# TQUK Level 3 Certificate in AI Programming with Python (RQF)

610/0155/7

# Qualification Summary

## Key Information

**Level**
Level 3

**Qualification Type**
Vocationally-Related Qualification

**Total Credits**
24

**SSA**
06.1 ICT practitioners

**Guided Learning Hours**
197

**Sector**
IT

**Assessment Language**
English

**Operational Start Date**
01/12/2021

**Qualification Status**
Available To Learners

**Overall Grading Type**
Pass/Fail

**Internal/External**
Internal

**Recommended Minimum Age**
16

**Assessment Methods**
Portfolio of Evidence

**Permitted Delivery Types**
Blended
Classroom
Distance

# Contents

## Introduction

## Qualification Details

**Visit www.tquk.org in order to stay up to date with the latest qualification news.**

## Welcome to TQUK

TQUK is an Awarding Organisation recognised by the Office of Qualifications and Examinations Regulation (Ofqual) in England and CCEA Regulation in Northern Ireland.

TQUK offers qualifications which are regulated by Ofqual and, in some cases, by CCEA Regulation, sit on the Regulated Qualifications Framework (RQF) and are listed on the Register of Regulated Qualifications website.

Our qualifications are designed to support and encourage learners to develop their knowledge and skills. This development may result in progression into employment or career development in the workplace. Our qualifications also allow learners to progress onto further qualifications.

Please visit our website www.tquk.org for news of our latest developments.

## Qualification Specifications

Each qualification which TQUK offers is supported by a specification that includes all the information required by a centre to deliver a qualification. Information in the specification includes unit information, assessment and learning outcomes.

The aim of the Qualification Specification is to guide a centre through the process for delivering the qualification. Please read it alongside the TQUK Centre Handbook.

Details of TQUK's procedures and policies can be found on www.tquk.org. Qualification specifications can be found also be found on www.tquk.org. Please check the website regularly to ensure that you are using the most up to date version.

If you have any further questions, please contact TQUK.

## Brand Guidelines

TQUK is a professional organisation and use of its name and logo is restricted. TQUK's name may only be used by recognised centres to promote TQUK qualifications. Recognised centres may use the logo for promotional materials such as on corporate/ business letterheads, pages of a centre's website relating to TQUK qualifications, printed brochures, leaflets or exhibition stands.

When using TQUK's logo, there **must** be no changes or amendments made to it, in terms of colour, size, border and shading. The logo **must** only be used in a way that easily identifies it as TQUK's logo. Any representation of TQUK's logo **must** be done so as a representation of the true logo.

It is the responsibility of the centre to monitor the use and marketing of TQUK's logos and qualifications on their own materials as well as on those of any re-sellers or third parties that they may use. TQUK **should** be made aware of relationships with re-sellers or third parties including any additional websites that the centre will use in addition to their own website. If this information is changed TQUK **should** be notified. TQUK is required to monitor centre's websites and materials to ensure that learners are not being misled.

If a centre is no longer a TQUK recognised centre it **must** immediately discontinue the use of TQUK's logo, name and qualifications.

# Qualification Details

## The Qualification

The TQUK Level 3 Certificate in AI Programming with Python (RQF) is regulated by Ofqual.

## Qualification Purpose

This qualification is designed to supercharge your skills and power the countrys digital infrastructure forwards as it equips learners with knowledge and skills for Artificial Intelligence (AI) programming specifically with Python.

When indulging on this qualification, learners will cover key areas such as: basic python functions, writing scripts, libraries used within python, version control using GITHUB and neural networks which will entail linear algebra and calculus.

This qualification also aims to support and drive forward Government and Combined Authorities skill gap strategies for digital skills as this qualification encourages individuals to enter a growing sector.

The AI and python qualification holds a high status within the industry meaning that upon completion, learners will have entry into the programming sector and can path the way for the future of artificial intelligence and software technologies.

