

INDUSTRIAL IOT

“Unlock the power of connected devices to drive efficiency, safety, and innovation in oil & gas.”

Schedule

Venue	Fees
In-House	ASK FOR THE QUOTATION

► **Available delivery methods:** In-House Training

Introduction

The Industrial Internet of Things (IIoT) is revolutionizing oil & gas operations by enabling real-time monitoring, remote asset management, predictive maintenance, and process automation. This manager-focused course delivers a strategic overview of IIoT technologies, architectures, data flows, cybersecurity concerns, and implementation models specifically designed for upstream, midstream, and downstream environments.

Objectives

Participants will:

- Understand IIoT technologies, protocols, and architectures
- Identify high-value IIoT applications in oil & gas (e.g., pipeline monitoring, equipment diagnostics, worker safety)
- Explore edge-to-cloud integration and analytics platforms
- Evaluate IIoT implementation challenges and risk mitigation
- Align IIoT strategy with operational and digital transformation goals

Why Attend

The oil & gas industry must evolve beyond manual inspections and reactive maintenance. IIoT offers scalable, data-driven approaches to reduce costs, enhance uptime, and support ESG compliance. This course empowers managers to lead effective IIoT adoption.

Target Audience

- Digital Transformation Leaders
- Operations & Maintenance Managers
- IT, OT & SCADA Engineers
- Asset Integrity & Reliability Engineers
- Project Managers in Oil & Gas Tech Programs
- Strategy, Innovation, and HSE Executives

Individual Benefits

- Grasp IIoT architecture and data lifecycle management
- Identify opportunities for cost savings and predictive intelligence
- Improve cross-functional decision-making with real-time visibility

Organizational Benefits

- Enhance operational efficiency and reduce unplanned downtime
- Improve equipment performance and safety with remote monitoring
- Support ESG and emissions tracking via smart sensors
- Prepare infrastructure for AI, digital twins, and smart automation

Instructional Methodology

- Expert-led sessions & industry-specific case studies
- Interactive group discussions and IIoT value mapping
- Technology deep-dives with live architecture breakdowns
- Strategic planning exercises

Course Outline

DETAILED 5-DAY COURSE OUTLINE (CUSTOMIZABLE)

Training Hours: 7:30 AM – 3:30 PM

Daily Format: 3–4 Learning Modules | Coffee Breaks: 09:30 & 11:15 | Lunch Buffet: 01:00 – 02:00

Day 1: IIoT Foundations in Oil & Gas

Module 1: Overview of IIoT – Evolution, Concepts & Industry Trends (07:30 – 09:30)

Module 2: IIoT Use Cases in Oil & Gas Operations (09:45 – 11:15)

Module 3: Anatomy of an IIoT System – Sensors, Gateways, Cloud, & Edge (11:30 – 01:00)

Module 4: Workshop: Identifying Value Areas for IIoT Adoption (02:00 – 03:30)

Day 2: Technology Architecture & Data Integration

Module 1: IIoT Communication Protocols (MQTT, OPC-UA, etc.) (07:30 – 09:30)

Module 2: Edge vs. Cloud – Architecture Choices for Oil & Gas (09:45 – 11:15)

Module 3: Data Flow: Acquisition, Storage, Visualization & Action (11:30 – 01:00)

Module 4: Interactive Lab: Designing a Pipeline Monitoring IIoT System (02:00 – 03:30)

Day 3: Analytics, Automation, and Smart Maintenance

Module 1: Real-Time Monitoring & Condition-Based Maintenance (07:30 – 09:30)

Module 2: Predictive Maintenance & Machine Learning Integration (09:45 – 11:15)

Module 3: Workflow Automation and Intelligent Alerts (11:30 – 01:00)

Module 4: Workshop: IIoT in Tank Farms, Refineries, and Offshore Rigs (02:00 – 03:30)

Day 4: Security, Governance & Scalability

Module 1: IIoT Security Challenges – Threats to OT Networks (07:30 – 09:30)

Module 2: Data Privacy, Access Control & Encryption Strategies (09:45 – 11:15)

Module 3: Governance, Compliance & Vendor Management (11:30 – 01:00)

Module 4: Simulation: Responding to a Cyber Threat in a Connected Site (02:00 – 03:30)

Day 5: Deployment Planning & Strategic Alignment

Module 1: Building a Business Case for IIoT (07:30 – 09:30)

Module 2: Pilot Programs vs. Full-Scale Deployment Strategies (09:45 – 11:15)

Module 3: ROI Measurement & Organizational Readiness (11:30 – 01:00)

Module 4: Final Exercise: IIoT Roadmap for a Midstream Asset (02:00 – 03:30)

Certification

Participants will receive a **Certificate of Completion – Industrial IoT for Oil & Gas Industry Managers**, validating their capability to lead IIoT initiatives in line with operational and digital transformation goals.

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