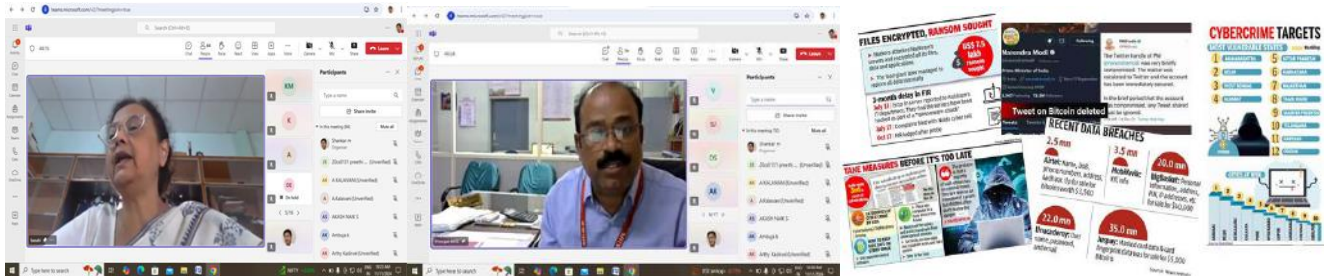


**A Report on One Week Online Faculty Development Programme on  
“Recent Trends and Predictions in Cyber Security”  
Organised by Department of Computer Science & Technology  
In Association with IIC-MITS from 11.11.2024 to 16.11.2024**



**Report Submitted by: Mr. V. Naveen, Assistant Professor, Department of Computer Science & Technology.  
Report Received on 20.11.2024.  
Mode of Delivery: Online**

The Department of Computer Science & Technology, in collaboration with IIC, successfully organized a One-Week Online Faculty Development Programme (FDP) on “Recent Trends and Predictions in Cyber Security” at MITS. The programme was conducted in online mode from November 11 to November 16, 2024.

This FDP featured expert lectures, engaging interactive sessions, and hands-on practical exercises, offering participants an in-depth understanding of emerging trends and future predictions in the field of Cyber Security. The FDP drew participation from approximately 150 individuals, including faculty members from various engineering colleges, universities, business professionals and academicians from across the country.

**Day 1 - Inaugural Function:**

The FDP commenced on November 11, 2024, with an inaugural function that set the stage for the program **Mr. V. Naveen, Assistant Professor, Dept. of Computer Science & Technology, MITS** anchored the inaugural ceremony. The day's proceedings included the following sessions:

**Welcome Address and Introduction to FDP:**

**Dr. N. Praveena, Assistant Professor in the Department of CST at MITS**, delivered the welcome address, warmly greeting the participants and providing an overview of the FDP's objectives. She pointed out the aim of this FDP is to promote awareness of cyber security, applications of cyber security and learn skills required for the Cyber security profession and research dimensions. The sessions include security issues, make faculties understand importance of these aspects in real life scenarios and practice tools required for cyber security. It also familiarizes faculties with various laws related to cyber security and cybercrimes.

**Opening Note and Introduction to FDP:**

**Dr. K. Dinesh, Head of the Department of CST at MITS**, delivered the opening remarks, underscoring the importance of staying updated on recent trends and predictions in cybersecurity. He outlined the objectives and scope of the FDP, emphasizing its role in fostering participants' professional development and skill enhancement.

**Keynote Address:**

**Dr. Basabi Chakarborthy, Professor and Dean of the Department of CST at MITS**, delivered the keynote address, emphasizing the critical importance of cybersecurity. She provided valuable insights, advocating for the inclusion of more practical, hands-on sessions in the FDP to enhance understanding and make the learning experience more effective and accessible.

**Special Address:**

**Dr. C. Yuvaraj, Principal, MITS** delivered a special address, offering valuable insights into the significance of the FDP and its alignment with the institution's vision and goals. He highlighted the growing importance of understanding recent trends and predictions in cybersecurity in today's rapidly evolving digital landscape. He also commended the Department of CST for selecting highly skilled resource persons to share their expertise in the field of cybersecurity.

