



Operation & Maintenance Of Mobile Lifting Equipment



Introduction:

This course will highlight the added value that mobile lifting equipment operation and maintenance can offer to support engineers and technicians working in heavy transportation and lifting, petroleum industries, and construction projects. It will show how to safely use such equipment economically, safely and environment friendly. The course will emphasize the application of related recommended operation and maintenance practices advised by the most reputable manufacturers of such equipment and by the relevant standards, focus on proper equipment selection for specific jobs, retrieval and interpretation of data from equipment manuals.

This course will feature:

- The importance of correct selection of lifting equipment for specific jobs
- The detailed description of lifting equipment systems and characteristic performance
- Discussions on the types and applications of modern mobile lifting equipment including truck cranes and forklifts
- Focusing on standard safety measures to be applied on operating various lifting equipment

Who Should Attend?

Mechanical Engineers, General Supervisors, Consulting Engineers, Design Engineers, Foremen, Supervisors, Technicians, Maintenance Personnel, Engineers of all disciplines, Supervisors, Team Leaders and Professionals in Maintenance, Engineering and Production Managers, Maintenance Personnel, Heads of Maintenance and Operation, Chemical Engineers, Equipment Specialists, Technical Engineers, Operation Engineers, Planning Engineers, Process Engineers, Reliability Specialists, Boiler Plant Construction Managers, Consulting Engineers, Design Engineers, Insurance Company Inspectors, Operation, Maintenance, Inspection and Repair Managers, Supervisors and Engineers, Plant Engineers, Senior Boiler Plant Operators, Repairers and Installers, Product Engineers and Technologists, Operation, technical service and maintenance professionals, Engineers, Consultants and Sales professionals, Technical professionals responsible for interdisciplinary energy projects, Load Lifting Engineers and Supervisors, Mobile Cranes Operators, Mobile Cranes Maintenance Engineers and Technicians, Mobile Cranes Inspectors, Load Lifting Safety Engineers and Professionals

Course Objectives:

By the end of this course delegates will be able to:

- Discuss the issues of forklifts and truck cranes stability
- Describe the principle of operation of various stability monitoring systems used in modern forklifts and truck cranes
- List and explain the application of forklift attachments and the lifting tackles
- Outline the basics of lifting equipment safety
- List the types and applications of mobile lift equipment including forklifts and mobile cranes
- Outline the types and applications of mobile lifting equipment
- Inspect the lifting tackles including wire ropes, synthetic slings, clips, hooks, sockets, eyebolts, and hoist rings
- Apply a standard inspection procedure on truck cranes and write the relevant report
- Explain how to maintain the forklifts and truck cranes

Course Outline:

Load Lifting Equipment Basics

- Load lifting safety standards
- Load lifting certification
- Load lifting basics: Preparatory work and calculations, selection of equipment and lifting tackles, load hitching, loads hanging, load moving and signaling, Load positioning or stacking
- Qualifications and skills of lifting equipment operators

Lifting Tackles

- Wire ropes
- Types and classification, Construction, Grades, Lays, Safety factor, Sizing, Aging, Maintenance, Safety precautions, Inspection
- Rigging slings
- Working Load Limit (WLL), Hitches (Single, Bridle, Basket, Choker, Applications) Synthetic slings (Types, Grades, Applications) Sling tables and sling leg load, Unequal sling lengths and center of gravity, Sling shock load
- Clips and Schackles
- Standards, Wire rope clips types (U bolt, fist grip) Clips number and installation, Types of schackles (Screw anchor, Chain anchor - Schackle rules, Schackles for synthetic slings)
- Hooks
- Standards, Hooks loading, Load limit, Types (Wide schackle, Sizes, Material, Grade)
- Sockets
- Types (Headache ball, Wedge, Applications)
- Eye bolts and Hoist Rings
- Eye bolts (Working load, Types, Alignment)
- Hoist rings (Types, Working load, Applications)

Forklift Operation and Maintenance

- Forklift types (Stand up rider, Sit down rider, Motorized hand pallet jack, Rough terrain)

- Forklift layout and components
- Forklift stability and modern stability monitoring systems
- Forklift operating hazards
- Forklift operations (Pre-operation checks, Picking up the load, Travelling with load, load placement, Moving on ramps, Crossing railroads, Parking)
- Forklift hazards
- Forklift attachments (Side shifters, carton clamp, Drum rotator, Paper roll clamp, bar arm clamp, pallet handler, Pull and push)
- Forklift safety standards

Mobile Truck Cranes

- Types of mobile crane
- Telescopic boom (Rough terrain, Carry deck, Pick& carry, Carrier mounted, Crawler, Truck mounted)
- Lattice boom (Carrier mounted, Crawler, Truck mounted, Long reach)
- Mobile crane identification
- Mobile crane layout and components
- Load charts
- Reeving load blocks
- Mobile crane stability and operation quadrants
- Mobile Crane Operation
- Pre-lift operations (Selection of proper crane - Critical lift criteria and preparation Boom length & radius& angle, Ground bearing capacity checking, Load and rigging, Environment conditions, Selection of operator and signaling person, Lift plan checklist, Lift plan drawing, Site preparation)
- Safe operating procedure (crane levelling, load rigging, load lifting, load moving, load positioning)
- Data hazard sheet
- Safety systems

Maintenance and Inspection of Mobile Lifting Equipment

- Mobile cranes maintenance
- Basics of mechanical maintenance

- Pre-delivery maintenance of mobile cranes
- In-service maintenance intervals and operations
- Maintenance personnel qualification and skills
- Maintenance information and records
- Inspection
- Crane data
- Crane manual and records
- Pre-inspection operations
- Crane set-up
- Load charts
- Crane inspection components
- Assessment of crane condition