



Design Thinking Practitioner

Course Information

Qualification Information

Occupational Qualification: Design Thinking Practitioner

Level	SAQA ID	Credits
NQF 4	118705	100

Entry Requirements:

- NQF Level 3

Occupational Purpose

Coaches teams to apply design thinking approach and methodologies to understand and address complex challenges to create innovative solutions for problem solving and addressing needs. They immerse themselves in the environment and context of the problem or need and approach it from multiple perspectives and collaboratively apply analysis and synthesis of data from multiple sources in a coherent way and in a manner that is relevant to solution

Occupational Tasks:

- Lead teams to Conduct Applied Ethnographic Research and immerse self in the environment and context to augment engagement and empathising with stakeholders and problem analysis (NQF Level 4)
- Be a conduit for, and lead teams to understand problems and achieve the creation of innovative solutions using design thinking methodologies (NQF Level 4)
- Apply the design thinking process and methodology to stimulate creativity and innovation for the design and creation of innovative solutions to solve a problem (NQF Level 4)

Assessments

- Formative assessment activities during the course of each module.
- Summative assessments at the end of each module
- An External Integrated Summative Assessment (EISA) at the end of the qualification.

NB: Access to the EISA is dependent on the successful of all qualification deliverables and formative and summative assessment at IQ.

Knowledge, Practical and Workplace Modules comprise the following competencies.

Knowledge Experience Module	Level	Credits
Human Centred Innovation	4	4
Design Thinking Fundamentals	4	4
Collaboration	4	4
Fundamentals of Positive Psychology for Design Thinking	4	4
Research to Inform Design Thinking Processes	4	4
Benefits of Design Thinking	4	2
Innovation Leadership for Design Thinking	4	4
Coaching Workshops for Design Thinking	4	8
Introduction to Project Management for Design Thinking	5	4
Introduction to Design Thinking Governance, Legislation and Ethics (starting own business)	4	2
4IR and Future Skills	4	4

Beginner, Intermediate and Advanced Computer Technology and Utilisation,	3	2
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Practical Module	Level	Credits
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Conduct Applied Ethnographic Research	4	8
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Lead Group Interaction for Innovative Solutions	4	24
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Apply Design Thinking for Innovation Principles and Methodologies	4	24
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Beginner, Intermediate and Advanced Computer Technology and Utilisation	3	2
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Apply Ethics and Effectiveness in the Workplace	4	4
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Workplace Modules	Level	Credits
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Applied Ethnographic Research	4	4
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Design Thinking Innovation Coaching	4	24
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Data visualisation and Reporting Processes	4	24
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Knowledge Module 01

Introduction to human centred innovation	4	10%
Innovation cycle	4	10%
Fundamentals of innovation	4	10%
Enhancing creativity and innovation	4	15%
Cognition in creativity	4	10%
Convergent and divergent thinking	4	10%
Ideation brainstorming tools and techniques	4	25%
National and international legislation (copyright and patents)	4	5%
Application of design thinking	4	5%

Knowledge Module 02

Introduction to Design Thinking	4	5%
Attributes of design thinking	4	15%
Principles of design thinking	4	5%
Design thinking process	4	15%
Key design thinking skills and techniques	4	15%
Observe and notice	4	5%
Frame and reframe	4	5%

Solution Finding (Imagine and design	4	5%
Make and experiment	4	5%
Design objectives	4	5%
Open-mindedness	4	5%
Multiple intelligences	4	5%
Emotional intelligence (EQ)	4	10%

Knowledge Module 03

Introduction to collaboration	4	15%
Different kinds of collaboration	4	10%
Collaborative behaviours	4	10%
Communicating ideas and framing feedback	4	20%
Group dynamics for design thinking (For Lead)	4	40%
Design thinking as a personal development tool	4	5%

Knowledge Module 04

Positive psychology	4	30%
Introduction to the PERMA Model	4	20%
Elements of positive psychology	4	50%

Research principles and methodology	4	10%
Applied Ethnographic Research	4	10%
Qualitative research	4	10%
Quantitative research	4	10%
Analysing, synthesising and sense-making	4	5%
Research instruments	4	20%
Collecting, recording and storing data	4	10%
Report-writing principles and methods	4	5%
Presenting findings and recommendations using suitable visual and verbal tools and techniques	4	20%
Introduction to networking and wireless connections	4	10%
Introduction to recovery	4	5%
Cloud computing	4	10%
Security fundamentals	4	10%
Programming and development	4	5%

Knowledge Module 04

Introduction to programming languages	4	30%
Programming basics	4	40%
Software applications	4	30%

Mean	4	25%
Standard deviation	4	25%
Regression	4	25%
Sample size determination	4	25%

Knowledge Module 06

Sample or population data	5	2%
Fundamentals of descriptive statistics	5	7%
Measures	5	7%
Distributions	5	7%
Estimators and Estimates	5	7%
Confidence intervals advanced topics	5	3%
Hypothesis testing	5	15%
Fundamentals of regression analysis	5	13%
Subtleties of regression analysis	5	13%
Categorical data	5	5%
Classification	5	10%
Clustering	5	4%
Association	5	7%