## Introduction to Resource Person:

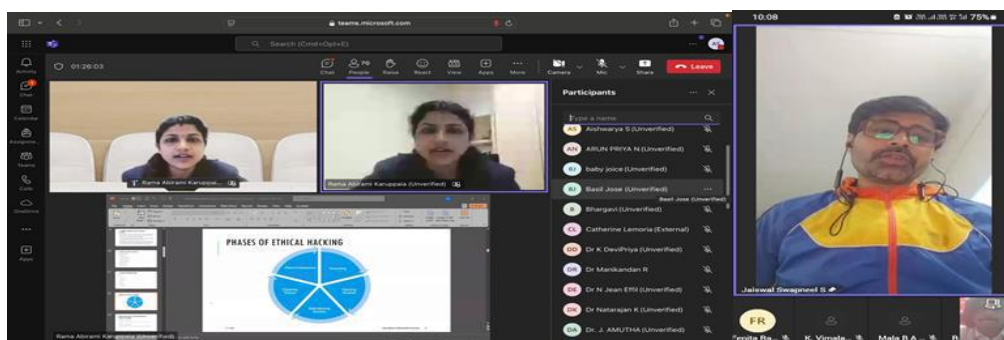
**Mr. V. Naveen, Assistant Professor in the Department of CST at MITS**, provided a brief introduction to the resource person Mr.A.Sathish Kumar, Sub Inspector of Police, Cyber Crime Police station, Vellore District, Tamilnadu for the session-1.

## Session: 1 Issues and Challenges on Cybercrime and Cyber security

**Mr. A. Sathish Kumar, Sub-Inspector of Police at the Cyber Crime Police Station**, Vellore District, Tamil Nadu, led Session 1. He covered key topics such as an introduction to cybersecurity, causes and types of cyberattacks, malware, phishing, spoofing, ransomware, social engineering, and information security violations. He also discussed MHA recommendations, OWASP Top 10, server hardening, incident reporting, mobile device security, cybersecurity best practices, and recent developments in the field. He shared numerous real-world incidents of recent cybercrimes from around the globe.

## Session: 2 Exploring Cyber Threats and Ethical Hacking for Securing Networks and Applications

**Dr. Rama Abirami K, Lecturer, Department of Electrical and Computer Engineering, Curtin University, Malaysia** provided valuable insights into exploring cyber threats and ethical hacking for securing networks and applications. She also conducted practical hands-on sessions, guiding participants in the use of various cybersecurity tools. She focused on following titles,



- Introduction to Cyber Threats
- Types of Threats
- Understanding Ethical Hacking
- Securing Networks-Key Practices
- Tools for Network Security
- Securing Applications-Tools for Application Security:
- Practical Hands-on Tools for Ethical Hacking
- Kali Linux: A specialized operating system for penetration testing and security research.
- Nmap: For network discovery and security auditing.
- John the Ripper: A password cracking tool.
- Hydra: For brute-force attacks on login credentials.
- Real-World Applications.

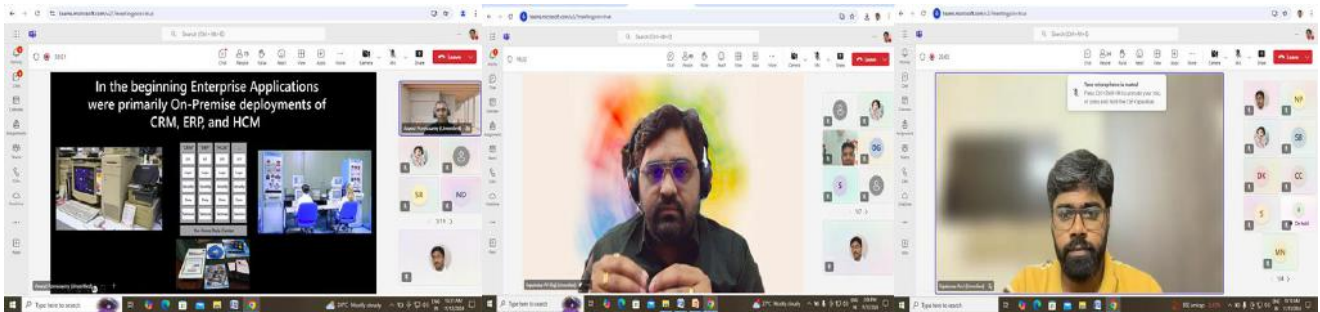
## Session: 3 Security in Enterprise Systems on Cloud

**On Day 2 (12.11.2024)**, before the commencement of Session 3, **Dr. Swapneel Jaiswal, Coordinator of the Industry-Institute Interaction Cell (IIIC)/MITS** and Senior Assistant Professor in the Department of Civil Engineering at MITS, highlighted the importance of industry-institution collaborations. He emphasized how initiatives like FDPs play a crucial role in enhancing the skills of both professionals and students. Dr. Jaiswal also appreciated the Department of CST, MITS, for organizing such valuable FDPs featuring distinguished industrial resource persons.

