

6.3.3 Details of professional development / administrative training programmes organized by the Institution for teaching and non-teaching staff during the year

Title of the professional development programme organised for teaching staff	Title of the administrative training programme organised for non-teaching staff	No. of participants	Dates (from-to) (DD-MM-YYYY)	
			(from DD-MM-YYYY)	(to DD-MM-YYYY)
FDP On MATLAB & SIMULINK: Basics to Advance		24	24-04-2023	28-04-2023



HEAD,
 Department of Electronics & Telecomm. Engg.
 R. I. T. Rajaramnagar (Sakhrala)
 415414

A Report on Five Days FDP

On

MATLAB & SIMULINK: Basics to Advance

24th to 28th April 2023



www.ritindia.edu



MATLAB[®]
&
SIMULINK[®]



A 5 Days FDP Organised by

Department of Electronics and Telecommunication Engineering

Rajarambapu Institute of Technology, Rajaramnagar

Basics to Advance

Organised by

**Department of Electronics and
Telecommunication Engineering**



Coordinators

Prof. Randhir J Patil

randhir.patil@ritindia.edu

+91 9423984211

Prof. Ketaki S. Sawashe

ketaki.sawashe@ritindia.edu

+917498626797

About the Workshop

This five days faculty development program (FDP) organized during the period 24th to 28th April 2023. Various sessions that consists of lectures and hands on practical hours were conducted. Ultimate focus of this program was to train the teaching faculty and research scholars on basics to advanced contents of programming in MATLAB™ and SIMULINK™. With help of basic programming techniques, significant stress was given on MATLAB script programming followed by function design, various plotting techniques, GUI design and programming etc. Exclusive sessions were conducted on SIMULINK. During these sessions participants were trained on basic block building in SIMULINK followed by making subsystems, implementing mathematical equations, interfacing of basic hardware (LED, LCD, DC & Stepper Motor, Relay, BT, GSM) through ARDUINO. Trainers also have demonstrated various applications of MATLAB and SIMULINK in multiple disciplines such as Control System Engineering, Image Processing, and AI-ML along with general purpose standalone application design and deployment. Tools used in this course were MATLAB software v2023a (online & offline), ARDUINO Boards and various peripherals. All the tools and hardware are readily available in the institutes with all the participants. After completion of workshop participants now has become able to utilize tools and techniques for designing and developing projects and research on their own.

Objectives

- 1) To learn and review basics of MATLAB programming.
- 2) To design and program GUI in MATLAB followed by deployment.
- 3) To learn modelling in SIMULINK and explore SIMSCAPE
- 4) To learn hardware interfacing techniques using MATLAB and SIMULINK.
- 5) To design systems using SIMULINK and explore various applications.

FDP Contents

DAY I: Introduction to MATLAB Environment

- Basic programming in MATLAB.
- Matrix manipulation
- Array formation
- String manipulation
- Branching techniques
- Looping

DAY II: Plotting and Functions

- Basic plotting techniques in MATLAB
- Types of MATLAB plots (Line Plots, Scatter and Bubble Charts, Data Distribution Plots, Discrete Data Plots, Geographic Plots, Polar Plots, Contour Plots, Vector Fields Surface and Mesh Plots, Volume Visualization, Animation, Images)
- MATLAB functions
- Special type of MATLAB functions
- User defined functions
- Sub-function, local function
- Nested functions
- Global variables

DAY III: GUI Design and App Packaging & Applications

- Designing of GUI layout.
- Programming GUI objects (pushbutton, slider, list box etc.)
- Controlling hardware through MATLAB GUI.
- Standalone Applications Deployment
- Inbuilt applications on signal processing, control systems, image processing, and file handling.

DAY IV: Basics of SIMULINK

- Introduction to SIMULINK environment
- Introduction to SIMSCAPE
- Mathematical modelling
- Mathematical functions to block
- Subsystems design
- Hardware interfacing (Arduino)
- Modeling to hardware deployment

DAY V: Applications of SIMULINK

- SIMULINK to read sensor data
- SIMULINK modelling for deep learning
- Hardware controlling
- Modelling for IOT application
- Exploring various toolboxes for SIMULINK

Expected Outcomes

After completion of workshop, participants are able to

1. Script file programing in MATLAB.
2. Design and program GUI in MATLAB.
3. Application design and deployment in MATLAB.
4. Model mathematical equations in SIMULINK.
5. Explore capabilities of MATLAB and SIMULINK for research and project development
6. Explore SIMSCAPE for research and project development.