Data science	5	15%
Approaches in data analysis	5	25%
Data quality	5	10%
Best practices for data governance	5	10%
Legislation (e.g. POPI Act)	5	40%

Knowledge Module 08

Introduction to Business Analytics	5	5%
Introduction to business processes, analysis and process modelling	5	20%
Introduction to Data Science Programs	5	5%
Data Analytics	5	15%
Wrangling	5	10%
Data Structures	5	5%
Data Visualization	5	5%
High-throughput	5	15%
High-dimensional data analysis	5	10%
Basic machine learning and artificial intelligence concepts	5	10%

Governance	4	20%
Legislation governing workplaces	4	15%
Introduction to ethics and security	4	5%
Ethics at work	4	14%
Security	4	15%
Performance management	4	10%
Business planning	4	7%
Costing of products	4	7%
Resources	4	7%

Knowledge Module 10

Introduction to design thinking	4	15%
The human element	4	10%
Creativity	4	20%
Innovation	4	20%
Design	4	10%
Design thinking methodology	4	10%
Application of design thinking	4	15%

Knowledge Module 11

Knowledge Modules Breakdown

4 IR emerging trends	4	10%
Computing Knowledge	4	7%
Future skills and competencies (4IR)	4	10%
4 IR trends affecting businesses	4	10%
Interpersonal skills	4	5%
Intrapersonal skills	4	5%
Communication principles and methods	4	5%
Written business communication	4	7%
Presentation skills	4	7%
Teamwork in the workplace	4	10%
Committees and meetings	4	5%
Job descriptions and profiles	4	5%
Customers and stakeholders	4	7%
Customer service	4	7%

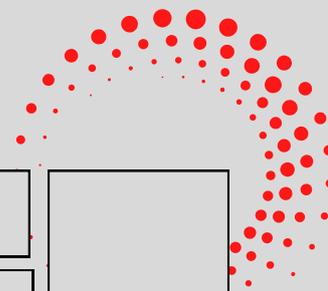
Practical Module 01

Practical Modules Breakdown

Number bases and measurement units	4	Credits 3
Basic math	4	
Operator precedence	4	
Integer division	4	
Functions, limits and continuity	4	
Differential calculus of single variable functions	4	
Modulus	4	
Increments	4	
Mixing types	4	
Casting (timing and contextualising)	4	

Practical Module 02

Source and compare at least three software toolkits/platforms/ languages used in your field of studies	4	Credits 4
Identify and contrast four (4) paradigms	4	
Create a programming environment (tailored to a specific tool or platform)	4	
Write code using a programming language for giving instructions for use of a software toolkit/platform	4	
Select and use correct data types (tailored to a specific tool or platform)	4	
Use complex types to organise data (tailored to a specific tool or platform)	4	
Add API's (Application Programming Interface) to an application (tailored to a specific tool or platform)	4	
Define a function (tailored to a specific tool or platform)	4	

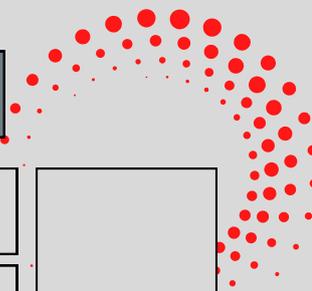


Use logical branch statements and comparison operators (tailored to a specific tool or platform)	4	Credits 3
Code loops (tailored to a specific tool or platform)	4	
Use and apply variable scopes (tailored to a specific tool or platform)	4	
Create queries to pull desired data using a structured query language (SQL) (applicable to data base) (tailored to a specific tool or platform)	4	
Handle errors and troubleshooting (tailored to a specific tool or platform)	4	
Identify the general steps for writing code (tailored to a specific tool or platform)	4	
Execute practical exercises 1, 2 and 3 using the specified product set	4	

Practical Module 03

Report data using spreadsheets	4	Credits 3
Summarise and format data using spreadsheet tables	4	
Create, use and edit pivot tables and pivot charts	4	
Create, use and edit dashboards	4	
Create and configure hierarchies and time data	4	
Apply a spreadsheet data model	4	
Import data from files	4	
Import data from databases	4	
Import data from reports	4	
Visualize data	4	
Scrape data from the web using an appropriate too	4	

Practical Module 04



Use spreadsheet data with BI technologies	5	Credits 4
Self-service BI technology solutions	5	
Shape and combine data	5	
Model data	5	
Use interactive data visualizations to represent data graphically	5	
Access data	5	
Use visualisation tools to present data as meaningful insights	5	

Practical Module 05

Write queries	5	Credits 4
Write SELECT queries	5	
Query multiple tables	5	
Sort and filter data	5	
Use SQL server data types	5	
Use data manipulation language (DML) to modify data	5	
Use built-in functions	5	
Group and aggregate data	5	
Use subqueries	5	
Use table expressions	5	

