

### **THE INSTITUTE**

National Institute of Technology Durgapur (NITD) is a leading technical institute offering undergraduate, postgraduate and doctoral programmes in various disciplines of engineering, technology, science, social science and management. The education system is holistic with equal importance being attached to all-round development of the students. NITD was established as a Regional Engineering College (REC) in 1960 as a joint venture of the Government of India and Government of West Bengal. REC Durgapur was converted to NIT Durgapur under the full administrative and financial control of the Ministry of Human Resource Development of Government of India with a Deemed University status on 3rd July, 2003. Subsequently NITD has been given the status of a University by the UGC Act. The Institute was declared an **Institute of National Importance** by the Government of India on August 15, 2007.

The city of Durgapur is recognized as one of the fastest developing Tier-II cities in the national scenarios. Durgapur is situated at a distance of about 180 KMs from Kolkata. It is located right on the major railway and expressway (NH-2) connecting Kolkata to Delhi and Durgapur can be reached from Kolkata (and vice versa) in ~ 2 hrs. 30 mins.

### **THE DEPARTMENT**

The Electronics and Communication Engineering course was initiated in 1983. In the early years the aim was in the development of a good infrastructural facility for teaching the B. E. course. After the formation of the new department in 1990 the development took a new turn. The department has been successfully running two M. Tech courses in Telecommunication Engg., and Microelectronics and VLSI. The faculties are actively involved in the research areas like application of evolutionary algorithm, VLSI, signal processing, Antenna etc. A good number of Ph.D. degrees have been awarded under the supervision of the faculty members of the Department and a number of students are working at present for their Ph.D. degrees.

### **ABOUT THE WORKSHOP OTA-2014**

Mathematical optimization has experienced tremendous growth in the last 20 years, and today, fundamental advances continue to occur at a furious pace. Soft Computing

Techniques (Artificial Neural Networks, Genetic Algorithms, Fuzzy Logic Models, Particle Swarm Techniques) have been recognized as attractive alternatives to the standard, well established “hard computing” paradigms. Traditional hard computing methods are often too cumbersome for today’s problems. Soft computing techniques, which emphasize gains in understanding system behaviour in exchange for unnecessary precision, have proved to be important practical tools for many contemporary problems. Genetic Algorithm and Particle Swarm Optimization and other recent techniques have emerged as potential and robust optimization tools in recent years. The course contents will be taught by eminent experts in the field, having adequate teaching and research experience. This course will be beneficial to faculty and scholars from all engineering disciplines as a potential computing tool in their research activities. The proposed program will be centred on the development and application of these modern trends in optimization. It will bring together researchers from engineering, computer science, mathematics, operations research, and other fields, who have a common interest in optimization.

The goal of the workshop is to develop and exchange ideas about modern optimization which can be influenced by, and influence in turn, progress in engineering and science.

**Besides the invited talks by the resource persons, there will be paper presentations covering the theme of the course.**

### **TOPICS TO BE COVERED**

- Basic Abstract to Optimization Techniques
- Constrained and unconstrained deterministic linear and non-linear programming methods
- Single Agent vs. Multi-agent Search/Optimization
- Neural Network (NN) Optimization Techniques
- Fuzzy Logic Optimization Techniques
- Genetic Algorithm (GA) based Optimization Techniques.
- Particle Swarm Optimization (PSO) Technique
- Basic Steps in Differential Evolution Algorithm
- New modifications of DE
- Application of GA, PSO and DE in Various interdisciplinary real world problem

- Wavelet Mutation
- Modifications and Hybridization of NN, GA, PSO, DE, etc.
- Demonstration of MATLAB.

### **RESOURCE PERSONS**

The resource persons constitutes of experts/senior faculty members from NIT Durgapur and various guest speakers from other reputed institutions and industries including IIT’s, Jadavpur University, ISM Dhanbad etc.

### **WHO CAN ATTEND OTA-2014**

OTA-2014 is aimed to attract and bring together Faculty Members, Scientists, Engineers, Technologists, Research Scholars and Final Year PG students from Academic and Research Institutions and Industries. The participants will get new insights and knowledge about the topic through close interactions/discussions with the Scientists and Experts of the respective field during the lecture sessions as well as in some laboratory sessions.

