LEVEL 3 IT SOLUTIONS TECHNICIAN

THE APPRENTICE and TRAINING PARTNERSHIP

There is nothing standard about the new apprenticeship Standards!

Following the 2019 - 2021 digital skills review, modern apprenticeships have once again taken a leap forward to provide better vocational training for apprentices and greater benefit to employers. The perfect solution for new career starts, professional upskilling or changes in career direction.

Programme Overview:

As digital and IT technologies evolve and enable digital transformation of business, there is an increasing need for individuals equipped with the skills to support, develop and implement IT solutions.

IT Solutions Technicians develop, implement and maintain complete IT Solutions, including; servers, networks, operating systems, middleware and applications.

Core skills include; requirements gathering, solution development, testing, implementation and support. This can be in both traditional or modern 'DevOps' style teams.

IT Solutions Technicians undertake duties across the complete IT Solution, working on the team's core activities. All apprentices are taught a common core understanding and then take one of following two options for more in-depth learning:

- **IT Hardware Solutions;** focuses on infrastructure aspects of solutions such as servers and networks (fixed or mobile)
- **IT Software Solutions;** focuses on applications and supporting components such as databases

Who is it for?

Typical job titles include;

- IT Solutions Technician
- First Line Support Technician
- Technical Analyst
- IT Support Technician
- IT Service Desk Technician
- Database Technician
- Applications Support Technician

Entry Requirements:

Entry requirements exist for all funded Further Education programmes. These ensure the value, gain and success of the programme. The ATP will conduct the processes with employers and prospective apprentices to determine correct funding eligibility.

Here is a general overview of each eligibility criteria:

Job role eligibility (known as Competency Role Map):

The job role must contain opportunity for an apprentice to practice the content set out in the apprenticeship Standard to achieve vocational competency. Apprentices must have the opportunity to practice the knowledge taught in training sessions in order to convert new knowledge in to sustainable skills applied in the workplace.

Each apprenticeship requires a portfolio of evidence this will showcase the apprentice's work and will be reviewed by the apprenticeship assessment organisation to determine how well new knowledge has been successfully utilised vocationally. If a job role is close to the eligibility criteria we will consult with employers to see if adjustments can be made to ensure criteria is met.

Initial assessment of knowledge and skills:

A prospective apprentice must stand to gain significant knowledge and skills from an apprenticeship. If the apprenticeship is too advanced for them or if they already know much of the knowledge and skills the apprenticeship would provide then they may not be eligible for the funding.

The ATP will review existing qualifications, knowledge and skills to determine if the prospective apprentice will benefit from the proposed apprenticeship such that it meets the funding criteria. In most instances this is very straightforward, however in some instances funding can be specially authorised for reduction in order to fund the parts of an apprenticeship that would be relevant. The ATP will provide the assessment for these possibilities.

The Level 3 IT Solutions Technician is highly technical, so whilst employers can select their own entry criteria, they should include; at least 5 GCSEs including English and Mathematics and have achieved a Level 2 or equivalent qualification as a minimum to help ensure success.

In many cases this type of apprenticeship can demand a higher capability of English and maths than is taught at GCSE or A-Level. For example, advanced report writing, budgeting, complex structured explanations and/or advanced formulae and statistics. The ATP will provide both functional and advanced English and maths diagnostics and teaching to ensure each apprentice is fully supported in these areas.

Programme Duration:

This apprenticeship is delivered over 18 months for full-time employees. For part-time employees the term is adjusted depending on contracted hours.

Standard Delivery Model:

Apprenticeship training is delivered through a blend of weekly live virtual classrooms and regular mentoring sessions that are held on a one-to-one basis.

These live classrooms are held through Microsoft Teams. This software provides the full suite of educational tools including everything you would find in a conventional classroom and more e.g. live open interactions, private breakout rooms, note and question queues and interactive illustration boards. We can also use movie green screen technology for lesson illustrations.

A full timetable for the training and mentoring, exams and assessments are provided at the outset. Progress is reviewed at 12 week intervals in a meeting between the mentor, apprentice and employer (typically the apprentice's line manager).

Employers and apprentices have full visibility of progress in real-time by accessing the e-portfolio system, alternatively regular updates can be provided by other means if preferred.

End Point Assessment (EPA):

Aside from qualifications that can be obtained by doing an apprenticeship, the most important and valuable goal is what has been achieved during the programme.

