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IT LEARNERSHIPS

DATA SCIENCE PRACTITIONER

QUALIFICATION 118708
LEARNERSHIP Q-NUMBER: 32Q320170251855

Designed to support your Workplace Skills Plan and build job-ready IT capability

Build data capability that turns insight into action

Data is a critical business asset, but only when it is organised, analysed, and used effectively. Organisations need people who can turn raw data into meaningful insight.

This Data Science Practitioner learnership builds practical capability to collect, prepare, and analyse data, and communicate insights that support better decisions.

Whether your learners are starting out, moving into tech, or building a future-ready career, this qualification opens the door to roles like Data Analyst, Data Technician or Junior Data Practitioner.

QCTO

On successful completion of this qualification, learners are awarded: **Occupational Certificate: Data Science Practitioner (SAQA ID: 118708)**

We work closely with you to understand your objectives, guide you through the requirements, and support the implementation of qualifications that deliver real impact.

NQF LEVEL **5**

CREDITS **185**

WHO SHOULD ENROL?

- Organisations building data and analytics capability
- Teams working with operational or business data
- Employers looking to strengthen insight-driven decision-making
- Individuals starting a career in data, analytics or IT
- School leavers interested in data and technology
- Professionals looking to move into data-related roles

WHAT MAKES THIS COURSE DIFFERENT?

This programme is designed to move you from learning to doing

- Build strong foundations in data collection, analysis and visualisation
- Apply your skills using real datasets and practical tools
- Gain experience communicating insights that support business decisions

WHAT IS THE ENTRY CRITERIA?

- Grade 12

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DATA SCIENCE PRACTITIONER

QUALIFICATION

Data Science Practitioners take custody of data and make the data available in a structured form for the Data Scientist to use. They support the data life cycle by collecting, transforming, and analysing data, and communicating results in order to solve elementary business problems. They transform data into robust, comprehensive data sets, aligned with the problem identified in the statement of work and ready for storage.

Skills your teams will build

These skill level outcomes show what learners will be able to do:

- Collect large amounts of structured and unstructured data from primary and secondary sources and extract and transform them into a usable format
- 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
- Prepare and present descriptive analytics reports on patterns and trends using computer programming languages and explain those patterns and trends through e.g., visualisation, storytelling etc. using data visualisation tools

Recognised, quality-assured qualification

Learners undergo internal assessment across the knowledge, practical, and workplace modules, all of which are formally assessed and moderated, in line with QCTO requirements. Successful completion of all components ensures that learners are EISA-ready for the External Integrated Summative Assessment.

To obtain the qualification, learners must pass the External Integrated Summative Assessment (EISA), conducted at an Accredited Assessment centre under the oversight of an Assessment Quality Partner (AQP). The EISA evaluates learners' competence against the qualification's Exit Level Outcomes through integrated written, practical, and/or work-based assessment methods, in line with approved external assessment specifications.

Let's partner for impact!

Our approach combines a deep understanding of your objectives with expert guidance on QCTO programmes, ensuring smooth implementation and meaningful impact in the workplace.

We'll help you get clear on the holistic implementation process

From first conversation to final assessment, you'll be supported by a team that understands how to make QCTO programmes work in practice.

Delivered your way

- Classroom | Johannesburg
- Virtual | Instructor-led
- On-site | Nationwide

Contact us to start your journey!

impactful@lrmg.co.za
impactful.co.za

An environment that enables your learning journey

To ensure a successful learning journey, learners are supported by the right tools, systems, and experienced mentors within a structured environment that aligns with workplace standards. Everything is designed to help learners learn, practice, and perform with confidence.

Physical Requirements

- Tools, equipment, systems, e.g.: company systems, documents, data, relevant meetings, teams and supervisors, design studio, etc.
- Key processes, e.g.: RPA design, testing and deployment processes project on the go or completed

Human Resource Requirements

- Maximum mentor/learner ratio of 1:3 in the ideal situation.
- Supervisor/mentor: 2 years' software development experience

Legal Requirements

- Legal (product) licences to use software.
- OHS compliance certificate.
- Ethical clearance (where necessary)

DATA SCIENCE PRACTITIONER

QUALIFICATION

This detailed overview outlines how the qualification is structured to develop capability progressively – from foundational knowledge, through applied practical skills, to integrated workplace experience. Each module is aligned to the credit requirements of the nationally recognised qualification

