

## DATA SCIENCE PRACTITIONER OCCUPATIONAL CERTIFICATE: Occupational Certificate: Data Science Practitioner

DURATION	LEVEL	TECHNOLOGY	DELIVERY METHOD	TRAINING CREDITS
1850 Notional Hours	NQF 5	QCTO	ILT	N/A

### INTRODUCTION

Data science is a multidisciplinary field that employs scientific methodologies, processes, algorithms, and systems to derive knowledge and insights from both structured and unstructured data. It is closely associated with data mining, machine learning, and big data. Professionals in data science are responsible for creating strategies for data analysis, data preparation, data exploration, analysis, visualization, model building using programming languages, and integrating models into applications. This qualification encompasses data collection and transformation, addressing business challenges through data analysis to reveal patterns and trends, and the creation and presentation of descriptive analytic reports utilizing programming techniques, mathematics, and statistics.

### AUDIENCE PROFILE

Data Science Practitioners are responsible for managing data, ensuring it is organized and accessible for Data Scientists. They facilitate the data lifecycle through activities such as data collection, processing, analysis, and reporting, addressing fundamental business challenges. They create well-structured datasets that are comprehensive and relevant to the issues outlined in the project's scope, preparing them for storage and further use.

### PREREQUISITES

Previous Technical NQF 4 courses

### MODULES

**Module 1:**  
251102-001-00-KM-01  
Introduction to Data Science and Data Analysis  
Level 4  
6 Credits.

**Module 2:**  
251102-001-00-KM-02  
Logical Thinking and Basic Calculations: Refresher  
Level 4  
4 Credits.

**Module 3:**  
251102-001-00-KM-03  
Computers and Computing Systems  
Level 4  
4 Credits.

**Module 4:**  
**251102-001-00-KM-04**  
**Computing Theory**  
Level 4  
2 Credits.

**Module 5:**  
251102-001-00-KM-05  
Basic Statistics for Data Analytics  
Level 4  
10 Credits.

**Module 6:**  
251102-001-00-KM-06  
Statistics Essentials for Data Analytics  
Level 5  
4 Credits.

**Module 7:**  
251102-001-00-KM-07  
Data Science and Data Analysis  
Level 5  
12 Credits.

**Module 8:**  
251102-001-00-KM-08  
Data Analysis and Visualisation  
Level 5  
16 Credits.

**Module 9:**  
251102-001-00-KM-09  
Introduction to Governance, Legislation, and Ethics  
Level 4  
3 Credits.

**Module 10:**  
251102-001-00-KM-10  
Fundamentals of Design Thinking and Innovation  
Level 4  
4 Credits.

**Module 11:**  
251102-001-00-KM-11  
4IR and Future Skills  
Level 4  
1 Credits.

## Practical Modules

**Module 1:**  
251102-001-00-PM-01  
Apply Logical Thinking and Maths Refresher  
Level 4  
3 Credits

**Module 2:**  
251102-001-00-PM-02  
Apply Code to Use a Software Toolkit/Platform in the Field of Study or Employment  
Level 4  
4 Credits

**Module 3:**  
251102-001-00-PM-03  
Use Spreadsheets to Analyse and Visualise Data  
Level 4  
3 Credits

**Module 4:**  
251102-001-00-PM-04  
Use a Visual Analytics

Platform to Analyse and Visualise Data  
Level 5

**Module 5:**  
251102-001-00-PM-05  
Apply Statistical Tools and Techniques  
Level 5  
4 Credits

**Module 6:**  
251102-001-00-PM-06  
Collect and Pre-Process Large Amounts of Unruly Data  
Level 5  
12 Credits

**Module 7:**  
251102-001-00-PM-07  
Apply Data Analysis Techniques to Uncover Patterns and Trends in Datasets,  
Level 5  
12 Credits

**Module 8:**  
251102-001-00-PM-08  
Prepare and Present Descriptive Analytic Reports for Decision Making  
Level 5  
12 Credits

**Module 9:**  
251102-001-00-PM-09  
Participate in a Design Thinking for Innovation Workshop  
Level 5  
3 Credits

**Module 10:**  
251102-001-00-PM-10  
Collaborate Ethically and Effectively in the Workplace  
Level 5  
2 Credits.

## EXIT-LEVEL OUTCOMES

- Outcome 1:**  
Collect large amounts of structured and unstructured data from primary and secondary sources and extract and transform them into a usable format.
- Outcome 2:**  
Apply data analysis techniques to uncover patterns and trends in datasets (resultant sets of data that can be viewed as tables or as a "spreadsheet of data") to solve business-related problems.
- Outcome 3:**  
Prepare and present descriptive analytics reports on patterns and trends using computer programming languages and explain those patterns and trends through e.g., visualization and storytelling etc., using data visualisation tools.

## Work Experience

**Module 1:**  
251102-001-00-WM-01  
Data Collection and Pre-processing Processes  
Level 5  
16 Credits.

**Module 2:**  
251102-001-00-WM-02  
Statistical Data Analysis Processes  
Level 5  
16 Credits.

**Module 3:**  
251102-001-00-WM-03  
Data visualisation and Reporting Processes  
level 5  
16 Credits.

**Module 4:**  
251102-001-00-WM-04  
Capstone Proj4ect Using an Appropriate Toolkit  
Level 5  
12 Credits.