

DATA ANALYTICS BLACK BELT

The Complete AI-Powered Mastery Program — Beginner to Professional

Complete Table of Contents

Duration 12 Days	Level Beginner to Professional	Domains Covered 9 Domains
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Program Features & Benefits

- A complete, industry-grade curriculum engineered to take a total beginner to confident, professional-level mastery — no prior background required
- Masters the entire modern analytics stack in a single program: Excel, SQL, Python, Statistics, Power BI, Machine Learning fundamentals, and Generative AI
- Every domain is broken into precise modules and sub-topics, giving structured, trackable mastery at every step
- 100% hands-on by design — every technical module is reinforced with real-world datasets and practical, industry-style case studies
- A dedicated Generative AI and Prompt Engineering track — the differentiator that sets this program apart from traditional analytics courses
- A powerful Day 12 capstone project that integrates SQL, Python, Power BI, and AI-assisted insights into one portfolio-ready deliverable
- Professional-readiness built in: resume building, LinkedIn optimization, and role-specific interview mastery
- A focused, high-intensity 12-day format engineered for maximum skill gain in minimum time — built for working professionals
- Positions learners for high-value roles: Data Analyst, Business Analyst, BI Analyst, Reporting Analyst, and Analytics Consultant
- A single, unified learning path — eliminates the need to stitch together multiple disconnected courses and tutorials

All Topics Covered — Domain-wise Summary

A consolidated, at-a-glance list of every topic in the program, grouped by domain.

Day 1: Foundations of Data Analytics & Career Landscape

- What is Data Analytics
- Data Analytics vs Data Science vs Artificial Intelligence vs Machine Learning
- Types of Analytics: Descriptive, Diagnostic, Predictive, Prescriptive
- The Data Analytics Lifecycle
- Applications across Banking, Retail, Healthcare, and Manufacturing
- Career roles: Data Analyst, BI Analyst, Business Analyst, Reporting Analyst
- Skills-to-role mapping and a personal learning roadmap
- Where Excel, SQL, Python, Power BI, and GenAI each fit in a real analytics workflow
- Setting up the environment: Excel, SQL client, Python/Jupyter, Power BI Desktop

Day 2: Excel for Data Analytics

- Interface, data types, and formatting
- Tables and Named Ranges
- Sorting, Filtering, Conditional Formatting, Data Validation
- Text and Date functions
- Lookup functions: VLOOKUP, XLOOKUP, INDEX-MATCH
- Logical functions: IF, Nested IF, IFS

- Data cleaning and importing external / CSV data
- PivotTables and PivotCharts
- Dashboard building and What-If Analysis

Day 3: SQL for Data Analytics — Part 1: Fundamentals

- Introduction to databases and ER diagrams
- Core database concepts
- SQL installation, setup, and data types
- DDL, DML, DCL, and TCL commands
- WHERE, ORDER BY, GROUP BY, HAVING
- Aggregate functions: SUM, AVG, COUNT, MIN, MAX
- String functions and date functions

Day 4: SQL for Data Analytics — Part 2: Advanced

- Inner, Left, Right, and Full Joins
- Self Join and Cross Join
- Subqueries
- Views and Stored Procedures
- Window functions and ranking functions
- Common Table Expressions (CTEs)
- Applied case study: SQL-based retail / banking analytics

Day 5: Python Programming — Part 1: Core Language

- Variables, operators, and data types
- Strings, Lists, Tuples, Dictionaries, Sets
- If statements and loops
- Functions and Lambda expressions
- File handling and exception handling
- Modules, packages, and virtual environments

Day 6: Python for Data Analysis — Part 2: Libraries

- Arrays, indexing, and slicing
- Mathematical operations and broadcasting
- Series and DataFrame objects
- Reading and writing files; data cleaning and missing values
- Merge, Join, Concatenate, GroupBy, Pivot Table, Apply, Map

Day 7: Statistics & Data Visualization

- Mean, Median, Mode, Variance, Standard Deviation
- Probability basics and sampling
- Correlation and covariance
- Hypothesis testing, normal distribution, confidence interval
- Matplotlib and Seaborn
- Line, Bar, and Pie charts; Histograms; Scatter plots
- Heatmaps, Pairplots, Boxplots, Distribution plots

