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E & ICT Academy



MNIT Jaipur

<http://www.mnit.ac.in/eict>

Two Week Faculty  
Development Program on

## Advanced Optimization Techniques (AOT-2017)

6 Oct - 15 Oct, 2017

Venue: Prabha Bhawan, MNIT

FDP Programme  
Sponsored by



सत्यमेव जयते

Ministry of Electronics and  
Information Technology

Government of India

[meity.gov.in/content/schemes-projects](http://meity.gov.in/content/schemes-projects)

**Prof. Udaykumar R. Yaragatti**  
Chairman, Advisory Board,  
EICT Academy & Director MNIT Jaipur

**Prof. Viswanath Sinha**  
Academic Chair, EICT Academy

**Prof. Vineet Sahula**  
Chief Investigator, EICT Academy

### Course Contents (40 hours theory + 40 hours Lab)

**Module 1 : Classical Opt. techniques & intro. to 'Evolutionary Computation':** Derivative based approaches, LMS Algorithm, RLS Algorithm, Introduction to nature Inspired algorithms and Swarm Intelligence, Genetic Algorithm, Differential Evolution, Bacterial Foraging Opt., Application to System Identification, Comm. Channel Equalization, Intelligent Instrumentation.

**Module 2: Multi-Objective Optimization :** Non-dominated Sorting Genetic Algorithm, Multi-Objective Particle Swarm Opt., Multi-Objective Cat Swarm Opt., Evaluation criterion of Algorithms.

**Module 3: Neural Network and Fuzzy Logic :** Introduction to Neural Networks, Multi Layer Perceptron, Functional Link ANN, Radial Basis Function, Introduction to Fuzzy Logic, Fuzzification and De-fuzzification, Fuzzy logic based models, Application to Classification, Genomic Signal Processing, Aquastic Noise Cancellation and Hearing Add Design.

**Module 4 : Nature Inspired Algorithms :** Gray Wolf Optimization, Monkey Algorithm, Social Spider Algorithm, Symbiotic Organism Search, Cuckoo Search and Levy flight, Firefly Algorithm, Whales Optimization, Artificial Immune Systems, Data Classification and Clustering, Pattern Recognition.

**Module 5 : Swarm Intelligence :** Particle Swarm Optimization and its variants, Ant Colony Optimization, Artificial Bee Colony Algorithm, Directed Bee Optimization, Termites Algorithm, TSP Problem, Power System Optimization.

**40 hours Laboratory Sessions :** It consist of twenty simulation experiments which enables the participants to know depth in programming aspects of the theoretical concepts. Simulation will be carried out in MATLAB & Simulink.

### Course Registration & Fee

- Registration is done online at [http://www.mnit.ac.in/eict/apply\\_now.php](http://www.mnit.ac.in/eict/apply_now.php)
- One-time registration fee of **Rs. 500/-** is to be paid by each participant attending first time. This fee is not applicable for those participants, who have already attended Academy training programme earlier.
- Along with one time registration participants from academia/ research scholars/ PhD students are required to pay a further fee of **Rs. 4000/-** .
- Along with one time registration participants from industries, UG/PG students would pay a further fee of **Rs. 8000/-**.
- Relaxation/rebate of 75% course fee** in C) and D) for SC/ST candidates.
- Lodging a limited numbers will be provided to outstation participants at Hostels of MNIT Jaipur.
- The registration fee covers the participation in the programme, course material, breakfast and working lunch on all the days of the workshop. The travel and other expenses would have to be borne by the participants.
- Registration amount is received through online payment/NEFT/IMPS/DD.

Account Name-  
'Electronics and ICT Academy MNIT Jaipur'

Account Number-  
676801700483

Bank address-  
ICICI Bank, MNIT Campus Branch, Jaipur.

IFSC Code-  
ICIC0006768

### Distinguished Speakers



**Prof. Ganapati Panda**, FNAE, FNASc.  
School of Electrical Sciences  
IIT Bhubaneswar  
<http://www.iitbbs.ac.in/profile.php/gpanda/>



**Prof. B. K. Panigrahi**,  
Dept. of Electrical Engineering  
IIT Delhi  
[ee.iitd.ernet.in/people/bkpanigrahi.html](http://ee.iitd.ernet.in/people/bkpanigrahi.html)



**Dr. Pyari Mohan Pradhan**  
Dept. of Electronics & Comm. Engg.  
IIT Roorkee  
[https://www.iitr.ac.in/departments/ECE/pages/People+Faculty+Pyari\\_Mohan\\_Pradhan.html](https://www.iitr.ac.in/departments/ECE/pages/People+Faculty+Pyari_Mohan_Pradhan.html)



**Dr. Nithin V. George**,  
Dept. of Electrical Engg.  
IIT Gandhinagar  
<http://www.iitgn.ac.in/faculty/electrical/nithin.htm>



**Dr. Sitanshu S. Sahu**,  
Dept. of Electronics & Comm. Engg.  
BIT Mesra, Ranchi  
<https://www.bitmesra.ac.in>

### MNIT Organization Committee

#### Coordinators

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