

DIGITAL TWINS IN OIL & GAS IN THE OIL & GAS INDUSTRY FOR MANAGERS

“Leverage digital twin technology to enable real-time insights, enhance asset performance, and future-proof operations in the oil & gas industry.”

Schedule

Venue	Fees
In-House	ASK FOR THE QUOTATION

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

Introduction

Digital twins are transforming the way oil & gas companies design, operate, and maintain complex assets and systems. This advanced course is tailored for executives, asset managers, and engineers responsible for operational strategy and digital innovation. Through an in-depth look at the lifecycle of digital twins—from design to real-time operation—participants will gain strategic insight into planning, deploying, and scaling digital twin ecosystems across upstream, midstream, and downstream sectors.

Objectives

Participants will be able to:

- Understand what digital twins are and how they apply to the oil & gas value chain
- Explore real-world use cases for digital twins in exploration, drilling, production, and asset integrity
- Evaluate the business case, ROI, and lifecycle management of digital twins
- Integrate data from sensors, IoT, SCADA, ERP, and AI into real-time simulation models
- Develop a roadmap to deploy digital twins for their assets or facilities

Why Attend

Digital twins provide unparalleled visibility into operational data, enabling predictive analytics, remote monitoring, and proactive maintenance. This course equips managers with the knowledge to lead these transformative projects with clarity and confidence.

Target Audience

- Digital Transformation & Innovation Leaders
- Operations & Asset Managers
- Maintenance & Reliability Engineers
- Project & Facility Managers
- Process Engineers & Automation Leads
- Strategy, Planning & IT Managers

Individual Benefits

- Learn how to scope, implement, and manage digital twin projects
- Enhance decision-making using real-time data models and predictive insights
- Develop cross-functional collaboration between IT, engineering, and operations

Organizational Benefits

- Improve asset uptime, safety, and reliability through predictive capabilities
- Optimize operational efficiency with data-driven simulations
- Reduce unplanned shutdowns and maintenance costs
- Enable a digital-first asset management and planning strategy

Instructional Methodology

- Strategy-led lectures and concept briefs
- Case studies from global oil & gas deployments
- Interactive group activities and use case analysis
- Digital twin lifecycle roadmap workshop

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: Foundations of Digital Twin Technology**
- Module 1:** Introduction to Digital Twins – History & Concepts (07:30 – 09:30)
- Module 2:** Types of Digital Twins – Product, Process, Asset, and System (09:45 – 11:15)
- Module 3:** Digital Twin Architecture – Data, Models & Connectivity (11:30 – 01:00)
- Module 4:** Workshop: Digital Twin Maturity Assessment (02:00 – 03:30)
- Day 2: Technologies Powering Digital Twins**
- Module 1:** Role of IoT, Sensors, and Real-Time Data Streams (07:30 – 09:30)
- Module 2:** AI, Machine Learning & Predictive Analytics (09:45 – 11:15)
- Module 3:** Simulation, AR/VR & 3D Modelling in Asset Monitoring (11:30 – 01:00)
- Module 4:** Case Study: Digital Twin in Offshore Oil Rig Operations (02:00 – 03:30)
- Day 3: Applications Across the Oil & Gas Lifecycle**
- Module 1:** Digital Twins in Exploration & Drilling (07:30 – 09:30)
- Module 2:** Production, Refining, and Process Optimization (09:45 – 11:15)
- Module 3:** Integrity Management, Turnaround, and Inspection (11:30 – 01:00)
- Module 4:** Case Study: Predictive Maintenance via Digital Twins (02:00 – 03:30)
- Day 4: Implementation & Integration**
- Module 1:** Building the Business Case & ROI Framework (07:30 – 09:30)
- Module 2:** Data Integration: SCADA, ERP, MES & Engineering Systems (09:45 – 11:15)
- Module 3:** Cybersecurity, Governance & Digital Twin Ethics (11:30 – 01:00)
- Module 4:** Interactive Workshop: Develop Your Asset Twin Blueprint (02:00 – 03:30)
- Day 5: Strategy, Scale & Future Outlook**
- Module 1:** Scaling Digital Twins Across the Enterprise (07:30 – 09:30)
- Module 2:** Digital Twin Ecosystems – Vendors, Platforms, and Open Data (09:45 – 11:15)
- Module 3:** The Future: Autonomous Operations & Smart Assets (11:30 – 01:00)
- Module 4:** Capstone Presentation: Present Your Digital Twin Strategy (02:00 – 03:30)

Certification

Participants will be awarded a **Certificate of Completion: Digital Twins in Oil & Gas for Managers**, recognizing their capability to drive digital twin implementation, integration, and scaling.

Why Choose MAWA Events

- **Global Expertise:** More than 17 years of experience in professional training and consulting.
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