

National Institute of Technical Teachers Training and Research Bhopal

Programme Brief: MATLAB Software Programming (EEE-7)

3-07-23 to 7-07-23

1. **Rationale:** The demand of MATLAB software has been increasing and has touched number of areas of engineering. Because of its computational power, MATLAB is a tool of choice for many engineers to solve technical computing problems. Hence this programme intends to help the participants to get a hands-on learning experience for using MATLAB and Simulink toolbox. No prior programming experience or knowledge of MATLAB is assumed, and the course is structured to allow thorough assimilation of ideas through examples and exercises in the basic operation of MATLAB and Simulink toolbox.
2. **Programme Outcomes:** The participants of the programme will be able to:
 - a) Upgrade knowledge and skills in the area of computational analysis.
 - b) Equip with the skills to use MATLAB.
 - c) Develop skills to work with Simulink toolbox.
 - d) Solve application problems using MATLAB.
 - e) Compare MATLAB with open source software Scilab.
3. **Programme Contents:** MATLAB Environment and fundamentals, Basics of MATLAB programming, Script Files, Functions, Debugging Relational and logical operations Programs, SIMULINK, MATLAB Applications for Numerical Analysis: Polynomials, Curve Fitting and Interpolation, MATLAB Applications for Integration, Differentiation and Fourier Analysis, Comparison of MATLAB with Scilab.
4. **Instructional Strategy:** Following participative strategies will be employed:
 - Input sessions
 - Internet based learning
 - Assignment and Practice
 - Plenary session for presentation
5. **Dates and Venue:** 3 to 7 July 2023 at NITTTTR, Bhopal
6. **Target Group:** Faculty members of all disciplines

7. **Coordinator: Prof. (Mrs.) Susan S. Mathew**, Associate Professor, Department of Electrical and Electronics Engineering Education

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9. **Tentative Programme Schedule:**

DAY/ DATE	Session I 10.00 am - 11.30 am	Session II 11.45 am-1.15 pm	Session III 2.15-3.45 pm	Session IV 4- 5.30 pm
3-07-23 Monday	<ul style="list-style-type: none"> ▪ Registration ▪ Expectations ▪ Programme Overview & Objectives 	MATLAB Basics	MATLAB Basics	<i>Practice Session</i>
4-07-23 Tuesday	Files and functions	<i>Practice Session</i>	Plots and Advance Plotting	<i>Practice Session</i>
5-07-23 Wednesday	Flow control and Loops concept	<i>Practice Session</i>	MATLAB Applications: Polynomials, Curve Fitting and Interpolation	<i>Practice Session</i>
6-07-23 Thursday	Integration, Differentiation and Fourier Analysis	<i>Practice Session</i>	Simulink	<i>Practice Session</i>
7 -07-23 Friday	Comparison of MATLAB with Scilab	Presentations by Participants	Presentations by Participants	Overall feedback Valedictory session