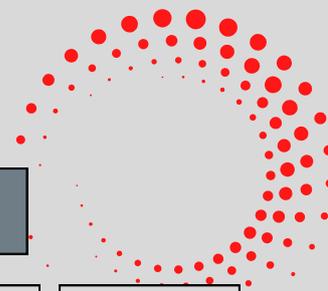
Use set operators	5	Credits 4
Use ranking, offset and aggregate functions	5	
Write queries using pivoting and grouping sets	5	
Execute stored procedures	5	
Program with SQL	5	
Implement error handling	5	
Implement transactions	5	

Practical Module 06

Apply the first steps of the data science life cycle	5	Credits 12
Work with programming languages and software packages, e.g. SAS, R, Python, etc.	5	

Practical Module 07

Apply the steps in the process for data analysis	5	Credits 12
Design and build a model	5	
Select and apply statistical principles, methods, techniques and tools to analyse data	5	
Apply statistical tools and techniques to collect, pre-process and analyse data	5	



Practical Module 08

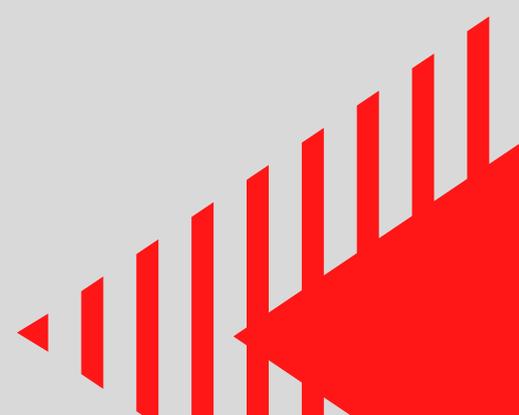
Explore data/visualise the data using a given platform	5	Credits 12
Model the data to extract meaningful information and insights	5	
Communicate results	5	

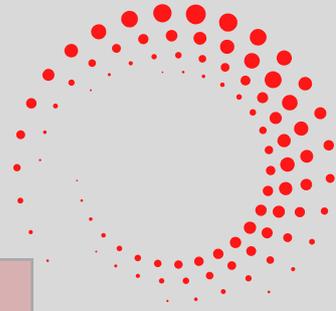
Practical Module 09

Collaborate with team members to apply innovative and problem-solving strategies	5	Credits 12
Apply design thinking process to solve a problem creatively and innovatively	5	

Practical Module 10

Present information to an audience	5	Credits 2
Conduct basic research (gather and explore data and information) on 4IR skills and application opportunities in the workplace	5	
Ensure compliance with the code of conduct and governance in the workplace	5	
Collaborate with team members in the workplace	5	
Attend and participate in meetings	5	





Workplace Modules

Attend induction program and familiarise self with company processes, procedures, tools and culture	5	Credits 16
Shadow and observe an experienced Data Analyst undertaking the following tasks	5	
Conduct the following tasks under supervision	5	

Workplace Modules

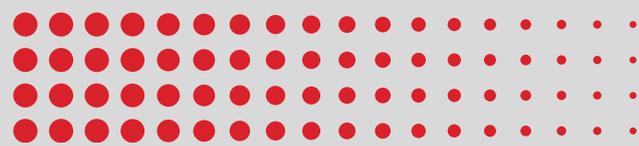
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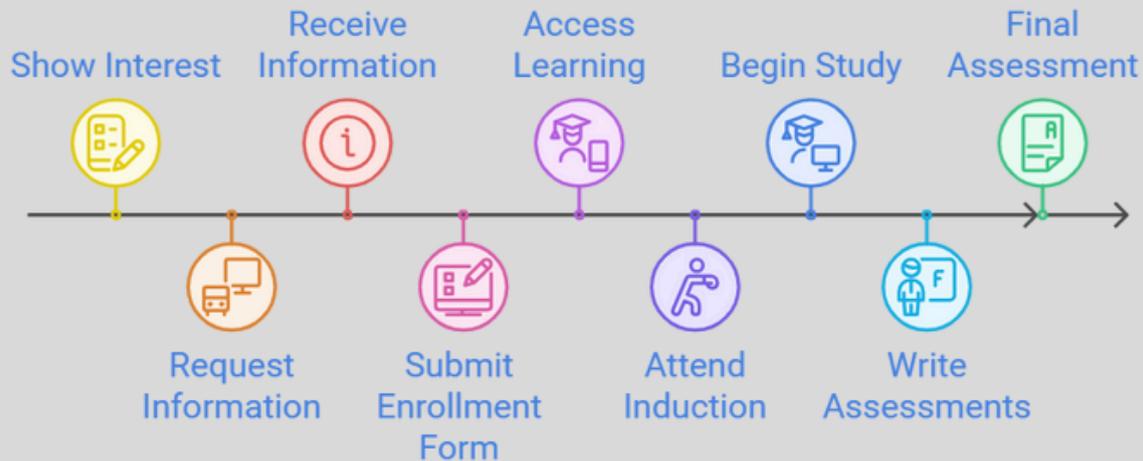
Workplace Modules

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	5	Credits 16
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Customer Journey

Enrollment and Completion Process for IQ Programmes



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- Flexible, Engaging Learning
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- Recognition of Prior Learning
- Innovative Assessments & Real-World Learning
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