



# **DIPLOMA IN OIL & GAS DATA ANALYTICS**

*in Collaboration  
with*



**Lincoln Professional  
Academy**

## Course Overview & Learning

In collaboration with Lincoln Professional University, this 14-week comprehensive course aims to provide participants with in-depth knowledge of modern data analytics techniques. They will learn to apply these techniques to solve industry-specific problems and gain hands-on experience through case studies and capstone projects. Upon completion, participants will be equipped to drive innovation and improve efficiency, safety, and profitability in their respective organizations. This detailed curriculum offers a roadmap for a comprehensive educational journey, ensuring participants are well-prepared to tackle the challenges and seize the opportunities in the dynamic Oil & Gas industry.



# Why to learn Oil & Gas Using Data Analytics:

- **High Demand for Data Professionals:** The oil and gas industry is increasingly relying on data analytics for decision-making and operational efficiency, leading to a high demand for skilled data professionals.
- **Lucrative Career Opportunities:** Professionals with expertise in data analytics and oil and gas can secure high-paying positions in leading companies within the industry, such as data scientists, analysts, and engineers.
- **Diverse Job Roles:** Learning data analytics opens up a wide range of career paths in the oil and gas sector, including roles in exploration, production, safety management, and predictive maintenance.
- **Competitive Edge:** Gaining proficiency in data analytics provides a competitive edge in the job market, making you a valuable asset to potential employers who are looking for innovative solutions to industry challenges.
- **Career Advancement:** Knowledge of data analytics can lead to faster career progression, with opportunities for leadership positions in data management, strategic planning, and operational optimization.
- **Global Opportunities:** The oil and gas industry operates on a global scale, and expertise in data analytics can open doors to international job opportunities, allowing you to work in diverse locations and gain global experience.

# Course Highlights:

## Week 1 - 3: Foundations of Oil & Gas Data Analytics

### Week 1: Introduction to Energy Sector Challenges and Data Basics

- Overview of global energy landscape
- Specific challenges in Oil & Gas exploration and production
- Types of data: seismic, geospatial, operational, environmental
- Introduction to data collection technologies: IoT, sensors, satellites

### Week 2: Data Management Fundamentals and Statistical Analysis

- Data storage solutions (Cloud, On premise)
- Data cleaning and preprocessing for Oil & Gas datasets
- Application of statistics in well test analysis
- Basics of Bayesian methods for uncertainty estimation

### Week 3: Statistical Analysis Techniques and Data Visualization

- Advanced statistical methods in Oil & Gas
- Introduction to data visualization principles
- Tools and techniques for effective data presentation

## Week 4 - 6: Python Programming for Data Analytics

### Week 4: Python Fundamentals and Control Flow

- Discover the significance of Data Science/AI ML in the Oil and Gas Industry.
- Introduction to Python basics: IDEs, installation, data types, variables, basic operations
- Essential data structures: lists, tuples, dictionaries
- Control flow mechanisms: conditional statements, loops

### Week 5: Functions and Advanced Python Concepts

- Functions: definition, usage, module creation, exception handling
- NumPy for numerical operations and array manipulations
- Pandas for data generation, reading, processing, and manipulation of tabular data

### Week 6: Data Analytics and Visualization

- Data visualization with Matplotlib
- Real world dataset exploration using NumPy and Pandas
- Deriving insights through data visualization techniques

## **Week 7- 9: Machine Learning and Big Data Technologies**

### **Week 7: Introduction to Machine Learning**

- Machine learning models for predictive maintenance
- Regression models for estimating reservoir performance

### **Week 8: Advanced Machine Learning Techniques**

- Ensemble methods for predicting equipment failures
- Neural networks for seismic data interpretation

### **Week 9: Time Series Analysis and Big Data**

- Forecasting production levels using ARIMA models
- Realtime data analysis for operational decision-making
- Introduction to Hadoop and Spark in Oil & Gas data processing

## **Week 10- Week 12: Power BI and SQL for Data Management**

### **Database Management and Data Transformation**

- Creating and managing databases with SQL
- Data exploration and transformation with Power BI
- Visualizing production trends and forecasting