Successful apprentices will obtain a Pass, Merit or Distinction in their apprenticeship. The way a Pass, Merit or Distinction is determined is at a stage called End Point Assessment which takes place once all the leaning has been completed. Like all examinations, a mock will take place before the final assessment.

Once all components of the apprenticeship have been achieved including the mock, a final review is conducted to ensure everything has been covered, this is called gateway. Then the apprentice will undergo their End Point Assessment.

EPA for this programme consists of:

1. Portfolio of Evidence demonstrating work on 6-8 projects covering all the standard criteria

2. Knowledge Tests (4)

3. Project and Interview underpinned by the portfolio of evidence
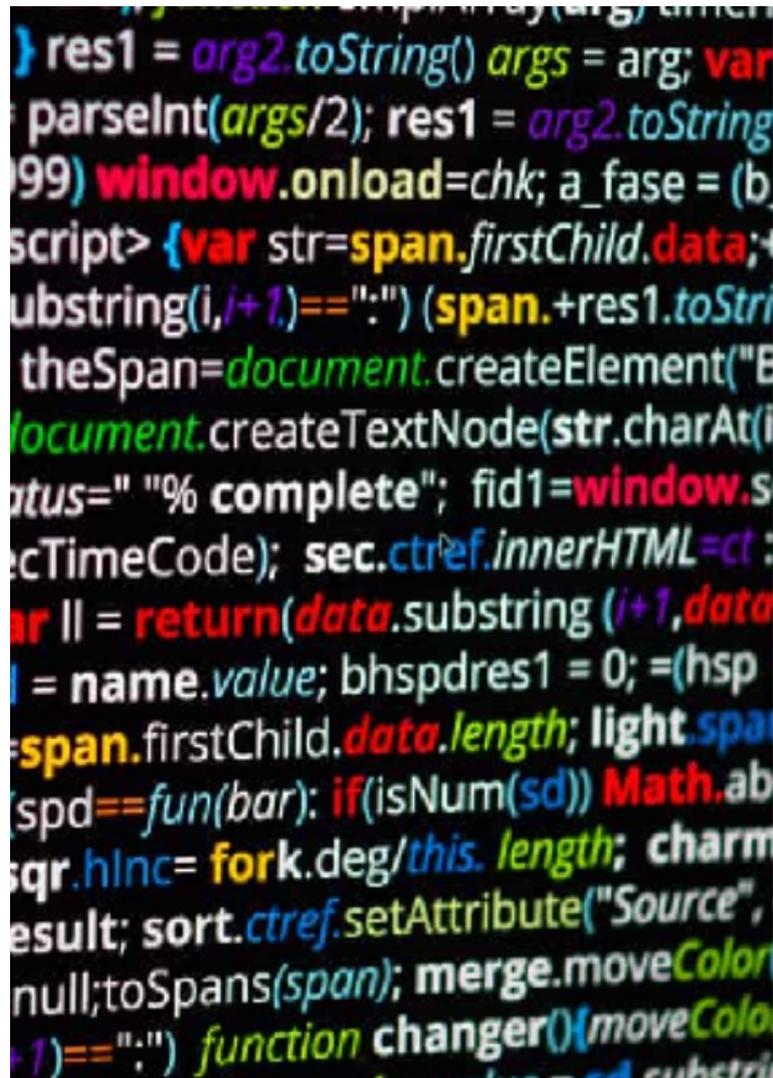
Programme Structure:

Apprentices are taught principles, techniques and technologies. The education incorporates knowledge, skills and behaviours as well as self-management self and objective led approach.

Technical Competencies:

- Stages of a solution lifecycle
- Principals, features, differences and benefits of Waterfall and Agile methodologies and the function of service management frameworks
- Aims and benefits of DevOps, including automation, continuous integration and monitoring
- Principles of Solution Architecture including the importance of re-use
- Testing necessity; the need for both functional and non-functional testing, types of testing available, including unit, integration, user acceptance and performance
- Planning and delivery within their role and how this contributes to the wider team and the organisation
- How end-user context influences a solution
- 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)
- Different types of network devices, routers and switches, their relationship to the stack model and the use of firewalls
- Main components of an IT Solution including how hardware and software components work together
- Main components of a computer system and their purpose, including servers, end-user work stations, mobile devices (both physical and virtual), user interfaces, CPUs, storage and connectivity
- Purposes of an Operating System
- Concepts of Cloud, Cloud Services and storage
- How their work contributes to business performance, continuity and resilience
- Main trends in emerging technologies, including the Internet of Things (IoT), artificial intelligence, automation and potential for digital activities
- Binary and Hexadecimal

