COURSE REGISTRATION FORM

A Five Day Short Term Course on
ARTIFICIAL INTELLIGENCE TECHNIQUES
FOR VIBRATION SIGNAL PROCESSING
(Sponsored by CSIR)
(09-13 December 2019)

Name:

Designation:

Gender:

Qualification:

Area of interest:

Organization:

Address:

E-mail:

Mobile No:

DD/cheque No or Online Transaction ID and Date:

Bank Name:

Accommodation required: Yes/No

Signature of Applicant

For any Query, Contact Student Co-coordinators :
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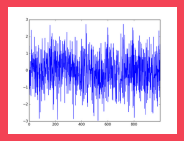

IMPORTANT DATES

Last date for receipt of application : 30-11-2019
Complete information for communication must be necessarily provided in the registration form. The number of seats is limited to 30.

TRAVEL AND ACCOMMODATION

The participants will have to make their own arrangements for travel. Boarding and lodging can be arranged on payment basis in the Institute's guest houses based upon prior request and availability. There are also many good hotels in Rourkela; the same can be booked on request and prior payment.

HOW TO REACH ROURKELA

Rourkela is located on the Howrah (Kolkata)-Mumbai main line of South Eastern railway. The railway station and mofussil bus stand are 6 km and 2 km from NIT Rourkela campus respectively. The airports near to Rourkela are Ranchi, Bhubaneswar and Kolkata. Rourkela is well connected to these cities by rail and road.
Participants will be paid to and fro train fare (III AC) via shortest route (strictly on the production of ticket) and provided free boarding and lodging, subject to the funds received from the funding agencies.

COURSE COORDINATORS

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A
FIVE DAY SHORT TERM COURSE
ON

ARTIFICIAL INTELLIGENCE TECHNIQUES FOR VIBRATION SIGNAL PROCESSING

(SPONSORED BY CSIR)

09-13th December 2019

PATRON
PROF. ANIMESH BISWAS
DIRECTOR, NIT ROURKELA

CHAIRMAN
PROF. D.R.PARHI
HEAD OF THE DEPARTMENT
DEPARTMENT OF MECHANICAL ENGINEERING

ORGANIZED BY
DEPARTMENT OF MECHANICAL ENGINEERING
NATIONAL INSTITUTE OF TECHNOLOGY
ROURKELA-769008
ODISHA

ABOUT THE INSTITUTION

National Institute of Technology Rourkela is an institute of national importance created under the act of parliament. NIT Rourkela has been ranked at 215 and 27th position in QS Asia University Ranking, and QS Indian University Ranking 2019 respectively. It has also been ranked in 121 positions in QS BRICS category, 2019. Times Higher Education has figured NIT Rourkela in the group of 601-800 in World University Ranking 2019. The Institute provides quality education in a diverse and multi-cultural environment. The mission of the institute is to become an internationally acclaimed institution of higher learning that will serve as a source of knowledge and expertise for the society and be a preferred destination for undergraduate and graduate studies. The institute is offering Ph.D. and M.Tech by Research programme in 21 branches of Engineering. The institute research centers are engaged in consultancy and research activities of several bodies such as DST, DAE, CSIR, DRDO, BARC, ISRO and private industries.

DEPARTMENT OF MECHANICAL ENGINEERING

The Mechanical Engineering Department of NIT, Rourkela is known for research in most of these fields. The main foci of research are on mechanical vibration, robotics, CAD/CAM, precision engineering, Metal forming, manufacturing, CFD, Industrial refrigeration and Cryogenics. The academic programme of the department reflects not only the core areas of Mechanical Engineer but also the research specialization of the faculty. The department at present has over one hundred research scholars pursuing projects on diverse fields. The faculty is organized under three divisions and six groups. All the groups are working in close co-operation while retaining individual identities. Many Research and Development projects being pursued by the faculty are sponsored by Government agencies and private industries. Some of the major sponsors are BRNS, DST, DAE, CSIR, DRDO, BARC, ISRO and private industries.

ABOUT THE COURSE

The prediction of the faults and failures in the mechanical system before any catastrophic accidents is always been a widely researched area. Such demands led to the development of vibration based condition monitoring and signal processing using Artificial Intelligence techniques. During the maintenance process, the engineers focus on the live performance of the mechanical system to predict the faults and failures. These predictions can be made by analyzing the vibration signals obtained from the mechanical system during its operation. However, such signals from the working conditions are raw data, and hence, the signal needs to be processed to obtain the required details to understand the working life of the mechanical system. Industries also understand the importance of vibration condition monitoring and have included these procedures as a part of their normal operations. This short term course is aimed to provide a fundamental understanding of the vibration signals and its associated processing using Artificial Intelligence techniques. This will also cover the recent developments made in the field of signal processing.

COURSE CONTENT

The lectures will cover the following topics :

- Modeling of discrete and continuous systems.
- Forced response analysis
- Artificial Intelligence (AI) techniques
- Basics of fault diagnostics
- Fault diagnostics using Neural Network and Fuzzy systems and support vector methods.
- Signal Processing :Time and Frequency domain analysis
- Experimental modal analysis
- Advanced signal processing techniques
- MATLAB implementation of advanced signal processing techniques

Lectures/demos will be delivered by distinguished faculty members from reputed institutes and professionals from industries. Laboratory sessions will also be arranged for practical exercise on the vibration signal processing.

TARGET AUDIENCES

The course will be useful to engineers from industries, faculty members and research scholars from engineering colleges, universities, and research institutes. The successful participants will be given participation certificate.

COURSE FEE

Faculties from academic institutions	:	Rs 3000
Participants from industries	:	Rs 5000
Research Scholars/Students	:	Rs 1500

PAYMENT

DD/Cheque should be on the name of '**Continuing Education, NIT Rourkela**'. payable at SBI NIT RKL.

For Online transaction:

Account number is :10138951784,

SBI NIT RKL Branch (IFSC: SBIN0002109). If paid by online transaction, then it is required to submit the transaction proof at the time of registration.

Fee includes course material, working Lunch, tea and snacks. Accommodations are available for outstation participants in the institute guest houses/hostels with prior intimation.