**REGISTRATION FORM**

Name: 
Designation: 
Department: 
Academic degree: 
Address:............................................................................
............................................................................................
City: ................................ Pin code : .....................
Mobile No: .........................id:..................................

Category of participant:  
Faculty/student/Research Scholar of NITK Yes/No 
Participants from other institution Yes/No 
Industrial Participant Yes/No 
Foreign Participant: Yes/No 
NITK Accommodation Required: Yes/No 
Payment Mode: DD for registration fee in favor of the Director, NITK, Surathkal, payable through any Nationalized Bank at Surathkal/ Mangalore. 

□ I agree to attend the course for the entire duration.

Signature of the participant:

Signature of the sponsoring authority with seal: 
Date: 
Place: 

**CONTACT DETAILS**

Dr. N. Gnanasekaran  
Assistant Professor 
Department of Mechanical Engineering  
National Institute of Technology Karnataka  
Srinivasanagar, Mangalore-575025.  
Email id: gnanasekaran@nitk.edu.in  
Contact: +917204877348

**ACCOMMODATION**

A limited number of in campus accommodation can be provided at institute's hostel and guest house for which the participants has to pay accommodation charges. Participants have to send a special request through mail to the coordinator.

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**ABOUT INSTITUTE AND SURATHKAL**

National Institute of Technology Karnataka (NITK), Surathkal – venue of the course - is one of the “Institutes of National Importance” in the country fully funded by the Ministry of Human Resource Development (MHRD), Govt. of India. The institute has an impressive infrastructure with state of art facilities in all the departments for teaching, research and consultancy. The institute is located 22 km north of Mangalore city. NITK nestles between the verdant mountain ranges of Western Ghats on one side and vast tranquil blue water of the Arabian Sea on the other. NITK celebrated Golden Jubilee in the year 2009-2010. Weather is pleasant in the month of November with temperatures ranging from 20 to 30°C. NITK is a focal point of visits to important places of pilgrimage and Archaeological sites.

**ABOUT THE GIAN COURSES**

MHRD, Govt. of India has launched an innovative program titled “Global Initiative of Academic Networks (GIAN)” in Higher Education, in order to garner the best international expertise into our system. As a part of this, internationally renowned Academicians and Scientists are invited to augment the country’s academic resources, accelerate the pace of quality reforms and elevate India’s scientific and technological capacity to global excellence.

**ABOUT DEPARTMENT**

The Department of Mechanical Engineering established in 1960, the oldest and largest department of NITK, has traversed the path of knowledge dissemination and generation as well as delivering over 4000 Mechanical Engineering graduates to the Nation. Over these 55 glorious years, it has carved a niche for itself in the key areas of teaching, research, consultancy, administration and community services. Academic programmes leading to B. Tech. degree in Mechanical Engineering, M. Tech. degree in Manufacturing, Design and Precision, Mechatronics and Thermal Engineering and full time PhD degree are currently offered by the department. The department has also been recognized as QIP centre for M.Tech and Ph.D in Mechanical Engineering.

**A short term course on**

Transfer Function Based on Green’s Function Method (TFBGF) to Solve Inverse Heat Conduction problem (IHCP):
Manufacturing Process Application

Nov 7-11, 2016

International Faculty
Prof. Gilmar Guimarães  
School of Mechanical Engineering,  
Federal University of Uberlandia-MG, Brazil

Coordinator
Dr.N. Gnanasekaran

Organized by
DEPARTMENT OF MECHANICAL ENGINEERING
NATIONAL INSTITUTE OF TECHNOLOGY
KARNATAKA
SURATHKAL - 575025
OVERVIEW OF THE COURSE
Currently a lot of interest has been focused on the study of fundamental problems applied to manufacturing process. The temperature field generated in the cutting process, for example, is subject of extensive research. The studies of these thermal fields in machining are very important for the development of new technologies aiming to increase the tool lives and to reduce production costs. The fact that these processes are affected and controlled by heat transfer phenomena has motivated a large number of researchers to turn their attention to these kinds of problems. The understanding of these processes involves the skill of modelling and obtaining the temperature field on piece or work piece. As direct measurements of temperatures at the contact of two moving pieces are very difficult the use of inverse heat conduction techniques represents a good alternative to solve thermal problems due to manufacturing process since this technique takes into account temperatures measured from accessible positions.

COURSE CONTENTS
Heat Conduction using Green’s Function: Direct problem
- DIRAC Delta Function
- Laplace Transform Method
- Product Solution for Transient GF
- Two-dimensional Semi-Infinite Bodies
Inverse Problem Using Heat transfer Function: Time and Frequency Domain estimation
- Frequency Response Functions
- Basic Concepts: Correlation (Covariance) Functions.
- Cross-Correlation Function for Time Delay
- Stationary Random Processes
- Thermal property estimation
- Modulus and Phase of Impedance Estimation
- Heat flux estimation in Time and Frequency Domain. Sensitivity Analysis
Manufacturing Application
- Orthogonal cutting process, welding process modelling and 3D Transient problem.

ABOUT Prof. GILMAR GUIMARAES
Gilmar Guimarães was born in Capinopolis, Minas Gerais-Brazil, May 31, 1960. He obtained his B.S. in Mechanical Engineering from the Federal University of Uberlandia (UFU) in 1983 and his M.S. in Mechanical Engineering from Federal University of Santa Catarina (UFSC) in 1986. He joined the School of Mechanical Engineering of UFU in 1987 and obtained his Ph.D. in Mechanical Engineering from Federal University of Santa Catarina (UFSC) in 1993. His research areas of interest include heat conduction, inverse problems and optimization, heat transfer in manufacturing processes and thermal property estimation. Another area of interest is the use of thermal images in biomechanics. Its research has resulted in over 100 technical publications in major journals and conferences with emphasis on inverse heat conduction problem. Reviewer of several international journals in the heat transfer area, he is researcher of Brazilian Research Agency (CNPq) since 1994.

WHO CAN PARTICIPATE?
1) Executives, engineers and researchers from manufacturing, service and government organizations including R&D laboratories.
2) Students at all levels (B.Tech/M.Sc/M.Tech/Ph.D) or Faculty from reputed academic institutions and technical institutions.
3) Faculty members working in Engineering Colleges in Mechanical, Production, Industrial Engineering and allied Department.

HOW TO REGISTER?
Stage – 1: Web (Portal) Registration: Visit GIAN
Website at the link: http://www.gian.iitkgp.ac.in/GREGN/index and create login User ID and Password. Fill up the blank registration form and do web registration by paying Rs. 500/- online through Net Banking/Debit/Credit card. This provides him/her with life time registration to enroll in any number of the GIAN courses offered.

Stage – 2: Course Registration (Through GIAN Portal):
Log in to the GIAN portal with the user ID and Password created. Click on “Course Registration” option given at the top of the registration form. Select the Course titled “Transfer Function Based on Green’s Function Method (TFBGF) to Solve Inverse Heat Conduction problem (IHCP): Manufacturing Process Application” from the list and click on “Save” option. Confirm your registration by Clicking on “Confirm Course”.

REGISTRATION FEE (Excluding Lodging & Boarding)

- Faculty & Scientists : Rs.2,000/-
- Participants from Industry/Training : Rs.10,000/-
- Organizations/Consultancy Firms
- Students and Research Scholars : Rs.1,000/-
- Other Participants from Abroad : US $500

The registration fee includes instructional materials, tutorials, laboratory and computer use, free internet facility, working lunch, mid-sessions tea & snacks. Outstation participants will be provided accommodation and boarding in Visitors Block/Hostel in the campus on payment.