Petroleum Data Analytics & Digital Oilfield Management

7 – 11 November 2027
Online



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Ref: 3255101_187591 **Date:** 7 – 11 November 2027 **Location:** Online **Fees:** 2700 GBP

Introduction

The oil and gas industry is undergoing a major transformation driven by advancements in data analytics and digital oilfield management.
These technologies enable organizations to optimize exploration, production, and maintenance processes by collecting and analyzing massive amounts of real-time data.
This course is designed for professionals who want to master the tools and methodologies that enhance operational efficiency, reduce costs, and enable data-driven decision-making.

Course Objectives

- Understand the core concepts of petroleum data analytics.
- Explore the components and architecture of digital oilfield management systems.
- Apply predictive analytics to optimize production and minimize downtime.
- Integrate geological, engineering, and production data into a unified platform.
- Utilize artificial intelligence AI and machine learning ML to analyze well data.
- Develop interactive dashboards for real-time performance monitoring.
- Learn from real-world case studies of successful digital oilfield applications.

Course Outlines

Day 1: Introduction to Petroleum Data Analytics

- Overview of data analytics and its role in oil and gas.
- Types of industry data geological, engineering, production.
- Data acquisition infrastructure and quality standards.
- Basic data analysis tools and software.
- Practical exercise: Exploring a sample production dataset.

Day 2: Digital Oilfield Management Fundamentals

- Defining the digital oilfield concept.
- Key components of a digital oilfield system.
- Data integration between field systems and office platforms.
- Remote monitoring and control technologies.
- Practical exercise: Designing a mini digital oilfield model.



Day 3: Predictive Analytics and Performance Optimization

- Descriptive, diagnostic, and predictive analytics.
- Predictive modeling for production forecasting.
- Early fault detection through data analysis.
- Optimizing preventive maintenance programs.
- Practical exercise: Building a production prediction model.

Day 4: AI and Machine Learning in Digital Oilfields

- Introduction to AI and ML concepts.
- AI applications for oil production optimization.
- Computer vision for geological and seismic image analysis.
- Integrating ML models into digital oilfield systems.
- Practical exercise: Well data analysis using ML algorithms.

Day 5: Dashboard Development & Case Studies

- Designing interactive dashboards for oilfield operations.
- Key performance indicators KPIs for digital oilfields.
- Real-time production monitoring and visualization.
- Case studies of successful petroleum data analytics projects.
- Final project: Building a complete digital oilfield dashboard.

Why Attend this Course: Wins & Losses!

- Gain advanced skills in petroleum data analytics.
- Learn cutting-edge digital oilfield technologies.
- Improve data-driven decision-making capabilities.
- Harness AI and ML to enhance production.
- Boost operational efficiency and reduce costs.
- Tailor solutions to specific operational challenges.
- Access real-world case studies for practical insights.
- Earn a recognized professional certification.

Conclusion

The Petroleum Data Analytics & Digital Oilfield Management course offers a comprehensive approach to merging field expertise with advanced digital tools.

By combining theoretical knowledge with hands-on practice, participants will gain the skills needed to design and implement smart solutions that improve production efficiency, enhance maintenance strategies, and secure a competitive advantage for their organizations in a data-driven future.

