



Applied Digitalization for Oil & Gas Industry Course

21 – 25 December 2026
Madrid (Spain)



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Introduction:

Digitalization, in its various forms, is slated to transform the landscape of oil & gas operations. This digitalization in the oil and gas industry course is achieved by adding new game-changing efficiencies and transcending barriers to boost production while simultaneously containing costs.

As digitalization in the oil and gas industry shifts paradigms toward more complex fields after successfully exploiting the relatively "easy oil," effective digitalization is the need of the hour.

In this digitalization in the oil and gas industry training, participants will gain first-hand exposure to new efficiencies added through digitalization while honing digital engineering skills required to boost competitiveness.

Targeted Groups:

- Operations supervisors.
- Production engineers and Reservoir engineers.
- Instrumentation and control engineers.
- Compliance and safety officers.
- Drilling and completion engineers.
- Well, services and field operators.
- Data scientists and Digitalisation contractors.
- Cybersecurity analysts and Computer security analysts.
- Geologists and geophysicists.
- Planning and business analysis.
- IT specialists and managers.

Course Objectives:

At the end of this digitalization in the oil and gas industry course, the participants will be able to:

- Appreciate the cyber representation of physical assets and its implications.
- Effectively evaluate modern information flow and control models.
- Hone digital engineering and Fourth Industrial Revolution 4IR skills.
- Prepare the workplace for the coming generation of digital natives.
- Deal with the convergence of operational technology and information technology.
- To become familiar with digital connectivity and its exponential growth.

Targeted Competencies:

Upon the end of this digitalization in the oil and gas industry training, the participant's competencies will:

- The Framework of the Digital Oilfield.
- Hands-on modern cyber model design and optimization.
- Digitalising safely: Cybersecurity.
- Organizational and behavioral aspects of digitalization.
- Machine learning and artificial intelligence techniques.
- Digital twin applications.

Digital Technology in the Oil and Gas Industry:

The Applied Digitalization for the Oil and Gas Industry course offers comprehensive insights into the evolving digitalization landscape within the oil and gas sector. This specialized program delves into key topics such as digitalization strategies, emerging technologies, and innovative digital solutions tailored specifically for the industry.

Participants will explore the impact of digital technologies on operational efficiency, safety, and sustainability within oil and gas operations. Through interactive sessions and case studies, attendees gain practical knowledge on implementing digital tools to optimize production, enhance asset management, and improve decision-making processes.

This course is ideal for professionals seeking to harness the power of digitalization to drive transformative change and gain a competitive edge in the dynamic oil and gas marketplace. Suppose you want to stay ahead of the digitalization wave sweeping the industry. In that case, this course is designed to equip you with the necessary skills and insights to navigate this exciting transformation.

Course Content:

Unit 1: Overview of the Digital Industry:

- Digital oilfield components.
- Monitor and control networks.
- Automation systems.
- Lessons learned from digitalization ventures.
- Value of legacy-based data.
- Informed decisions for intelligent operations.

Unit 2: Digitalization in Action:

- Oil and gas industry as a system.
- Digitalization value.
- Digitalization for HSSE.
- Organization and behavioral aspects.
- Machine learning techniques.
- Artificial intelligence.

Unit 3: Integrated Cybersecurity:

- Understanding the threat and its implications.
- Oilfields as a critical infrastructure.
- Cybersecurity vs. Physical Security.
- Integrated solutions.
- Digital policies.
- Cybersecurity for contractors and subcontractors.

Unit 4: Applied Petroleum Informatics:

- Secure network architecture.
- Function-specific design.
- Digital twin concept.
- Digital Twin VS Traditional Simulation.
- Virtual reality.
- Collaborative online environments.

Unit 5: Modern Information and Data Flow:

- Big data for big opportunities.
- Data and information flow.
- Control network deployment patterns.
- Logical operations control centers.
- Project assignment.
- Project design and optimization.

Conclusion:

The applied digitalization for the oil and gas industry course encapsulated the critical role of digitalization in revolutionizing the oil and gas sector. Participants deeply understood how digital technologies are reshaping the industry landscape through engaging discussions and practical insights.

The course underscored the importance of embracing digital solutions to optimize operations, improve safety, and enhance decision-making processes within oil and gas companies. Attendees explored innovative strategies and cutting-edge technologies driving efficiency and sustainability in the digital era.

This course served as a valuable platform for professionals to harness the power of digitalization and leverage advanced tools tailored specifically for the unique challenges of the oil and gas industry. As the industry continues to evolve, embracing digitalization remains essential for staying competitive and maximizing opportunities in the dynamic oil and gas marketplace.