Jointly Organized by
Electronics & ICT Academies

NITP, IITR, MNITJ

Numerical & engineering computation, optimization using open-source- SCILAB

21 Feb – 4 Mar 2022

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

Online Autumn Training Programme
E&ICT Academy is funded by

Ministry of Electronics and Information Technology Government of India

Ministry of Electronics & Information Technology
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Preamble (Electronics & ICT Academy)

Government of India had announced a National Policy on Skill Development, which has set a target of skilling 500 million people by 2022 in the domain of Electronics & IT. Under the plan scheme of "Digital India Manpower Development". MeitY has set up seven (07) Electronics and ICT Academies as a unit in 03 IITs, 03 NITs and 01 IIIT with an objective of faculty/mentor development/up gradation in the areas related to Electronics & ICT leading ultimately to improved employability of graduates/diploma holders. MNIT Jaipur has set up such an academy for providing specialized training to faculty and industry persons in the states/UTs of Rajasthan, Gujarat, Daman & Diu, Dadra Nagar Haveli.

(A) Issues-
1. IT Hardware and Electronics Manufacturing industry- availability of properly trained, skilled and qualified manpower
2. Number of quality PhDs generated in IT / Computer Science is very low
3. In E & ICT domain- there is a very high degree of obsolescence of existing technologies and faster emergence of newer technologies

(B) Approach-
1. A focused faculty training/updation programme for IT, Electronics and related sectors
2. Spreading up and continuous updation regarding Emerging Technology
3. Training and consultancy services for Industry
4. Design, Develop and Deliver specialized modules for specific research areas and Industry
5. Providing advice and support for technical incubation and entrepreneurial activities

The course has been designed to impart programming knowledge and skills required for being an effective researcher/teacher with Applications of SCILAB. The Course will Introduce open source SCILAB as an effective communication tool for teachers and cover basics of programming to algorithm development and implementation using SCILAB and would be equally useful for the persons from all disciplines. Interactive programming sessions would be conducted to develop programming aptitude and algorithm thinking. Case studies related to programming required for various numerical methods would be presented. All participants will be allowed to take and complete SCILAB programming for Matrix manipulation, iterative methods, Eigen value problems, 2D/3D plotting, Xcos block, etc.

Experts/Speakers-
1) Mr. Chaitanya Kancharla, ESI India (Consent awaited)
2) Mr. Hugues Arthur Garioud, ESI France (Consent awaited)
3) Faculty from host institutes- MNIT Jaipur, IIT Kanpur, IIITDM Jabalpur

Course Contents:

SCILAB Fundamentals (Basic)
1. Introduction, 2. Scilab & Xcos Software, 3. Scilab Presentation
4. Data Types, 5. Progrmming Basics, 6. Inputs / Outputs
7. 2D Graphics – Plots, 8. 3D Graphics – Plots, 9. Main Functions
Introduction to Xcos (Basic)
1. Xcos Environment, 2. Diagram Creation
3. Block Design, 4. Blocks Structure, 5. Xcos and Modelica
Advanced Topics & Industry Uses Cases
Solving set of equations- Matrices and vectors, elimination methods, ill-conditioned systems, iterative methods.
Large Matrix analysis and large Eigen value problem- Eigenvalues & eigen vectors.
Numerical Optimization, Interpolation

Programme Coordinators:

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Registration:
Registration is open to graduate, postgraduate and doctoral students, faculty and industry persons. Participants will be admitted on first-come first-served basis.
Details of the programme- http://www.mnit.ac.in/eict/acad_training_prg.php
Register online at portal- http://online.mnit.ac.in/eict

Registration Fee:
Academic (student/faculty) India/SAARC: ₹ 500/-
Industry/Others from India/SAARC: ₹ 1000/-
Other countries (student/faculty/Industry persons): $ 60 /£ 50

(A) Fee once paid will not be refunded back; it may only be adjusted in future courses upon prior request.
(B) The fee covers online participation in the programme, comprehensive tutorials, practice notes & certification charges.
(C) The organizers should receive the fee through online payment gateway provided at the registration portal provided above.

→For any other query, email us at academy[AT]mnit.ac.in