



# IT259: Advanced Data Analytics with Power BI

## Training Description:

Organizations today generate vast amounts of data from multiple sources, making it essential for professionals to transform raw data into meaningful insights that support strategic decision-making. This comprehensive Advanced Data Analytics with Power BI training course is designed to equip participants with advanced skills in data preparation, modeling, analysis, visualization, and dashboard development using Microsoft Power BI.

The training course provides a practical, hands-on learning experience that enables participants to build robust business intelligence solutions, automate reporting processes, create interactive dashboards and apply advanced analytical techniques to uncover trends, patterns and business opportunities. Participants will work with real-world datasets and business scenarios to develop actionable insights and enhance organizational performance.

By the end of the training, participants will be able to confidently utilize Power BI's advanced capabilities, including Power Query, DAX calculations, data modeling, AI-powered analytics, predictive insights and enterprise-level dashboard deployment.

## Training Objectives:

**By the end of the training, participants will be able to:**

- ✓ Understand the complete data analytics lifecycle and business intelligence framework
- ✓ Connect, import, and integrate data from multiple sources
- ✓ Clean, transform, and prepare data using Power Query Editor
- ✓ Design efficient data models and establish relationships between datasets
- ✓ Create advanced calculations using DAX (Data Analysis Expressions)
- ✓ Develop interactive and visually compelling dashboards and reports
- ✓ Perform advanced data analysis including trend analysis, forecasting and KPI monitoring.
- ✓ Utilize AI-powered features within Power BI for enhanced insights
- ✓ Implement data governance, security, and row-level security practices
- ✓ Publish, share, and collaborate using Power BI Service
- ✓ Build executive dashboards for strategic decision-making
- ✓ Apply best practices for enterprise-level reporting and analytics

## Training Designed for:

This training course is intended for Business Analysts, Data Analysts, Reporting Analysts, Business Intelligence Professionals, Finance Professionals, HR Analysts, Operations Managers, Project Managers, Digital Transformation Teams, Data Scientists (Beginners to Intermediate), IT Professionals, Decision Makers and Executives and Professionals responsible for reporting and performance management.

## Training Requirement:

**“Hand’s on practical sessions, equipment and software will be applied during the course if required and as per the client’s request.”**

Contents can be adapted to your specific wishes. It is therefore possible to focus on specific modules of the training course as per client's learning needs and objectives. Further, it should be forwarded to us a month prior to the course dates.

## Training Program:

### DAY ONE:

#### Data Analytics Fundamentals & Data Preparation with Power BI

- ❖ **Session 1: Introduction to Data Analytics and Business Intelligence**
  - Understanding Data Analytics Framework
  - Types of Analytics
    - Descriptive Analytics
    - Diagnostic Analytics
    - Predictive Analytics
    - Prescriptive Analytics
  - Role of Business Intelligence in Organizations
  - Data-Driven Decision Making
  - Power BI Ecosystem Overview
- ❖ **Session 2: Power BI Architecture and Components**
  - Power BI Desktop
  - Power BI Service
  - Power BI Mobile
  - Power BI Report Server
  - Licensing and Deployment Options
- ❖ **Session 3: Data Connection and Integration**
  - Connecting to Excel
  - SQL Server Integration
  - CSV and Flat Files
  - SharePoint Data Sources
  - Web Data Sources
  - Cloud-Based Data Sources
- ❖ **Session 4: Data Cleaning and Transformation using Power Query**
  - Power Query Interface
  - Data Profiling
  - Handling Missing Values
  - Data Transformation Techniques
  - Merging Queries
  - Appending Queries
  - Splitting and Combining Columns
  - Creating Conditional Columns
- ❖ **Practical Exercises**
  - Import and prepare multi-source business datasets
  - Clean and standardize data for reporting

## DAY TWO:

### Data Modeling and Advanced DAX Techniques

- ❖ **Session 1: Data Modeling Fundamentals**
  - Star Schema vs Snowflake Schema
  - Fact and Dimension Tables
  - Creating Relationships
  - Cardinality Concepts
  - Model Optimization Techniques
- ❖ **Session 2: Building Efficient Data Models**
  - Relationship Management
  - Active and Inactive Relationships
  - Hierarchies
  - Data Categorization
  - Performance Optimization
- ❖ **Session 3: Introduction to DAX**
  - DAX Fundamentals
  - Calculated Columns
  - Measures
  - Variables
  - Context Concepts
- ❖ **Session 4: Advanced DAX Calculations**
  - Time Intelligence Functions
  - YTD, QTD, MTD Analysis
  - Running Totals
  - Ranking Functions
  - Conditional Calculations
  - Dynamic Measures
  - KPI Calculations
- ❖ **Practical Exercises**
  - Develop sales performance measures
  - Create profitability and KPI dashboards