KNOWLEDGE MODULES (66 CREDITS)

ID	Name	Level	Credits
251102-001-00-01 KM-	**Introduction to Data Science and Data Analysis**	**4**	**6**
The main focus of the learning in this knowledge module is to build an understanding of the concepts of data analytics and the application of data science and analysis in the economic sectors The learning will enable learners to demonstrate an understanding of:			
KM-01-KT01	What is data science?		
KM-01-KT02	Why data science?		
KM-01-KT03	Sources of data		
KM-01-KT04	Ensuring access to accurate data		
KM-01-KT05	Applications of data science		
KM-01-KT06	Attributes of a Data Science Practitioner		
KM-01-KT07	Big Data		

ID	Name	Level	Credits
251102-001-00-KM-02	**Logical Thinking and Basic Calculations: Refresher**	**4**	**4**
The main focus of the learning in this knowledge module is to acquire mathematical thinking theory for solving problems and acquire basic maths knowledge for use during data analytics The learning will enable learners to demonstrate an understanding of:			
KM-02-KT01	Mathematical thinking skills for problem solving		
KM-02-KT02	Conversion between decimal and binary systems		
KM-02-KT03	Expressing size and magnitude		
KM-02-KT04	Error in calculations		
KM-02-KT05	Cartesian coordinate system		
KM-02-KT06	Pythagorean theorem for finding the distance between two points		
KM-02-KT07	Operator precedence		
KM-02-KT08	Integer division		
KM-02-KT09	Modulus		
KM-02-KT10	Increments		
KM-02-KT11	Mixing types		

ID	Name	Level	Credits
251102-001-00-KM-03	Computers and Computing Systems	4	4
The main focus of the learning in this knowledge module is to build an understanding of what computers can do and the processes that make them function in terms of the four major parts: input, output, CPU (central processing unit) and memory. It gives an overview of networks and connectivity as well as security issues pertaining to IT ecosystems The learning will enable learners to demonstrate an understanding of:			
KM-03-KT01	Problem solving skills for IT Professionals		
KM-03-KT02	Input and output devices		
KM-03-KT03	Installing printers		
KM-03-KT04	Mobile devices, multimedia, and laptop computers		
KM-03-KT05	Preventative maintenance		
KM-03-KT06	Troubleshooting procedures		
KM-03-KT07	Introduction to operating systems		
KM-03-KT08	Managing files		
KM-03-KT09	Applications utility, troubleshooting and optimization		
KM-03-KT10	Introduction to networking and wireless connections		
KM-03-KT11	Introduction to recovery		
KM-03-KT12	Cloud computing		
KM-03-KT13	Security fundamentals		
KM-03-KT14	Programming and development		

ID	Name	Level	Credits
251102-001-00-KM-04	Computing Theory	4	2
The main focus of the learning in this knowledge module is to build an understanding of programming as creating a set of instructions to a computer on how to perform a task using coding and programming languages The learning will enable learners to demonstrate an understanding of:			
KM-04-KT01	Introduction to programming languages		
KM-04-KT02	Programming basics		
KM-04-KT03	Software applications		

ID	Name	Level	Credits
251102-001-00-KM-05	Basic Statistics for Data Analytics	4	10
The main focus of the learning in this knowledge module is to build an understanding of basic statistics as it pertains to and is applied in data analysis The learning will enable learners to demonstrate an understanding of:			
KM-05-KT01	Mean		
KM-05-KT02	Standard deviation		
KM-05-KT03	Regression		
KM-05-KT04	Sample size determination		

ID	Name	Level	Credits
251102-001-00-KM-06	**Statistics Essentials for Data Analytics**	**5**	**4**
The main focus of the learning in this knowledge module is to build an understanding of statistics essentials as they pertain to and are applied in data analysis The learning will enable learners to demonstrate an understanding of:			
KM-06-KT01	Sample or population data		
KM-06-KT02	Fundamentals of descriptive statistics		
KM-06-KT03	Measures		
KM-06-KT04	Distributions		
KM-06-KT05	Estimators and Estimates		
KM-06-KT06	Confidence intervals advanced topics		
KM-06-KT07	Hypothesis testing		
KM-06-KT08	Fundamentals of regression analysis		
KM-06-KT09	Subtleties of regression analysis		
KM-06-KT10	Categorical data		
KM-06-KT11	Classification		
KM-06-KT12	Clustering		
KM-06-KT13	Association		

