Electronics & ICT Academy
IIT Roorkee

An Initiative of
Ministry of Electronics & Information Technology (MeitY)
Government of India

सत्यमेव जयते

Joint Faculty Development Program
on

Advanced Optimization Techniques using MATLAB

Two - Week Joint Faculty Development Programme

In association with

Feb 17 – Feb 28, 2025

04:00 PM – 08:00 PM

Everyday

Register Before: Feb 14 , 2025

Mode of Delivery is Online

About E&ICT Academy

Electronics and ICT Academy is an initiative of Ministry of Electronics & Information Technology (MeitY), Govt. of India for conducting various Faculty/ Research Scholar Development Programme. Academy has planned short-term training programs on fundamental and advanced topics in IT, Electronics & Communication, Product Design, and Manufacturing with hands-on training and project work using the latest software tools and systems. In addition, the Academy will conduct specialized/customized training programs and research promotion workshops for corporate sector & educational institutions.

Prerequisites

No experience is required, but fundamental knowledge of any programming language would be helpful.

Objectives of the course

- Introduce participants to fundamental optimization techniques, including linear programming, simplex methods, and derivative-based optimization.
- Explore advanced nature-inspired and bio-inspired optimization techniques for solving multimodal and complex optimization problems.
- Familiarize learners with multi-objective optimization methods and their applications in real-world scenarios.
- Provide practical knowledge on benchmarking optimization methods using mathematical and dynamic system identification.
- Develop skills to hybridize optimization algorithms with neural networks and deep learning for advanced applications.

Focus Areas

- Foundations of Optimization
- Nature-Inspired Optimization
- Multi-objective Optimization
- Applications of Optimization
- Hybrid Optimization Techniques

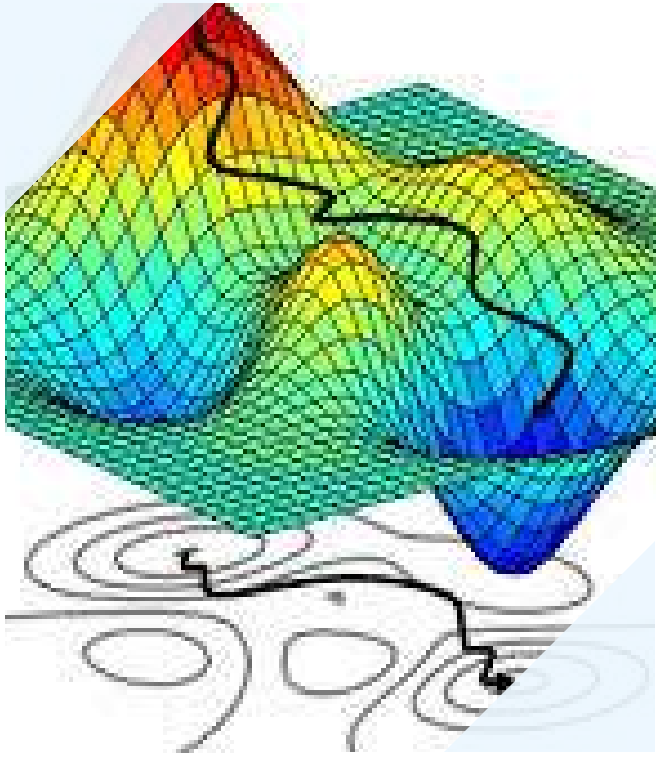
Course Features

- 40 Hours of Lectures, hands-on, and Pedagogy/Industry sessions.
- Lectures from Expert Speakers, Hands-on from industry/Academia experts.
- Access to learning material and video lectures
- Certificate by E&ICT Academy IIT Roorkee

Course Outcomes

Participants are likely to:

- Understand and apply core optimization techniques, including constrained and unconstrained methods, graphical solutions, and Newton's method.
- Implement nature-inspired optimization algorithms, such as genetic algorithms, particle swarm optimization, and ant colony optimization, to solve diverse problems.
- Apply multi-objective optimization techniques like NSGA-II, NSGA-III, and particle swarm optimization for non-dominated solutions.
- Solve real-world problems like system identification, communication channel equalization, and time series forecasting using optimization.



Experts from Academia/Industry

Who Should Register?

Any Interested Faculty/PhD-Scholars
UG/PG/ & Industry Persons can register

Registration Fee

Fees: ₹ 500/- Faculty/Research Scholar
Note: Registration Fee is Refundable if the cancellation request is submitted before the last date of registration.

How to make Payment

Please make the payment first using the below link upload the payment receipt when filling out the Google registration form

https://eict.iitr.ac.in/instruction-for-payment/

Conference Code: EICTIITR-FDP-25-28

Registration Link

https://forms.gle/raxKAZ1G2ezyjQaeA

Scan QR for registration

Register before:
Feb 14 , 2025

Click to follow us on:

Resourse Person

- Experts from IITs/NITs / IIITs and Industry experts
- Prof. N. P. Padhy, Director MNIT Jaipur
- Prof. Ganapati Panda, IIT Bhuwaneshwar
- Dr. Nithin V. George, IIT Gandhinagar
- Dr. Pyari M. Pradhan, IIT Roorkee
- Dr. Sitanshu Sekhar Sahu, BIT MESRA
- Dr. Sriparna Saha, IIT Patna
- Dr Prashant K. Jain, IIITDMJ
- Dr. Satyasai Jagannath Nanda, MNIT Jaipur

Principal Coordinator

Dr. S. J. Nanda, MNIT Jaipur

Joint Principal Coordinators

- Prof. Sanjeev Manhas, IIT Roorkee
- Prof Suarabh Khanna , IIT Roorkee
- Prof. Prabin K Padhy, IIITDMJ
- Prof. Ratnajit Bhattacharjee, IIT Guwahati
- Dr. Mukesh Kumar, NIT Patna
- Dr Manjubala Bisi, NIT Warangal
- Dr. Piyush Kumar , NIT Patna

Reach Us :

M.No.: 8112766397
Landline No.: +91-1332286457
Email: eict@iitr.ac.in