MAWA EVENTS

Address: No. 857, Block A2. Leisure Commerce Square - No 9., 46150 Petaling Jaya, Selangor, Malaysia

Phone: +601116373203 | **Email:** info@mawaevents.net

DIGITAL TRANSFORMATION IN OIL AND GAS (UPSTREAM)

"Leveraging Digital Technologies to Optimize Upstream Exploration and Production"

Schedule

Date	Venue	Fees (Face-to-Face)
03 – 07 Aug 2026	London, UK	USD 3495 per delegate

► **Available delivery methods:** Face-to-Face & Online Training

Introduction

The upstream sector of the oil and gas industry faces increasing pressure to improve efficiency, reduce exploration and production costs, enhance safety, and optimize asset performance. Digital transformation offers a pathway to meet these demands by integrating cutting-edge technologies such as artificial intelligence, machine learning, cloud computing, and remote operations into daily workflows.

This course provides a strategic and practical framework for implementing digital transformation in upstream oil and gas operations. It equips participants with the tools to map digital solutions across the value chain—from seismic exploration and drilling to production optimization—while managing change and minimizing operational risk.

Objectives

By the end of this course, participants will be able to:

- Understand the digital landscape and its relevance to upstream oil and gas
- Identify key digital technologies and their applications in exploration and production
- Implement strategies for data-driven reservoir management and field operations
- Apply predictive maintenance and real-time monitoring to optimize asset performance
- Develop a digital transformation roadmap tailored to upstream operations

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Why Attend

- Discover how digital tools are revolutionizing upstream operations
- Learn how to use data for faster, more informed decision-making
- Analyze real-world case studies of digital success in exploration and production
- Improve operational efficiency and reduce unplanned downtime
- Develop a practical transformation plan for your organization

Target Audience

This program is designed for:

- Upstream engineers, geoscientists, and field operators
- IT/OT professionals working in exploration and production environments
- Asset managers and digital transformation leaders
- Production engineers and maintenance supervisors
- Project and innovation managers in the upstream sector

Individual Benefits

Key competencies that will be developed include:

- Understanding of upstream digital transformation drivers and enablers
- Skills in data analytics, AI, IoT, and digital workflows for E&P
- Ability to design and implement technology-enabled solutions
- Confidence to lead digital change across upstream functions
- Enhanced strategic thinking to align technology with business value

Organizational Benefits

Upon completing the training course, participants will demonstrate:

- Improved asset reliability and production optimization
- Reduced costs through predictive insights and automation
- Enhanced safety and compliance via digital monitoring systems
- Stronger collaboration between field, technical, and digital teams
- Accelerated innovation and adaptability to industry challenges

Instructional Methodology

The course follows a blended learning approach combining theory with practice:

- Strategy Briefings – Deep dive into upstream digitalization, data integration, and intelligent field concepts
- Case Studies – Examples of upstream digital success in drilling, reservoir management, and asset monitoring
- Workshops – Hands-on exercises in designing digital workflows and analyzing field data
- Peer Exchange – Collaborative discussions on implementation challenges and solutions
- Tools – Templates for digital readiness assessments, technology mapping, and transformation planning

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Course Outline

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: Introduction to Digital Transformation in Upstream

- Module 1: Upstream Challenges and the Digital Opportunity (07:30 – 09:30)
- Key operational challenges in exploration and production
- Role of digital transformation in upstream performance
- Industry 4.0 and its application to oil and gas
- Module 2: The Digital Value Chain in E&P (09:45 – 11:15)
- Overview of digital touchpoints from exploration to production
- Mapping data flows across upstream functions
- Technologies for reservoir, drilling, and production optimization
- Module 3: Case Study – Intelligent Oil Field (11:30 – 01:00)
- Integration of sensors, AI, and analytics in field operations
- Production monitoring and optimization
- Key learnings and transformation outcomes
- Module 4: Workshop – Assessing Your Digital Maturity (02:00 – 03:30)
- Conduct a digital self-assessment
- Identify current gaps and future needs
- Evaluate readiness for transformation