ID	Name	Level	Credits
251102-001-00-KM-07	**Data Science and Data Analysis**	**5**	**12**
The main focus of the learning in this knowledge module is to build an understanding of concepts, principles and governance within data analytics The learning will enable learners to demonstrate an understanding of:			
KM-07-KT01	Data science		
KM-07-KT02	Approaches in data analysis		
KM-07-KT03	Data quality		
KM-07-KT04	Best practices for data governance		
KM-07-KT05	Legislation (e.g. POPI Act)		

ID	Name	Level	Credits
251102-001-00-KM-08	Data Analysis and Visualisation	5	16
The main focus of the learning in this knowledge module is to build an understanding of data analysis and visualisation procedures The learning will enable learners to demonstrate an understanding of:			
KM-08-KT01	Introduction to Business Analytics		
KM-08-KT02	Introduction to business processes, analysis and process modelling		
KM-08-KT03	Introduction to Data Science Programs		
KM-08-KT04	Data Analytics		
KM-08-KT05	Wrangling		
KM-08-KT06	Data Structures		
KM-08-KT07	Data Visualization		
KM-08-KT08	High throughput		
KM-08-KT09	High-dimensional data analysis		
KM-08-KT10	Basic machine learning and artificial intelligence concepts		

ID	Name	Level	Credits
251102-001-00-KM-09	Introduction to Governance, Legislation and Ethics	4	3
The main focus of the learning in this knowledge module is to acquire general knowledge and understanding of the various legislations governing the workplace and their implications for the employer and employees. The learning of this module will also enable the learner to acquire an understanding of the principles of areas of performance management, business planning concepts, costing of products and concepts of general ethical behaviour and its impact in the workplace The learning will enable learners to demonstrate an understanding of:			
KM-09-KT01	Governance		
KM-09-KT02	Legislation governing workplaces		
KM-09-KT03	Introduction to ethics and security		
KM-09-KT04	Ethics at work		
KM-09-KT05	Security		
KM-09-KT06	Performance management		
KM-09-KT07	Business planning		
KM-09-KT08	Costing of products		
KM-09-KT09	Resources		

ID	Name	Level	Credits
251102-001-00-KM-10	**Fundamentals of Design Thinking and Innovation**	**4**	**4**
The main focus of the learning in this knowledge module is to build an understanding of design thinking principles and application in the workplace The learning will enable learners to demonstrate an understanding of:			
KM-10-KT01	Introduction to design thinking		
KM-10-KT02	The human element		
KM-10-KT03	Creativity		
KM-10-KT04	Innovation		
KM-10-KT05	Design		
KM-10-KT06	Design thinking methodology		
KM-10-KT07	Application of design thinking		

ID	Name	Level	Credits
251102-001-00-KM-11	**4IR and Future Skills**	**4**	**1**
The main focus of the learning in this knowledge module is to build an understanding of the impact of 4IR on communities, individuals and businesses and important skills for future needs The learning will enable learners to demonstrate an understanding of:			
KM-11-KT01	4 IR emerging trends		
KM-11-KT02	Computing Knowledge		
KM-11-KT03	Future skills and competencies (4IR)		
KM-11-KT04	4 IR trends affecting businesses		
KM-11-KT05	Interpersonal skills		
KM-11-KT06	Intrapersonal skills		
KM-11-KT07	Communication principles and methods		
KM-11-KT08	Written business communication		
KM-11-KT09	Presentation skills		
KM-11-KT10	Teamwork in the workplace		
KM-11-KT11	Committees and meetings		
KM-11-KT11	Job descriptions and profiles		
KM-11-KT13	Customers and stakeholders		
KM-11-KT14	Customer service		

PRACTICAL SKILL MODULES (59 CREDITS)

ID	Name	Level	Credits
251102-001-00-PM-01	**Apply Logical Thinking and Maths Refresher**	**4**	**3**
The focus of the learning in this module is on providing the learner with an opportunity to acquire mathematical thinking skills for solving problems and to acquire basic maths skills for using software toolkits or platforms. Functional understanding of maths and for logical reasoning The learner will be required to:			
PM-01-PS01	Number bases and measurement units		
PM-01-PS02	Basic math		
PM-01-PS03	Operator precedence		
PM-01-PS04	Integer division		
PM-01-PS05	Functions, limits and continuity		
PM-01-PS06	Differential calculus of single variable functions		
PM-01-PS07	Modulus		
PM-01-PS08	Increments		
PM-01-PS09	Mixing types		
PM-01-PS10	Casting (timing and contextualising)		
Associated Knowledge Module: KM-02 Logical Thinking and Basic Calculations: Refresher			

