A Report on Industrial Visit to "Adani Kattupalli Port Private Limited", Chennai, Tamil Nadu Organized by Department of Computer Science & Engineering on 16.11.2026



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Faculties Accompanied: Mr. Murali T and Mrs G. Vasundhara Devi
Venue: Adani Kattupalli Port Private Limited, Kattupalli, Tamil Nadu Chennai, Tamil Nadu – 600048
Mode of Conduct: Offline
Attendees Count: 48 students
Report Received on 17.11.2026

Company Details:

Company Name: Adani Kattupalli Port Private Limited Kattupalli, North Chennai, Tamil Nadu.

Address: Marine Infrastructure Developer Private Limited (Adani Kattupalli Port) Kattupalli Village, Ponneri Taluk, Tiruvallur District, Chennai – 600120, Tamil Nadu, India. Contact: +91 78239 41714

Website: Adani Kattupalli Port – Official Website

Introduction:

The Department of Computer Science and Engineering, Madanapalle Institute of Technology & Science (MITS) – Deemed to be University, organized an industrial visit to Adani Kattupalli Port and Liquid Terminal, Kattupalli, Tamil Nadu, on 16 November 2026. The visit was intended to provide students with practical exposure to port infrastructure, cargo handling, logistics, industrial operations and the use of information technology in the maritime sector.

The students attended an informative technical session delivered by Mr. Soundar of Adani Kattupalli Port. The session covered container terminal infrastructure, liquid cargo handling, port operations, digital systems, automation, cybersecurity, risk management and corporate social responsibility. Students also observed port facilities and interacted with industry personnel.

Overview of Adani Kattupalli Port:

Adani Kattupalli Port is a commercial port located at Kattupalli in Tamil Nadu, approximately 25 km from Chennai, as explained during the visit. The presentation described the port's role in supporting maritime transportation, cargo movement and international trade. The officials also discussed the classification of Indian ports into major and non-major (minor) ports and the role of maritime policies and government bodies in the regulation of port activities.

Container Terminal Infrastructure:

A presentation on Kattupalli Container Terminal Infrastructure introduced the students to the equipment and facilities used for vessel handling, container movement and yard management. The figures below are reproduced from the presentation photographed during the visit.\

Infrastructure element	Details shown in presentation
Berths	**3 berths; combined length shown as 1,004 m**
Vessel draft	**14.5 m**
Quay cranes	**8 Ship-to-Shore (STS) cranes**
Yard equipment	**E-RTG cranes and 5 reach stackers**
Internal transfer vehicles	**51 ITVs**
Reefer points	**360**

Ground slots	5,706
Yard capacity	20,000 TEUs
Annual capacity	1.6 million TEUs
Navigation	24/7 navigation facility

Types of Cargo Handled at Ports:

The resource person explained four broad categories of cargo handled at commercial ports:

- Container cargo: Goods packed in standardized containers for transportation by ships, trucks and other modes.
- Bulk liquid cargo: Liquid products, including oils and other industrial materials, stored in tanks and transferred through pipelines.
- Break-bulk cargo: Goods transported as individual units or packages rather than in standardized containers.
- Project cargo: Large, heavy or specialized equipment that requires dedicated lifting, handling and transportation arrangements.

The discussion emphasized that cargo type determines the handling equipment, storage arrangements, safety procedures and logistics planning required at a port.

Container Handling and Yard Operations:

1. The students learned about the sequence of container handling activities, beginning with a vessel's arrival and berthing. STS cranes are used to transfer containers between the vessel and the quay. Internal transfer vehicles move containers between the quay and the yard, while E-RTG cranes and reach stackers support stacking, retrieval and rearrangement within the yard.

1. Vessel arrival and allocation of a suitable berth.
2. Loading and unloading of containers using STS quay cranes.
3. Transfer of containers between the quay and the yard using internal transfer vehicles.
4. Stacking and storage of containers in designated yard slots.
5. Retrieval, repositioning and dispatch of containers for onward transportation.

The concept of TEU (Twenty-foot Equivalent Unit) was explained as a standard unit for expressing container capacity. The session also highlighted the importance of container identification, tracking, yard planning and efficient use of available space.

Liquid Terminal Operations:

The students were introduced to the liquid cargo facilities at Adani Liquid Terminal. The presentation described storage tanks, dock pipelines, truck loading bays and pumps used in the handling and transfer of liquid cargo.

Facility	Details shown in presentation
Storage tanks	**20 tanks**
Capacity per tank	**5,000 KL**
Total stated storage capacity	**100,000 KL**
Dock pipelines	**3**
Truck loading bays	**12**
Pumps	**8**

The presentation explained the movement of liquid cargo from vessels through dock pipelines to storage tanks and its subsequent transfer to road tankers through truck loading facilities. Safe storage, controlled transfer, monitoring and operational safety were emphasized.

