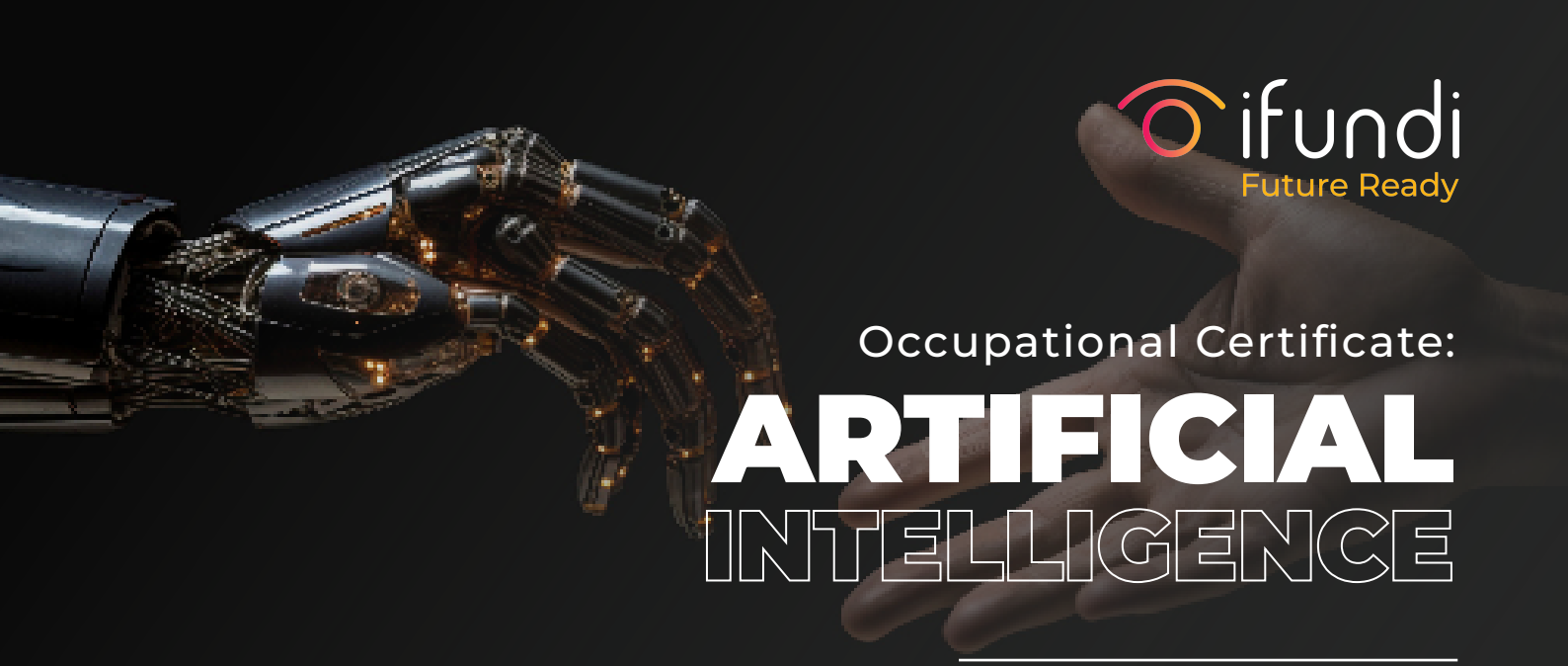




Occupational Certificate: **ARTIFICIAL INTELLIGENCE**

NQF: 5 SAQA ID 118792 CREDIT: 209

Description

The Occupational Certificate: Artificial Intelligence Software Developer prepares learners to work as AI software developers. These developers integrate AI algorithms and logic into IT projects, teaching machines to solve problems like humans.

They write, test, and deploy code, and convert machine learning application programming interfaces (APIs) for other applications. The program covers AI, machine learning, and data science fundamentals, as well as practical applications in various industries. It equips learners with the skills and knowledge needed to develop, implement, and maintain AI-driven software solutions.

Career Fields

With this qualification, successful learners could pursue a career as a:

- Artificial Intelligence Software Developer
- Software Developer
- Machine learning engineer
- Robotics engineer
- Computer vision engineer
- AI Software Developers
- Machine Learning Engineers
- Data Scientists
- AI Consultants
- Research Scientists in AI

Programme Outline

Knowledge Modules:

- Overview of Artificial Intelligence
- Introduction to Mathematics and Statistics
- Analytical Thinking and Problem Solving
- Databases and Data Visualisation
- Computing Theory
- Introduction to Artificial Intelligence, Machine Learning, Deep Learning
- Introduction to Governance, Legislation and Ethics
- Fundamentals of Design Thinking and Innovation
- 4IR and Future Skills
- Artificial Intelligence.
- Machine Learning
- Deep Learning

Practical Skill Modules:

- Mathematics and Statistics for Programming
- Problem Definition, Analytical Thinking and Decision-Making
- Access, Analyse and Visualise Structured Data Using SpreadsheetS
- Use SQL to Communicate with a Database
- Build a simple AI solution using Python
- Use Python Data Scraping to Populate Database Table in SQL
- Use Machine Learning to Build an AI solution in Python
- Use Deep Learning to Build an AI Neural Network Architecture in Python
- Use Deep Learning to Build an AI Neural Network Architecture in TensorFlow
- Function Ethically and Effectively as a Member of a Multidisciplinary Team
- Participate in a Design Thinking for Innovation Workshop

Work Experience Modules:

- Solution Design Interpretation and Development
- AI Solution Performance Testing
- AI Solution Deployment, Modification and Improvement

Type of programme

This programme is offered in blended and online format. Duration to be determined in consultation with the client aligned with business needs and logistic convenience

Admission requirements

The minimum entry requirement for this qualification is:

- Any NQF Level 4 qualification

Integrated Assessment

During the roll out of the programme formative and summative assessments will be conducted. Learners are also required to complete a Final Integrated Summative Assessment (FISA). Upon successful completion of the FISA, learners will be issued with a Statement of Results (SOR) from iFundi. This SOR is the entry requirement for undertaking the External Integrated Summative Assessment (EISA).

EISA is a single, national assessment undertaken at accredited assessment centres. It is an integral and critical component of QCTO's quality assurance system, as it ensures that the assessment of occupational qualifications, part-qualifications and trades is standardised, consistent and credible. This leads to competent learners being awarded Occupational Certificates. Qualifying for External Assessment: To qualify for an external assessment, learners must provide proof of completion of all required knowledge and practical modules by means of statements of results and a record of completed work experience.

Articulation

This qualification provides opportunities for horizontal and vertical articulation options.

Horizontal Articulation:

- Diploma in Information Technology in Software Development
- Diploma in Information Technology in Web Development
- Diploma in Information Technology Management

Vertical Articulation:

- Diploma in Information Technology