- Why cyber security is essential as part in the delivery of any solution
- Working securely and the main classifications and types of threats and common mitigation practices
- Risk in the context of security and the relationship between levels of risk, impact, and designed level of protection in IT Solutions
- Configuration management and version control systems and when they should be used
- Concepts of virtualisation
- Use of different platforms (including web, mobile, or desktop applications)
- Concepts of relational, non-relational structured and unstructured databases
- Solution development to a given set of requirements, including standard approaches for web and cloud-based solutions
- Benefits of and requirements for vendor support including commercial cloud offerings

Skills:

- Applies a professional structured methodology to their work tasks
- Executes appropriate due diligence, including formal testing or validation
- Applies 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 according to organisational polices, standards, legislation, security requirements, professional ethics, privacy, confidentiality, and escalation policies
- Creates and maintains documentation according to best practice, organisation guidance and legislation
- Applies logical and creative thinking.
- Understands client requirements and problems, uses sound analytical and problem solving skills
- Communicates effectively
- Operates securely across all areas of responsibility, according to organisation guidance and legislation

Behavioural development embedded:

- Professionalism, responsibility and initiative
- Standard business courtesies and professional ethics
- Demonstrates a productive and organised approach
- Works effectively with customers, clients and users
- Proactive and uses initiative

Software Pathway:

IT Software Solutions Skills:

- Works at any stage of a software solution lifecycle
- Undertakes maintenance of a range of contemporary or legacy software solutions
- Installs and configures software system components including virtualised components
- Writes and/or maintains simple scripts or code
- Can search and manipulate different types of data sources, including structured and unstructured

IT Software Knowledge and Understanding:

- Principles of Software Solution Architecture
- Following good coding practices and standards
- Categories, features and benefits of computer languages
- Implementing software solutions, including simple programming to a given a set of requirements and how to connect code to data sources
- Purpose and usage of document mark-up languages including XML and html
- Use of relational databases, including tables, views, joins and indexes.
- Use of Big Data environments for storage and analysis of non-relational structured and unstructured data. The purpose of database normalization, organising attributes and relations of a relational database to reduce redundancy and improve integrity
- How to develop, test and implement code

Hardware Pathway:

IT Hardware Solutions Skills:

- Works at any stage of the hardware solution lifecycle.
- Undertakes maintenance of a range of contemporary or legacy hardware solutions to required levels of service.
- Installs and configures basic hardware system components, networks and devices (including servers, end-user computers, and mobile devices, whether physical or virtual) as required.
- Demonstrates safe application of the concepts of Electro Static Discharge (ESD) and meets appropriate health and safety standards when working with hardware

IT Hardware Knowledge and Understanding:

- Principles of Hardware Solution Architecture
- Advantages and disadvantages of different types of hardware configuration
- A range of cabling and connectivity
- Concepts of standard builds

- Concepts of mobile data, Bluetooth, 3G, 4G, 5G, wifi and the security implications of each
- Types of storage including locally attached, SAN and networked. The concepts of RAID and knowledge of RAID levels
- Requirements and equipment when working with electro static sensitive equipment and when working in a server room or data centre when handling equipment
- How to install, configure and test hardware components, networks and devices – including servers, end-user computers and mobile devices
- The need to follow a logical approach and how to ensure connectivity within solutions

The designated mentor will support the employer and apprentice throughout the programme as a single point of contact for questions and queries. This includes additional support for portfolio and project preparation, along with any advice and guidance needed.

Next steps:

To configure an ideal apprenticeship we will meet with you virtually to discuss your requirements, present the options and collaborate to determine the best apprenticeships to meet your needs. We will provide ongoing support including:

- Recruitment of apprentices
- Quality assured Information Advice and Guidance
- Updates and information on legislation and funding
- Support and guidance for apprentice and employer throughout the apprenticeship
- Access to a comprehensive suite of resources and support material via OneFile
- Industry specialist qualified trainers and mentors