### **AUTHORS / PRESENTATORS (Optional)**

#### **Guidelines for preparing the manuscript**

Authors are advised to follow the template of paper given in the following link (**Maximum of 4 pages**):

[http://www.ieee.org/conferences\\_events/conferences/publishing/templates.html](http://www.ieee.org/conferences_events/conferences/publishing/templates.html)

### **BOARDING & LODGING**

Boarding, lodging and travel expenses shall be borne by the participants. Limited shared accommodations may be available in the Institute Guest House on first come first served basis. Several good hotels are available in and around Durgapur. Participants may contact directly or through the coordinator(s) for accommodation in Hotels. No TA/DA will be paid to the participants by NIT Durgapur.

### **IMPORTANT DATES**

**Deadline of paper Submission:-** April 01, 2014

**Paper Acceptance notification:** April 15, 2014

**Registration Deadline for all :** May 01, 2014

## REGISTRATION FORM

TEQIP-II Sponsored One Week Workshop on

**Advanced Optimization Techniques in Engineering  
Application (OTA 2014), 10<sup>th</sup>-14<sup>th</sup> June 2014**

**Dept. of ECE, National Institute of Technology,  
M.G. Avenue, Durgapur – 723109,  
West Bengal, India**

1. Name: \_\_\_\_\_
2. Designation & Affiliation: \_\_\_\_\_  
\_\_\_\_\_
3. Male/Female: \_\_\_\_\_
4. Mailing Address: \_\_\_\_\_
5. Telephone No. : \_\_\_\_\_ ( M)
6. E-mail ID : \_\_\_\_\_
7. Paper ID (if applicable): \_\_\_\_\_
8. Registration fees: DD/Cheque No. \_\_\_\_\_  
Date \_\_\_\_\_ Amount \_\_\_\_\_  
**(DD/Cheque should be drawn in favour of  
“OTA 2014”, payable at Durgapur.)**
9. Vegetarian / Non-Vegetarian: \_\_\_\_\_

*N.B.: Photocopy of this form may also be used for registration.*

Place: \_\_\_\_\_ *Signature of the Applicant*  
Date: \_\_\_\_\_

*Signature and Seal of the Head of the  
Department/Institute*

**Those who are not willing to present their paper  
they are also invited to attend the Workshop.**

### REGISTRATION FEES

**A. Industries: Rs. 5,000/-**

**B. Academia: Rs. 2,000/-**

*Registration fee includes conference kit, study/lecture materials, copy of the Proceedings, refreshment and lunch for 5 days during the course.*

**(Note: Each registration covers maximum one paper)**

**Patron:** Prof. T. Kumar, Director, NIT Durgapur

#### Advisory Committee:

Col. (Retd.) P. S. Sandhu (Registrar)  
Prof. P. P. Gupta, Dean (R&C)  
Prof. B. Halder, Nodal Officer (Academic) TEQIP-II  
Prof. K. C. Ghanta, Coordinator TEQIP-II  
Prof. B. Maji, HOD, ECE, NIT Durgapur

#### Workshop Coordinators:

Dr. Rajib Kar & Dr. Durbadal Mandal

#### Members:

Dr. A. K De, Prof. G. K. Mahanti, Prof. S. Kundu, Prof. R Ghatak

*Please send the completed application form together with demand draf/ Cheque t to the Coordinator on or before **May 01, 2014**. Also send the scanned copy of the said documents by E-mail to [ota2013nitdgp@gmail.com](mailto:ota2013nitdgp@gmail.com).*

#### CORRESPONDING ADDRESS

**Dr. R. Kar & Dr. Durbadal Mandal  
Coordinator, OTA 2014**

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**TEQIP-II Sponsored One Week  
Workshop on**

**Advanced Optimization  
Techniques in Engineering  
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10<sup>th</sup>-14<sup>th</sup> June 2014**



**Workshop Coordinators:**

**Dr. R. Kar & Dr. D. Mandal  
Department of ECE  
National Institute of Technology Durgapur  
Mahatma Gandhi Avenue  
Durgapur 713 209**

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