ID	Name	Level	Credits
251102-001-00-PM-02	**Apply Code to use a Software Toolkit/Platform in the Field of Study or Employment**	**4**	**4**
The focus of the learning in this module is on providing the learner with an opportunity to acquire the ability to apply basic programming skills and code to use a software toolkit/platform in the field of study or employment The learner will be required to:			
PM-02-PS01	Source and compare at least three software toolkits/platforms/ languages used in your field of studies		
PM-02-PS02	Identify and contrast four (4) paradigms		
PM-02-PS03	Create a programming environment (tailored to a specific tool or platform)		
PM-02-PS04	Write code using a programming language for giving instructions for use of a software toolkit/platform		
PM-02-PS05	Select and use correct data types (tailored to a specific tool or platform)		
PM-02-PS06	Use complex types to organise data (tailored to a specific tool or platform)		
PM-02-PS07	Add API's (Application Programming Interface) to an application (tailored to a specific tool or platform)		
PM-02-PS08	Define a function (tailored to a specific tool or platform)		
PM-02-PS09	Use logical branch statements and comparison operators (tailored to a specific tool or platform)		
PM-02-PS10	Code loops (tailored to a specific tool or platform)		
PM-02-PS11	Use and apply variable scopes (tailored to a specific tool or platform)		
PM-02-PS12	Create queries to pull desired data using a structured query language (SQL) (applicable to data base) (tailored to a specific tool or platform)		
PM-02-PS13	Handle errors and troubleshooting (tailored to a specific tool or platform)		
PM-02-PS14	Identify the general steps for writing code (tailored to a specific tool or platform)		
PM-02-PS15	Execute practical exercises 1, 2 and 3 using the specified product set		
Associated Knowledge Module: KM-04 Computing Theory			

ID	Name	Level	Credits
251102-001-00-PM-03	**Use Spreadsheets to Analyse and Visualise Data**	**4**	**3**
The focus of the learning in this module is on providing the learner with an opportunity to acquire the skills to use spreadsheets to analyse and visualise data The learner will be required to:			
PM-03-PS01	Report data using spreadsheets		
PM-03-PS02	Summarise and format data using spreadsheet tables		
PM-03-PS03	Create, use and edit pivot tables and pivot charts		
PM-03-PS04	Create, use and edit dashboards		
PM-03-PS05	Create and configure hierarchies and time data		
PM-03-PS06	Apply a spreadsheet data model		
PM-03-PS07	Import data from files		
PM-03-PS08	Import data from databases		
PM-03-PS09	Import data from reports		
PM-03-PS10	Visualize data		
PM-03-PS11	Scrape data from the web using an appropriate tool		

ID	Name	Level	Credits
251102-001-00-PM-04	**Use a Visual Analytics Platform to Analyse and Visualise Data**	**5**	**4**
The focus of the learning in this module is on providing the learner with an opportunity to acquire the skills to use Business Intelligence (BI) Technologies to analyse and visualise data (BI toolsets and technologies refer to e.g. Power BI, R, Python, Tableau, Hadoop, Spark, etc.) The learner will be required to:			
PM-04-PS01	Use spreadsheet data with BI technologies		
PM-04-PS02	Self-service BI technology solutions		
PM-04-PS03	Shape and combine data		
PM-04-PS04	Model data		
PM-04-PS05	Use interactive data visualizations to represent data graphically		
PM-04-PS06	Access data		
PM-04-PS07	Use visualisation tools to present data as meaningful insights		