## Session: 3

**Mr. Anand Ponnusamy, Director- Business Applications and Platform, Microsoft Corporation, Chennai** delivered that the securing enterprise systems on the cloud requires a comprehensive strategy that balances robust technological measures with operational diligence. By understanding challenges, implementing proactive security measures, and leveraging cloud-native tools, organizations can ensure the safety of their systems and data in the cloud. He focused on following titles,

- Introduction to Enterprise Systems on Cloud.
- Cloud Era.
- Key Security Challenges in Cloud-based Enterprise Systems.
- Secure Enterprise Apps.
- Security-Practically Applied Microsoft Power Platform.



#### Session: 4 Security in Automation

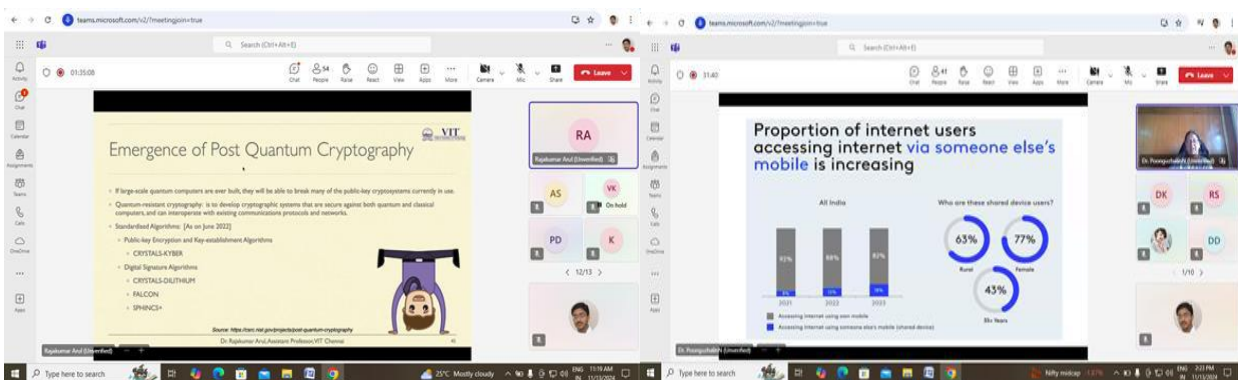
**Mr. Rajashekhar P V, Digital Transformation Strategist, Microsoft Corporation, Chennai**, this session focused on security in automation. He discussed under the following titles,

- Microsoft Power Platform (AI-Enabled Low-Code Platform)
- Automate across legacy & modern Applications
- What are Cloud Flows?
- What are Desktop Flows?
- Team benefits of automation
- Orchestrate an ecosystem of seamless Connectivity
- Power Automate and Power Automate Desktop
- 5 layers of Security
- Power Automate offers Secure Authentication.

#### Session: 5 Quantum-Safe Cryptography

**Dr. Raja Kumar Arul, Associate Professor, Center for Smart Grid Technologies, School of Computer Science and Engineering, Vellore Institute of Technology, Chennai** delivered a session on Quantum-Safe Cryptography under the following divisions such as,

- Foundations of Cryptography
- Properties of Light
- BB84 Explained
- Limitations of Quantum information
- Emergence of Post Quantum Cryptography.



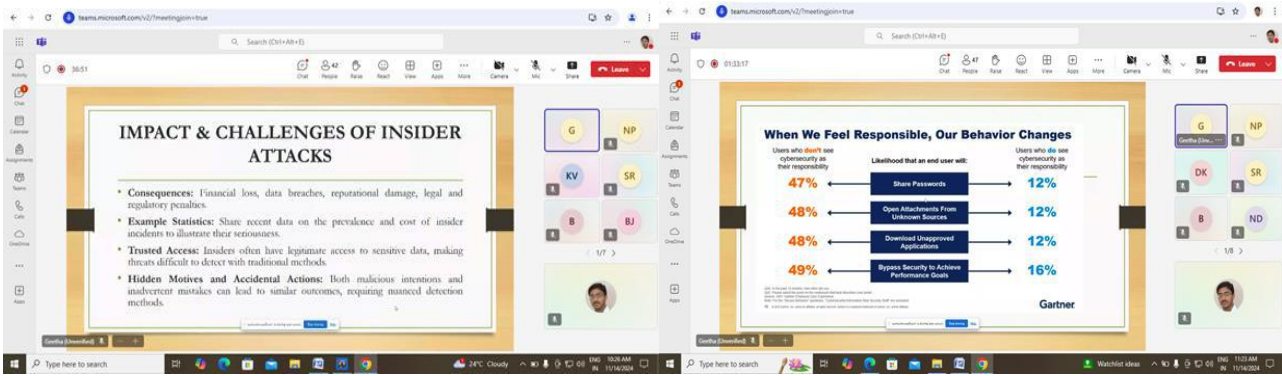
#### Session: 6 Recent Trends in IoT Security

