SODBRIDGE ACADEMY
ADVANCED PROFESSIONAL PROGRAMME CURRICULUM

TRACK: DATA ANALYTICS

Programme Detail	Information
Duration	12 Weeks
Live Instruction	6 Hours Per Week
Total Live Instruction	72 Hours
Weekly Schedule	3 Sessions × 2 Hours
Programme Fee	₦200,000

1. Programme Overview

The Data Analytics track develops the practical skills required to transform raw data into meaningful insights, business intelligence and informed decisions.
Learners work with spreadsheets, relational databases, Python and Power BI to prepare data, perform analysis, develop analytical models, build dashboards and communicate findings to decision-makers.
The programme emphasises practical problem-solving, analytical thinking, data accuracy and the ability to translate business questions into evidence-based recommendations.

2. Learning Outcomes

By the end of the programme, learners should be able to:

- Use advanced Excel techniques to organise, prepare and analyse business data.
- Apply Power Query to combine, clean and transform datasets.
- Write SQL queries to retrieve, join, aggregate and analyse structured data.
- Use Python, NumPy and pandas for data cleaning, exploration and analysis.
- Perform exploratory data analysis and communicate patterns in datasets.
- Understand analytical data modelling, including fact and dimension tables.
- Develop Power BI reports and dashboards using appropriate DAX measures.
- Define and communicate meaningful business KPIs.
- Present analytical findings through effective visualisations and storytelling.
- Translate analytical results into practical recommendations.

3. Entry Requirements

Applicants should have:

- Confident use of Microsoft Excel, including formulas, sorting, filtering and basic charts.
- Basic familiarity with SQL and relational database concepts.
- Basic analytical and problem-solving skills.
- Willingness to practise independently between live sessions.

Applicants who do not meet these requirements may be advised to complete the Foundations programme or an appropriate readiness assessment.

4. Tools and Technologies

The programme will primarily use:

- Microsoft Excel
- Power Query
- PostgreSQL
- SQL
- Python
- NumPy
- pandas
- Matplotlib
- Seaborn
- Microsoft Power BI
- DAX
- Git and GitHub

5. Programme Structure and Weekly Curriculum

The programme begins with one shared professional core week, followed by 11 weeks of Data Analytics specialisation, practical exercises and capstone development.

WEEK 1 — SHARED PROFESSIONAL CORE

Focus: Professional problem-solving and project practices.

Topics:

- Understanding professional data projects.
- Translating stakeholder needs into analytical questions.
- Identifying and assessing relevant data sources.
- Introduction to data quality and reliability.
- Git and GitHub fundamentals.
- Project folder organisation and documentation.
- Reproducible analytical workflows.
- Responsible use of data.

WEEK 2 — ADVANCED EXCEL I

Focus: Developing stronger spreadsheet analysis and data preparation skills.

Topics:

- Structured tables and data organisation.
- Advanced formulas and functions.
- Lookup functions and conditional logic.
- Logical and text functions.
- Date and time functions.
- Error handling and formula auditing.
- Sorting, filtering and data validation.
- Preparing structured datasets for analysis.

WEEK 3 — ADVANCED EXCEL II AND POWER QUERY

Focus: Efficient analysis and repeatable data transformation.

Topics:

- Pivot tables and pivot charts.
- Advanced analytical summaries.
- Importing data from multiple sources.
- Combining and merging datasets.
- Cleaning and transforming data with Power Query.

- Handling missing values and inconsistent records.
- Building repeatable transformation workflows.
- Refreshing and maintaining prepared datasets.

WEEK 4 — SQL AND POSTGRESQL I

Focus: Retrieving and analysing structured data.

Topics:

- Relational database concepts.
- PostgreSQL environment and database navigation.
- SELECT statements.
- Filtering and sorting records.
- DISTINCT and limiting results.
- Aggregate functions.
- GROUP BY and HAVING.
- INNER, LEFT, RIGHT and FULL JOIN concepts.
- Practical analytical queries.

WEEK 5 — ADVANCED SQL AND POSTGRESQL II

Focus: Developing more advanced analytical queries.

Topics:

- Subqueries.
- Common Table Expressions (CTEs).
- CASE expressions.
- Date and text functions.
- Window functions.
- Ranking and partitioning.
- Combining multiple analytical queries.
- Query readability and organisation.
- Introduction to query performance awareness.
- Solving business questions using SQL.

WEEK 6 — PYTHON FOR DATA ANALYTICS I

Focus: Using Python and its data libraries for analytical work.

Topics:

- Python fundamentals for analytical workflows.
- Working with Jupyter notebooks.
- Introduction to NumPy.
- Introduction to pandas.
- Series and DataFrames.
- Importing CSV and Excel files.
- Inspecting and understanding datasets.
- Selecting, filtering and sorting records.
- Basic aggregation and summary statistics.