The qualification provides an alternative to the traditional academic University route. Innovation is at the heart of this qualification and is why it meets the need of any employers as they require qualifications and experience within programming.

While this qualification isnt your traditional University education, its a new and innovative way of learning. The knowledge, skills and behaviours instilled in learners taking this qualification will give them the opportunity to spark the start of their career in the programming industry. Applying knowledge and skills to real life situations allows learners to adapt their behaviours and perform in a way that can be self-paced in a hands-on environment.

## Entry Requirements

There are no specific entry requirements however learners should have a minimum of level two in literacy and numeracy or equivalent.

The recommended minimum age for this qualification is 16 years and above.

## Progression

Successful learners can progress to other qualifications such as:

- Level 4 Diploma in Software Development
- Software Development technician Apprenticeship standard.

Successful learners can apply for job roles such as:

- Data and AI Consultant
- AI Developer
- AI Engineer
- Data science
- Software Developer.

## Structure

Learners must achieve all credits from all mandatory units.

## Mandatory Units

| Unit ref. | Title | Level | GLH | Credit Value |
|-----------|-------|-------|-----|--------------|
| A/650/0763 | Calculus Essentials for neural networks | 3 | 20 | 2 |
| D/650/0764 | Introduction to Neural networks | 4 | 32 | 5 |
| J/650/0758 | Introduction to Python | 3 | 35 | 4 |
| T/650/0761 | Introduction to version control using GitHub for Python | 4 | 42 | 6 |
| Y/650/0762 | Linear Algebra Essentials for Neural Networks | 3 | 31 | 3 |
| K/650/0759 | Understand libraries used for Python Programming | 3 | 37 | 4 |

## Barred Units

There are no barred units.

## Duration

### Guided Learning Hours

These hours are made up of all contact time, guidance or supervision of a learner by a lecturer, supervisor, tutor, trainer or other appropriate provider of education or training. Guided Learning Hours for this qualification is 197.

### Directed Study

Learners are expected to study and complete aspects of their assessment portfolio in their own time. This additional time is expected to be approximately two hours over the cycle of the programme.

### Total Qualification Time

This is an estimate of the total length of time it is expected that a learner will typically take to achieve and demonstrate the level of attainment necessary for the award of the qualification i.e. to achieve all learning outcomes.

Total Qualification Time is comprised of GLH and an estimate of the number of hours a learner is likely to spend in preparation, study or any other learning including assessment, which takes place as directed by, but not under the supervision of a lecturer, supervisor or tutor. The credit value, where given, for a qualification is determined by TQT, as one credit corresponds to 10 hours of learning. Total Qualification Time for this qualification is 240 hours.

## Grading and Assessment

The qualification is assessed by internally set and marked assessments subject to external quality assurance.

Where indicated in the unit specifications, assessment must meet the requirements of the identified assessment strategy/principles.

Materials for internal assessment must be submitted to TQUK for approval prior to use and must be mapped to the relevant unit, learning outcome and assessment criteria.

All learning outcomes must be met to achieve a Pass - there is no grading.

## Centre Recognition

To offer any TQUK qualification, each centre must be recognised by TQUK and meet qualification approval criteria. Qualification approval must be confirmed prior to any assessment of learners taking place. It is essential that centres provide learners with access to

appropriate support in the form of specialist resources.

The TQUK centre recognition process requires a centre to have in place a number of policies and procedures to protect the learners undertaking a TQUK qualification and the integrity of TQUKs qualifications. The policies and procedures will also support a recognised centres quality systems.

Recognised centres must seek approval for each qualification they wish to offer.

The approval process requires centres to demonstrate that they have the resources, including staff, to deliver and assess the qualification.

# Support from TQUK

Recognised centres will be able to access support from TQUK whenever necessary. External Quality Assurance activities will be undertaken on a regular basis. TQUK also offers recognised centres the service of a Client Relationship Officer whose role is to support centres with any administration queries or qualification support.

