

Foreign Expert



Prof. Arthur W Lees (B.Sc., Ph.D., D.Sc., C.Eng., C.Phys., F.I.Mech.E., F.Inst.P., L.R.P.S):

Professor Lees graduated in Physics and remained at Manchester University for three years research. After completing his PhD, he joined

the Central Electricity Generating Board, initially developing Finite Element codes then later resolving plant problems. During his time in industry, Professor Lees was author of over 100 internal reports, mainly relating to plant problems, making recommendations on maintenance and operations. As a result of his research, Professor Lees has published over 130 journal and conference papers and two textbooks. He is a regular reviewer of many technical journals and was, until his recent retirement, on the editorial boards of the Journal of Sound & Vibration.



Dr. Mohit Lal (Course Coordinator)

is an Assistant Professor in the Department of Industrial Design, National Institute of Technology Rourkela, Odisha, India. He received his Ph.D. degree in Mechanical Engineering with specialization in

Machine Design from the Indian Institute of Technology Guwahati, India, in 2013. His current research interests include Condition monitoring of rotating machinery, characteristics parameters estimation of rotor AMB systems, Human vibrations in Product Design etc.



Dr. Mohammed Rajik Khan (Co-Coordinator) is an Assistant Professor in the Department of Industrial Design, National Institute of Technology Rourkela Odisha, India.

His current research interests include Geometric Modeling, Bio-Mechanical, CAD, CAE, Design of Electro Magnetic Welding Coil, Design of Elderly Assistive Devices, Human factors in Product Design, CAD based Industrial Ergonomics, Innovative Product Design, etc.

About NIT Rourkela

NIT Rourkela is a MHRD, Government of India funded premier national level institute of higher learning for engineering, science and technology located in the steel city of Rourkela, Odisha, India. The institute was established as Regional Engineering College Rourkela in 1961 and was elevated to a deemed university under the name of National Institute of Technology, Rourkela in the year 2002.

NIT Rourkela is ranked 15 in the NIRF Rankings 2018 of Indian Engineering Universities. According to the Times Higher Education (THE) ranking of the World's best Universities 2016-17, it is ranked in top 800 institutes of world, and it is only NIT to feature in the list.

The main objective of the Institute is to produce quality Engineers and Scientists in Graduate and Post-Graduate levels in various branches of engineering and science. The institute with a lush green campus area of 650 acres has twenty departments, three academic centers and six service centers. The Institute has a very vibrant campus life with ten hall of residence for students, residential quarters for employees and two guest houses for visitors. The Institute has been modernized by several foreign collaborative research projects. A very good number of sponsored research and consultancy projects are running at present.

ABOUT DEPARTMENT

The Department of Industrial Design aims to create the next generation Industrial designers and innovators who can provide innovative design solutions to the complex challenges faced by the industry and society. The Department offers a B.Tech/M.tech/Ph.D program in Industrial Design. The Department has well qualified and experienced faculty, and good laboratory facilities. Currently, the Department is executing several consultancy and collaborative R&D projects with reputed industries and research organizations like DRDO, BRNS, ICMR, DST, etc.

<https://nitrkl.ac.in>

<http://www.gian.iitkgp.ac.in>

For details please contact

Course Coordinator

Dr. Mohit Lal

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GLOBAL INITIATIVE OF ACADEMIC NETWORK (GIAN)

10 Days Course
on

**Vibration Problems in Rotating Machines:
Diagnosis and Rectification (171030L02)**

February 18-March 1, 2019

Venue



**Department of Industrial Design
National Institute of Technology Rourkela
Rourkela, Odisha-769008**

Under the aegis



**Government of India
Ministry of Human Resources and Development**

Overview

Rotating machineries find a wide variety of applications in industries such as turbine generator systems in power plant, nuclear sector, marine, aerospace and many more. These rotating machineries often come across different kind of faults like unbalance, misalignment, crack, rotor bow, bearing fault, gear fault etc. The course will give the participants an understanding of the ways in which measured data can be interpreted to gain an insight into a machine's operation and to diagnose incipient faults. This will be achieved by studying the effects of a range of machine faults, the means of acquiring and presenting plant data and advanced techniques of data analysis.

