



**CAREERS**  
BUSINESS INSTITUTE

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# Occupational Certificate: AI Software Developer (NQF 5)



Careers Business Institute has been empowering the community since its inception in 1991. We provide a comprehensive range of Management, Office Administration, Financial and IT courses that have been designed to help you launch your successful career. The Careers Training Group has campuses in Umhlanga Ridge and at the Chatsworth Centre in Kwazulu Natal

**Microsoft**  
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**QCTO**  
Quality Council for Trades & Occupations

## Occupational Certificate: Artificial Intelligence Software Developer (NQF 5)

### What is an Artificial Intelligence (AI) Software Developer?

As a specialist software engineer, the AI Software developer focuses on the creation and deployment of AI systems and solutions. They may work on language processing algorithms, computer vision or even robotics.

Their tasks include collecting and pre-processing data, while ensuring data quality: an imperative for the success of an AI project. Developers have to collect, clean and pre-process the data so that it is representative and suited to the target objective. Depending on the nature of the problem, this expert chooses the most appropriate type of AI model and configures it.



The next step is to train the model using the training data. The developer must monitor the process carefully and adjust the parameters to optimize the model's performance. Once the model has been trained, it needs to be evaluated on test data to ensure that it is robust and can be generalized to new situations. To complete the development process, the AI model needs to be integrated into the existing infrastructure and deployed for practical use. This requires close collaboration with the operational teams.

Over time, the professional constantly refines the AI algorithms for optimum performance.

AI Developers also need to keep abreast of developments in AI technologies and methods to ensure that they remain up to date.

### The AI Software Developer Solution by Quality Council for Trades & Occupations (QCTO)

The QCTO is responsible for overseeing the development, implementation and maintenance of occupational qualifications within the South African National Qualifications Framework (NQF).



As an integral part of South Africa's education and training system, the QCTO is responsible for ensuring that the skills development programmes meet the required standards and are in line with South Africa's economic and social goals. By setting and maintaining high standards, the QCTO contributes to the overall improvement of skill development and workforce quality.

### Is an AI Software Developer Career for me?

Software Developer Career have the following characteristics; Adaptability, resourcefulness, and the ability to troubleshoot and problem-solve in high-pressure situations. They also have good communication and teamwork skills.

If you are any of these archetypes, you may be well suited to be an AI Software Developer.

## Occupational Certificate: Artificial Intelligence Software Developer (NQF 5)

### Occupational Certificate: Artificial Intelligence Software Developer at Careers Business Institute

The Occupational Certificate: Artificial Intelligence Software Developer (NQF 5) program equips students with the skills and knowledge to integrate cutting-edge Artificial Intelligence (AI) and Machine Learning (ML) into software solutions. AI Software Developers integrate AI algorithms and logic into IT projects, essentially teaching machines to solve problems like humans.



The program covers the essential foundations of AI, ML, and data science, along with practical applications in diverse industries. Graduates gain expertise in writing, testing, and deploying code, leveraging APIs to build innovative applications. This program equips learners to develop, implement, and maintain AI-powered software solutions that solve real-world problems and drive business success.

Careers Business Institute have been producing professional graduates for over 30 years, being Nationally & Internationally accredited has assisted our alumni in finding employment sooner!

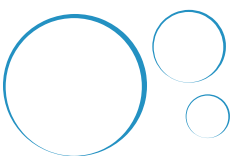
### I'm a Certified Artificial Intelligence (AI) Software Developer, What now?

Certified AI Software Developers have a wide range of Career Opportunities available. We have listed some of the more widely available careers for certified AI developers;

- AI Software Developer
- Software Developer
- Robotics Engineer
- Computer Vision Engineer
- AI Consultant



Students have the option of specialization through Information Technology (IT) programs offered at Careers Business Institute. Are you looking to become a Data Science Practitioner or a Cyber Security Specialist? Join the Occupational Certificate: Data Science Practitioner (NQF 5) or move onto the Cyber Security Expert (NQF 5) Qualification to have access to higher level IT employment opportunities. Contact a Careers Business Institute Campus to find more about these courses and their requirements!





# Occupational Certificate: Artificial Intelligence Software Developer (NQF 5)

## Course Breakdown: Knowledge Modules

- Computers and Computing Systems
- Desktop and Professional Software to Communicate and Visualize Information
- Automated Web Scraping as a Data Source & Computing Theory
- Logical Thinking and Basic Calculations
- Software Development with HTML5, Opensource Frameworks and Libraries
- UML as Standard Modelling Language for Software and Systems Development
- Obtaining, Querying, Manipulating and Presenting Data with and without MVC
- Software Development Life Cycle, Programming Languages, Algorithms and Security
- Introduction to Governance, Legislation and Ethics
- 4IR, Future Skills & Design Thinking Principles for Innovation
- Business communication and customer services

## Course Breakdown: Practical Modules

- Use Software to Communicate and Visualize Information
- Use and Manage Spreadsheets and Workbooks
- Use Desktop Applications to Analyze, Visualize and Report on Data
- Use a Visual Analytics Platform and Visualization Tools to Analyze, Visualize and report on Data
- Query, Massage Data Apply Logical Thinking and Math

- Apply Code to use a Software Toolkit/Platform in the Field of Study or Employment
- Develop Software using HTML5, Opensource Frameworks and Libraries
- Design and Build Web Applications, Desktop Graphical User Interfaces or Mobile Apps
- Use a Cloud Automation Platform to Create Solutions & Develop Software using Python
- Apply the Development Cycle when Developing Software
- Design Thinking for Innovation Workshop
- Provide support to end Users & Install computer software and hardware

## Course Breakdown: Work Experience Modules

- Technical Requirement Analysis and Refinement
- Modelling Processes & Capstone Project
- Programming for Software Solution Development

## Minimum Requirements & Details

Minimum Requirements: Grade 12 (English) or any NQF 4 Qualification

Full - Time: 2 Years (Part time also available)

SAQA ID: 118707 Credits: 220

Assessment method: External Integrated Summative Assessment (EISA).

**Includes FREE Learning Materials – No hidden costs!**

## Course Fees

Careers Business Institute has developed easy payment options for all courses. Please enquire for a full fee schedule