ID	Name	Level	Credits
251102-001-00-PM-05	**Apply Statistical Tools and Techniques**	**5**	**4**
The focus of the learning in this module is on providing the learner with an opportunity to acquire the skills to apply various methods and tools to analyse data and create meaningful insights The learner will be required to:			
PM-05-PS01	Write queries		
PM-05-PS02	Write SELECT queries		
PM-05-PS03	Query multiple tables		
PM-05-PS04	Sort and filter data		
PM-05-PS05	Use SQL server data types		
PM-05-PS06	Use data manipulation language (DML) to modify data		
PM-05-PS07	Use built-in functions		
PM-05-PS08	Group and aggregate data		
PM-05-PS09	Use subqueries		
PM-05-PS10	Use table expressions		
PM-05-PS11	Use set operators		
PM-05-PS12	Use ranking, offset and aggregate functions		
PM-05-PS13	Write queries using pivoting and grouping sets		
PM-05-PS14	Execute stored procedures		
PM-05-PS15	Program with SQL		
PM-05-PS16	Implement error handling		
PM-05-PS17	Implement transactions		

ID	Name	Level	Credits
251102-001-00-PM-06	**Collect and Pre-Process Large Amounts of Structured and Unstructured Data**	**5**	**12**
The focus of the learning in this module is on providing the learner with an opportunity to acquire the skills to collect and clean large amounts of structured and unstructured data The learner will be required to:			
PM-06-PS01	Apply the first steps of the data science life cycle		
PM-06-PS02	Work with programming languages and software packages, e.g. SAS, R, Python, etc.		
Associated Knowledge Modules: KM-05 Basic Statistics for Data Analytics KM-06 Statistics Essentials for Data Analytics			

ID	Name	Level	Credits
251102-001-00-PM-07	**Apply Data Analysis Techniques to Uncover Patterns and Trends in Datasets**	**5**	**12**
The focus of the learning in this module is on providing the learner with an opportunity to acquire the skills to conduct preliminary analysis of data The learner will be required to:			
PM-07-PS01	Apply the steps in the process for data analysis		
PM-07-PS02	Design and build a model		
PM-07-PS03	Select and apply statistical principles, methods, techniques and tools to analyse data		
PM-07-PS04	Apply statistical tools and techniques to collect, pre-process and analyse data		
Associated Knowledge Module: KM-08 Data Analysis and Visualisation			

ID	Name	Level	Credits
251102-001-00-PM-08	**Prepare and Present Descriptive Analytic Reports for Decision Making**	**5**	**12**
The focus of the learning in this module is on providing the learner with an opportunity to acquire the skills to explore and model to extract meaningful information and insights and present such insights The learner will be required to:			
PM-08-PS01	Explore data/visualise the data using a given platform		
PM-08-PS02	Model the data to extract meaningful information and insights		
PM-08-PS03	Communicate results		
Associated Knowledge Module: KM-08 Data Analysis and Visualisation			

ID	Name	Level	Credits
251102-001-00-PM-09	**Participate in a Design Thinking for Innovation Workshop**	**5**	**3**
The focus of the learning in this module is on providing the learner with an opportunity to acquire the skills to participate in a design thinking intervention, apply design thinking methodologies and look for opportunities to apply the same methodology in world-of-work and personal life The learner will be required to:			
PM-09-PS01	Collaborate with team members to apply innovative and problem-solving strategies		
PM-09-PS02	Apply design thinking process to solve a problem creatively and innovatively		
Associated Knowledge Module: KM-10 Fundamentals of Design Thinking and Innovation			

ID	Name	Level	Credits
251102-001-00-PM-10	**Collaborate Ethically and Effectively in the Workplace**	**5**	**2**
The focus of the learning in this module is on providing the learner with an opportunity to acquire the skills to function ethically and effectively in the workplace The learner will be required to:			
PM-10-PS01	Present information to an audience		
PM-10-PS02	Conduct basic research (gather and explore data and information) on 4IR skills and application opportunities in the workplace		
PM-10-PS03	Ensure compliance with the code of conduct and governance in the workplace		
PM-10-PS04	Collaborate with team members in the workplace		
PM-10-PS05	Attend and participate in meetings		
Associated Knowledge Module: KM-09 Introduction to Governance, Legislation and Ethics KM-11 4IR and Future Skills			

WORK EXPERIENCE MODULES (60 CREDITS)

