# Data Academy Syllabus

TECH TALENT ACADEMY

The data program focuses on data science's fundamental areas, including data engineering, data analytics, algorithms, databases and machine learning techniques.

The aim is to equip all learners with a blend of technical and personal skills to launch their career, and to ensure they emerge with a well-rounded individual skillset. The technical part of the curriculum is significantly hands-on and includes practical tasks and projects to consolidate the learning in a real-life environment.

In addition to technical skills, we teach soft skills to prepare our learners to apply and succeed in the workplace by training them to be critical thinkers, to develop various projects, to develop collaborative team dynamics, and to build communication skills. All teaching is delivered in a virtual led environment for increased versatility.

- **Python Fundamentals**
  Learners will tackle the fundamentals of Python, building simple and complex scripts and developing applications. These involve understanding the three pillars of programming, including sequence, selection and iteration programming techniques. We give insight into clean coding techniques and the advanced features of using procedures, functions, reading, and writing to external files.

- **Data Science with Python: Introduction to NumPy and Pandas**
  The learners apply vital data science skills using two industry-standard libraries: NumPy and Pandas. The students will learn how to load data and manipulate it to investigate the data, in order to generate meaningful insights.

- **Data Science with Python: Introduction to Algorithms, Machine and Deep Learning**
  Teaching is focused on the algorithms that are used within data science. The learners will be applying these algorithms using Sci-Kit Learn for machine learning and TensorFlow. They will create a clustering and regression model, and a fully connected neural network to investigate classification problems.

- **Introduction to Modelling and Data Visualisation**
  The learners model data and create meaningful data visualisations and data dashboards, using various Python libraries and proprietary software.

- **Big Data & Databases**
  Learners dig deep into what big data is and how it affects our everyday lives. The learners gain fundamental skills in creating relational databases using industry-standard SQL.

- **Data Science with R Studio**
  Learners consolidate the fundamentals of programming and learn how to transfer their skills to conduct statistical analysis on data using the powerful R language and its many libraries, such as ggplot2, within the R Studio environment. The learners will also explore where to go next, looking into Microsoft Azure, AWS and cloud computing.

Each module above will have either a practical project, i.e., write code with the following functionality, or a small task to demonstrate skills learnt. Either of these approaches will provide the delegate with the opportunity to demonstrate their understanding of the topic.