BACKGROUND
Teachers and professional engineers need to be introduced the fundamentals of Finite Element Analysis & Signal Processing in Rotor-Bearing Systems. Rotor-bearing systems of modern high-speed rotating machineries constitutes a complex dynamic system. With the advancement in high-speed machinery and increase in the power/weight ratio, the determination of the rotor dynamics characteristics through reliable finite element modeling has gained prime importance. The advancement in modern instrumentation, computational capabilities and numerical methods has helped in the analysis and vibration signal processing of these complex systems.

In this course teachers/scientists/engineers are given a complete understanding of Rotor-Bearing systems and allied areas from very basic vibrations to advanced modeling, analysis and signal processing techniques. This course helps the participants in understanding the rotordynamic problems in practical situations. They will be able to implement the ideas of modeling, simulation and techniques for dynamic analysis and signal processing in practical situations and for research purposes.

COURSE CONTENTS
- Introduction to linear and non-linear dynamic systems, finite element methods and vibration signal processing.
- Analysis in rotor-bearing systems: Free vibrations, Critical speeds, unbalance response, gyroscopic effects and instability.
- Bearings: Tribology of bearings – Fluid film and rolling element bearings.
- Signal processing in rotor-bearing systems: Balancing of rotors, bearing dynamic parameter estimation.
- Hands-on laboratory classes on dynamic balancing of rotors, bearing dynamic parameter estimation, etc.
- Hands-on laboratory classes on the MATLAB software package.

FACULTY
Faculty members of IIT Guwahati and guest faculty members from other premier Institution/Organization will deliver lectures.

COURSE MATERIAL
Each registered participant will be provided with a set of comprehensive lecture notes.

ABOUT IIT GUWAHATI
IIT Guwahati campus is spread over a sprawling 285 hectares plot of land on the north bank of the river Brahmaputra around 25 km from the heart of the city. With the majestic Brahmaputra on one side, and with hills and vast open spaces on others, the campus provides an ideal setting for learning. Guwahati city (situated at 91° 44 E longitude & 26° 10 N latitude) is gateway to beautiful NE region of the country and linked with all major cities by rail, road and air. Guwahati has a temperate climate with temperature varying between 7°C to 37°C. Summer span is usually from May to September. Buses (from Institution of Engineers Building, near Panbazar over-bridge), auto-rickshaws and taxis are available from Guwahati City to the IIT Guwahati Campus.

FINANCIAL ASSISTANCE
Limited number of Participants from AICTE recognized engineering institutions will be eligible for to and fro railway fare via shortest route in sleeper class and free lodging and boarding in the hostel during course period. Candidates attending the course in full only will be eligible for TA and DA.

For all other participants no TA/DA will be paid by IIT Guwahati

QIP SHORT TERM COURSE
ON
Theory & Practice of Rotor Dynamics
Dec 15-19, 2008

Application Form
1. Name (block letter):
2. Designation & pay scale:
3. Organisation:
4. Address for communication:
5. Pin code: Ph. No.:
   Fax No. E-mail:
6. Highest Academic Qualification:
7. Specialisation:
8. Experience (in years):
   (a) Teaching: (b) Industrial:
9. Amount of TA required as per entitlement mentioned in this brochure (only for AICTE approved college teachers):

10. Choice of Accommodation:
    Hostel /Guest House
    Please register me for the course on “Theory & Practice of Rotor Dynamics” to be held at IIT Guwahati.

Place: Date: Signature of the applicant
**SPONSORSHIP**

Prof./Dr./Mr./Ms./Mrs./_______________________ is an employee of our institute and his/her application is hereby sponsored. The applicant will be permitted to attend the short-term course “Theory & Practice of Rotor Dynamics” at IIT Guwahati during December 15-19, 2008, if selected.

Date: ____________________________
Signature of Sponsoring Authority
Designation: ____________________________

Official Seal: ____________________________

For applicants from Industries and Government Departments:

DD No. ____________________________ Date: ____________________________
Bank: ____________________________ Amount: ____________________________

Signature of the Applicant

The duly sponsored application form should be mailed to:

Professor Rajiv Tiwari,
Course Coordinator
QIP Short Term Course
Department of Mechanical Engineering
Indian Institute of Technology Guwahati
Guwahati – 781 039, Assam
Ph. No.: 0361 2582667 (O), 2583001
Fax No.: 0361 2690762, 2583020
Email: rtiwari@iitg.ernet.in

**ELIGIBILITY**

The course is open to teachers of mainly to Engineering Colleges and a few polytechnics approved by AICTE. No course fee is charged for participants sponsored by AICTE approved institutions. However, Rs 1000/- caution-money has to be sent by the provisionally selected participants, which will be returned only when participant fully attend the course.

Participants from Governments Departments and Industries are eligible, provided they meet their T.A. and D.A. and pay a course fee @ Rs. 2500/- and Rs. 5000/- respectively. The payment is to be made by demand draft drawn on any Nationalised Bank in favour of QIP, IIT Guwahati, payable at Guwahati.

**BOARDING AND LODGING**

Boarding and lodging facilities will be provided for the selected candidates from AICTE approved institutions in the student’s hostels of the institute. However, lodging can be arranged in the Institute Guest House on payment of rent (subject to availability) as per the rate given below.

Single occupancy: Rs. 250/- per day
Double occupancy: Rs. 350/- per day

**IMPORTANT DATES**

The last date for the receipt of duly sponsored applications: 20.11.2008

Intimation of Selection: 20.11.2008

N.B. Interested candidates may send advance copy of the application duly countersigned by the Head of the Department / Controlling Officer (for sponsored candidate) to avoid procedural delay.