**Dr. N. Poonguzhali, Associate Professor, School of Computer and Systems Science, Jawaharlal Nehru University, New Delhi** handled the session by sharing her insights in recent trends in IoT Security with following titles,

- Introduction to Cyber Security
- Facts and Concerns of Cyber Security
- Introduction to IoT
- IoT Architecture
- Attacks on IoT Architecture
- IoT Security
- Security Threats
- Solution Architectures.

#### Session: 7 Insider Threats and Human-Centric Security

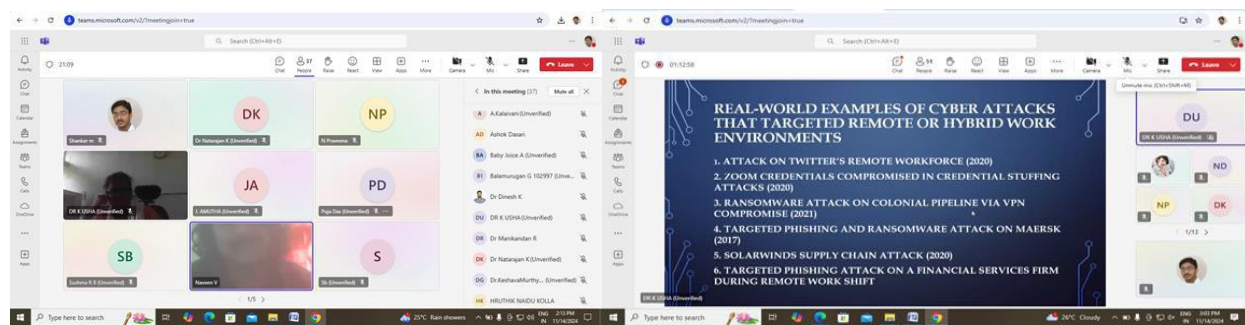
**Dr. S. Geetha, Assistant Professor, Department of Banking Technology, School of Management, Pondicherry Central University, Puducherry** handled this session under the topic of insider threats and human-centric Security by delivering the following information's,



- Insider Threat Overview
- Impact Of Insider Attack
- Case Study Using Insider Attack
- Human-Centric Security Overview
- Importance Of Human-Centric Security
- Applications And Success Cases with Human-Centric Security

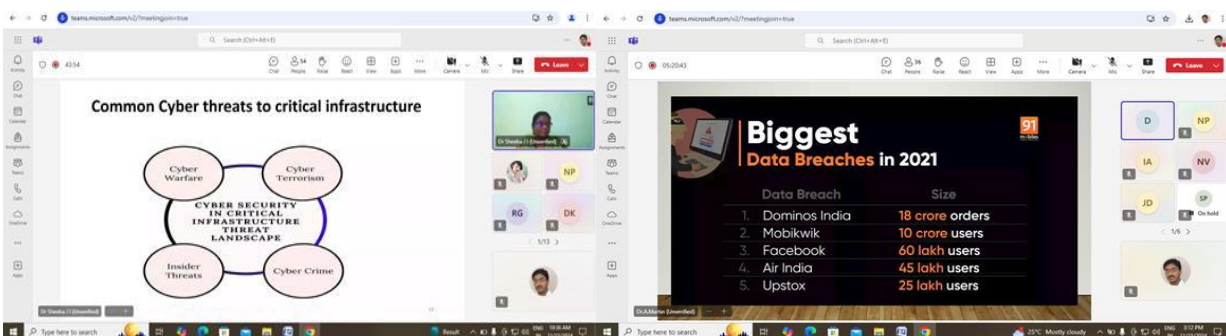
### Session: 8 Cybersecurity in Remote and Hybrid Work Environments

**Dr. K. Usha, Associate Professor, Department of Banking Technology, School of Management, Pondicherry Central University** started her session by addressing the challenges in Cyber security in Remote and Hybrid Work Environments under following titles,



### Session: 9 Cybersecurity for Critical Infrastructure

**Dr. J. I. Sheeba, Associate Professor, Puducherry Technological University, Puducherry** handled the session under the topic of Cybersecurity for Critical Infrastructure she shared her insights in the following titles,



- Cyber and Information Security
- Cybersecurity vs. Information Security
- Critical infrastructure
- Different categories of Cyber threats
- Common Cyber threats to critical infrastructure
- Need for a Comprehensive Cyber Security Policy
- Need for a Nodal Authority
- Need for an International Convention on Cyberspace
- Challenges in Cyber Security for Critical Infrastructure
- Cyber Security in Critical Infrastructure Best Practices
- Examples of Cyber Security in Critical Infrastructure
- Strategies for Safeguarding Critical Infrastructure.

