

PROGRAMME TITLE	NQF	SAQA ID	CREDITS
<b>Occupational Certificate: Internet-of-things Developer</b>	<b>4</b>	<b>119262</b>	<b>141</b>

## DESCRIPTION

The purpose of this qualification is to prepare a learner to function as an Internet-of-Things Developer. An Internet-of-Things Developer coordinates all components of an Internet-of-Things (IoT) solution that includes sensors, devices, actuators, networks, and other infrastructure to aggregate and disseminate data, store the data on the cloud and make it available to the data scientist for decision making, thus being responsible for the full cycle from data collection to data delivery. In the broadest sense, the term Internet of Things (IoT) encompasses everything connected through the internet, but it is increasingly being used to define objects that "talk" to each other. Simply, the Internet of Things is made up of devices, from simple sensors to smartphones and wearables - connected together". The IoT is one of the fastest growing fields in the world of digitalisation.

## CAREER FIELDS

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

- Data Analytics
- Network and Networking Structure
- Security
- Sensors and Actuators
- Embedded Programme Engineer

## PROGRAMME OUTLINE

Knowledge Modules:

- 251201-003-00-KM-01, Introduction to Internet of Things, Level 4, 4 Credits.
- 251201-003-00-KM-02, Computers, Devices and Computing Systems, Level 4, 6 Credits.
- 251201-003-00-KM-03, Building Blocks of Internet of Things, Level 4, 8 Credits.
- 251201-003-00-KM-04, Internet of Things Design and Development Considerations, Level 4, 8 Credits.
- 251201-003-00-KM-05, Data, Databases and Visualisation, Level 4, 4 Credits.
- 251201-003-00-KM-06, 4IR and Future Skills, Level 4, 4 Credits.
- 251201-003-00-KM-07, Design Thinking Principles for Innovation, Level 4, 1 Credit.
- 251201-003-00-KM-08, Basic Electronic Principles, Level 3, 4 Credits.

Total number of credits for Knowledge Modules: 39

Practical Skill Modules:

- 251201-003-00-PM-01, Apply Basic Scriptwriting for Internet of Things Toolsets, Level 4, 4 Credits.
- 251201-003-00-PM-02, Access, Analyse and Visualise Structured Data using Spreadsheets, Level 4, 4 Credits.
- 251201-003-00-PM-03, Implement the Internet of Things Solution Infrastructure and Deploy Edge Devices, Level 4, 10 Credits.
- 251201-003-00-PM-04, Provision and Manage Devices, Level 4, 10 Credits.
- 251201-003-00-PM-05, Process and Manage Data in an Internet of Things Solution, Level 4, 8 Credits.
- 251201-003-00-PM-06, Monitor, Troubleshoot and Optimise Internet of Things Solutions, Level 4, 8 Credits.
- 251201-003-00-PM-07, Implement Security Measures for Internet of Things Solutions, Level 4, 10 Credits.
- 251201-003-00-PM-08, Participate in a Design Thinking for Innovation Workshop, Level 4, 3 Credits.
- 251201-003-00-PM-09, Function Ethically and Effectively in the Workplace, Level 4, 3 Credits.

Total number of credits for Practical Skills Modules: 60

Work Experience Modules:

- 251201-003-00-WM-01, Internet of Things Solution Deployment Processes, Level 4, 15 Credits.
- 251201-003-00-WM-02, Data Collecting, Aggregating, Disseminating and Storing Processes, Level 4, 15 Credits.
- 251201-003-00-WM-03, Data Integration Systems and Processes, Level 4, 12 Credits.

Total number of credits for Work Experience Modules: 42

## TYPE OF PROGRAMME

The programme duration is 1 year on a full-time basis. Tuition is face to face and is scheduled per campus. Programmes are offered during the week on a full-time and part-time basis. Part-time tuition is scheduled as per the stipulated planner.

## ADMISSION REQUIREMENTS

The minimum entry requirement for this qualification is:

- NQF Level 3 qualification



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### LEARNER MATERIAL

Prescribed textbook lists will be provided by the academic department at your campus. Students will receive electronic versions of the study guides for this programme.

### PRICING

Enquire at the Berea College of Technology campus for a current programme pricelist.

### ADDITIONAL COSTS

Students must make provision for additional items such as textbooks, stationery, supplementary examinations, research costs and printing of study guides etc.

### EXAMINATION AUTHORITY

In terms of the Skills Development Act, 1998 (Act 97 of 1998), the QCTO accredits assessment centres to conduct the External Integrated Summative Assessment (EISA) (link to EISA information brochure PDF) for specified occupational qualifications, part-qualifications or trades recorded on the National Learners' Records Database (NLRD) but without an associated occupational qualification.

#### Integrated Assessment

Integrated Formative Assessment: The skills development provider will use the curriculum to guide them on the stipulated internal assessment criteria and weighting. They will also apply the scope of practical skills and applied knowledge as stipulated by the internal assessment criteria. This formative assessment together with work experience leads to entrance in the integrated external summative assessment.

Integrated Summative Assessment: An external integrated summative assessment, conducted through the relevant QCTO Assessment Quality Partner is required for the issuing of this qualification. The external integrated summative assessment will focus on the exit level outcomes and associated assessment criteria. The assessment will be conducted through written assessment and the evaluation of practical tasks at decentralised approved assessment sites by a panel of assessors evaluated by assessor(s) registered with the AQP within a period of 1 day.

EISA is a single, national assessment which leads to competent learners being awarded Occupational Certificates. 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. 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.

### CERTIFICATION

On successful completion of the programme, the student will receive a statement of result from Berea College of Technology and upon meeting the EISA requirements, receive an Occupational Certificate: Internet-of-things Developer from the QCTO.

### ARTICULATION

This qualification provides opportunities for horizontal and vertical articulation options.

#### Horizontal Articulation:

- Further Education and Training Certificate: Information Technology: Technical Support, NQF Level 4.
- Occupational Certificate: Cloud Administrator, NQF Level 4.

#### Vertical Articulation:

- Higher Certificate in Information Technology, NQF Level 5.
- Occupational Certificate: Artificial Intelligence Software Developer, NQF Level 5.
- Occupational Certificate: Data Science Practitioner, NQF Level 5.

### FURTHER STUDIES

Please enquire at the nearest Berea College of Technology campus for the prospectus containing post-certificate studies. Admission to further your studies at a different institution remains the prerogative of each institution and its academic council.



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**DISCLAIMER**

*The information contained in this fact sheet is accurate at the time of printing. However, factors beyond Berea College of Technology control (such as environmental, regulatory or technical changes) may cause the contents of this fact sheet or of the programme to change. In the event of any such change, Berea College of Technology will formally notify current learners. All possible measures will be taken to minimise inconvenience to learners.*

Name of Learner: I....., hereby acknowledge that I understand the information stated in this document and fully comprehend the specifics explained above pertaining to this qualification.

Signature of Learner: .....

Name of Legal Guardian: .....  
(if applicable)

Signature: .....

Name of Sales Consultant: .....

Signature: .....

Name of Head of Department: .....

Signature: .....

Date: .....

\* Please note the original signed copy should be kept on the learner record file.