## DAY THREE:

### Advanced Data Visualization and Interactive Dashboards

- ❖ **Session 1: Data Visualization Principles**
  - Data Storytelling
  - Dashboard Design Best Practices
  - Choosing Appropriate Visualizations
  - Avoiding Visualization Errors
- ❖ **Session 2: Power BI Visual Components**
  - Bar and Column Charts
  - Line and Area Charts
  - Scatter Plots
  - Maps and Geographic Analysis
  - Tree Maps

- Waterfall Charts
- KPI Visuals
- ❖ **Session 3: Interactive Reporting Features**
  - Drill Through
  - Drill Down
  - Tooltips
  - Bookmarks
  - Navigation Buttons
  - Dynamic Titles
- ❖ **Session 4: Executive Dashboard Design**
  - Strategic KPI Dashboards
  - Operational Dashboards
  - Financial Dashboards
  - HR Analytics Dashboards
  - Sales Performance Dashboards
- ❖ **Practical Exercises**
  - Build an executive-level dashboard
  - Design mobile-friendly reports

**DAY FOUR:**

**Advanced Analytics, AI Features and Forecasting**

- ❖ **Session 1: Advanced Analytics in Power BI**
  - Trend Analysis
  - Variance Analysis
  - Root Cause Analysis
  - Correlation Analysis
  - Segmentation Analysis
- ❖ **Session 2: AI-Powered Analytics**
  - AI Visuals
  - Key Influencers
  - Decomposition Tree
  - Smart Narratives
  - Anomaly Detection
- ❖ **Session 3: Forecasting and Predictive Insights**
  - Time Series Analysis
  - Forecasting Techniques
  - Scenario Analysis
  - What-If Parameters
  - Predictive Dashboard Development
- ❖ **Session 4: Statistical Analysis Techniques**
  - Basic Statistical Functions
  - Regression Concepts
  - Distribution Analysis
  - Performance Metrics

❖ **Practical Exercises**

- Build forecasting dashboards
- Analyze future sales and operational trends

**DAY FIVE:**

**Power BI Service, Security, Governance & Capstone Project**

❖ **Session 1: Power BI Service and Collaboration**

- Publishing Reports
- Creating Workspaces
- Dashboard Sharing
- Collaboration Features
- Report Distribution

❖ **Session 2: Data Security and Governance**

- Data Governance Framework
- Data Privacy Considerations
- Row-Level Security (RLS)
- User Access Management
- Compliance Best Practices

❖ **Session 3: Performance Optimization**

- Dataset Optimization
- Query Performance
- Dashboard Performance Tuning
- Best Practices for Enterprise Deployment

❖ **Session 4: Capstone Analytics Project**

**Participants will:**

- Import and transform business data
- Develop data models
- Create advanced DAX calculations
- Design interactive dashboards
- Apply forecasting techniques
- Publish reports to Power BI Service
- Present findings and recommendations

❖ **Final Assessment and Review**

- Knowledge Assessment
- Practical Project Evaluation
- Group Presentation
- Feedback Session
- Action Planning

❖ **POST-ASSESSMENT and EVALUATION**

**Training Methodology:**

The workshop utilizes a highly interactive and practical approach including:

- Instructor-led presentations
- Live demonstrations
- Hands-on Power BI exercises

- Case studies and business scenarios
- Group discussions
- Individual practical assignments
- Dashboard development workshops
- Real-world data analysis projects
- Knowledge assessments and feedback sessions

This interactive training course includes the following training methodologies as a percentage of the total tuition hours:

- 30% Lectures, Concepts, Role Play
- 70% Workshops & Work Presentations, Techniques, Based on Case Studies & Practical Exercises, Gamification, Software & General Discussions
- Pre and Post Test

### Training Certificate(s):

CMCT Internationally recognized certificate(s) will be issued to each participant who completed the course.

### Training Fees:

**TBA as per the location** - This rate includes participant's manual, hand-outs, buffet lunch, coffee/tea on arrival, morning & afternoon of each day.

*Note: The 5% VAT (Value Added Tax), will be effective starting 01<sup>st</sup> of January 2018 as per the new regulation from the UAE Government. The VAT applies for all quotation both for local and abroad.*

### Training Timings:

#### Daily Timings:

07:45 - 08:00	Morning Coffee / Tea
08:00 - 10:00	First Session
10:00 - 10:20	Recess (Coffee/Tea/Snacks)
10:20 - 12:20	Second Session
12:20 - 13:00	Recess (Prayer Break & Lunch)
13:00 - 14:00	Last Session

#### **For training registrations or in-house enquiries, please contact:**

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