



SAQA ID 48872

**NATIONAL
CERTIFICATE**

**Information Technology Machine Learning
NQF Level 5
120 Credits**

Introduction & Course Curriculum

Introduction

Realize the power of Machine Learning in this dynamic and competitive qualification that is aligned with some of the best Machine Learning programmes offered nationally and internationally. From foundational algorithms like linear regression and decision trees to cutting-edge techniques in the deep learning and ensemble methods, you'll gain a deep understanding of predictive modeling.

Implement real-world datasets to create intelligent systems and elevate your skills in the realm of AI-driven innovation.

Course Breakdown

- **Minimum Entry Requirements:** None
- **Language Policy:** English
- **NQF Level:** 5
 - **Credits:** 120
- **Delivery Mode:** Contact and Distance Learning
- **Duration:** 12 Months
- **SAQA ID:** #48872 (Learning Programme)

COURSE CURRICULUM

The certification comprises of a wide range of Machine Learning concepts covered across two semesters:

SEMESTER 1

- ✓ Introduction to Data Science
- ✓ Mathematics and Statistics fundamentals
- ✓ ML Programming and Tools (Python)
- ✓ Data Acquisition and Preprocessing
- ✓ Exploratory Data Analysis (EDA)

SEMESTER 2

- ✓ Machine Learning Fundamentals
- ✓ Supervised Learning Algorithms
- ✓ Unsupervised Learning Algorithms
- ✓ Bias in Data Collection and Models
- ✓ Capstone Project

Introduction & Course Curriculum

This highly competitive and innovative programme covers the following programming languages and AI/ML tools:

Python: Learn libraries such as *NumPy*, *Pandas*, *TensorFlow* and *PyTorch*.

R: Particularly useful for statistical analysis and data visualization.

Pandas: A versatile library for data manipulation and analysis.

Matplotlib and seaborn: Create static, interactive, and quality visualizations.

Plotly: Offers interactive visualizations and dashboards.