Six Days Online faculty Development Programme (FDP) on

"Machine Learning and Statistical Data Analysis using MATLAB"

8th-13rd July, 2024

Organized By

Malaviya Mission Teacher Training Centre (MMTTC)

Shri Mata Vaishno Devi University

Kakryal, Katra-182 320

Jammu and Kashmir, India

OVERVIEW:

MATLAB stands for MATrix LABoratory. MATLAB was written originally to provide easy access to matrix software developed by the LINPACK (linear system package) and EISPACK (Eigen system package) projects. MATLAB is a high-performance language for technical computing. It integrates computation, visualization, and programming environment. Furthermore, MATLAB is a modern programming language environment: it has sophisticated data structures, contains built-in editing and debugging tools, and supports object – oriented programming. These factors make MATLAB an excellent tool for teaching and research.

MATLAB has many advantages compared to conventional computer languages for solving technical problems. MATLAB is an interactive system whose basic data element is an array that does not require dimensioning. The software package has been commercially available since 1984 and is now considered as a standard tool at most universities and industries worldwide.

It has powerful built-in routines that enable a very wide variety of computations. It also has easy to use graphics commands that make the visualization of results immediately available. Specific applications are collected in packages referred to as toolbox. There are toolboxes for signal processing, symbolic computation, control theory, simulation, optimization, and several other fields of applied science and engineering.

Objective of the FDP

Scientists and academicians in engineering, sciences and management require platforms that let them investigate and express new ideas, solve intricate problems, and create tools, leveraging a robust and flexible computational foundation. MATLAB and Simulink are widely used across industries for research and product development, so researchers can apply their research to interesting and challenging real-world examples. MATLAB is a multi-paradigm numerical computing environment and proprietary programming language. MATLAB allows matrix manipulations, plotting of functions and data, implementation of algorithms, creation of user interfaces, and interfacing with programs written in other languages, including C, C++, C#, Java, Fortran and Python. The proposed program aims at deliberation, sharing knowledge to the target audience about the significance of MATLAB Tools and its application and present current research opportunities in this field. The discussion shall foster inter-disciplinary collaborative research in MATLAB Tools and its application. The program shall provide an excellent opportunity to exchange ideas on the topics of importance along with thought provoking hands on technical sessions. This FDP further aims at enhancing the knowledge about the latest techniques pertaining to ML (Machine Learning) and optimization using MATLAB

Topic and Subtopics

1. **Introduction to MATLAB**
2. **MATLAB for Basic Computation**
3. **MATLAB Plotting Tools**
4. **MATLAB Symbolic Computing**

5. **MATLAB Optimization toolbox**
6. **Mathematical Modeling with MATLAB**
7. **Introduction to Machine Learning using MATLAB**
8. **Statistical Analysis of Data.**
9. **Build & optimize predictive Model.**
10. **Working with time series data**
11. **Financial Modules in MATLAB**
12. **Modelling data using Distribution Fitter**
13. **Onramp certification for MATLAB, Symbolic, Curve fitting and Machine learning.**

PEDAGOGY:

The sessions of this FDP shall be conducted by a team of academicians and industry experts from MATLAB Inc. possessing in-depth knowledge of MATLAB and its toolboxes. It will consist of a series of lectures and hands-on/onramp practical sessions.

DURATION:

FDP is a six-day program scheduled from 8th -13th July 2024 and will be conducted in four sessions from 9.30 am to 5.30 pm daily.

Target Participants

The target participants are:

- Faculty members in Colleges, Institutions and Universities
- Priority shall be given to faculty from Business/Economics/ Sciences/Engineering faculty.

Prerequisite

- **Computing Machine (laptop/desktop) with stable internet connection**
- **Basis understanding of computers and programming.**

How to Apply

Interested faculty members are requested to send his/her mail with recent CV to at link below before 30th June 2024.

Click to apply: - https://forms.gle/KqtBLE436UR47xvK6

No. of Participants

Maximum of 50 participants will be shortlisted for this Six Days Online Workshop. The committee will select the participants based on their research topic, and Curriculum Vitae. The committee decision on the selection

of the participants and count is final and binding. **Permission/Nomination/No Objection letter on institute letter pad duly signed from respective competent authority must be submitted at the time of registration or latest by 3rd July 2024 5:00 pm** to become eligible for receiving STP certificate.

Registration Fee:

No Registration fee for attending this Online FDP.

Certificate

The participants will be provided certificates on successful completion of the programme. **Attendance is must** in all sessions including Onramp certification/Hands-on sessions. Along with attendance one needs to **submit all certificates** to become eligible for certification.

Contact for information.

Email:- amit.pandit@smvdu.ac.in

ORGANISING COMMITTEE

Prof. Pragati Kumar Hon'ble Vice Chancellor, SMVD University	Patron
Shri Ajay Kumar Sharma, Registrar, SMVD University	Co-Patron
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Dr Baijnath Kaushik, Associate Professor School of Computer Science Engineering, SMVDU	Co-Coordinator
Dr. R. Gopinathan Assistant Professor, School of Economics SMVDU	Co-Coordinator
Dr. Arif Billah Dar, Assistant Professor School of Economics SMVDU	Co-Coordinator

Team Members of Malaviya Mission Teacher Training Centre (MMTTC) at SMVDU

S.No.	Name	Designation	Department	Role
I	Dr. Supran Sharma	Professor	School of Business	Director
II	Dr. Sharda M. Potukuchi	Associate Professor	School of Biotechnology	Deputy Director

III	Dr. Raghavendra K. Mishra	Professor	School of Mechanical Engineering	Co-Coordinator
IV	Dr. Ankush Anand	Professor	School of Mechanical Engineering	Co-Coordinator
V	Dr. Sunanda	Assistant Professor	School of Computer Science & Engineering	Co-Coordinator
VI	Dr. Surender Singh	Assistant Professor	School of Mathematics	Member
VII	Dr. Anil K. Bharadwaj	Assistant Professor	School of Electronics & Communication Engineering	Member
VIII	Dr. Kamaldeep	Assistant Professor	School of Electrical Engineering	Member
IX	Dr. Pabitra Kumar Jena	Assistant Professor	School of Economics	Member