Faculty Development Program on
"Numerical Algorithms and Programming Using MATLAB"

July 11-15, 2018

Session	Time	Topic	Faculty
		Day 1, July 11, 2018 (Wednesday)	
1.	9:00-9:30	Registration	
2.	9:30-10:00	Inaugural	
3.	10:00-11:00	Introduction to MATLAB as effective communication tool, MATLAB User Interface, Basic Operations	PKK
4.	11:00-11:15	Tea Break	
5.	11:15-12:15	Basic Operations, Handling Variables, Data Format	SKJ
6.	12:15-13:15	Exercise on Handling Variables, Data Format	SKJ
7.	13:15-14:15	Lunch	
8.	14:15-15:15	Programming skill required for being an effective teacher with Applications of MATLAB	PKJ
9.	15:15-15:30	Tea Break	
10.	15:30-16:30	Exercises on Expressions and Matrices	SKJ
11.	16:30-18:30	Exercise on basic operations and algorithm development	PKK
		Day 2, July 12, 2018 (Thursday)	
1.	9:00-10:00	Programming Basics for decision making, Conditional/logical Statement	PKK
2.	10:00-11:00	Exercise on Conditional/logical Statement	PKK
3.	11:00-11:15	Tea Break	
4.	11:15-12:15	Using MATLAB as smart Calculator	PKJ
5.	12:15-13:15	Execution Control, Loops	PKK
6.	13:15-14:15	Lunch	
7.	14:15-15:15	2D Plotting Visualization Using MATLAB, 3D Plots, Modifying plots using property editor	PKJ
8.	15:15-15:30	Tea Break	
9.	15:30-16:30	Exercises on plotting commands and visualization	PKJ
10.	16:30-18:30	Exercise on decision making, loops	PKK
		Day 3, July 13, 2018 (Friday)	
1.	9:00-10:00	Writing Functions	PKK
2.	10:00-11:00	Lab based on use of functions	PKK
3.	11:00-11:15	Tea Break	
4.	11:15-12:15	Automating Plots using Functions	PKJ
5.	12:15-13:15	Handling data in MS Excel and text file, Debugging a program	PKK
6.	13:15-14:15	Lunch	
7.	14:15-15:15	Building Graphical User Interface (GUI)	PKJ
8.	15:15-15:30	Tea Break	
9.	15:30-16:30	MATLAB based Time-Frequency Analysis	RBP
10.	16:30-17:30	Exercise on Time-Frequency Analysis	RBP
11.	17:30-18:30	Exercise on GUI	PKJ
		Day 4, July 14, 2018 (Saturday)	
1.	9:00-11:00	Polynomials, Curve Fitting and Interpolation	PKK
2.	11:00-11:15	Tea Break	
3.	11:15-12:15	Integration	PKK
4.	12:15-13:15	Problem formulation	PKJ
5.	13:15-14:15	Lunch	

6.	14:15-15:15	Building GUIs with display of information, Developing GUI for Input/output functions	PKJ
7.	15:15-15:30	Tea Break	
8.	15:30-16:30	Nonlinear Optimization	AS
9.	16:30-17:30	Exercises based on Optimization	AS
10.	17:30-18:30	Quiz	
	Day 5, July 15, 2018 (Sunday)		
1.	9:00-11:00	App development in MATLAB, Generating Executable Files and Stand-Alone Applications	PKJ
2.	11:00-11:15	Tea Break	
3.	11:15-12:15	Multi Objective Optimization using GA	AS
4.	12:15-13:15	Exercise on GA	AS
5.	13:15-14:15	Lunch	
6.	14:15-15:15	Ordinary differential equations	PKK
7.	15:15-15:30	Tea Break	
8.	15:30-16:30	Solving an Equation with One Variable	PKK
9.	16:30-17:30	Case Studies	PKJ
	17:30-18:30	Valedictory	

Speakers for the Course:

- Prof. Ram Bilas Pachori (RBP), IIT Indore
- Dr. Amit Singh (AS), MNIT Jaipur
- Dr. Prashant Kumar Jain (PKJ), PDPM IIITDM Jabalpur
- Dr. Sachin Kumar Jain (SKJ), PDPM IIITDM Jabalpur
- Dr. Pavan Kumar Kankar (PKK), PDPM IIITDM Jabalpur