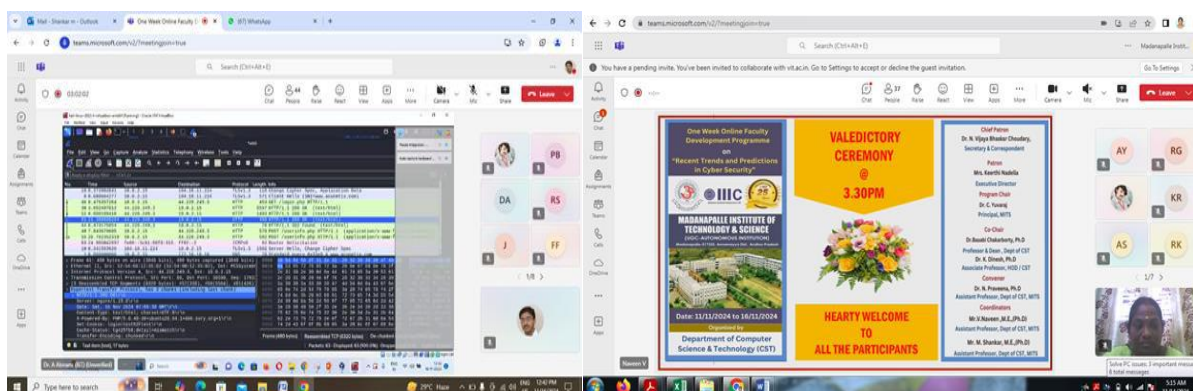
## Session: 10 Cyber Crime and information technology Act 2000 and its amendments

**Dr. A. Martin, Assistant Professor, Dept of Computer Science, Central University of Tamilnadu**, delivered his lecture on below mentioned topics,

- A Primary Effect of Cybercrime is Financial Fraud
- Malware, Ransomware and its recovery
- Internet Fraud & International Transactions
- Internet Fraud Types
- Phishing and Spoofing
- Data Breach & Denial of Service
- Business Email Compromise
- Email Phishing Scams & Spear Phishing
- Credit Card Scams & Online Dating Scams
- Cyberstalking & Cyberbullying
- Software Piracy
- How to prevent Cybercrime?
- Intrusion Detection System
- Information Technology ACT 2000, Offenses
- Notable Cases

## Session: 11 Cyber Forensics and Incident Response

**Mr. Dinesh, CEO, Hackup Technology Pvt. Ltd, Coimbatore, Tamilnadu and his teammate Mrs. A. Abirami, Assistant Professor (SG), BAIT, Coimbatore** jointly handled a session on Cyber Forensics and Incident Response it was completely a hands-on session much insights been given practically by working on Kali Linux.



## Session: 12 Block Chain Security and Smart Contract Auditing

**Dr. Harihara Gopalan S, Associate Professor, Sri Ramakrishna Engineering College, Coimbatore, Tamilnadu** handled a session under the topic of Block Chain Security and Smart Contract Auditing given a knowledge in wide areas like,

- Block Chain Security- Core Knowledge Areas & Applications
- Smart Contract Auditing - Skills and Tools
- Broader Areas of Knowledge - regulatory frameworks governing block chain (e.g., GDPR, AML).

### Valedictory Ceremony:

**Mr. M. Shankar, Coordinator of the FDP** and Assistant Professor in the Department of Computer Science & Technology at MITS, anchored the valedictory ceremony. **Dr. R. Manikandan, Assistant Professor and Academic Coordinator** of the Department of CST, graced the occasion and congratulated all participants on successfully completing the FDP. He also expressed heartfelt gratitude to the FDP team for their unwavering dedication and hard work in making the event a grand success.

**Dr. N. Praveena, Convener and Assistant Professor in the Department of CST**, extended her thanks to the MITS Management, Principal, Vice Principals of Academics and Administration, and the Dean of CST for providing the opportunity to organize this FDP on Recent Trends and Predictions in Cyber Security. She conveyed her sincere appreciation to all the FDP coordinators, faculty members of the organizing committee, and the teaching and non-teaching staff for their invaluable support in making the FDP a resounding success