Objectives

- To understand the various methods of presenting complex data
- To introduce modern methods of data analysis to aid diagnostics
- To support these aims with modelling methods and case studies from real plant
- Appreciation of the ways in which common machine faults influence vibration and other external signals

Course Contents

Course participants will learn these topics through lectures and tutorials.

- Introduction of Rotor Systems
- Machine Classifications
- The Presentation of Data
- Understanding the Data
- Modelling and Analysis
- Analysis of different Faults such as Rotor Misalignment, Shaft Crack, Bow, Bearing Faults etc.
- Interaction through Bearings
- Forms of Excitation
- Sample exercise in data manipulation
- Sample problems with model solutions and comparative studies
- Case Studies
- The Future of Condition Monitoring

Who Can Participate:

- Students at all levels (BTech/BE/MSc/MTech/ME/PhD) or Faculty from academic and research institutes.
- Professionals, Executives, Engineers and Researchers from industries like HAL, NAL, and automobile & turbine industries, power plants etc.

The maximum number of participants for the course shall be limited to 40. (Participants will be selected on first-cum-first serve basis)

Registration/Course Fee (Non-refundable)

The participation fee for taking the course is as follows:

Participants from academic institutions:	₹ 5000 /-
Participants from industry:	₹ 7500 /-
For students*:	₹ 2000 /-
Participants from abroad :	US \$500

(*ID proof to be submitted for student category)

The above fee includes all instructional materials, computer use for tutorials and assignments. The registration/course fee is to be paid through a Demand Draft which should be drawn in favor of 'Continuing Education, NIT Rourkela' payable at **SBI, NIT Rourkela Branch (Code:2109)** or by NEFT/RTGS to A/C No.: **10138951784, State Bank of India, NIT Rourkela Branch IFSC Code: SBIN0002109.**

In addition to the above fee, one-time online fee of Rs.500/- is to be paid for registration in the GIAN web portal. (See registration process)

Accommodation

Out station participants can be provided accommodation in the Institute Guest Houses inside the campus on payment basis as the Registration fee does not include lodging and boarding. Limited accommodation is available at the Institute Guest Houses which may be provided on first-cum-first serve basis. The lodging (twin sharing) and boarding charges may range from Rs.3000/- to Rs.4000/- for the entire duration of the course. Participants may also arrange their own accommodation.

Important Dates

- **Last date for receiving applications & DD/NEFT is Extended up to January 28, 2019**
- **Last date for Intimation to Participants: January 29, 2019**
- **Course Dates: February 18 – March 1, 2019**

Registration Process

Registration for any GIAN course is a two-step process.

Step 1:

One Time Registration with the GIAN web portal of IIT Kharagpur using the following steps:

- Create login and password at: <http://www.gian.iitkgp.ac.in/GREGN/index>
- Complete the personal details and pay Rs. 500/- (non-refundable) through the online payment gateway
- Select the Course(s) you are interested in
- Confirm your application
(Individuals who have already registered to GIAN earlier need not to repeat)

Step 2:

- Course registration with the course coordinator
- Institute registration process is an offline process. The participants are required to take print out of Registration Form. The registration form is available at: <http://nitrkl.ac.in//docs/CEP/ID/17122018133854052F.pdf>
- He/she then may proceed for the course registration by filling out the registration form and paying the registration course fee*

Documents to be sent online

- Scanned copy of filled in "Registration Form".
- Scanned copy of "Demand Draft/ receipt of NEFT". (Above documents must be sent to course coordinator via email: dr.mohital@gmail.com)

Documents to be sent by post

- Original registration form.
 - Demand Draft/ receipt of NEFT.
- The above documents must be sent by post to:

Dr. Mohit Lal
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Department of Industrial Design,
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Phone: 0661-246 2856 (O); 07415189453 (M)
E-mail: dr.mohital@gmail.com

*The DD/Receipt of NEFT and the original registration form must reach to the coordinator on or before **January 28, 2019.**