ID	Name	Level	Credits
251102-001-00-WM-01	**Data collection and Pre-processing Processes**	**5**	**16**
The focus of the work experience is on providing the learner with an opportunity to: Collect, clean, wrangle and scrub large amounts of structured and unstructured data, transform them into a usable format and to assist organisations in making informed decisions The learner will be required to:			
WM-01-WE01	Attend induction program and familiarise self with company processes, procedures, tools and culture • Attend induction program and familiarise self with the culture of the company • Apply protocols and work etiquette • Attend company specific information sharing sessions (e.g. standing meetings, toolbox talks, power hours, etc.) • Familiarise self with and apply "working from anywhere" protocols • Comply with governance protocols and code of ethics of the company and ensure legal compliance by adhering to legal requirements (incl. but not limited to privacy, confidentiality, security of data, etc.) • Spend time in the various departments of the company, observe process flows and compile wire diagrams or workflow of the processes observed using suitable tools and showing the relationships and influences each of the departments have on each other • Understand management requirements and expectations from data analysis and data visualisation • Understand business intelligence and application of findings and projections from data analysis and the decisions that must be informed by it • Manage timesheets and apply self-management skills • Collaborate with team members to achieve common and individual goals		

WM-01-WE02	Shadow and observe an experienced Data Analyst undertaking the following tasks
	• Frame the problem to exactly define what is needed or expected and set well-defined goals
	• Break the problem statement down in source code, decide on platform
	• Undertake data collection from multiple sources, including primary, secondary, internal, and external sources to generate relevant data for analysis:
	  ○ Scrape data from the web using an appropriate tool
	  ○ Utilise historical data sets and planned product changes to model and forecast business trends
	  ○ Access the vendor specific platform analytics database
	  ○ Log information into the vendor specific platform business intelligence and analytics database of the organization
	  ○ Ensure data integrity
	  ○ Use DMX utilities
	• Clean, wrangle, scrub and reorganise data:
	  ○ Fix coding errors and other data-related problems
	  ○ Data clean-up (wrangling) using utilities (redundancy, errors)
	  ○ Reorganise data in a format that can be easily read by either human or machine.		

ID	Name	Level	Credits
251102-001-00-WM-01	**Data collection and Pre-processing Processes**	**5**	**16**

	• Retrieve and extract data from multiple sources into a scratch table:
	  ○ Filter out and group and summarise
	  ○ Prepare data
	  ○ Query and make sure they get the right performance of the query
	  ○ Compile excel spreadsheets and use visual basic for applications to make data visible before analysis
	• Develop a data model
	• Manage master data, including creation, updates and deletion
	• Define new data collection and analysis processes
	• Take notes on company processes, procedures and requirements for future reference		

WM-01-WE03	Conduct the following tasks under supervision
	• Frame the problem to exactly define what is needed or expected and set well-defined goals
	• Break the problem statement down into source code, decide on platform
	• Undertake data collection from multiple sources, including primary, secondary, internal and external sources to generate relevant data for analysis:
	  ○ Scrape data from the web using an appropriate tool
	  ○ Utilise historical data sets and planned product changes to model and forecast business trends
	  ○ Access the vendor specific platform analytics database
	  ○ Log information into the vendor specific platform business intelligence and analytics database of the organization
	  ○ Ensure data integrity
	  ○ Use DMX utilities
	• Clean, wrangle, scrub and reorganise data:
	  ○ Fix coding errors and other data-related problems
	  ○ Data clean-up (wrangling) using utilities (redundancy, errors)
	  ○ Reorganise data in a format that can be easily read by either human or machine
	• Retrieve and extract data from multiple sources into a scratch table:
	  ○ Filter out, group and summarise
	  ○ Prepare data
	  ○ Query and make sure they get the right performance of the query
	  ○ Compile spreadsheets and use VB or any applicable platform to make data visible before analysis
	• Develop a data model
	• Manage master data, including creation, updates, and deletion
	• Defining new data collection and analysis processes
	• Obtain sign-off on accomplished tasks		