Program Details

Venue, Date & Time:

Date	Time	Activity	Venue	Infrastructural Availability
24 th to 28 th April 2023	10.00 AM to 5.00 PM	Theory and Practical sessions	Research LAB, Department of E&TC Engineering, RIT	MATLAB Version 2023a

No. of Participants: 24

Registration Fees: ₹300/- per participant

Resource Person Details:

Name	Designation	Contents Delivered
Prof. Keatki S. Sawashe	Assistant Professor Dept. of E&TC Engineering, RIT	Basics of MATLAB, Plotting, Applications of MATLAB in Signal Processing etc.
Prof. Randhir J. Patil	Assistant Professor Dept. of E&TC Engineering, RIT	Programing techniques using branching and looping, Functions, GUI Design, General Purpose app design and deployment etc.
Mr. Kunal Khandelwal	Application Engineer Design Tech Systems Pvt. Ltd. Pune	Basics of SIMULNK, Mathematical Modelling, Arduino Interfacing, App deployment, Applications of SIMULINK, Deep learning modelling using Simulink etc.
Dr. Anand B. Kakde	Dean R&D, RIT Professor Dept. of E&TC Engineering, RIT	Application of MATLAB for active learning and continuous assessment of students

Glimpses of FDP



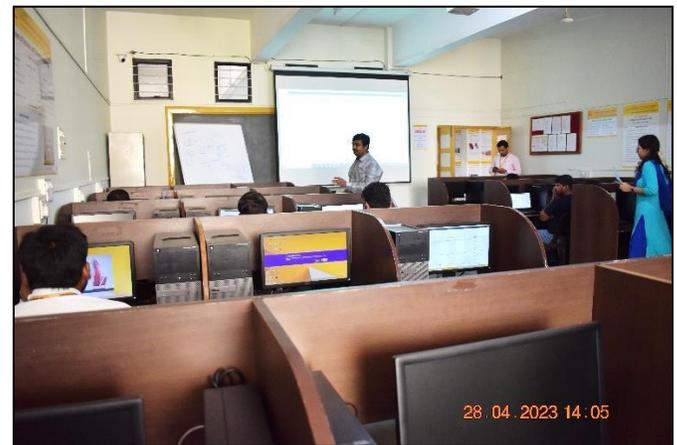
Felicitation of Dr. A. B. Kakade by HOD Dr. M. S. Patil



Felicitation of HOD Dr. M. S. Patil by Prof. K. S. Sawashe



Content delivery by Prof. K. S. Sawashe



Content delivery by Mr. Kunal Khandelwal



Felicitation of industry resource person Mr. Kunal Khandelwal by Dean R&D Dr. A. B. Kakade



Interaction of industry resource person Mr. Kunal Khandelwal with participants



Participants alongside Dr. M. S. Patil, Mr. Kunal Khandelwal and Coordinators of the FDP

Sample Feedback Form



Kasegaon Education Society's
Rajarambapu Institute of Technology, Islampur
 Department of Electronics and Telecommunication
FDP Feedback Form

We would appreciate if you could take a few minutes to share your opinions with us so we can serve you better.
 Please return this form to the instructor or organizer at the end of the workshop. Thank you.

Workshop title: "MATLAB & SIMULINK: Basics to Advance"

Date: 24th April to 28th April, 2023

PART I: General

Sr. No.	Question	Ratings				
		1	2	3	4	5
1	The content was as described in publicity materials					✓
2	I will recommend this workshop to others					✓
3	The program was well paced within the allotted time				✓	
4	The material was presented in an organized manner					✓
5	I would be interested in attending a follow-up, more advanced workshop on this same subject					✓

Note: Kindly make a ✓ in the appropriate cell. Rating 1 for strongly disagree to rating 5 for strongly agree

PART II: Level of FDP/Training

- Given the topic, was this workshop: a. Too short b. Right length c. Too long
- In your opinion, was this workshop: a. Introductory b. Intermediate c. Advanced
- Please rate the following:

	Poor	Fair	Good	Very Good	Excellent
a. Visuals	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Acoustics	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c. Meeting space	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d. Handouts	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e. The program overall	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Note: Kindly make a ✓ in the appropriate cell

PART III: Trainers (rate trainers based on knowledge, skills, expertise, communication etc.)

Sr. No.	Name of Trainer	Overall Rating				
		1	2	3	4	5
1	Prof. Ketaki Sawashe					✓
2	Prof. Randhir Patil					✓
3	Mr. Kunal Khandelwal					✓

Note: Kindly make a ✓ in the appropriate cell. Rating 1 for poor to rating 5 for excellent

PART IV: Overall (Personal review/opinion)

What did you most appreciate/enjoy/think was best about the FDP? Any suggestions for improvement?

I am able to recognize all the applications of matlab & simulink. Although I learned the applications, I should be able to implement them.

Name & Sign: Rajsinh Shivajirao Patil

Sample Certificate of Participation

