

Occupational Certificate: Artificial Intelligence Software Developer

SAQA: 118792 | NQF Level: 5 | Total Credits: 209 | Duration: 1.5 year (3 Semesters)
 Accreditation Authority: Quality Council for Trades and Occupations

Step into the world of cutting-edge technology with the Occupational Certificate: Artificial Intelligence Software Developer. This qualification prepares you to design, develop and deploy AI solutions, laying the foundation for careers in AI development, machine learning and data science. Gain hands-on experience in building machine learning models neural networks and deep learning architecture.

Admission Requirements

To register for this qualification, candidates must meet one of the following criteria:

- ❖ National Certificate at NQF Level or equivalent
- ❖ Recognition of Prior Learning (RPL) is available.

Qualification Structure

The qualification consists of three Knowledge, five Practical Skills, and three Work Experience Modules, designed to take learners from foundational AI concepts to advanced AI applications combining knowledge with hands-on experience. Qualification structured as follows:

Module	Description	NQF Level	Credits
SEMESTER 1			
Knowledge Modules			
KM-01	Overview of Artificial Intelligence	4	2
KM-02	Introduction to Mathematics and Statistics	4	10
KM-03	Analytical Thinking and Problem Solving	4	3
KM-03	Data, Databases, and Data Verification	4	8
Practical Modules			
PM-01	Mathematics and Statistics for Programming	4	8
PM-02	Problem Definition, Analytical Thinking , and Decision Making	4	2
PM-03	Access and Visualise Structured Data Using Spreadsheets	4	4
PM-04	Use SQL to Communicate with a Database	5	4
Work Modules			
WM-01	AI Solution Design Interpretation and Development	5	20
SEMESTER 2			
Knowledge Modules			
KM-05	Computing Theory	4	8
KM-06	Introduction to Artificial Intelligence, Machine Learning, Deep Thinking	4	5
KM-07	Artificial Intelligence	5	12
KM-08	Machine Learning	5	16
Practical Modules			
PM-05	Build a simple AI solution using Python	5	8
PM-06	Use Python Data Scraping to Populate Database Table in SQL	5	4
PM-07	Use Machine Learning to Build and AI Solution in Python	5	6
Work Modules			
WM-02	AI Solution Performance Testing	5	20

SEMESTER 3

Knowledge Modules

KM-09	Deep Learning	5	16
KM-10	Introduction to Governance ,Legislation and Ethics	4	1
KM-11	Fundamentals of Design Thinking and Innovation	4	1
KM-12	4IR and Future Skills	4	4

Practical Modules

PM-08	Use Deep Learning to Build AI Neural Network Architecture in Python	5	10
PM-09	Use Deep Learning to Build and AI Neural Architecture in Tensor Flow	5	10
PM-10	Function Ethically and Effectively as a Member of a Multidisciplinary Team	4	3
PM-11	Participate in Design Thinking for Innovation Workshop	4	4

Work Modules

WM-03	AI Solution Deployment, Modification, and Improvement	5	20
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Career Opportunities

Students for this qualification are equipped with the essential skills needed to excel in all industries. Upon completing this qualification, Students can pursue various career opportunities, including:

- ❖ AI Software Developer
- ❖ Machine Learning Engineer
- ❖ Data Scientist
- ❖ AI Solutions Architect

Articulation Options

- ❖ Horizontal: Computer Technical (NQF Level 5)
- ❖ Vertical: Diploma in Information Technology (NQF Level 6)
- ❖ Diagonal: Advanced Certificate in Business Administration and Future Technology (NQF Level 6)