TECHNICAL
EDUCATION
ACADEMY

School of Engineering

COURSE PROGRAMME

000649

PROD021 – Crude Oil Storage, Measurement & Control Systems

The "Crude Oil Storage, Measurement, and Loss Control" training program represents a pioneering educational journey, meticulously designed to empower professionals in the dynamic and critical field of crude oil management.



Learn from the Best in the Business!

Course overview

Intermediate level

Why take this course

The "Crude Oil Storage, Measurement, and Loss Control" training program represents a pioneering educational journey, meticulously designed to empower professionals in the dynamic and critical field of crude oil management. This comprehensive program, spanning various key aspects of crude oil handling, is structured to cater to a wide range of professionals, from those just entering the field to seasoned experts looking to update their knowledge with the latest industry practices.

Central to the program's curriculum are nine carefully crafted modules that encompass the entire spectrum of crude oil storage and management. Beginning with an in-depth exploration of crude oil and product properties, the course lays a solid foundation of knowledge, crucial for understanding subsequent modules. As participants progress, they delve into more specialized topics, including the intricacies of tank design, construction requirements, and advanced terminal operations. The course is uniquely designed to integrate theoretical knowledge with practical, hands-on experiences, ensuring that participants not only understand the concepts but also can apply them in real-world scenarios. This practical aspect is further enhanced by a module dedicated to specialized software tools, bridging the gap between traditional methods and modern, digital solutions in crude oil management.

Moreover, the program is structured to keep pace with the evolving regulatory landscape of the oil and gas industry. The inclusion of a module on international regulations and requirements underscores the program’s commitment to equipping professionals with the knowledge necessary to navigate the complex compliance environment. This holistic approach ensures that participants are not just adept at handling technical aspects of crude oil storage and measurement but are also well-versed in the legal and safety standards that govern their profession.

In essence, the "Crude Oil Storage, Measurement, and Loss Control" training program is a cutting-edge educational experience, meticulously designed to prepare professionals for the challenges and opportunities in the world of crude oil management. Its comprehensive curriculum, practical orientation, and focus on regulatory compliance collectively make it an indispensable tool for professionals seeking to excel in this vital sector.

Who it is for and how it helps

The "Crude Oil Storage, Measurement, and Loss Control" training program is ideally suited for a diverse range of professionals who are directly or indirectly involved in the oil and gas industry, particularly those focusing on storage, handling, and management of crude oil. The course is designed to benefit:

- Oil and Gas Industry Professionals: Engineers, geologists, and other technical professionals who are involved in the exploration, production, and processing of crude oil. This course will deepen their understanding of the storage and handling aspects, which is critical for effective operations.

Course overview — continued

- Storage and Terminal Operators: Individuals responsible for the day-to-day operations of oil storage facilities and terminals. This includes tank farm managers, terminal operators, and maintenance personnel who will gain valuable insights into advanced storage techniques, safety protocols, and routine maintenance practices.

- Safety and Environmental Officers: Professionals tasked with ensuring compliance with safety and environmental regulations within the oil and gas sector. The course's focus on emissions, fire protection, and spill response is particularly relevant for them.

- Regulatory Compliance and Legal Personnel: Staff members who oversee regulatory compliance and legal aspects of crude oil storage and transportation. They will benefit from the modules on international regulations, legal requirements, and industry standards.

- Quality Control and Inspection Personnel: Those involved in the inspection, quality control, and certification of crude oil storage facilities. The course covers in-depth topics on tank inspection, maintenance, and quality standards like ISO 17025.

- Project Managers and Planners: Professionals involved in the planning, design, and construction of oil storage facilities. They will find the modules on tank design, construction, and engineering considerations particularly useful.

What you will learn

- Understand the Comprehensive Properties of Crude Oil: Delegates will have a deep understanding of the physical, chemical, and hazardous properties of crude oil and related products, and how these properties influence storage and handling methods
- Implement Effective Tank Storage Strategies: They will be proficient in various aspects of tank fundamentals, including design, construction, and the requirements for different types of stored products, enabling them to make informed decisions about storage solutions
- Manage Operations and Maintenance Efficiently: Participants will gain the ability to oversee routine operations and maintenance of tank storage facilities, including handling crude oil cargo, shipment procedures, and implementing efficient tank gauging and metering practices
- Utilize Specialized Software Tools: Participants will be adept at using specialized software for crude oil accounting and managing modern electronic transactions, enhancing the efficiency and accuracy of their operations
- Conduct Effective Inspection and Quality Control: They will possess the skills required for thorough inspection and maintenance of tanks, including understanding the importance of quality control standards like ISO 17025
- Enhance Terminal and Inventory Management: Participants will learn to optimize tank terminal operations, including layout planning, inventory control, and managing inter-tank transfers
- Apply Safety and Environmental Protocols: Delegates will learn to implement and manage safety systems, fire protection measures, and environmental protocols, ensuring compliance with industry standards and reducing the risk of incidents

