiccant Cooling Systems, Renewable Energy Heat Transfer
<b>Dr. Aruna Tiwari</b> Associate Professor Discipline of Computer Science and Engineering IIT Indore	Soft-computing based classifiers & its performance, Soft-computing based classifiers for big data classification, Machine learning

**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: Canara bank

Branch: IIT Indore, Khandwa Road, Simrol, Indore

Account number: 1476101027440

IFS Code: CNRB0006223

**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 **01 October 2018**.

**Address for correspondence**

**Dr. Anand Parey**

Professor

Mechanical Engineering Discipline

**Indian Institute of Technology Indore**

**Khandwa Road, Simrol, Indore, MP.**

**E-mail:** anandp@iiti.ac.in

**Phone:** 09425053943(M)

**REGISTRATION FORM**

**Name :**

**Designation:**

**Institution/Organization:**

**Address:**

**E-mail id:**

**Phone/Mobile No.:**

**Accommodation Required:    Yes / No**

**Payment details**

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

**Signature of the applicant with**

**date**