DATASTAT TRAINING IN

OFFICIAL COURSE PROSPECTUS

Center for Advanced Research & Professional Development

Nairobi Training Center • Global Virtual Academy • Corporate On-Site

OIL AND GAS

Training Course on Industrial Internet of Things (IIoT) for Smart Oilfields

Comprehensive Course Syllabus, Practical Modules & Upcoming Schedules

PROGRAM SPECIFICATIONS & HIGHLIGHTS

DURATION
10 Days Practical Hands-on

DELIVERY MODES
In-Person Class & Live Virtual

CERTIFICATION
Accredited Certificate of Completion

INTAKES / DATES
Multiple Cohort Schedules Included

PREPARED FOR:

Valued Participant

Email: training@datastatresearch.org | Issued: November 21, 2026

Academic & Professional Training Year: 2026

DATASTAT TRAINING INSTITUTE

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Training Course on Industrial Internet of Things (IIoT) for Smart Oilfields

Oil and Gas • 10 Days Intensive • Accredited Certification

Course Overview

Training Course on Industrial Internet of Things (IIoT) for Smart Oilfields provides comprehensive training to industry professionals on how to harness IIoT technologies to modernize oilfield operations and improve ROI.

Key Skills & Software Tools Covered

IIoT • Smart Oilfields • Automation • Data Analytics

Upcoming Training Schedules

Confirmed cohort intakes and venues. Both physical in-person classroom and live virtual online seats are available.

TRAINING DATES	LOCATION / VENUE	FORMAT / DURATION	INVESTMENT (FEE)
5 Jan 2026 – 16 Jan 2026	Nairobi	Classroom / 10d	**$3,000 USD / KES 220,000**
5 Jan 2026 – 16 Jan 2026	Kigali	Classroom / 10d	**$6,000 USD / KES 110,000**
5 Jan 2026 – 16 Jan 2026	Dubai	Classroom / 10d	**$10,000 USD / KES 110,000**
5 Jan 2026 – 16 Jan 2026	Cape Town	Classroom / 10d	**$9,000 USD / KES 110,000**
5 Jan 2026 – 16 Jan 2026	Addis Ababa	Classroom / 10d	**$6,000 USD / KES 110,000**
5 Jan 2026 – 16 Jan 2026	Singapore	Classroom / 10d	**$10,000 USD / KES 110,000**
5 Jan 2026 – 16 Jan 2026	Istanbul	Classroom / 10d	**$10,000 USD / KES 110,000**
5 Jan 2026 – 16 Jan 2026	Bangkok	Classroom / 10d	**$10,000 USD / KES 110,000**
5 Jan 2026 – 16 Jan 2026	Accra	Classroom / 10d	**$8,000 USD / KES 110,000**
19 Jan 2026 – 30 Jan 2026	Nairobi	Classroom / 10d	**$3,000 USD / KES 220,000**
19 Jan 2026 – 30 Jan 2026	Kigali	Classroom / 10d	**$6,000 USD / KES 110,000**
19 Jan 2026 – 30 Jan 2026	Dubai	Classroom / 10d	**$10,000 USD / KES 110,000**

* Corporate discounts and customized cohort scheduling are available for teams of 3 or more participants.

Course Curriculum & Modules

Training Course on Industrial IoT (IIoT) for Smart Oilfields

Introduction

The Industrial Internet of Things (IIoT) is revolutionizing the oil and gas industry, offering transformative potential to enhance operational efficiency, predictive maintenance, and data-driven decision-making. In the context of smart oilfields, IIoT integrates advanced sensor networks, real-time analytics, and cloud computing to enable intelligent monitoring and automated control of assets. Training Course Industrial Internet of Things (IIoT) for Smart Oilfields provides comprehensive training to industry professionals on how to harness IIoT technologies to modernize oilfield operations and improve ROI.

With global energy demand surging and exploration shifting toward more challenging environments, deploying IIoT solutions has become a strategic imperative. This training equips participants with hands-on skills and deep insights into smart sensors, edge computing, AI-based data analysis, cybersecurity, and cloud-based platforms for efficient upstream, midstream, and downstream operations. Participants will explore real-world case studies, pilot strategies, and system integrations that are reshaping digital oilfields.

Course Objectives

- Understand the fundamentals of Industrial IoT architecture in the energy sector.
- Explore applications of edge computing and real-time data analytics in oilfields.
- Implement predictive maintenance strategies using IIoT platforms.
- Gain knowledge on smart sensor integration and connectivity protocols.
- Analyze cybersecurity challenges and best practices in IIoT systems.
- Examine the role of machine learning and AI in production optimization.
- Learn deployment strategies for cloud-based SCADA systems.
- Evaluate wireless communication technologies for remote oilfields.
- Apply digital twin technology in asset monitoring and performance simulation.
- Leverage big data analytics for resource planning and operational efficiency.
- Develop and manage end-to-end IIoT pilot projects.
- Understand regulatory compliance and data governance in IIoT.
- Design scalable IIoT architecture for smart oilfield automation.

