



IN PARTNERSHIP WITH



Data Analytics Programme Curriculum

In partnership with  **EXPLORE AI**
ACADEMY

www.alxafrica.com

Data Analytics Programme Curriculum

Module 1: Explore 101 (1 Week)		
Orientation		
Setting up your learning environment	ExploreAI teaching philosophy and educational support framework	Troubleshooting at ExploreAI Academy
Introduction to Data and Data Analytics		
What is data and how it is used to make data-driven decisions	An introduction to modern data practices and practitioners	Approaches to data analysis
Problem-solving		
Mutually exclusive and collectively exhaustive statements and decisions	Design thinking and the scientific method	Introduction to solution-oriented communication
Programmatic Thinking		
How to use algorithms and operators	Flowcharts, pseudocode, and conditional statements	Converting logic between statements, logic trees, pseudocode, and flowcharts
Module 2: Preparing Data (3 Weeks)		
Introduction to Spreadsheets		
Working with spreadsheets	Data types and formatting	Introduction to visualisation
Data Manipulation		
Cleaning and analysing spreadsheet data	Working with various data types	Finding and fixing data anomalies
Introduction to Statistics		
Summarising data using descriptive statistics	Measures of central tendency and spread	Samples and distributions
Introduction to Data Modelling		
Basic spreadsheet functions and conditionals	Identifying patterns and the line of best fit	Testing assumptions and model accuracy

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Module 3: Querying Data (4 Weeks)

Introduction to SQL

Working with databases

Basic SQL data types and calculations

Aggregating, sorting, and grouping data

Relational Database Design

SQL schemas and entity relationships

Table normalisation, primary and foreign keys

Common table expressions and views

SQL in Practice

Set theory and SQL joins

Nested and subqueries

Improving query performance

Data Manipulation

Cleaning and analysing data

Working with numeric, time, and string data types

Data transformations and anomalies

Module 4: Visualising Data (4 Weeks)

Data in Power BI

Loading and linking datasets in Power BI

Cleaning data and creating calculated columns and measures using DAX

Reports, data, and relationship views

Visuals in Power BI

Numeric visuals – cards, tables

Graphic visuals – line chart, bar chart, pie chart, column chart, treemap

Using slicers and custom visuals

Dashboards

Planning, designing, and prototyping

Working with various charts

Working with filters

Visual Storytelling

Telling a story with visuals

When to use which visuals

Presentation best-practice