MERCURY

Applied Digitalization for Oil & Gas

Istanbul - Turkey: +90 539 599 12 06
Amman - Jordan: +962 785 666 966
London - UK: +44 748 136 28 02

MERCURY

# Applied Digitalization for Oil & Gas

## Introduction:

Digitalization, in its various forms, is slated to transform the landscape of oil & gas operations. This is achieved by adding new game-changing efficiencies and transcending barriers to boost production while containing costs simultaneously. As the industry shifts paradigms towards more complex fields after successful exploitation of the relatively “easy oil”, effective digitalization is the need of the hour.

Participants will gain first-hand exposure to new efficiencies added through digitalization while honing digital engineering skills, which are required to boost competitiveness

## Targeted Groups:

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

## Course Objectives:

At the end of this 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
- Become familiar with digital connectivity and its exponential growth

## Targeted Competencies:

- Framework of the digital oilfield
- Hands-on modern cyber model design and optimisation
- Digitalising safely: Cybersecurity
- Organisational & behavioral aspects of digitalisation
- Machine learning and artificial intelligence techniques
- Digital twin applications

## Course Content:

Istanbul - Turkey: +90 539 599 12 06
Amman - Jordan: +962 785 666 966
London - UK: +44 748 136 28 02

MERCURY

## 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 & 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
- Oilfield 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 networks deployment patterns
- Logical operations control centers
- Project assignment
- Project design and optimization