Day 8: Power BI — Part 1: Fundamentals

- Installation and the Power BI Desktop interface
- Importing data, Power Query, and data cleaning
- Table relationships and star schema design
- Data modeling best practices

Day 9: Power BI — Part 2: Advanced & Publishing

- DAX basics, Measures, and Calculated Columns
- Building KPIs
- Charts and dashboard design
- Drill-through and bookmarks
- Row Level Security
- Power BI Service and publishing reports

Day 10: Introduction to Machine Learning

- AI vs Machine Learning vs Deep Learning
- Supervised, Unsupervised, and Reinforcement Learning
- Train-Test Split and Cross Validation
- Linear Regression and Logistic Regression
- Decision Trees, Random Forest, KNN, Naive Bayes
- Clustering fundamentals
- Confusion Matrix
- Accuracy, Precision, Recall, F1 Score

Day 11: Generative AI for Data Analytics

- Introduction to Large Language Models (ChatGPT, Gemini, Claude, Microsoft Copilot)
- AI ethics and responsible AI
- Prompt basics, zero-shot and few-shot prompting
- Chain-of-thought and role prompting
- Designing reusable prompt templates for business use
- Using AI for Excel, SQL query generation, and Python coding assistance
- AI for Power BI and dashboard creation
- AI-assisted data cleaning, EDA, and report generation

Day 12: Capstone Project, Portfolio & Career Readiness

- Problem definition and data collection
- Data cleaning, SQL analysis, and Python analysis
- Visualization, dashboard development, and AI-assisted insights
- Final presentation
- Mini case studies across Sales, HR, Finance, Healthcare, Retail, Marketing, Churn, and Banking analytics
- Resume building and LinkedIn profile optimization
- SQL, Python, Power BI, and Excel interview questions
- Mock interview practice

Tools & Platforms Used Across the Program

- Microsoft Excel
- SQL
- Python
- Jupyter Notebook
- Google Colab
- NumPy
- Pandas
- Matplotlib
- Seaborn
- Scikit-Learn
- Power BI Desktop
- Power BI Service
- ChatGPT

- Gemini
- Microsoft Copilot

Detailed Day-Wise Curriculum

Each day covers one domain, broken into modules and sub-topics for structured, trackable progress.

DAY 1

Domain: Foundations of Data Analytics & Career Landscape

Module 1.1 — Introduction to Data Analytics

- What is Data Analytics
- Data Analytics vs Data Science vs Artificial Intelligence vs Machine Learning
- Types of Analytics: Descriptive, Diagnostic, Predictive, Prescriptive
- The Data Analytics Lifecycle

Module 1.2 — Industry Applications & Career Pathways

- Applications across Banking, Retail, Healthcare, and Manufacturing
- Career roles: Data Analyst, BI Analyst, Business Analyst, Reporting Analyst
- Skills-to-role mapping and a personal learning roadmap

Module 1.3 — Analytics Toolset Overview

- Where Excel, SQL, Python, Power BI, and GenAI each fit in a real analytics workflow
- Setting up the environment: Excel, SQL client, Python/Jupyter, Power BI Desktop

DAY 2

Domain: Excel for Data Analytics

Module 2.1 — Excel Fundamentals for Analysts

- Interface, data types, and formatting
- Tables and Named Ranges
- Sorting, Filtering, Conditional Formatting, Data Validation

Module 2.2 — Formulas & Functions

- Text and Date functions
- Lookup functions: VLOOKUP, XLOOKUP, INDEX-MATCH
- Logical functions: IF, Nested IF, IFS

Module 2.3 — Data Analysis with Excel

- Data cleaning and importing external / CSV data
- PivotTables and PivotCharts
- Dashboard building and What-If Analysis

DAY 3

Domain: SQL for Data Analytics — Part 1: Fundamentals

Module 3.1 — Database & SQL Foundations

- Introduction to databases and ER diagrams
- Core database concepts
- SQL installation, setup, and data types

Module 3.2 — Core SQL Commands

- DDL, DML, DCL, and TCL commands
- WHERE, ORDER BY, GROUP BY, HAVING

Module 3.3 — Aggregation & Functions

- Aggregate functions: SUM, AVG, COUNT, MIN, MAX
- String functions and date functions

DAY 4

Domain: SQL for Data Analytics — Part 2: Advanced

Module 4.1 — Joins & Relationships

- Inner, Left, Right, and Full Joins
- Self Join and Cross Join

Module 4.2 — Advanced Querying

- Subqueries
- Views and Stored Procedures

Module 4.3 — Analytical SQL

- Window functions and ranking functions
- Common Table Expressions (CTEs)
- Applied case study: SQL-based retail / banking analytics

DAY 5

Domain: Python Programming — Part 1: Core Language

Module 5.1 — Python Basics

- Variables, operators, and data types
- Strings, Lists, Tuples, Dictionaries, Sets

Module 5.2 — Control Flow & Functions

- If statements and loops
- Functions and Lambda expressions

Module 5.3 — Files & Error Handling

- File handling and exception handling
- Modules, packages, and virtual environments

DAY 6

Domain: Python for Data Analysis — Part 2: Libraries

Module 6.1 — NumPy for Numerical Computing

- Arrays, indexing, and slicing
- Mathematical operations and broadcasting

Module 6.2 — Pandas for Data Manipulation

- Series and DataFrame objects
- Reading and writing files; data cleaning and missing values
- Merge, Join, Concatenate, GroupBy, Pivot Table, Apply, Map

DAY 7

Domain: Statistics & Data Visualization

Module 7.1 — Statistics for Data Analytics

- Mean, Median, Mode, Variance, Standard Deviation

- Probability basics and sampling
- Correlation and covariance
- Hypothesis testing, normal distribution, confidence interval

Module 7.2 — Data Visualization with Python

- Matplotlib and Seaborn
- Line, Bar, and Pie charts; Histograms; Scatter plots
- Heatmaps, Pairplots, Boxplots, Distribution plots

DAY 8

Domain: Power BI — Part 1: Fundamentals

Module 8.1 — Power BI Foundations

- Installation and the Power BI Desktop interface
- Importing data, Power Query, and data cleaning

Module 8.2 — Data Modeling

- Table relationships and star schema design
- Data modeling best practices

DAY 9

Domain: Power BI — Part 2: Advanced & Publishing

Module 9.1 — DAX & Calculations

- DAX basics, Measures, and Calculated Columns
- Building KPIs

Module 9.2 — Visualization & Interactivity

- Charts and dashboard design
- Drill-through and bookmarks

Module 9.3 — Governance & Deployment

- Row Level Security
- Power BI Service and publishing reports

DAY 10

Domain: Introduction to Machine Learning

Module 10.1 — Machine Learning Foundations

- AI vs Machine Learning vs Deep Learning
- Supervised, Unsupervised, and Reinforcement Learning
- Train-Test Split and Cross Validation

Module 10.2 — Applied ML with Scikit-Learn

- Linear Regression and Logistic Regression
- Decision Trees, Random Forest, KNN, Naive Bayes
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Module 10.3 — Model Evaluation

- Confusion Matrix
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Module 11.1 — GenAI & LLM Fundamentals

- Introduction to Large Language Models (ChatGPT, Gemini, Claude, Microsoft Copilot)
- AI ethics and responsible AI

Module 11.2 — Prompt Engineering

- Prompt basics, zero-shot and few-shot prompting
- Chain-of-thought and role prompting
- Designing reusable prompt templates for business use

Module 11.3 — AI-Augmented Analytics Workflow

- Using AI for Excel, SQL query generation, and Python coding assistance
- AI for Power BI and dashboard creation
- AI-assisted data cleaning, EDA, and report generation

Module 12.1 — End-to-End Capstone Project

- Problem definition and data collection
- Data cleaning, SQL analysis, and Python analysis
- Visualization, dashboard development, and AI-assisted insights
- Final presentation

Module 12.2 — Industry Case Study Portfolio

- Mini case studies across Sales, HR, Finance, Healthcare, Retail, Marketing, Churn, and Banking analytics

Module 12.3 — Career Readiness

- Resume building and LinkedIn profile optimization
- SQL, Python, Power BI, and Excel interview questions
- Mock interview practice