MAWA EVENTS

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

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DATA ANALYSIS AND DATA VISUALIZATION IN OIL AND GAS (DOWNSTREAM)

"Turning Refinery, Distribution, and Marketing Data into Actionable Business Intelligence"

Schedule

Date	Venue	Fees (Face-to-Face)
19 – 23 Oct 2026	London, UK	USD 3495 per delegate

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

Introduction

In the downstream oil and gas sector—refining, logistics, marketing, and distribution—massive volumes of process and business data are continuously generated. The ability to analyze and visualize this data is essential to improving operational efficiency, optimizing supply chains, enhancing profitability, and making data-driven decisions.

This intensive 5-day course is designed to give professionals practical skills in collecting, analyzing, and visualizing downstream data. Using tools such as Excel, Power BI, and Python, participants will learn to derive insights from refinery operations, supply chain flows, inventory levels, product margins, and marketing performance metrics.

Objectives

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

- Clean, organize, and prepare downstream datasets for analysis
- Use data visualization to monitor refining KPIs, inventory, and logistics
- Perform cost, margin, and performance analysis using real industry scenarios
- Build dashboards for operational and business decision-making
- Translate technical and commercial data into strategic insights

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Why Attend

- Develop advanced analytics and visualization capabilities for downstream operations
- Use real data to identify inefficiencies and optimize refinery or logistics performance
- Present production, inventory, and marketing insights to technical and business audiences
- Support energy transition and digital transformation initiatives
- Learn in a hands-on environment using real-world oil & gas datasets

Target Audience

This program is designed for:

- Process, refinery, and operations engineers
- Supply chain, logistics, and inventory professionals
- Commercial analysts and financial planners in oil & gas
- Data analysts and IT professionals supporting downstream business units
- Anyone responsible for reporting, modeling, or optimizing downstream performance

Individual Benefits

Key competencies that will be developed include:

- Data analysis and visualization for refinery and logistics performance
- Excel, Power BI, and Python for downstream applications
- Monitoring KPIs like throughput, yield, utilization, and margins
- Dashboard creation for executives, operations, and sales teams
- Interpreting business performance from operational data

Organizational Benefits

Upon completing the training course, participants will demonstrate:

- Better control of inventory, scheduling, and refinery economics
- Improved reporting accuracy and speed of decision-making
- Enhanced cross-functional alignment between operations and business units
- Optimized downstream performance through data-driven planning
- Reduced waste, downtime, and missed opportunities across the value chain

Instructional Methodology

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

- Strategy Briefings – Data analytics for refining, logistics, and marketing
- Case Studies – Real-world refinery and product flow performance examples
- Workshops – Step-by-step data cleaning, modeling, and visualization
- Peer Exchange – Sharing business challenges and analytics strategies
- Tools – Power BI dashboards, Excel models, Python scripts, KPI trackers

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Course Outline

Detailed 5-Day 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: Understanding Downstream Data & KPI Landscape

- Module 1: Overview of Downstream Operations and Data Sources (07:30 – 09:30) • Refinery, terminal, and sales data streams • Data categories: operational, commercial, environmental
- Module 2: Data Cleaning and Preparation (09:45 – 11:15) • Missing values, duplicates, consistency checks • Data types and formats in Excel and Power BI
- Module 3: Key Downstream KPIs and Metrics (11:30 – 01:00) • Utilization, OEE, yield %, blend ratios, margin per barrel • Stock turnover and logistics KPIs
- Module 4: Workshop – Clean and Organize Refinery Data (02:00 – 03:30) • Apply data wrangling techniques in Excel and Power BI

Day 2: Visualization and Dashboarding in Refining & Logistics

- Module 1: Visualizing Process and Throughput Data (07:30 – 09:30) • Line charts, Gantt timelines, process heatmaps • Tracking unit availability, planned vs actual throughput
- Module 2: Inventory and Logistics Dashboards (09:45 – 11:15) • Terminal utilization, pipeline flows, tank levels • Supply chain bottleneck visualizations
- Module 3: Power BI for Interactive Reporting (11:30 – 01:00) • Filters, slicers, KPI cards, visual themes • Connecting multiple downstream datasets
- Module 4: Workshop – Build a Refinery Dashboard (02:00 – 03:30) • Create a live KPI dashboard using Power BI

Day 3: Commercial Analysis – Margins and Performance

- Module 1: Crude Assay and Feedstock Optimization (07:30 – 09:30) • Evaluating feedstock economics • Blend optimization using spreadsheets
- Module 2: Product Margin and Cost Analysis (09:45 – 11:15) • Gross margin per unit, netbacks, yield vs. margin trade-offs • Cost tracking by process or product stream
- Module 3: Business Intelligence Reporting (11:30 – 01:00) • Dashboards for executives and commercial teams • Financial and operational data alignment
- Module 4: Workshop – Product Margin Analysis (02:00 – 03:30) • Analyze margin drivers and visualize trade-offs

Day 4: Advanced Analytics & Automation in Downstream

- Module 1: Using Python for Data Analysis (07:30 – 09:30) • Intro to pandas, seaborn, and matplotlib • Analyzing process and delivery variability
- Module 2: Forecasting and Trend Analysis (09:45 – 11:15) • Time series forecasting and regression • Volume, price, and margin forecasting
- Module 3: Exception Alerts and Business Rules (11:30 – 01:00) • Trigger-based reporting and operational alerts • Embedding business logic in dashboards
- Module 4: Workshop – Python Script for Stock Optimization (02:00 – 03:30) • Build a script to forecast inventory levels and reorder timing

Day 5: Presentation of Insights & Strategy Integration

- Module 1: Reporting to Technical and Non-Technical Stakeholders (07:30 – 09:30) • Data storytelling and communication best practices • Tailoring dashboards to different audiences
- Module 2: Digital Transformation in the Downstream Sector (09:45 – 11:15) • Trends in analytics, AI, and automation • Smart terminals and intelligent operations
- Module 3: Final Group Case Study and Review (11:30 – 01:00) • Integrate commercial and operational KPIs into a full dashboard
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Module 4: Action Planning & Certification (02:00 – 03:30) • Implementation ideas and next steps • Certificate distribution and course close

Certification

Participants will receive a Certificate of Completion in Data Analysis & Visualization in Oil & Gas (Downstream), validating their ability to analyze, visualize, and communicate operational and commercial insights for the downstream oil and gas sector.

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.

In-House / Customized Training Interested in running this course for your team? Please contact us:	TEL: **+601116373203**	EMAIL: **info@mawaevents.net**

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