ID	Name	Level	Credits
251102-001-00-WM-02	**Statistical Data Analysis Processes**	**5**	**16**
The focus of the work experience is on providing the learner with an opportunity to: Use analytical and logical reasoning to gain information from and find meaning in data so that the derived knowledge can be used to make informed decisions The learner will be required to:			
WM-02-WE01	Shadow and observe an experienced Data Analyst undertaking the following tasks • Query data • Apply a combination of analytical skills, problem-solving skills, logical reasoning and communication skills to define tendencies in complex data sets and relay them to their superiors • Apply statistical principles, methods, techniques and tools to analyse data • Analyse and interpret collected data using statistical tools and computer software etc. • Using statistical tools to interpret data sets, paying particular attention to trends and patterns that could be valuable for diagnostic and predictive analytics efforts • Code and re-code data contained within various databases to identify patterns • Find meaning in data so that the derived knowledge can be used to make informed decisions • Interpret the raw data and identify any patterns in it to provide clarity to the non-technical audience		
WM-02-WE02	Conduct the following tasks under supervision • Query data • Apply a combination of analytical skills, problem-solving skills, logical reasoning and communication skills to define tendencies in complex data sets and relay them to their superiors • Apply statistical principles, methods, techniques and tools to analyse data • Analyse and interpret collected data using statistical tools and computer software etc. • Use statistical tools to interpret data sets, paying particular attention to trends and patterns that could be valuable for diagnostic and predictive analytics efforts • Code and re-code data contained within various databases to identify patterns • Find meaning in data so that the derived knowledge can be used to make informed decisions • Interpret the raw data and identify any patterns in it to provide clarity to the non-technical audience		

ID	Name	Level	Credits
251102-001-00-WM-03	**Data Visualisation and Reporting Processes**	**5**	**16**
The focus of the work experience is on providing the learner with an opportunity to: Prepare and present descriptive analytic reports on patterns and trends using computer programming languages, linear maths and statistics and explaining those patterns and trends through, e.g. visualisation, storytelling, and the like The learner will be required to:			
WM-03-WE01	Shadow and observe an experienced Data Analyst undertaking the following tasks • Create visualizations, including dashboards, flowcharts, and graphs to relay business concepts through visuals to colleagues and other relevant stakeholders • Test the system to ensure it provides accurate results or performs the required tasks accurately • Ensure that the visual elements accurately represent the results of your data analysis • Ensure it answers the questions or explains solutions to the problems defined at the start of the data analysis life cycle • Use the results of your analysis to perform predictive analysis • Create insights for the business and use storytelling and other techniques to present data • Identifying new process improvement opportunities		
WM-03-WE02	Conduct the following tasks under supervision • Create visualizations, including dashboards, flowcharts, and graphs to relay business concepts through visuals to colleagues and other relevant stakeholders • Test the system to ensure it provides accurate results or performs the required tasks accurately • Ensure that the visual elements accurately represent the results of your data analysis • Ensure it answers the questions or explains solutions to the problems defined at the start of the data analysis life cycle • Use the results of your analysis to perform predictive analysis • Create insights for the business and use storytelling and other techniques to present data • Identifying new process improvement opportunities		

ID	Name	Level	Credits
251102-001-00-WM-04	**Capstone Project using an Appropriate Toolkit**	**5**	**12**

The focus of the work experience is on providing the learner with an opportunity to:

Provide for the: retrieval, analysis, simplification, and representation of complex data sets and examining of company data in order to make conclusions about them that interested parties can leverage to shape the future of the business

The learner will be required to:

WM-04-WE01	Mine and analyse datasets, draw valid inferences and present them successfully to management using a reporting tool. Execute the following activities and present a step-by-step report with examples and motivations • Utilize historical data sets and planned product changes to model and forecast business trends • Track and report on department initiatives and status reports • Log information into the vendor specific platform business intelligence and analytics database of the organization • Analyse the firm's operations for trends, volume, demographics and operator metrics to support decisions • Conduct research on specific complaints, the individuals submitting those complaints and other relevant information related to individual queries or systemic issues • Update and manage information in a web-based case management system • Act on cases and provide case summaries for referral to relevant unit for follow-up review and action • Utilise the vendor specific platform analytics database to carry out statistical analysis and ad hoc reporting as required • Provide support with technical writing and editing as required • Develop analytics to identify trend lines across several data sources within the organization • Examine and evaluate existing business practices and systems and proffer suggestions aimed at creating efficiency and streamlining operations, while maintaining or increasing compliance rates • Apply predictive analysis and tools to forecast and employ business analytics (including an enhanced ability to quantify and qualify data) • Undertake operational research to identify and recommend optimal/near-optimal solutions to complex challenges • Produce and track key performance indicators • Develop and support reporting processes • Monitor and audit data quality • Liaise with internal and external clients to fully understand data content • Gather, understand and document detailed business requirements using appropriate tools and techniques • Manipulate, analyse and interpret complex data sets relating to the employer's business • Prepare reports for internal and external audiences using business analytics reporting tools • Provide sector and competitor benchmarking