WEEK 7 — PYTHON FOR DATA ANALYTICS II

Focus: Cleaning, exploring and analysing datasets using Python.

Topics:

- Identifying and handling missing values.
- Detecting and removing duplicates.
- Data type conversion.
- Filtering and transforming columns.

- Grouping and aggregation with pandas.
- Merging and joining datasets.
- Exploratory data analysis.
- Basic visualisation with Matplotlib and Seaborn.
- Identifying patterns, trends and anomalies.
- Exporting cleaned datasets and analytical outputs.

WEEK 8 — ANALYTICAL DATA MODELLING

Focus: Structuring data for reliable business intelligence.

Topics:

- Understanding analytical data models.
- Measures versus attributes.
- Fact and dimension tables.
- Understanding data grain.
- Primary and foreign keys.
- Relationships between tables.
- Star-schema principles.
- Preparing analytical models for reporting.
- Validating relationships and model structure.

WEEK 9 — DAX AND BUSINESS MEASURES

Focus: Developing reliable calculations and performance indicators.

Topics:

- Introduction to Data Analysis Expressions (DAX).
- Calculated columns versus measures.
- Understanding filter context.
- CALCULATE and common DAX patterns.
- Aggregation measures.
- Time and period comparisons.
- KPI definitions and calculations.
- Validating measures against source data.
- Building meaningful business performance indicators.

WEEK 10 — POWER BI AND DASHBOARD DEVELOPMENT I

Focus: Connecting data sources and developing reports.

Topics:

- Introduction to Power BI Desktop.
- Connecting to PostgreSQL, Excel and flat files.
- Power Query in Power BI.
- Data types and transformation.
- Creating table relationships.
- Developing report pages.
- Selecting appropriate visualisations.
- Applying basic dashboard design principles.

WEEK 11 — POWER BI AND DASHBOARD DEVELOPMENT II

Focus: Building interactive dashboards and communicating insights.

Topics:

- Multi-page dashboard development.
- Slicers and drill-through.
- Interactive report design.

- Visual hierarchy and layout.
- Dashboard usability and accessibility.
- Analytical storytelling.
- Identifying patterns and exceptions.
- Communicating findings and recommendations.
- Publishing and sharing concepts.
- Report review and refinement.

WEEK 12 — CAPSTONE PRESENTATION AND DEFENCE

Focus: Demonstrating practical analytical competence.

Activities:

- Presenting the business problem and analytical approach.
- Explaining the data preparation process.
- Demonstrating SQL and Python analysis.
- Explaining the analytical data model.
- Demonstrating the Power BI dashboard.
- Explaining KPI choices and calculations.
- Communicating key findings and recommendations.
- Defending analytical decisions.
- Discussing limitations and possible improvements.

6. Capstone Project

Learners will complete a practical business intelligence project demonstrating their ability to transform raw data into meaningful business insights.

The expected deliverables include:

1. A clearly defined business problem and analytical questions.
2. Prepared and validated source data.
3. Evidence of data preparation using appropriate tools.
4. SQL queries used for data retrieval and analysis.
5. Python-based data cleaning, exploration or analysis.
6. A documented analytical data model.
7. A Power BI report with appropriate DAX measures.
8. An interactive dashboard.
9. A concise presentation of findings and recommendations.

Learners may use Excel, SQL and Python at appropriate stages of the project. They are not expected to perform every task using every tool; they should demonstrate sound judgement in selecting the right tool for the problem.

7. Assessment Approach

Learners will be assessed through:

- Advanced Excel and Power Query exercises.
- SQL querying and analytical assignments.
- Python and pandas implementation tasks.
- Data cleaning and exploratory analysis exercises.
- Data modelling checkpoints.
- DAX and KPI development exercises.
- Dashboard development and usability reviews.
- Capstone project assessment.

The capstone assessment will consider problem framing, technical quality, analytical accuracy, insight, communication and documentation.

8. Learning Model

The programme follows three complementary stages:

LEARN

Instructor-led explanations, demonstrations and guided technical practice.

BUILD

Structured weekly exercises and assignments that progressively develop the skills required for the capstone.

APPLY

An end-to-end project, review and presentation demonstrating the learner's ability to explain and defend their work.

9. Additional Information

- Live instruction is delivered over three 2-hour sessions each week.
- Learners should plan for approximately 4–6 additional hours of independent practice weekly.
- Learners should have access to a suitable computer and the required development environments.
- Public, synthetic or appropriately authorised datasets should be used.
- Access to confidential employer or customer records is not required.
- Programme details are subject to the final cohort calendar and published enrolment terms.

SODBRIDGE ACADEMY

Real-world learning through practical skills, projects and professional development.