Joint Online Two Weeks Certificate Faculty Development Program

Numerical & Engineering Computation, Optimization for Physicists, Scientists & Engineers - Open Source SCILAB
February 21 – March 4, 2022

Jointly Organized by:
NIT Patna,
IIT Kanpur,
MNIT Jaipur,
PDPM IIITDM
Jabalpur.

Objective & Scope

The course gives the insight about the numerical & engineering computation and optimization using the open sources.

Course Contents

- Solving set of equations- Perform computations like matrix, vectors; Gaussian elimination & iterative methods, ill-conditioned systems, iterative methods; nonlinear equations
- Large Matrix analysis and large Eigen value problem- Eigenvalues & eigen vectors- Gerschghorin theorem, iterative method, Sturm sequence, QR method, Singular value problems
- Random numbers Simulation & Applications
- Open source & traditional technical computing
- Solving ordinary differential equations (ODE); plotting 2D and 3D plots; diagram creation
- Xcos- Model based simulations using Xcos.
- Introduction to Discrete Probabilities with Scilab
- Introduction to constrained and un-constrained optimization; optimality conditions.
- Writing functions in Scilab and scripting
- Building an interactive GUI
- Linear algebraic equations, fast computation, Pade & rational approximation
- Numerical approximations of functions - Taylor's polynomial, least square approximation, Chebyshev series/polynomial, splines,
- Fourier coefficients, Fourier series, trigonometric interpolation, DFT, FFT; Compression
- Application development; Industry real time Use Cases

Joint-Principal Coordinators

Prof. P. K. Jain,
PDPM IIITDM Jabalpur
Email: pkjain@iiitdmj.ac.in
Phone: 0761-2794415
         +91-9425800310

Speakers (Tentative)

- Prof Kannan Moudgalya, IIT Bombay
- Prof. S. A. Katre, Bhaskaracharya Institute, Pune
- Experts from IITs, NITs, etc.

Key Features

- Online / Live lectures sessions by subject experts.
- Comprehensive tutorials and practice notes.
- Online lab and training sessions.
- Follow up sessions and discussion forums on research problems and internships.

Last Date for registration: February 19 2022

Course Fee Details

Academic (student/faculty): 500 INR
Industry People/Others: 1000 INR
Foreign Participants: 4000 INR

Online payment details
Beneficiary Name : EICT Academy
Bank Name: INDIAN BANK
A/C No. : 50302042708
IFSC Code: IDIB000M694
Branch: Mehgawan, IIITDM Branch

Link for registration: https://forms.gle/ovAUnaxLBWYTZ4T87

Contact Us:
Email ritu.bhatnagar@iiitdmj.ac.in, academy@iiitdmj.ac.in
Contact No.: +91-8458849734