

**TEQIP-II SPONSORED**

*National Level*  
Short Term Training Programme  
on

**Nonlinear Systems: Mathematical  
Modelling and Computer Simulations**

**January 04-08, 2016**



*Organized by*  
**Department of Mathematics**



**National Institute of Technology  
Raipur-492 010  
Chhattisgarh, India.**

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*Director, NIT Raipur*

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**Registration Form**

Name: .....  
Designation: .....  
Organization:.....  
Qualification:.....  
Correspondence Address: .....  
.....  
Tel. (O)..... (R) .....  
(M) .....  
Fax. No.....  
E-Mail:.....

Registration Fee: Paid herewith in the form of  
Cash/DD  
Amount .....  
D. D. No.....Date .....  
Name of the Bank.....  
Accommodation Required: Yes / No

Signature

Date:  
Place:

Note:

- Demand draft should be in favour of Director, National Institute of Technology Raipur, payable at Raipur.
- Photocopies of registration form may be used.

### About the Institute:

National Institute of Technology, Raipur (Formerly Government Engineering College Raipur), situated in the capital of a newly incepted state of Chhattisgarh, has proven to be "avant-grade" in the field of science and technology over past few decades in this region. With sweet memory of foundation ceremony by former president Hon'ble Dr. Rajendra Prasad on 14<sup>th</sup> September 1956. The institute started with two departments namely Metallurgical and Mining Engineering. Later the inauguration of the Institute building was done by our Prime Minister Hon'ble Pt. Jawahar Lal Nehru on 14<sup>th</sup> March 1963. From 1<sup>st</sup> December 2005, the institute has become the National Institute of Technology. It is well connected with Mumbai, Delhi, Hyderabad, Kolkata, Bhopal, Ahmedabad, Bangalore, Chennai and Chandigarh by regular flights and railway route. The institute is 5 km from the Raipur railway station and 14 km from airport on NH-6, the Great Eastern Road.

### About Department:

The Department of Mathematics came in existence since 1956. The department provides an outstanding research environment and offers academic program leading to the award of Ph.D. degree. Apart from all, department taking care of Mathematical input to all undergraduate and postgraduate courses in Engineering and Computer Science Applications.

### Theme/Scope:

Many phenomena in our world are essentially nonlinear and are described by nonlinear systems. A mathematical model helps to explain the system and to study the effects of different components and to make predictions about the behaviour. Computer simulation has become an important tool in engineering and science. The rapid development of high speed digital computers and the increasing desire for solving the nonlinear systems have led to enhanced demands in the courses dealing with the nonlinear dynamics & chaos, computational fluid dynamics.

The main aim of the present program is to explore the recent developments in dynamical systems in context of nonlinear differential equations, numerical techniques and their application in various fields of engineering and science. An exposure to this course will help in mathematical modelling and conducting the simulations. The program is intended to be a platform to participants to have exchange of ideas of common interest. The STTP is also focused on demonstration with hands on experience of Matlab and its applications, Latex for beginners. The goal of this program is to explain the mathematics as clearly as possible, and to explain how it can be used to understand the wonders of the nonlinear world.

### Objective:

The objective of this program is to train the post graduates students, research scholars, faculty and young scientists involved in active research in various organizations. This program will provide a platform for interaction and exchange of ideas on nonlinear systems, mathematical modelling and computer simulation in engineering and science. The lectures will be delivered by distinguished experts in their field from IITs and NITs. Also the course includes a hand on practical experience on Matlab and LaTeX for beginners.

### Topics to be covered:

- Applications of ODEs & PDEs in Real-World Problems
- Mathematical Modelling
- Nonlinear Dynamics and Chaos
- Fluid Dynamics
- Computational Fluid Dynamics
- Numerical Methods for Solving Nonlinear Problems
- Introduction to Matlab and its Applications
- Introduce LaTeX for Beginners

### Targeted Participants:

- Academicians
- Industry Professionals
- Students and Research Scholars

### Registration Fee Details (in INR):

Participants	Amount (in Rs.)
Students	1000
Faculty	1500
Industry Delegates	2000

### Registration Fee includes

- Workshop Kit
- Certificate of participation
- High-Tea and Lunch

### Instructions

1. DD should be drawn in favour of "Director NIT Raipur" payable at Raipur.
2. The number of seats is limited to 25.
3. Registration will be on First Come First Serve basis.
4. The deadline for receiving the duly filled in registration form is 15 December, 2015.
5. No TA/DA will be paid to the participants.

### Venue:

Department of Mathematics  
NIT Raipur (C. G.) – 492 010, INDIA