

Programme Overview

Unit 1

Data Fundamentals

- The wonderful world of data
- Powerful projects
- Types of data
- Data quality
- Structure of data
- Analytics roadmap

Unit 2

Databases and SQL

- Data governance [Legislation and policy]
- Working with databases [Introduction to SQL]
- Database design [SQL WHERE and ORDER]
- Aggregation [SQL GROUP BY]
- Joins [SQL JOINS]
- Beyond SQL databases: NoSQL, Big data, JSON

Unit 3

Data Visualisation and Business Intelligence

- Data visualisation [PowerBI introduction]
- Dashboards [Dashboards in PowerBI]
- Statistical analysis
- Hypothesis testing
- BI projects with impact

Unit 4

Advanced Analytics using Python

- Predictive modelling
- Introduction to coding
- Machine learning
- Decision trees
- Linear regression
- Logistic regression
- ETS Time Series forecasting
- Forecasting
- Clustering

Unit 5

Data Analytics Projects

- Data analytics life cycle
- Building a business case [finding an EPA project and some data]
- Stakeholder requirements
- Planning a project
- Data architecture
- Applying legislation and policies
- Writing and presenting a project proposal
- Building-in stakeholder feedback
- Communicating and reporting results

Unit 6

Data Pathways

- Data security, protection and privacy
- Ethics in the storage, processing, sharing and use of data
- Breaking into data science [advanced models, data mining, MLOps, Kaggle, Ensemble Models, Feature Extraction, Gradient boosting]
- Data on cloud infrastructure
- Introduction to AI, Deep Learning and Neural Networks
- Data Engineering primer
- Data Architecture [clouds, distributed architecture, containers]