Curriculum

Modules 01–04

01 Understanding Crude Oil and Product Properties

- Overview of Energy Production and Consumption
- Operational Planning and Scheduling in Tank Farms
- Exploring the Physical, Chemical, and Hazardous Properties of Stored Products
- Impact of Physical and Chemical Properties on Storage Methods
- Principles of Safety and Risk in Product Storage
- Examination of Ignition Sources
- Strategies for Fire Detection, Firefighting, and Protection

02 Essentials of Tank Fundamentals

- Comprehensive Fire Protection Techniques
- Effective Venting Practices
- Managing Emissions from Storage Tanks
- Understanding Tank Accessories and Their Functions

03 Diverse Tank Types, Construction, and Storage Requirements

- Understanding Variations and Purposes of Tank Farms
- Tank Design and Engineering Considerations: Adherence to API Codes and Standards
- Storage Solutions for Crude and Refined Products
- Storage Techniques for LNG, LPG, CNG
- Differentiating Roof Types: Fixed, Dome, Cone, and Floating Roof Variations
- Suction Level Optimization: Fixed vs. Floating
- Estimating and Measuring Tank Emissions and Losses

04 Operational Excellence in Tank Management and Maintenance

- Logistics of Crude Transportation and Storage
- Handling of Crude Oil Cargo
- Protocols for Shipment, Receipt, and Transfer
- Managing Water Draw Operations
- Procedures for Tank Lot, Roof Drainage, and Tank Gauging

Curriculum

Modules 05–08

05 Advanced Tank Terminal Operations

- Layout Planning for Tank Farms, Including Secondary Containment and Bund Walls
- Emergency Response Strategies and Oil Spill Handling
- Water Drainage System Networks and Process Water Treatment Techniques
- Managing Ship to Shore Transfers, Loading, and Discharging Processes
- Understanding the Bill of Lading, Custody Transfer, and Administrative Tasks
- Advanced Tank Gauging and Metering, Including Meter Proving, Stock Loss, and Pipeline Transfer Loss Analysis
- Sampling and Quality Control in Accordance with ISO 17025 Standards

06 Comprehensive Terminal Management Strategies

- Managing Comingled Stock and Unpumpables
- Effective Terminal Inventory Control Techniques
- Efficient Inter Tank Transfers
- Processes for Tank Calibration and Recalibration
- Advanced Instrumentation for Storage Management
- Spill and Overfill Control Mechanisms
- Techniques for Product Blending and Handling Product Failures

07 Specialized Focus on Tank Inspection and Maintenance

- Procedures for Pipe and Pipe Fitting
- Maintenance of Tank Instrumentation Systems
- Implementation and Maintenance of Safety Systems

08 Global Regulations and Standards for Oil & Gas Marine Terminals

- Overview of The Seveso III Directive
- Understanding ISGOTT Requirements for Release Notifications
- Techniques for Release Detection, Response, Reporting, and Investigation
- Best Practices in Tank Cleaning, Gas Freeing, and Confined Entry
- API 653 Tank Inspection Protocols
- Identifying and Preventing Causes of Tank Failure: Settling and Corrosion

Curriculum

Modules 09

09 Mastery in Specialized Software for Crude Oil Management

- Integration of Specialized Software for Crude Oil Accounting
- Navigating Modern Electronic Transactions in Crude Oil Production, Storage, and Disposal
- Engaging Case Studies and Hands-on Training with Industry-Standard Software Tools

Joining the programme

Contact the Academy and quote course code 000649 to confirm dates, delivery format, prices and enrolment terms.

Training for your team

Tell us your business goals, the roles and number of participants, and your preferred dates and location. This will help us discuss the right training option.

Preparing for the programme

The published programme does not specify any prerequisites. Contact us before enrolling to confirm how to prepare.

Discuss your training needs

mail@tecedu.org
www.tecedu.academy

Learn from the Best in the Business!