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COURSE BROCHURE

Container Terminal Automation Training Course

jupiterprime.uk

info@jupiterprime.uk

Registered in the United Kingdom and Saudi Arabia

Container Terminal Automation Training Course

Container Terminal Automation is a 1-week training course for terminal managers, berth planners and port operations supervisors who must judge where automated cranes, remote operation and terminal operating system logic will lift quay and yard output, and it ends with a terminal automation readiness roadmap. Larger vessels now demand shorter port stays. Jupiter Prime Training delivers this course for operations leaders.

Why Container Terminal Automation Matters Now

Three forces push terminals toward automation: shipping lines calling with larger vessels and tighter berth windows, a shrinking pool of experienced crane drivers, and landlord authorities asking concessionaires for measurable productivity gains. A terminal that automates well gains steady moves per hour, safer separation between people and machines and predictable energy use. One that automates badly buys equipment that idles behind manual handovers and poor data.

Who Gains Most from Container Terminal Automation

- Quay operations leads responsible for crane allocation, crane intensity and vessel turnaround
- Yard and equipment controllers responsible for stacking cranes, straddle carriers and horizontal transport dispatch
- Berth and vessel planners responsible for stowage sequences and berth window commitments
- Engineering and maintenance supervisors responsible for automated equipment availability
- Terminal systems coordinators responsible for operating system rules, interfaces and performance reporting

Terminal teams that send a quay lead, a yard controller and a systems coordinator together gain most.

Container Terminal Automation Capabilities

The capabilities below link crane technology, yard logic and operating system data to the productivity targets a terminal commits to with shipping lines.

- Assess the automation level suited to a terminal's vessel mix and volume profile — capital investment case
- Specify operating system dispatch rules for automated stacking cranes and guided vehicles — yard control team
- Calculate gross crane rate, berth productivity and equipment availability from system data — commercial reporting to carriers
- Design the interface between remote crane operators and automated landside transfer — safety and labour representatives
- Weigh retrofit against greenfield automation for quay, yard and gate — board and landlord authority
- Build a staged automation roadmap with transition risks and fallback modes — terminal leadership

Key Container Terminal Automation Terms

- Automated stacking crane ASC — A rail-mounted yard crane that stacks and retrieves containers without a driver in the cab, under terminal operating system control.
- Remote-controlled ship-to-shore crane — A quay crane whose operator works from a control room, with automated phases for the routine parts of each move.
- Terminal operating system TOS — The software that plans vessels, yard positions and gate transactions and dispatches every equipment move.
- Gross crane rate — Container moves per quay crane per hour, measured from first to last lift and including normal delays.
- Automated guided vehicle AGV — A driverless vehicle that carries containers between quay cranes and yard blocks along fixed routes.
- Landside transfer point — The interchange area where external trucks hand over or collect boxes from automated yard cranes.

Container Terminal Automation Day by Day

Day 1: Automation Drivers and Terminal Models

- Vessel Size Trends — Berth Window and Crane Intensity Requirements
- Manual, Semi-Automated and Fully Automated Layouts — Operating Model Choice
- Quay, Yard and Gate Process Mapping — Locating Automation Gains
- Landlord and Concession Expectations — Productivity Commitments in Agreements
- Labour Skills Shift — Workforce Transition and Retraining Needs

Day 2: Quay Crane and Horizontal Transport Technology

- Remote-Controlled Ship-to-Shore Cranes — Operator Ratio and Control Room Layout
- Twin and Tandem Lift Operation — Crane Rate Uplift Potential
- Automated Guided Vehicles and Lift Carriers — Horizontal Transport Selection
- Straddle Carrier Automation — Retrofit Feasibility in Existing Yards
- Battery and Electric Drive Systems — Energy Demand and Charging Planning

Day 3: Automated Yard and Terminal Operating System Logic

- Automated Stacking Crane Blocks — End-Loaded Versus Side-Loaded Layout
- TOS Dispatch Rules and Job Sequencing — Yard Crane Utilisation
- Housekeeping and Pre-Marshalling Routines — Reshuffle Reduction During Quiet Shifts
- Landside Transfer Points and Truck Appointment Systems — Gate Throughput
- Reefer and Out-of-Gauge Exceptions — Manual Intervention Zones

Day 4: Productivity Measurement and Safety Separation

- Gross Crane Rate and Berth Productivity Dashboards — Carrier Performance Reviews
- Equipment Availability and Mean Time Between Failures — Maintenance Strategy
- Digital Twin and Simulation Studies — Testing Layout Changes Before Investment
- Personnel Separation Zones and Access Control — Safe Automated Areas
- Cyber Resilience of Crane and TOS Networks — Operational Continuity Planning

Day 5: Practising the Terminal Automation Readiness Roadmap

- Automation Level Assessment — Applying Day 1 Layout Options to a Case Terminal
- Equipment Selection Matrix — Applying Day 2 Quay and Transport Choices
- Dispatch Rule Test — Applying Day 3 TOS Logic to a Peak Shift
- Productivity Baseline and Targets — Applying Day 4 Measures to the Case
- Terminal Automation Readiness Roadmap — Staging, Fallback Modes and Leadership Sign-Off

Applying Container Terminal Automation After the Course

- Run a gross crane rate and equipment availability baseline from the terminal operating system and share it with quay and engineering leads.
- Lead a simulation review of one yard block to test whether automated stacking or improved dispatch rules would cut reshuffles.

Container Terminal Automation Questions FAQ

What is container terminal automation and why does it matter now?

Container terminal automation is the use of remote and driverless cranes, vehicles and system logic to move boxes between ship, yard and gate. It matters now because larger vessels and tighter berth windows demand steady productivity that manual operations struggle to sustain.

Which roles gain most from container terminal automation training?

Quay operations leads, yard controllers, berth planners, maintenance supervisors and terminal systems coordinators gain most. Each shapes how automated equipment is dispatched, maintained or measured.

How does container terminal automation differ from general port operations training?

Container terminal automation focuses on equipment technology, dispatch logic and the transition from manual to automated handling. General port operations training covers marine services and berth scheduling across many cargo types.

What do you bring back from container terminal automation training?

You bring back a staged roadmap that sets the automation level, equipment choices, productivity baseline and fallback modes for your terminal.

Container Terminal Automation: The Way Forward

The terminal automation readiness roadmap first informs which automation stage the terminal funds next. Terminal leadership, engineering and the commercial team use it with carriers and the landlord. After the first stage goes live, revisit the productivity baseline and fallback modes against real shift data before committing to the next stage.