# Qualification Delivery

## Pre-Qualification Information

All learners should be given appropriate pre-course information regarding any TQUK qualifications. The information should explain about the qualification, the fee, the form of the assessment and any entry requirements or resources needed to undertake the qualification.

## Initial Assessment

Centres should ensure that any learner registered on a TQUK qualification undertakes some form of initial assessment. The initial assessment should be used to inform a teacher/trainer on the level of the learners current knowledge and/or skills. Initial assessment can be undertaken by a teacher/trainer in any form suitable for the qualification to be undertaken by the learner/s. It is the centres responsibility to make available forms of initial assessment that are valid, applicable and relevant to TQUK qualifications.

## Learner Registration

Once approved to offer a qualification the centre should register learners before any assessment can take place. Recognised centres must follow TQUKs procedures for registering learners. For short courses, TQUK offer the option of registering a course and booking a number of places. Learners are then added once the course has taken place, thus acknowledging situations where substitutions are made at short notice to meet business needs.

# Requirements

## Trainer/Assessor

Tutors/trainers who deliver a TQUK qualification must possess a teaching qualification appropriate for the level of qualification they are delivering. This can include the below:

- Further and Adult Education Teachers Certificate
- Cert Ed/PGCE/B Ed/M Ed
- PTLLS/CTLLS/DTLLS
- Level 3 Award/4 Certificate/5 Diploma in Education and Training

Assessors who assess a TQUK qualification must possess an assessing qualification appropriate for the level of qualification they are delivering. This can include:

- Level 3 Award in Assessing Competence in the Work Environment
- Level 3 Award in Assessing Vocationally Related Achievement
- Level 3 Award in Understanding the Principles and Practices of Assessment
- Level 3 Certificate in Assessing Vocational Achievement
- A1 or D32/D33

Specific requirements for assessors may be indicated in the assessment strategy/principles identified in individual unit specifications.

## Internal Quality Assurer

Centre staff who undertake the role of an Internal Quality Assurer (IQA) for TQUK qualifications must possess or be working towards a relevant qualification. This could include:

- Level 4 Award in the Internal Quality Assurance of Assessment Processes and Practice
- Level 4 Certificate in Leading the Internal Quality Assurance of Assessment Processes and Practice
- V1 Conduct internal quality assurance of the assessment process
- D34 Internally verify the assessment process

It is best practice that those who quality assure qualifications also hold one of the assessing qualifications outlined above. IQAs must follow the principles set out in Learning and Development NOS 11 Internally monitor and maintain the quality of assessment.

All staff members involved with the qualification (training, assessing or IQA) will also need to be occupationally competent in the subject area being delivered. This could be evidenced by a combination of the below:

- A higher level qualification in the same subject area as the qualification approval request.
- Experience of the delivery/assessment/IQA of the qualification/s requested.
- Work experience in the subject area of the qualifications.

Staff members will also be expected to have a working knowledge of the requirements of the qualification, and a thorough knowledge and understanding of the role of tutors/assessors and internal quality assurance. They are also expected to undertake continuous professional development (CPD) to ensure they are up to date with work practices and developments in the qualifications they are involved with.

# Centre Devised Assessment

We will work with you to develop your CDA, but please be aware that in some cases this can take time and learners are not permitted to sit their assessments until this process has been completed. With this in mind we encourage centres to talk to us about their CDAs as early on in the process as possible.

# Useful Resources

## Websites

Health and Safety Executive www.hse.gov.uk

Office of Qualifications and Examinations Regulation www.ofqual.gov.uk

Register of Regulated Qualifications register.ofqual.gov.uk

Skills Funding Agency skillsfundingagency.bis.gov.uk for public funding information for 19+ learners in England

Learning Aim Reference Service (LARS) www.gov.uk/government/publicationss

Department for the Economy www.economy-ni.gov.uk

Department of Education www.deni.gov.uk for public funding in Northern Ireland.

Training Qualifications UK
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