IT Solutions Technician (Software Route) Apprenticeship Standard
Role/Occupation: IT Software Solutions Technician
Level 3

Overview: IT Software Solutions Technicians undertake duties across the complete IT solution, working on the team's core activities so all apprentices take a common core and then choose to specialise in the **Software route**.

IT Software Solutions Technicians develop, implement and maintain complete IT solutions including software such as operating systems, middleware and applications. They will work as part of a multi-disciplinary team which may be a modern 'dev-ops' style team. An IT Software Solutions Technician will apply a professional methodology or framework to gather and analyse requirements to design, develop, test and implement IT solutions and provide ongoing support to end users and underlying IT services. Tasks will vary depending on the needs to be achieved, and may be technical in nature, others may be more analytical, business or user focused.

DURATION

The apprenticeship will typically take 21 months to complete.

ENTRY REQUIREMENTS

Each employer will set their own entry requirements, but typically an apprentice might be expected to already have GCSEs and/or other relevant qualifications.

ENGLISH & MATHS

Apprentices without Level 2 English or Maths will need to achieve this prior to taking their End Point Assessment.
For those with an education, health and care plan or a legacy statement, the minimum English and Maths requirement is Entry Level 3. For those whose primary language is British Sign Language, BSL qualifications are an alternative to English qualifications.

QUALIFICATIONS

There are no mandatory qualifications for this apprenticeship standard.

LINK TO PROFESSIONAL REGISTRATION

This apprenticeship is recognised for entry onto the BCS (**The Chartered Institute for IT**) Register of IT Technicians confirming Level 3 Professional Competence. Upon successful completion of this apprenticeship, the apprentice can apply for registration.

Core Technical Knowledge

The stages within the overall solution lifecycle

The main principals, features, differences and benefits of Waterfall and Agile type methodologies and the function of service management frameworks

The aims and benefits of DevOps approaches; including the benefits of automation, the ideas behind continuous integration and monitoring

The principles of Solution Architecture including the importance of re-use

Why testing is necessary, the need for both functional and non-functional testing, the different types of testing available, including unit testing, integration testing, user acceptance testing and performance testing

Planning and delivery within their role and how this contributes to the wider team and the organisation

How the end-user context influences the solution

The key features of, and where to find, organisational requirements in relation to policies, standards, legislation, professional ethics, privacy and confidentiality

The main legislation, policies and standards that apply to IT solutions

The concepts of networking including the ISO (International Organisation for Standardisation) and TCP/IP (Transmission Control Protocol/Internet Protocol) network stacks, Ethernet LANs (Local Area Networks), IP addressing, Port numbers, DNS (Domain Name System), DHCP (Dynamic Host Configuration Protocol), and the principals of routing between LANs and WANs (Wide Area Networks)

The different types of network devices, routers and network switches, their relationship to the stack model and the use of firewalls

The main components within an IT Solution including how hardware and software components work together

The main components of a computer system and their purpose, including servers, end-user computers, and mobile devices (both physical and virtual), user interfaces, CPUs, storage and connectivity

The purpose of an Operating System

The concepts of Cloud, Cloud Services and storage

How their work contributes to business performance, continuity and resilience

The main trends in emerging technologies – including the Internet of Things (IoT), artificial intelligence, and automation - and the potential implications for digital activities

The necessary numerical skills including Binary and Hexadecimal

Why cyber security is essential as part of the delivery of any solution

The importance of working securely and the main classifications of types of threats and common mitigation practices

The meaning of risk in the context of security and can explain the relationship between levels of risk, impact, and designed level of protection in IT Solutions

The role of configuration management and version control systems and when they should be used

The concepts of virtualisation

Core Technical Knowledge *(Continued)*

The use of different platforms (including web, mobile, or desktop applications)

The concepts of relational databases, non-relational structured and unstructured databases

The concepts of solutions development to a given set of requirements, including the use of standard approaches for web and cloud-based solutions

The benefits of and requirements for vendor support including commercial cloud offerings

Software Solutions: Specific Technical Knowledge & Understanding

The principles of Solution Architecture as applied to software

Why there is a need to follow good coding practices and have good coding standards

The main categories of computer languages and the main features and benefits of each

How to implement software solutions including simple programing to a given a set of requirements and how to connect code to data sources

The purpose and usage of document mark-up languages including XML (extensible markup language) and html (hyper text markup language)

The use of relational databases, including tables, views, joins and indexes

The use of Big Data environments for storage and analysis of non-relational structured and unstructured data the purpose of database normalization - organising the attributes and relations of a relational database to reduce data redundancy and improve data integrity

How to develop, test and implement code following a logical approach

Core Skills

Applies a professional methodology or framework in their work tasks

Executes appropriate due diligence, including formal testing or validation

Applies a range of technical IT skills, including: accessing remote systems; file manipulation; file editing, changing system or application settings; system administration; setting up and upgrading components (infrastructure or software)

Operates in line with organisational polices, standards, legislation, security requirements, professional ethics, privacy and confidentiality; and understands escalation policies

Creates and maintains documentation in accordance with best practice, organisational guidance and legislation

Identifies appropriate technical solutions using both logical and creative thinking

Diagnoses and understands client requirements and problems using sound analytical and problem solving skills

Communicates effectively in a variety of situations including formal and informally both within their team and externally

Operates securely across all their areas of responsibility, in line with organisational guidance and legislation

Software Solutions: Specific Skills

Works at any stage of the software solution lifecycle

Undertakes maintenance of a range of contemporary or legacy software solutions to required levels of service

Software Solutions: Specific Skills *(Continued)*

Installs and configures software system components including virtualised components where appropriate

Writes or maintains simple scripts or code

Can search and manipulate different types of data sources, including both structured and unstructured

Core Behaviours

Works professionally and independently, taking responsibility and initiative as appropriate

Demonstrates standard business courtesies and professional ethics in how they work

Demonstrates a productive and organised approach to their work

Works effectively with customers, clients and users

ON-PROGRAMME DELIVERY

Each apprentice will be allocated a Coach to support ongoing learning and preparation for End Point Assessment. In addition Progress Reviews will take place regularly to ensure the apprentice is on track. All apprentices will be invited to attend relevant workshops to support the development of their Knowledge, Skills and Behaviours. We may also offer technical training sessions, where required, for example ITIL.

END POINT ASSESSMENT

The EPA will consist of three assessment methods:

1. Four multiple choice knowledge tests
2. A portfolio of evidence or 'showcase'
3. A Project and Interview

The EPA will be conducted by an Independent External Assessment Organisation (IEAO).

PROGRESSION

Please talk to us about progression from this Apprenticeship.

REALITY CHECK

☐ Time and support required from the employer to the apprentice during the apprenticeship to include: regular Performance Reviews, relevant off the job training and preparation for the final EPA

☐ Expectation of significant amounts of study/work from the apprentice in order to meet the requirements of the apprenticeship

☐ Employer has to be involved in the EPA and provide support and time to the apprentice in preparation for the EPA

COSTINGS

Maximum Funding Band: £13,000
The cost of the apprenticeship will be negotiated with you in line with Government guidelines

**PLEASE CONTACT APPRENTICESHIPS@CIRENCESTER.AC.UK FOR FURTHER INFORMATION
TELEPHONE: 01285 626259**