## **Week 13 - 14: Exploring Machine Learning in Oil & Gas Operations**

### **Harnessing AI for Enhanced Efficiency and Predictive Insights in the Oil & Gas Industry**

- Leveraging Machine Learning in Petrophysical Analysis
- Advanced ML Techniques for Drilling and Reservoir Management
- Enhancing Well Testing with Machine Learning
- Predictive Maintenance and Asset Management Using ML
- Applying Machine Learning to Seismic Data Interpretation
- Utilizing Machine Learning for Accurate Production Forecasting



# Get a chance for Internship & placement Opportunities:

At our institution, we understand the importance of bridging the gap between academic learning and real-world industry experiences. Through strategic collaborations with leading organizations, we provide our students with enriching opportunities for placements and internships. Here's a closer look at some of our valued industry partners:

The logo for Rezlytix, featuring the word "Rezlytix" in a bold, orange, sans-serif font.The logo for GeoIN SERVICES, featuring the word "GeoIN" in a serif font with a globe icon for the letter 'o', followed by "SERVICES" in a smaller, all-caps serif font.The logo for KIRI, featuring the word "KIRI" in a blue, serif font inside an orange oval border.The logo for MANAN, featuring the word "MANAN" in a bold, black, sans-serif font followed by a stylized orange and yellow flame-like icon.The logo for Techwysht Services & Sols Pvt. Ltd., featuring a blue and white icon of a person with arms raised next to the word "Techwysht" in a bold, blue, sans-serif font, with "Services & Sols Pvt. Ltd." in a smaller, black, sans-serif font below it.The logo for G.O.T.S., featuring a stylized green "G" with a small square icon inside it, and the letters "O.T.S." in a green, sans-serif font below it.

# Time Table:

|         |             |                                                                                                |
|---------|-------------|------------------------------------------------------------------------------------------------|
| Week 1  | 10-08-2024  | <b>Saturday &amp;<br/>Sunday<br/>10:30 AM IST<br/>OR 5 AM GMT<br/>2 - 2.5 Hrs<br/>Duration</b> |
|         | 11 -08-2024 |                                                                                                |
| Week 2  | 17-08-2024  |                                                                                                |
|         | 18-08-2024  |                                                                                                |
| Week 3  | 24-08-2024  |                                                                                                |
|         | 25-08-2024  |                                                                                                |
| Week 4  | 31-08-2024  |                                                                                                |
|         | 01-09-2024  |                                                                                                |
| Week 5  | 07-09-2024  |                                                                                                |
|         | 08-09-2024  |                                                                                                |
| Week 6  | 14-09-2024  |                                                                                                |
|         | 15-09-2024  |                                                                                                |
| Week 7  | 21-09-2024  |                                                                                                |
|         | 22-09-2024  |                                                                                                |
| Week 8  | 28-09-2024  |                                                                                                |
|         | 29-09-2024  |                                                                                                |
| Week 9  | 05-10-2024  |                                                                                                |
|         | 06-10-2024  |                                                                                                |
| Week 10 | 12-10-2024  |                                                                                                |
|         | 13-10-2024  |                                                                                                |
| Week 11 | 19-10-2024  |                                                                                                |
|         | 20-10-2024  |                                                                                                |
| Week 12 | 26-10-2024  |                                                                                                |
|         | 27-10-2024  |                                                                                                |
| Week 13 | 02-11-2024  |                                                                                                |
|         | 03-11-2024  |                                                                                                |
| Week 14 | 09-11-2024  |                                                                                                |
|         | 10-11-2024  |                                                                                                |

# FAQs:

## What are the prerequisites for enrolling in the course?

Typically, there are no strict prerequisites, but familiarity with basic programming concepts and a willingness to learn are beneficial.

## When does the course start and what are the timings?

The course begins on August 10th, 2024, with sessions held on Saturdays and Sundays only, over weekends. The timings are 10:30 AM IST or 5:00 PM GMT

## Are there any opportunities for hands-on projects or practical experience?

This course will include hands-on projects, case studies, or interactive exercises to apply theoretical knowledge in real-world scenarios.

## Will study materials and recordings be provided?

Yes, participants will have lifetime access to study materials and recordings for convenient review and ongoing learning.

## Will I receive a certificate upon completion?

Yes, upon successfully completing the course, participants will receive a certificate from Lincoln Professional University, recognizing their achievement and completion of the program.

## Will this course help me advance in my career?

While the outcome varies for each individual, completing this course can certainly enhance your skills and knowledge, making you more competitive in the job market or better equipped for career advancement. However, it's essential to actively apply what you learn and continuously seek opportunities for growth.

## Contact Us

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