Day 2: Enabling Technologies in Upstream Operations

- Module 1: Internet of Things (IoT) and Field Data (07:30 – 09:30)
- Wireless sensor networks for data acquisition
- Edge computing and remote site connectivity
- Applications in drilling rigs and production wells
- Module 2: Artificial Intelligence and Analytics (09:45 – 11:15)
- Predictive analytics in exploration and reservoir modeling
- AI for pattern recognition in seismic and production data
- Building and deploying machine learning models
- Module 3: Cloud and Edge Computing (11:30 – 01:00)
- Cloud platforms for real-time data processing
- Hybrid architecture for field operations
- Data security and accessibility considerations
- Module 4: Workshop – Mapping Tech to Operational Gaps (02:00 – 03:30)
- Identify pain points in your operations
- Match enabling technologies to challenges
- Develop use-case scenarios

Day 3: Drilling and Production Optimization

- Module 1: Digital Drilling and Well Planning (07:30 – 09:30)
- Real-time drilling analytics and decision support
- Digital twin applications in well construction
- Drilling automation technologies
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Module 2: Production Monitoring and Control (09:45 – 11:15)

- Flow rate analysis and anomaly detection
- SCADA and DCS integration with advanced analytics
- Real-time visualization and control rooms
- Module 3: Predictive Maintenance and Asset Integrity (11:30 – 01:00)
- Using AI to predict equipment failure
- Monitoring critical assets: pumps, compressors, separators
- Maintenance strategies for remote and offshore locations
- Module 4: Workshop – Optimization Plan Design (02:00 – 03:30)
- Outline a plan for improving drilling and production
- Select KPIs and monitoring tools
- Plan performance evaluation

Day 4: Digital Risk, Safety, and Environmental Monitoring

- Module 1: Safety and Compliance Automation (07:30 – 09:30)
- Digital permit-to-work systems and hazard tracking
- Emergency response systems and simulations
- Automated compliance reporting
- Module 2: ESG and Environmental Monitoring (09:45 – 11:15)
- Methane leak detection using IoT and drones
- Emissions tracking and reduction initiatives
- Digital ESG performance dashboards
- Module 3: Cybersecurity for Upstream Operations (11:30 – 01:00)
- Threats in OT and IT convergence
- ICS/SCADA-specific security strategies
- Cyber incident response planning
- Module 4: Workshop – Digital Risk Management Plan (02:00 – 03:30)
- Identify risks in upstream digital environments
- Develop a mitigation and monitoring plan
- Define roles and responsibilities

Day 5: Strategy, Change, and Transformation Roadmap

- Module 1: Driving Digital Culture and Change (07:30 – 09:30)
- Building cross-functional digital teams
- Overcoming resistance and fostering innovation
- Upskilling the workforce
- Module 2: Creating a Business Case for Digital Investment (09:45 – 11:15)
- Aligning initiatives with operational priorities
- Calculating ROI and securing stakeholder buy-in
- Prioritizing projects for quick wins and long-term value
- Module 3: Roadmap Development and Planning (11:30 – 01:00)
- Structuring your transformation journey
- Milestones, resources, and governance
- Performance tracking mechanisms
- Module 4: Final Presentations and Wrap-Up (02:00 – 03:30)

Participant presentations of transformation plans

- Peer and facilitator feedback
- Course review and closing

Certification

Participants will receive a Certificate of Completion in Digital Transformation for Upstream Oil & Gas, recognizing their expertise in applying advanced digital tools and strategies to enhance exploration and production performance.

Why Choose MAWA Events

- **Global Expertise:** More than 17 years of experience in professional training and consulting.
- **Industry-Leading Faculty:** Courses delivered by seasoned professionals with hands-on experience.
- **Practical Insights:** Learn to turn theory into actionable strategies for real-world business impact.
- **Client-Focused Solutions:** Customized programs designed to achieve your organisation’s unique goals.

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