Maharaja Agrasen Institute of Technology

PSP Area, Plot No. 1, Sector-22, Rohini,Delhi-110086

Report on Faculty Development Program

Topic: "Modeling & Simulation Using MATLAB"

Date: December 16th –20th, 2024

Venue: Maharaja Agrasen Institute of Technology (Remote Centre), Rohini, Delhi

Organized by: National Institute of Technical Teachers Training and Research (NITTTR), Chandigarh, in collaboration with Maharaja Agrasen Institute of Technology (MAIT), Delhi

Overview of the FDP

The Faculty Development Program (FDP) on **"Modeling & Simulation Using MATLAB"** was successfully organized from **December 16th to 20th, 2024**, with the **Remote Centre hosted at Maharaja Agrasen Institute of Technology (MAIT), Rohini, Delhi**. This ICT-enabled program was conducted in collaboration with **NITTTR, Chandigarh**, a premier institute known for enhancing the technical teaching capabilities of educators across India.

The FDP aimed to empower faculty, researchers, and professionals with advanced skills in modeling and simulation, essential for optimizing experimental designs and product development. The program covered both foundational concepts and advanced applications of MATLAB and Scilab in engineering systems.

A total of **35 participants** registered, representing diverse engineering disciplines.

About the Organizers:

Maharaja Agrasen Institute of Technology (MAIT)

MAIT is a reputed ISO 9001:2015 certified technical institute, affiliated with Guru Gobind Singh Indraprastha University and approved by AICTE. Since its establishment in 1999, MAIT has grown into a prominent institution offering a range of undergraduate and postgraduate programs in engineering and management.

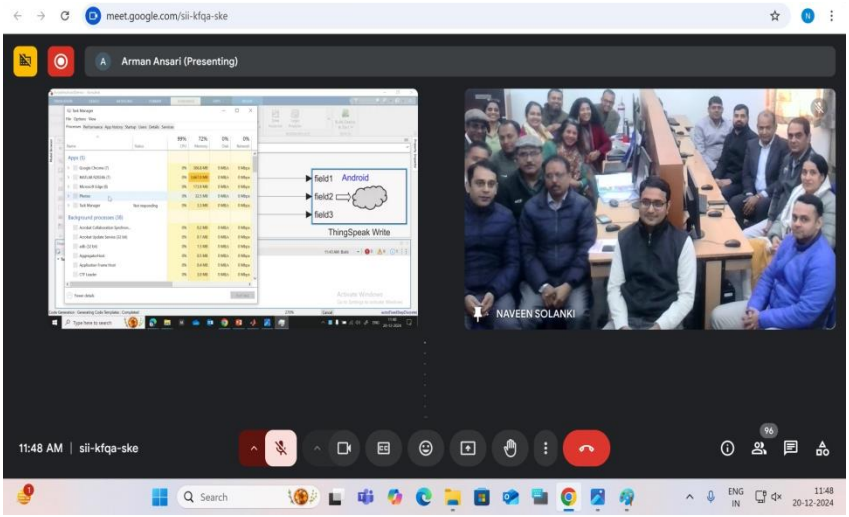
The **Mechanical Engineering Department**, established in 2019, focuses on integrating core and interdisciplinary knowledge with modern pedagogical practices. Hosting this FDP underscored MAIT's commitment to fostering technical innovation and capacity-building among educators and professionals.

National Institute of Technical Teachers Training and Research (NITTTR), Chandigarh

NITTTR, established in 1967, has a legacy of advancing technical education in India. The institute specializes in faculty training, curriculum development, and consultancy in engineering education. Its collaboration with institutions like MAIT ensures high-impact knowledge dissemination and training programs.

Program Highlights

The FDP provided a comprehensive overview of modeling and simulation tools, emphasizing their application in research, development, and engineering problem-solving. It combined theoretical sessions with hands-on practice to give participants a well-rounded learning experience.



Key topics included:

- Mathematical modeling of engineering systems
- Dynamic system simulations using MATLAB and Simulink
- Data visualization, signal processing, and IoT system development
- Introduction to Scilab for numerical computation

The program also featured interactive quizzes and practical sessions, encouraging active participation and collaborative learning.

Speakers' Profiles

1. Dr. S. S. Dhami
Course Coordinator, NITTTR Chandigarh

A distinguished academician, Dr. Dhami specializes in mathematical modeling, dynamic system simulations, and MATLAB programming. With years of experience in teaching and research, he brought clarity and depth to the program, particularly in explaining complex concepts with practical examples.

2. Dr. Deepam Goyal
Assistant Professor, Chitkara University, Rajpura

Dr. Goyal's expertise in data visualization and curve fitting using MATLAB enriched the sessions. His practical insights into engineering applications provided participants with valuable skills for solving real-world problems.

3. Dr. Vanraj
Consultant in Predictive Condition Monitoring

Dr. Vanraj's sessions on signal processing and data acquisition emphasized their significance in modeling and simulation. His industry-focused approach resonated well with participants.

4. Dr. Lini Mathew
Professor, NITTTR Chandigarh

Dr. Mathew delivered an engaging session on Artificial Neural Network (ANN) modeling using MATLAB, highlighting its relevance in engineering and research domains.

5. Er. Mahmooduz Zafar
Senior Engineer, DesignTech Systems

With vast industry experience, Mr. Zafar demonstrated the integration of IoT systems with MATLAB, offering participants a glimpse into cutting-edge applications of modeling tools.

6. Dr. Jagriti Saini
Founder, Eternal RESTEM, Chandigarh

Dr. Saini introduced Scilab, emphasizing its potential as a free, open-source alternative to MATLAB. Her session equipped participants with essential programming skills for numerical computation.

Role of MAIT as the Remote Centre

As the designated Remote Centre for this FDP, **MAIT** played a crucial role in ensuring the program's success. The institute provided:

- High-quality infrastructure for seamless online and offline participation.
- Well-equipped computer labs for hands-on sessions.
- Logistical support to facilitate participant engagement.

The program was coordinated by **Dr. Naveen Solanki**, FDP Coordinator, who worked hardly to manage the event and address participants' needs. The contributions of **Prof. V. N. Mathur** (Head, Department of Mechanical and Automation Engineering) and **Dr. Vaibhav Jain** (Head, Department of Mechanical Engineering) were helpful in ensuring the program's success. Their support greatly enhanced the overall learning experience for participants.

Concluding Session and Feedback

The FDP concluded with a feedback session, where participants appreciated the clarity of the sessions and the expertise of the speakers. **Dr. Naveen Solanki**, the FDP Coordinator, delivered the Vote of Thanks, expressing gratitude to **Prof. V. N. Mathur** and **Dr. Vaibhav Jain** for their support, as well as to the speakers, participants, and organizing teams from NITTTR Chandigarh and MAIT. Special thanks were extended to **Prof. Neelam Sharma**, Director of MAIT, for her invaluable support and to both institutions (**MAIT and NITTTR Chandigarh**) for their collaborative efforts in making the program a success.

The program achieved its objective of enhancing participants' proficiency in modeling and simulation using MATLAB and Scilab. It provided a platform for knowledge-sharing and networking, empowering participants to apply these tools in academia and industry.

This successful collaboration between **MAIT** and **NITTTR Chandigarh** highlights the importance of fostering partnerships in advancing technical education and innovation.

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