Warehousing and Container Freight Station:

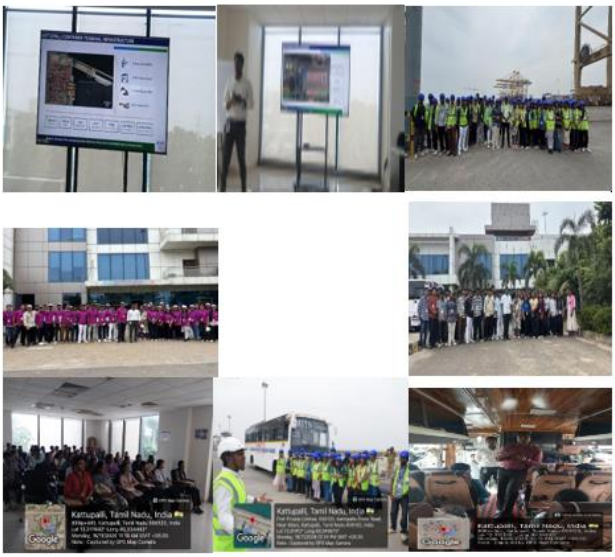
The resource person discussed the role of warehouse facilities and Container Freight Stations (CFS) in the port logistics chain. The discussion included closed and open storage areas, empty container storage and customs-related processes carried out through CFS facilities. These facilities support cargo storage, inspection, documentation and the movement of goods between the port and their destinations.

Digital Technologies and Information Systems:

The technical session introduced students to the use of information systems in modern port operations. A key topic was the Terminal Operating System (TOS), which supports the coordination and management of terminal activities.

- Terminal Operating System (TOS): Supports planning and monitoring of vessel, container and yard activities.
- Container identification and tracking: Helps associate containers with operational records and monitor their movement.
- Automation and AutoPush: Automation-related processes were discussed in the context of terminal operations.
- Virtual yard: A digital representation or view of yard arrangements can support planning and container positioning.
- ODeX: Mentioned during the session in connection with digital payment and documentation processes in shipping and logistics.

The session illustrated how digital systems can improve coordination, operational visibility, record management and efficiency across port activities.



Cybersecurity and Risk-Based Management:

The officials discussed the importance of risk-based management and cybersecurity in port operations. Modern ports rely on digital systems for container records, terminal operations, logistics coordination and business transactions. Protecting these systems and the information they process is important for continuity and reliability. The discussion highlighted the role of IT and cybersecurity teams in identifying risks and supporting secure operations.

Organizational Functions and Career Exposure:

The presentation also introduced students to the range of functions involved in port management. Departments and roles mentioned during the discussion included administration, human resources, operations, logistics, IT and cybersecurity, as well as safety and security functions. This helped students understand that port operations require coordination among technical, managerial and operational teams.

Corporate Social Responsibility:

The resource person discussed Corporate Social Responsibility (CSR) and the role of companies in contributing to the development of nearby communities. Areas mentioned during the discussion included education, healthcare, women empowerment, community support and emergency assistance during events such as floods. The session introduced students to the social responsibilities associated with eligible companies and the contribution of industry-led initiatives to society.

An education-focused initiative was also mentioned during the presentation. The exact project name was not sufficiently clear in the notes and should be confirmed with the port before formal publication.

Relevance to Computer Science and Engineering:

The visit was relevant to Computer Science and Engineering because modern port operations depend on digital platforms, connected equipment and information management. The industrial examples helped students relate their academic learning to practical applications in the maritime sector.

- Internet of Things (IoT): Potential use in monitoring equipment, containers and operational conditions.
- Artificial Intelligence and analytics: Potential support for planning, forecasting and resource optimization.
- Cybersecurity: Protection of terminal systems, networks and operational information.
- Database management: Organization of vessel, container, cargo and logistics records.
- Cloud and enterprise systems: Support for data access, information sharing and business workflows.
- Automation: Integration of control systems and equipment to improve operational efficiency.

Learning Outcomes:

At the end of the industrial visit, students gained an understanding of:

- The functioning and importance of a commercial seaport.
- Different cargo categories and their handling requirements.
- Container terminal infrastructure and the roles of STS cranes, E-RTG cranes, reach stackers and ITVs.
- The use of TEU as a measure of container capacity.
- Liquid cargo storage and transfer operations.
- The role of TOS and digital systems in port management.
- The importance of cybersecurity and risk-based management in industrial environments.
- The relationship between IT, logistics, automation and port operations.
- The role of CSR initiatives in supporting communities.

Conclusion:

The industrial visit to Adani Kattupalli Port and Liquid Terminal, Tamil Nadu, organized by the Department of Computer Science and Engineering, Madanapalle Institute of Technology & Science (MITS) – Deemed to be University, was an informative and valuable learning experience. The technical session delivered by Mr. Soundar and the exposure to port facilities helped students understand the practical functioning of a modern commercial port.

The visit provided insights into container handling, liquid terminal operations, warehousing, logistics, digital transformation, automation, cybersecurity and risk management. It connected academic concepts with real-world industrial practices and encouraged students to explore technology applications in maritime and logistics environments.

Certificates:







