COMPLETE MASTER PROGRAM IN

DATA ANALYTICS WITH AI

Excel • Oracle SQL • Python • NumPy • Pandas
Power BI • Practical AI for Analytics

3 MONTHS | 120 GUIDED HOURS

Beginner-friendly • Guided learning • Hands-on projects

11 structured modules • Real business datasets • Career preparation

Learn. Practice. Get Hired.

TOOLS & TECHNOLOGIES

Practical tools you will learn and apply throughout the program

- Excel
- Oracle SQL
- Python
- NumPy
- Pandas
- Power BI
- Practical AI for Analytics

PROGRAM AT A GLANCE

Duration: 3 months

Guided learning: 120 hours

Suggested pace: 10 guided hours per week over 12 weeks

Who can join: Students, graduates and working professionals; beginner-friendly

Core stack: Excel, Oracle SQL, Python, NumPy, Pandas, Power BI and basic AI tools

LEARNING PATH

- Analytics foundations, statistics and Excel
- Oracle SQL for business reporting
- Python fundamentals and data analysis with NumPy/Pandas
- Exploratory analysis and data visualization
- Power BI dashboards and business storytelling
- Introductory AI concepts and responsible AI-assisted analytics
- Integrated capstone project and career preparation

TOOLS & TECHNOLOGIES

Microsoft Excel • Oracle SQL • Python • Jupyter Notebook/Google Colab • NumPy • Pandas • Matplotlib • Seaborn • Power BI • AI assistants (e.g., ChatGPT) • Git/GitHub for portfolio

MODULE 01
Introduction to Data Analytics & Statistics

Understand how organizations use data to answer business questions and measure performance.

TOPICS COVERED

- What data analytics is and common business use cases
- Analytics lifecycle: collect, clean, analyze, visualize and communicate
- Structured and unstructured data; data types and measurement scales
- Descriptive statistics: mean, median, mode, range and standard deviation
- Percentages, quartiles, outliers and correlation vs. causation
- Business KPIs: revenue, profit, growth, retention and conversion

REAL-WORLD EXAMPLE

Explore a retail sales dataset and identify trends, outliers and important KPIs.

PRACTICE PROJECT

Create a short business insights report with charts and recommendations.

MODULE 02
Excel for Data Analytics

Use Excel to clean, analyze and summarize data, then build useful business reports.

TOPICS COVERED

- Workbook, worksheet, cell references and data types
- Sorting, filtering, formatting and data validation
- SUM, AVERAGE, MIN, MAX, COUNT and conditional functions
- IF, IFS, AND, OR, IFERROR and lookup functions such as XLOOKUP/VLOOKUP
- Text, date and rounding functions; remove duplicates and handle blanks
- PivotTables, PivotCharts, slicers and dashboard design
- AI-assisted formula help and insight generation

REAL-WORLD EXAMPLE

Analyze sales by product, region and month to find the strongest performers.

PRACTICE PROJECT

Build an interactive Excel dashboard using a realistic sales dataset.

MODULE 03
Oracle SQL for Data Analytics

Query relational data to answer business questions and combine data from multiple tables.

TOPICS COVERED

- Database tables, rows, columns, keys and relationships
- SELECT, WHERE, ORDER BY, DISTINCT and aliases
- Filtering with IN, BETWEEN, LIKE, NULL and logical operators
- Aggregate functions: SUM, AVG, COUNT, MIN and MAX
- GROUP BY and HAVING
- INNER, LEFT and RIGHT joins; subqueries and common table expressions
- CASE expressions, date functions, views and analytical functions basics

REAL-WORLD EXAMPLE

Analyze customer orders to calculate revenue, repeat purchases and top products.

PRACTICE PROJECT

Write a collection of SQL queries for business KPIs and management reporting.

MODULE 04
Python Programming Fundamentals

Learn beginner-friendly Python concepts needed for practical data analysis.

TOPICS COVERED

- Python setup with Jupyter Notebook or Google Colab
- Variables, strings, numbers, booleans and type conversion
- Input/output, operators and conditional statements
- Loops, functions, parameters and return values
- Lists, tuples, sets and dictionaries
- Working with files and importing modules
- Basic debugging and readable code practices

REAL-WORLD EXAMPLE

Write a Python script to calculate revenue, profit margin and average order value.

PRACTICE PROJECT

Create a small program that reads simple data and produces summary metrics.

MODULE 05
Python for Data Analysis

Use NumPy and Pandas to clean, transform and analyze datasets efficiently.

TOPICS COVERED

- NumPy arrays and vectorized calculations
- Pandas Series and DataFrames
- Read CSV and Excel files; inspect columns and data types
- Select, filter, sort and transform rows and columns
- Handle missing values, duplicates and inconsistent data
- GroupBy, aggregation, merge, join and concatenate
- Date/time columns and basic feature creation

REAL-WORLD EXAMPLE

Clean customer orders and compare monthly sales and product performance.

PRACTICE PROJECT

Prepare a reusable data-cleaning and analysis notebook.

MODULE 06
Power BI for Business Intelligence

Turn data into interactive dashboards that help stakeholders monitor performance.

TOPICS COVERED

- Power BI Desktop and connecting to Excel, CSV and database sources
- Power Query for cleaning and transformation
- Data modeling, relationships and star-schema basics
- Measures and calculated columns using introductory DAX
- Charts, cards, tables, slicers, drill-through and filters
- Dashboard layout, accessibility and storytelling
- Publishing, refresh concepts and report sharing basics

REAL-WORLD EXAMPLE

Build a sales dashboard showing revenue, profit, region and product trends.

PRACTICE PROJECT

Create a Power BI report with KPI cards, slicers and interactive visuals.

MODULE 07
Data Visualization & Exploratory Data Analysis

Discover patterns, distributions and relationships before drawing conclusions.

TOPICS COVERED

- EDA workflow and question-led analysis
- Matplotlib and Seaborn fundamentals
- Bar, line, histogram, box, scatter and correlation plots
- Distributions, outliers, trends and relationships
- Choose appropriate charts and avoid misleading visuals
- Summarize findings for technical and non-technical audiences

REAL-WORLD EXAMPLE

Investigate a decline in monthly sales and identify likely contributing segments.

PRACTICE PROJECT

Present an EDA notebook with clear visualizations and business findings.

MODULE 08
Practical AI for Data Analytics — Basics

Understand introductory AI concepts and use approved AI tools to support analytics tasks.

TOPICS COVERED

- Basic distinction between AI, machine learning and deep learning
- Responsible use of AI assistants for analysis support
- Prompting AI tools to explain formulas and SQL queries
- Drafting Python snippets and validating generated code
- Summarizing findings and drafting report narratives
- Privacy, verification, bias and limitations of AI-generated outputs

REAL-WORLD EXAMPLE

Use an AI assistant to help interpret a dataset, then verify every result against the data.

PRACTICE PROJECT

Create an analytics report with AI-assisted explanations and human-validated findings.

MODULE 09
Business Analytics & Storytelling

Translate analytical results into recommendations that support business decisions.

TOPICS COVERED

- Define business questions and measurable KPIs
- Compare periods, segments, products and regions
- Root-cause exploration and hypothesis-led analysis
- Build a clear narrative from evidence
- Communicate limitations, assumptions and next steps
- Present insights to business stakeholders

REAL-WORLD EXAMPLE

Explain why profit fell even though sales volume increased.

PRACTICE PROJECT

Prepare a one-page executive summary supported by SQL, Python or Power BI findings.

MODULE 10
Integrated Capstone Project

Combine Excel, Oracle SQL, Python, Power BI and basic AI assistance in an end-to-end project.

TOPICS COVERED

- Define the business problem and success measures
- Load, inspect and clean the dataset
- Analyze data using SQL and Python
- Build a Power BI dashboard and supporting visualizations
- Use AI assistance carefully and validate all outputs
- Document assumptions, findings and recommendations

REAL-WORLD EXAMPLE

Analyze retail sales, customer behavior or operational performance.

PRACTICE PROJECT

Deliver a complete analytics project with cleaned data, queries, notebook, dashboard and presentation.

MODULE 11
Career Preparation & Portfolio

Prepare to explain your skills and projects clearly for entry-level analytics roles.

TOPICS COVERED

- Resume and project portfolio preparation
- GitHub or portfolio organization for analytics work
- SQL, Excel, Python and Power BI interview practice
- Business case questions and analytical thinking
- Project walkthrough and presentation skills
- Mock interviews and career guidance

REAL-WORLD EXAMPLE

Present your capstone as if briefing a business manager.

PRACTICE PROJECT

Create a portfolio-ready project summary and practice a mock interview.

KEY LEARNING OUTCOMES

✓ Analyze data using Excel, Oracle SQL and Python.

✓ Clean, transform and summarize datasets with Pandas.

✓ Explore patterns and communicate findings using visualizations.

✓ Build interactive Power BI dashboards and KPI reports.

✓ Use basic AI assistance responsibly and validate results.

✓ Complete an end-to-end analytics capstone and present recommendations.

CAREER OPPORTUNITIES

- Data Analyst
- Business Analyst
- BI Analyst / Power BI Analyst
- Reporting Analyst
- MIS Analyst
- Data Insights Analyst
- Operations Analyst
- Junior Analytics Associate
- Dashboard Developer

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