Target Audience

- Oil & Gas Engineers
- IT and IoT Project Managers
- SCADA System Integrators
- Maintenance and Reliability Engineers
- Energy Data Scientists
- Digital Transformation Officers
- Petroleum Operations Managers
- Regulatory Compliance Officers

Course Duration: 10 days

Course Modules

Module 1: Introduction to Industrial IoT for Oil & Gas

- What is IIoT and its role in smart oilfields
- Evolution from traditional to digital oilfields
- Components of IIoT architecture
- Benefits and challenges in adoption
- Overview of key technologies
- Case Study: Chevron’s Digital Oilfield Transformation

Module 2: Sensor Technologies and Data Acquisition

- Types of sensors in oilfield monitoring
- Data acquisition systems and protocols
- Wireless sensor networks (WSN)
- Real-time monitoring use cases
- Power efficiency and rugged design
- Case Study: BP’s Use of Wireless Sensors in Remote Wells

Module 3: Edge Computing in Harsh Environments

- Role of edge devices in oilfield automation
- Edge vs cloud computing in IIoT
- Edge hardware selection and deployment
- Data filtering and local analytics
- Reducing latency in remote operations
- Case Study: Shell’s Edge Deployment in North Sea Platforms

Module 4: Real-Time Data Processing and Analytics

- Streaming analytics platforms
- Role of Apache Kafka, MQTT, and Spark

- Data lakes and analytics pipelines
- KPI tracking and operational dashboards
- Integration with existing legacy systems
- Case Study: Total’s Real-Time Monitoring for Leak Detection

Module 5: Predictive Maintenance and Asset Health

- Vibration, pressure, and temperature analytics
- Predictive vs preventive maintenance
- Fault detection algorithms
- Maintenance scheduling optimization
- ROI of predictive maintenance
- Case Study: ExxonMobil’s Predictive Pump Failure Detection

Module 6: Cloud and SCADA Integration

- Cloud-based SCADA architectures
- Secure data pipelines to the cloud
- Multi-cloud vs hybrid cloud strategies
- SCADA visualization and control features
- Vendor comparison (Azure, AWS, GCP)
- Case Study: Aramco’s SCADA-to-Cloud Migration

Module 7: Cybersecurity in IIoT

- Common threats in IIoT systems
- Best practices in secure deployment
- Identity and access management (IAM)
- Intrusion detection and prevention systems
- NIST and ISA/IEC 62443 frameworks
- Case Study: Cyberattack Response in Middle East Pipelines

Module 8: AI and Machine Learning Applications

- AI models for production forecasting
- ML algorithms in fault diagnosis
- Intelligent anomaly detection
- Self-learning systems
- AI integration with ERP and MES
- Case Study: AI-Driven Optimization at Equinor

Module 9: Digital Twin and Simulation

- Building digital replicas of assets
- Simulation environments for planning
- Real-time data feed into twins
- Training and safety applications
- Visual modeling tools (ANSYS, Simulink)
- Case Study: Petrobras’ Digital Twin for Offshore Operations

Module 10: Wireless Communication Technologies

- LPWAN, 5G, LoRaWAN, and satellite comms
- Choosing the right protocol
- Network design and reliability
- Range and bandwidth considerations
- Spectrum regulations
- Case Study: ONGC’s Private 5G for Wellsite Connectivity

Module 11: Big Data in Oilfield Analytics

- Data collection strategies
- Storage architecture for massive datasets
- Hadoop and NoSQL databases
- Pattern recognition in exploration data
- Visualization platforms (Tableau, Power BI)
- Case Study: Anadarko’s Use of Big Data in Seismic Analysis

Module 12: Compliance, Governance, and Regulations

- IIoT data governance frameworks
- Environmental and safety standards
- GDPR and data privacy
- Digital audits and traceability
- Best practice documentation
- Case Study: Regulatory Alignment in Deepwater Drilling Projects

Module 13: Human-Machine Interface (HMI) and Control Systems

- Designing intuitive HMI for field operators
- Mobile HMI apps and remote dashboards
- Alarm management and alerts
- Role of AR/VR in control rooms
- Integration with SCADA and PLCs
- Case Study: HMI Transformation in Alberta Oil Sands

Module 14: Project Planning and IIoT Implementation

- IIoT project lifecycle management
- Piloting vs full deployment
- Budgeting and ROI calculation
- Managing stakeholders and vendors
- Risk assessment strategies
- Case Study: Successful Pilot-to-Production at Marathon Oil

Module 15: Future of IIoT in Energy Sector

- Emerging technologies and innovations
- Autonomous operations and robotics
- Blockchain for oilfield transactions
- Green energy integration with IIoT
- Industry 5.0 implications
- Case Study: Future-Ready Strategy of TotalEnergies

Training Methodology

- Instructor-led sessions with interactive presentations
- Live demonstrations of IIoT platforms and tools
- Group activities and real-world problem solving
- Hands-on labs with cloud and edge computing simulators
- Case study analysis and open discussions
- Final assessment and certification

Register as a group from 3 participants for a Discount

Send us an email: info@datastatresearch.org or call +254724527104

Certification

Upon successful completion of this training, participants will be issued with a globally- recognized certificate.

Tailor-Made Course

We also offer tailor-made courses based on your needs.

Key Notes

a. The participant must be conversant with English.

b. Upon completion of training the participant will be issued with an Authorized Training Certificate

c. Course duration is flexible and the contents can be modified to fit any number of days.

d. The course fee includes facilitation training materials, 2 coffee breaks, buffet lunch and A Certificate upon successful completion of Training.

e. One-year post-training support Consultation and Coaching provided after the course.

f. Payment should be done at least a week before commence of the training, to DATASTAT CONSULTANCY LTD account, as indicated in the invoice so as to enable us prepare better for you.

Certification & Learning Methodology

- Hands-on practical delivery with real-world datasets, case studies, and lab exercises.
- Post-training mentorship, access to class resources, and customized follow-up support.
- Participants who successfully complete the course receive an accredited Datastat Certificate of Completion.

How to Enroll & Reserve Your Seat

1. Online Registration: Visit https://datastatresearch.org/courses/training-course-on-industrial-internet-of-things-iiot-for-smart-oilfields to register online.
2. Email Booking: Send participant details to training@datastatresearch.org for official invoice & reservation.
3. Support & Assistance: Inquire via phone +254 724 527 104 | +254 734 969 612.