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COURSE BROCHURE

Applied Digitalisation for Oil and Gas Operations Training Course

29 March – 2 April 2027
Dar es Salaam

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Applied Digitalisation for Oil and Gas Operations Training Course

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Applied Digitalisation for Oil and Gas Operations is a 1-week training course for operations and digital transformation leaders who must choose which digital tools earn a place on wellsites, plants and pipelines, and who leave with a digital use-case roadmap. Sensors, cloud historians and analytics are now cheap enough to deploy widely, yet many oil and gas pilots stall before they change how crews work. Jupiter Prime Training delivers this applied digitalisation course for oil and gas.

Why Applied Digitalisation for Oil and Gas Operations Matters Now

Three forces shape digital work in oil and gas today: falling costs of wireless sensors and edge computing that make whole-field instrumentation affordable; pressure to cut unplanned downtime, emissions and site visits; and a workforce that expects modern tools while veteran operators remain sceptical of screens that replace field rounds. Companies that apply digital tools well catch failing pumps early, optimise wells from remote centres and share one version of operating data. Those that do not accumulate disconnected pilots, untrusted dashboards and cyber exposure. The course uses value-led use-case screening, industrial data architecture and operational technology security principles.

Who Gains Most from Applied Digitalisation for Oil and Gas Operations

- Leaders who decide which digital projects receive operations budget
- Engineers who own production, maintenance and process data at field level
- Digital and data specialists who connect sensors, historians and analytics platforms
- Control system and cyber security staff responsible for operational technology networks
- Change leads who prepare crews to use new tools on shift

Asset leadership groups gain most when operations, maintenance, IT and OT representatives attend together and agree one roadmap.

Applied Digitalisation for Oil and Gas Operations Capabilities

Participants learn to judge a digital idea by the operating problem it solves, the data it needs and the people who must change their routines.

- Assess digital use cases by value, data readiness and effort — portfolio prioritisation
- Map data flows from field sensors to decision screens — architecture and integration choices
- Specify condition monitoring for rotating equipment — predictive maintenance decisions
- Weigh digital twin options for wells and process units — investment scoping
- Apply operational technology security controls — protecting control networks
- Design adoption plans for field crews — sustained use after go-live

Key Applied Digitalisation for Oil and Gas Operations Terms

- Digital oilfield — The use of real-time data, remote monitoring and analytics to run wells and facilities from integrated operations centres.
- Industrial IoT — Networks of connected field sensors and devices that stream measurements from equipment to data platforms.
- Process historian — A time-series database that stores high-frequency operating data from control systems for trend and analytics work.
- Predictive maintenance — Using condition data and models to forecast equipment failure and schedule repair before breakdown.
- Digital twin — A live virtual model of a well, unit or plant kept in step with field data for monitoring and what-if testing.
- Operational technology — Hardware and software that monitor and control physical processes, distinct from business information technology.

Applied Digitalisation for Oil and Gas Operations Day by Day

Day 1: The Digital Oilfield Landscape

- Digital Maturity Assessment for Upstream and Downstream Assets — Locating Starting Points
- Integrated Operations Centre Models — Deciding Remote Versus Field Roles
- Value Levers in Production, Maintenance and Energy Use — Targeting Digital Effort
- Use-Case Screening Matrix — Ranking Ideas by Value and Feasibility
- Lessons From Stalled Pilots — Avoiding Pilot Purgatory

Day 2: Data Flows and Connectivity

- Wireless Sensors and Edge Devices at Wellsites — Extending Field Instrumentation
- Process Historians and Data Lakes — Choosing Storage for Time-Series Data
- Data Quality and Tag Naming Standards — Building Trusted Operating Data
- IT and OT Integration Architecture — Connecting Control and Business Systems
- Operational Technology Cyber Security Zoning — Protecting Control Networks

Day 3: Predictive Maintenance and Analytics

- Vibration and Condition Monitoring for Pumps and Compressors — Spotting Early Degradation
- Anomaly Detection and Failure Prediction Models — Scheduling Repairs Before Breakdown
- Production Surveillance Dashboards — Flagging Underperforming Wells Daily
- Energy and Flaring Analytics — Reducing Fuel Use and Emissions
- Model Validation With Field Engineers — Earning Trust in Analytics Outputs

Day 4: Digital Twins and Change Adoption

- Well and Process Unit Digital Twins — Testing Operating Changes Safely
- Digital Twin Scope and Fidelity Choices — Matching Model Depth to Decision
- Mobile Tools for Field Rounds and Permits — Digitising Frontline Tasks
- Crew Engagement and Super-User Networks — Driving Daily Tool Use
- Benefit Tracking After Go-Live — Proving Operational Improvement

Day 5: Practising the Digital Use-Case Roadmap

- Use-Case Portfolio for a Gas Processing Plant — Applying the Screening Matrix
- Target Data Architecture for a Brownfield Asset — Applying Integration Principles
- Predictive Maintenance Business Case — Applying Analytics Value Estimates
- Adoption and Cyber Readiness Checklist — Applying Change and Security Controls
- Digital Use-Case Roadmap — Presenting Sequenced Initiatives to Asset Leadership

Applying Applied Digitalisation for Oil and Gas Operations After the Course

- Score current digital pilots in one asset with the screening matrix and recommend which to scale, fix or stop.
- Map the data flow for one critical pump train from sensor to dashboard and list the gaps that block predictive maintenance.

Applied Digitalisation for Oil and Gas Operations Questions FAQ

What is applied digitalisation for oil and gas operations and why does it matter now?

Applied digitalisation for oil and gas operations is the practical use of sensors, data platforms, analytics and digital twins to run wells and plants better. It matters now because tools are affordable while many pilots fail to change daily operations.

Which roles gain most from applied digitalisation for oil and gas operations training?

Operations leaders, maintenance and production engineers, data specialists, control system staff and change leads gain most. You benefit if you approve digital budgets, own field data or prepare crews for new tools.

How does applied digitalisation for oil and gas operations differ from a data science course?

This applied digitalisation course focuses on choosing, connecting and adopting digital tools in oil and gas operations, while data science courses teach coding and model building in depth.

What do you bring back from applied digitalisation for oil and gas operations training?

You bring back a digital use-case roadmap with a ranked portfolio, target data architecture, a predictive maintenance case and an adoption checklist for your asset.

Applied Digitalisation for Oil and Gas Operations: The Way Forward

The digital use-case roadmap becomes the reference for the next digital budget cycle, first informing which pilots scale and which stop. Operations, maintenance, IT and OT leaders use it to sequence projects and share data standards. After its first use, revisit the value estimates once tracked benefits show which use cases changed crew behaviour and which only produced dashboards.