

**Comprehensive Report on**

**Three-Month Online Certificate Course on**

***Chemical Safety & Security: Academia and Industry***

**April – August 2025**

The **National Association for Chemical Security (NACS)** successfully conducted a **Three-Month Online Certificate Course** on “**Chemical Safety & Security: Academia and Industry**” from April to August 2025, with **more than 85 registered participants** drawn from academia, industry, research institutions, and regulatory bodies across the country.

#### **Overall Leadership and Course Design**

The programme was **conceptualized, structured, and primarily delivered by Dr. M. Surianarayanan**, Former Senior Principal Scientist, **CSIR Central Leather Research Institute**, and a nationally recognized expert in **chemical process safety, risk assessment, and industrial hazard management**.

Dr. Surianarayanan led the course with a **coherent and progressive learning framework**, ensuring that **all modules outlined in the approved agenda**—covering chemical threats, safety and security integration, vulnerability assessment, physical protection systems, transportation security, insider threats, and emergency preparedness—were **systematically addressed**. His sessions blended **global best practices, Indian regulatory perspectives, and real-world industrial experience**, providing participants with **actionable skills and practical insights** rather than only theoretical knowledge.

The course was further **strengthened by invited expert lectures**, which complemented the core modules and provided **sector-specific depth**.

#### **Contributions of Invited Expert Speakers**

##### **1. Chemical Hazard Evaluation Procedures and Emergency Response Planning**

**Date:** 2 May 2025

**Speakers:**

- **Dr. Surinder Singh**, Panjab University, Chandigarh
- **Mr. Vijayinder Singh**, ONGC Petro Additions Ltd., Vadodara

This special session addressed **systematic hazard evaluation methods and emergency control planning** for chemical units. The speakers provided **academic and industrial perspectives**,

enabling participants to understand how **risk assessment outputs translate into operational emergency preparedness**.

## **2. HAZCHEM (Dangerous Goods) Safety and Security**

**Date:** 4 July 2025

**Speaker:** Dr. Sanjay Mishra

**Affiliation:** Founder and CEO, LCS Services India Pvt Ltd

Dr. Mishra delivered an engaging and practice-oriented session on **chemical transportation safety and emergency response**. He shared **real-life case studies on tanker accidents, route deviations, GPS-based monitoring, driver behavior analytics, and emergency interception**, demonstrating how **technology-enabled control systems** can significantly reduce chemical transport risks.

## **3. Homeland Security and Management of Chemical Threats: Incident Response and Remedial Measures**

**Date:** 25 July 2025

**Speaker:** Commandant Devansh Trivedi, TM (Retd)

**Affiliation:** Senior Faculty, School of Police Science & Security Studies, **National Forensic Sciences University**

Commandant Trivedi delivered a strategically important lecture focusing on **chemical threats from a homeland security perspective**. His talk addressed **incident response frameworks, coordination among first responders, CBRN preparedness, and remedial measures**, supported by **global and Indian case studies**. The session highlighted the **critical interface between law enforcement, industry, academia, and civil administration** in managing chemical emergencies.

## **4. Role of Process Safety Information in Risk Management for the Chemical Industry**

**Date:** 1<sup>st</sup> August 2025

**Speaker:** Dr. Gopal Pishe

**Affiliation:** Cluster Head – EHS & Sustainability, **Tagros Chemicals India Pvt Ltd**

Dr. Pishe emphasized the **importance of accurate and updated process safety information** as the foundation of effective **risk management systems**. Drawing from industrial practice, he discussed **hazard identification, documentation, and integration of safety data** into operational decision-making, particularly for **medium and large chemical manufacturing units**.

## **5. Environmental Safety from Industrial Chemicals**

**Date:** 29 August 2025

**Speaker:** Dr. Dipanjali Majumdar

**Affiliation:** Principal Scientist, **CSIR National Environmental Engineering Research Institute, Kolkata Zonal Centre**

Dr. Majumdar focused on **environmental pathways of industrial chemicals**, discussing **exposure assessment, pollution mitigation, and long-term environmental impacts**. Her lecture reinforced the link between **chemical safety, environmental protection, and public health**, aligning well with national sustainability goals.

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### **Course Completion and Certification**

The programme **concluded successfully on 5<sup>th</sup> September 2025**. Participants who met the attendance and learning requirements were awarded **online certificates issued by NACS**, marking a significant step toward **capacity building in chemical safety and security**.

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### **Overall Impact**

This certificate course stands as a **flagship skill development initiative of NACS**, demonstrating its commitment to **bridging academia, industry, and security agencies**. Under the **academic leadership of Dr. M. Surianarayanan** and the **expert contributions of distinguished speakers**, the programme significantly enhanced **awareness, competence, and preparedness** among professionals handling chemicals across sectors.