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COURSE BROCHURE

Digital Shipping and AI for Competitive Advantage Training Course

25 – 29 April 2027
Manama

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Registered in the United Kingdom and Saudi Arabia

Digital Shipping and AI for Competitive Advantage Training Course

Ref: 1307_49067 **Date:** 25 – 29 April 2027 **Location:** Manama **Fees:** 5500 GBP

Digital Shipping and AI for Competitive Advantage is a 1-week training course for shipping, port and maritime logistics managers who decide where vessel, cargo and terminal data should drive commercial and operational choices, and who leave with a shipping digital roadmap. Charterers, cargo owners and lenders now compare carriers on fuel efficiency, schedule reliability and paperless service, so data-led operators win contracts. Jupiter Prime Training delivers this course on Digital Shipping and AI.

Why Digital Shipping and AI Matter Now

Three forces are reshaping the trade: tightening emissions rules that reward measured fuel savings, cargo owners who expect live shipment visibility, and port communities moving from paper and email to shared digital platforms. Operators that use voyage data and machine learning well cut bunker spend, avoid off-hire and earn better charter terms; those that delay face higher costs and lose tenders to more transparent rivals. The course frames AI oversight with ISO/IEC 42001, the international standard for an AI management system, and the NIST AI Risk Management Framework NIST AI RMF, so automated recommendations remain accountable on the bridge and ashore.

Who Gains Most from Digital Shipping and AI

- Fleet and technical managers who set maintenance intervals and approve condition monitoring investments
- Commercial and chartering managers who price voyages and negotiate performance clauses
- Port and terminal operations managers who plan berths, cranes and yard capacity
- Marine operations managers who oversee routing, weather decisions and vessel performance
- Logistics and documentation managers who handle bills of lading, customs filings and cargo visibility

A cross-functional delegation from one operator, combining technical, commercial and port operations managers, gains most because it can agree one shared roadmap rather than three separate digital wish lists.

Digital Shipping and AI Capabilities

Participants learn to connect noon reports, sensor feeds and port call records to decisions that change fuel, schedule and cargo outcomes.

- Assess voyage optimisation proposals using speed, weather and fuel consumption models — charterers and fleet managers
- Build a predictive maintenance case for main engine or auxiliary equipment — technical superintendents
- Calculate the effect of just-in-time arrival on waiting time and emissions — port and terminal planners
- Specify data quality rules for noon reports and AIS positions — performance analysts
- Weigh electronic bill of lading options against counterparty readiness — documentation and legal teams
- Design a phased shipping digital roadmap with measured benefits — senior management and owners

Key Digital Shipping and AI Terms

- Automatic Identification System AIS — a transponder network broadcasting vessel identity, position, course and speed, widely used for traffic and arrival analytics.
- Voyage Optimisation — using weather routing, speed models and fuel curves to choose the route and speed that meet arrival terms at least cost.
- Just-in-Time Arrival — adjusting vessel speed so it reaches port when a berth is ready, reducing anchorage waiting and fuel burn.
- Predictive Maintenance — forecasting equipment failure from vibration, temperature and performance data so repairs are planned before breakdowns.
- Electronic Bill of Lading — a digital version of the title document for cargo, transferred securely between parties without paper originals.
- Port Call Optimisation — sharing estimated and actual times among ship, agent, terminal and services to synchronise every activity during a call.

Digital Shipping and AI Day by Day

Day 1: Forces Reshaping the Maritime Trade

- Maritime Digital Maturity Scan — Benchmarking Fleet and Shore Systems
- Emissions Rules and Carbon Intensity Ratings — Fuel Efficiency Pressure
- Cargo Owner Visibility Expectations — Container and Bulk Contract Terms
- Vessel Data Sources Inventory — Noon Reports, Sensors and AIS
- Competitive Positioning Map — Where Data Creates Commercial Advantage

Day 2: Voyage Optimisation with Machine Learning

- Weather Routing Models — Balancing Safety, Time and Bunker Consumption
- Speed and Fuel Curve Regression — Setting Economic Sailing Speeds
- Hull and Propeller Performance Monitoring — Timing Cleaning Decisions
- Charter Party Performance Clauses — Evidence for Claims and Disputes
- Tanker and Bulk Carrier Cases — Comparing Optimisation Gains by Trade

Day 3: Predictive Maintenance and Fleet Reliability

- Condition Monitoring Signals — Vibration, Temperature and Lube Oil Data
- Failure Prediction Models — Planning Dry-Dock and Spare Parts
- Digital Twin of Propulsion Systems — Testing Maintenance Scenarios
- Off-Hire Risk Scoring — Protecting Charter Revenue
- Model Oversight Checks from NIST AI RMF — False Alarm Management

Day 4: Ports, Documents and Cargo Visibility

- Port Call Analytics — Berth Waiting, Turnaround and Crane Productivity
- Just-in-Time Arrival Coordination — Ship, Agent and Terminal Data Sharing
- Electronic Bills of Lading and Digital Documentation — Counterparty Readiness
- Container Terminal Yard Planning Algorithms — Stacking and Gate Flows
- Cyber Risk on Connected Vessels — Securing Ship-to-Shore Data Links

Day 5: Practising the Shipping Digital Roadmap

- Opportunity Ranking — Applying the Day 1 Competitive Positioning Map
- Fuel and Voyage Initiatives — Reusing Day 2 Speed and Routing Models
- Maintenance and Port Initiatives — Drawing on Day 3 and Day 4 Cases
- AI Accountability Controls Aligned with ISO/IEC 42001 — Ownership and Monitoring
- Shipping Digital Roadmap — Phasing, Benefits and Board Presentation

Applying Digital Shipping and AI After the Course

- Run a speed and fuel curve check on two recent voyages and present the gap between planned and economic speed to the commercial team.
- Map the data shared during one port call and agree with the agent and terminal which estimated times to exchange digitally.

Digital Shipping and AI Questions FAQ

What is Digital Shipping and AI for Competitive Advantage and why does it matter now?

It is the use of vessel, port and cargo data with machine learning to improve fuel, reliability and service. It matters now because emissions rules, cargo owner expectations and digital port platforms are changing how carriers win and keep business.

Which roles gain most from Digital Shipping and AI training?

Fleet and technical, commercial and chartering, port and terminal, marine operations and documentation managers gain most. Each owns decisions that data can sharpen, from sailing speed and maintenance timing to berth planning and electronic cargo documents.

How does Digital Shipping and AI differ from a general shipping management course?

It concentrates on data and AI methods rather than the whole commercial and legal side of shipping. General shipping management courses cover chartering, finance and law broadly; this one shows how analytics and machine learning change those decisions.

What do you bring back from Digital Shipping and AI for Competitive Advantage?

You bring back a phased plan for your operation's data and AI initiatives. It ranks voyage, maintenance and port opportunities, estimates benefits, assigns owners and sets oversight controls, ready for senior management review.

Digital Shipping and AI: The Way Forward

The shipping digital roadmap informs the first decision a management team faces: which initiative to fund in the coming quarter. Technical, commercial and port managers use it to align budgets and data owners. After the first initiative runs, revisit the benefit estimates, because measured fuel and waiting time results usually reshape the order of later phases.