

ABOUT THE COURSE:

The modern power and control systems are becoming more complex and difficult to deal with. Thus, modeling and simulation of such systems with high degree of accuracy is required. This needs an accurate and robust platform for modeling and simulation. MATLAB and SIMULINK is one of the established software package (MATHWORKS INC.) widely used across the globe for developing large systems for Engineering and non-Engineering problems. MATLAB is a high-performance language for technical computing. It integrates computation, visualization, and programming in an easy-to-use environment where problems and solutions are expressed in familiar mathematical notation. MATLAB® features a family of application-specific solutions called toolboxes. Areas in which toolboxes are available include power system, control systems, signal processing, neural networks, fuzzy logic and many others. Some of the application areas of the MATLAB and SIMULINK include electromechanical systems and products, control system design/analysis, power system modeling, simulation and optimization, chemical and industrial process control, signal processing and filtering, test equipment/instrumentation, digital servo systems, Motor and motion control, system identification/parameter estimation and speech Processing.

The designed training course aims to provide detailed hands-on practice on MATLAB and SIMULINK platform for modeling and simulation. The participants will be given theoretical input and simultaneous hands-on learning experience in the basic operation and utilization of MATLAB and SIMULINK to solve many technical computing problems.

COURSE COVERAGE

1. An Introduction to MATLAB

- MATLAB Fundamentals
- MATLAB Environment and Command Window
- Saving and re-loading a work
- MATLAB demos
- Vector and Matrix Manipulation
- Scalar Operations
- Matrix Operations

2. Programming in MATLAB

- Basics of MATLAB programming structure
- Script Files
- Functions

- Debugging Programs
- Creating functions using m-files
- Loops, branches and Control flow
- Relational and logical operations
- Advanced data objects: Multidimensional matrices and structures

3. MATLAB Graphics

- Two and Three-dimensional graphics
- Multiple Plots
- Axis Scaling
- Printing Graphics
- Animation

4. Introduction to SIMULINK

- What can SIMULINK be used for?
- Multiple Plots Creating Models, Blocks
- Systems and Subsystems
- Simulating Dynamic Systems
- Solving a Model, Solvers
- MATLAB Simulink Integration
- S Function
- SIMULINK and GUIs
- SIMULINK Exercises

5. Demonstration of Toolboxes (Matlab & Simulink) such as

- - Power System Tool box
 - Control System Toolbox
 - Signal processing Toolbox
 - Wavelet Tool Box
 - Fuzzy Logic Tool Box
 - Neural Network Tool Box

VENUE

The course will be organized at the National Institute of Technology (NIT), Rourkela. It is one of the premier national level institutions for technical education in the country and is funded by the Government

of India. It is situated at the eastern end of Rourkela steel city, beyond Sector-1 over an area of 262 hectares of land. NIT Rourkela has fourteen academic departments which offer B.Tech, M.Tech and PhD programs in various areas of engineering and technology. The Institute is a participant of the Technical Education Quality Improvement programme of Government of India

The city of Rourkela came into prominence in the year 1954-55, with the decision of the Government of India to set up the first Public Sector Steel Plant in this locality in collaboration with the then West Germany. The city is a huge metropolis connected with all parts of the country by railway and road. NIT Rourkela is about 8 km and 3 km from Rourkela railway station and Sector-2 bus terminus respectively.

ABOUT THE DEPT. OF ELECTRICAL ENGINEERING

Department of Electrical Engineering, NIT Rourkela was established in 1961. Since its inception, the Department is under dynamic progress and is reputed for imparting quality education both at B.Tech, M.Tech levels. The Department currently runs two M.Tech programmes with the specializations in (i) Power Control and Drives, (ii) Electronic Systems and Communication. Besides the undergraduate and postgraduate teaching, a good number of research scholars are working on different areas of Electrical Engineering towards the award of PhD degrees. The Department has well equipped modern laboratories such as Signal Processing & Communication, Image Processing & Computer Vision, Power Electronics & Drives, Control & Robotics, Embedded Systems & Real-Time and Soft Computing Labs for pursuing research in the emerging areas of Electrical Engineering.

ELIGIBILITY OF PARTICIPANTS:

At least a Bachelor Degree in Engineering (Electrical/Electronics/Communication/instrumentation & Control/Computer Science/Information Technology).

FACULTY

The course will be offered by faculty members of the NIT, Rourkela.

APPLICATION PROCEDURE:

Applications in prescribed format and the course fee in the form of a demand draft drawn in favour of “Continuing Education, NIT Rourkela” payable at SBI, NIT Branch, Rourkela-8 (code- 2109) are to be addressed to

Dr. S.R.Samantray

Assistant Professor

Department of Electrical Engineering

National Institute of Technology

Rourkela – 769008, Orissa, India

The last date of receipt of the application is scheduled as 30th July 2009

REGISTRATION FEE

Type of Delegate	Rs.
Faculty Members	4000
Students	2000
Participants from Industry & Research Organization	6000

ACCOMMODATION

Accommodation for participants shall be arranged in the Institutes Guest House.

CONTACT ADDRESS OF COORDINATORS:

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Professor

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A Training Programme on MATLAB & SIMULINK for Electrical and Electronics Engineers

(12th -16th August 2009)

Registration Form

1. Full name:.....
(Capital letters) First Middle Surname
2. Designation :
3. Qualifications:
4. Specialisation:
5. Organization:
6. Mailing Address:
-PIN:
7. Phone (Off.): (Res.):
- Mobile:.....
8. Fax:
9. E-Mail:
9. Accommodation required? Yes No
10. Details of Registration Fee:
DD No.:.....
Date:.....Amount:.....
Bank:.....
11. Expected date and time of
 - Arrival.....
 - Departure

Place:

Signature with Date

All payments are to be made by a/c payee demand draft drawn in favour of "Continuing Education, NIT Rourkela" payable at SBI, NIT Branch, Rourkela-8 (Code-2109) on or before 30th July 2009

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Co-ordinators: Prof. B. D. Subudhi
Prof. S. R. Samantaray

Organized by



Centre for Industrial Electronics & Robotics

Department of Electrical Engineering

National Institute of Technology

Rourkela-769 008 (Orissa)