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# TEERTHANKER MAHAVEER UNIVERSITY

(Established under Govt. of. U.P. Act. No 30, 2008)

NH-09, Delhi Road, Moradabad-244001 (U.P) India

Tel.: +91-0591-2360222, 2476801, E-mail: [university@tmu.ac.in](mailto:university@tmu.ac.in), Website: [www.tmu.ac.in](http://www.tmu.ac.in)

## 8th Leadership Talk Series at TMU: Cybersecurity as a Career – IT vs OT Pathways

Teerthanker Mahaveer University (TMU) hosted its 8th enlightening session under the prestigious Leadership Talk Series, with the theme "Cybersecurity as a Career: IT vs OT Pathways." This session, at the university auditorium, explored the evolving landscape of cybersecurity, emphasizing the distinct career paths in Information Technology (IT) and Operational Technology (OT). With cybersecurity playing an increasingly critical role in various sectors, this session provided valuable guidance for students aspiring to build careers in these fields.

### The Significance of Cybersecurity in Modern Times

In today's fast-paced, digitally interconnected world, cybersecurity has become a cornerstone for safeguarding data, systems, and essential services. TMU's initiative to hold this talk stems from the growing demand for skilled professionals in the cybersecurity domain, particularly in both IT and OT pathways.

### Event Highlights and Structure

The event commenced with a ceremonial lamp lighting, symbolizing the dispelling of ignorance and the enlightening of minds. This was followed by the felicitation of the resource person, **Col. (Dr.) Milan Patnaik**, whose impressive career in cybersecurity made him an ideal speaker for the session. The inaugural address was delivered by **Prof. Manjula Jain**, Dean of Academics, who emphasized the increasing importance of cybersecurity in modern industry and education. Her opening remarks set the tone for a highly informative session, encouraging students to explore this vital field.

### About the Speaker – Col. (Dr.) Milan Patnaik

#### Academic and Professional Background

**Col. (Dr.) Milan Patnaik** is an esteemed figure in the field of cybersecurity, with over 22 years of experience as an Information Security professional. Currently serving as the Chief



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Information Security Officer and Head of Global Services at Whiz Hack Technologies Pvt. Ltd., Col. Patnaik is also an Adjunct Professor at Rashtriya Raksha University. His expertise spans designing security policies, risk management, and regulatory compliance, all of which have made significant contributions to national security efforts during his time with the Indian Army.

## Educational Credentials and Research Interests

Col. Patnaik holds a PhD in “Security Protocols for Cognitive Radio Networks” from IIT Madras and an M. Tech in Computer Science from the same institution, where he was awarded a silver medal for the highest CGPA. His extensive academic background also includes a Master of Science in Informatics from Masaryk University in the Czech Republic, where he received multiple honors. His research interests focus on areas such as block chain applications, security protocols, and offensive security techniques.

## Cybersecurity Career Paths: IT vs OT

### IT Cybersecurity

The session introduced students to the crucial distinction between IT cybersecurity and OT cybersecurity. IT cybersecurity, often more familiar to the general audience, involves protecting data, networks, and digital infrastructures from threats like malware, data breaches, and ransomware attacks. IT professionals typically focus on securing computer systems, cloud databases, and software applications.

### Key skills for IT cybersecurity professionals include:

- Network security
- Data encryption
- Penetration testing
- Firewall management

Students interested in computer science, networking, and software development were encouraged to explore this pathway, as it offers widespread career opportunities in industries like finance, e-commerce, and IT services.



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## OT Cybersecurity

On the other hand, OT cybersecurity is primarily concerned with protecting physical systems, particularly those involved in industrial operations. These include sectors like energy, healthcare, transportation, and manufacturing. Col. Patnaik emphasized that OT cybersecurity requires a unique blend of skills, combining knowledge of industrial control systems with software security principles.

### In OT cybersecurity, professionals focus on:

Securing programmable logic controllers (PLCs)

Supervisory Control and Data Acquisition (SCADA) systems

Ensuring the safety and availability of critical infrastructures

With the rise of Industry 4.0 and the **Industrial Internet of Things (IIOT)**, OT systems have become more integrated with IT, making them more vulnerable to cyberattacks. This growing convergence has led to an increased demand for professionals who can secure both IT and OT systems.

## Distinctions Between IT and OT Cybersecurity

### Key Differences in Skillsets

The session highlighted the primary distinctions between the two fields. While IT cybersecurity focuses on protecting confidentiality and integrity, OT cybersecurity emphasizes availability and safety, particularly in environments where system failure could lead to catastrophic outcomes.

### Industry-Specific Applications

Students were guided through real-world examples where IT and OT systems face cyber threats. For instance, breaches in an IT system might compromise data, while attacks on OT systems, such as power grids or manufacturing plants, could result in significant financial losses or even harm to public safety.



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## Career Opportunities in IT and OT Cybersecurity

### IT Cybersecurity Careers

Students interested in pursuing a career in IT cybersecurity can explore roles such as:

- Cybersecurity Analyst
- Network Security Engineer
- Ethical Hacker
- Cloud Security Architect

These roles focus on safeguarding digital infrastructures, making IT cybersecurity a popular choice among those pursuing degrees in computer science and information technology.

### OT Cybersecurity Careers

For those Dr. want to pursue OT cybersecurity, career prospects include:

- SCADA Security Specialist
- Industrial Control System (ICS) Security Consultant
- OT Network Engineer
- Industrial Cybersecurity Specialist

These roles are critical in industries where OT systems manage physical processes and equipment. The growing need for professionals skilled in securing OT systems presents significant opportunities for future growth.

## Event Conclusion and Participant Engagement

The session concluded with an engaging Q&A segment, where students actively participated by posing insightful questions. Col. Patnaik responded with practical advice, further enriching the audience's understanding of the cybersecurity landscape.

The closing remarks were delivered by Prof. Vipin Jain, Principal-TMIMT, who expressed heartfelt gratitude to both the speaker and the participants. Dr. Neha Anand and Dr. Varun K. Singh played pivotal roles in organizing and coordinating the event, ensuring its success.



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## Conclusion

TMU's 8th Leadership Talk provided invaluable insights into cybersecurity as a career, offering students a clearer understanding of the differences between IT and OT cybersecurity and the distinct opportunities available in each field. This event not only enriched the academic experience of the participants but also provided them with the tools to make informed career decisions in this rapidly growing domain.



### Engaged Audience at the 8th Leadership Talk Series, TMU

The session, titled "Cybersecurity as a Career: IT vs OT Pathways," offers an insightful exploration of the diverse opportunities within the cybersecurity field. Designed to empower students, it provides guidance on navigating career paths across both Information Technology (IT) and Operational Technology (OT) domains. By highlighting industry trends, required skills, and emerging roles, the session aims to help participants make informed decisions and build successful futures in the digital age.