

**APPRENTICESHIP DEGREE**  
**DIGITAL TECHNOLOGY AND SOLUTIONS**  
**PROFESSIONAL**  
**LEVEL 6**



**Apprenticeship Standard for Digital & Technology Solutions Professional**

<https://www.instituteforapprenticeships.org/apprenticeship-standards/digital-and-technology-solutions-professional-degree/>

**Core Skills (S)**

**S1: Information Systems:** is able to critically analyse a business domain in order to identify the role of information systems, highlight issues and identify opportunities for improvement through evaluating information systems in relation to their intended purpose and effectiveness.

**S2: Systems Development:** analyses business and technical requirements to select and specify appropriate technology solutions. Designs, implements, tests, and debugs software to meet requirements using contemporary methods including agile development. Manages the development and assurance of software artefacts applying secure development practises to ensure system resilience. Configures and deploys solutions to end users.

**S3: Data:** identifies organisational information requirements and can model data solutions using conceptual data modelling techniques. Is able to implement a database solution using an industry standard database management system (DBMS). Can perform database administration tasks and is cognisant of the key concepts of data quality and data security. Is able to manage data effectively and undertake data analysis.

**S4: Cyber Security:** can undertake a security risk assessment for a simple IT system and propose resolution advice. Can identify, analyse and evaluate security threats and hazards to planned and installed information systems or services (e.g. Cloud services).

**S5: Business Organisation:** can apply organisational theory, change management, marketing, strategic practice, human resource management and IT service management to technology solutions development. Develops well-reasoned investment proposals and provides business insights.

**S6: IT Project Management:** follows a systematic methodology for initiating, planning, executing, controlling, and closing technology solutions projects. Applies industry standard processes, methods, techniques and tools to execute projects. Is able to manage a project (typically less than six months, no inter-dependency with other projects and no strategic impact) including identifying and resolving deviations and the management of problems and escalation processes.

**S7: Computer and Network Infrastructure:** can plan, design and manage computer networks with an overall focus on the services and capabilities that network infrastructure solutions enable in an organisational context. Identifies network security risks and their resolution.

## **Core Technical Knowledge (K)**

*Knows and understands:*

**K1:** How business exploits technology solutions for competitive advantage.

**K2:** The value of technology investments and how to formulate a business case for a new technology solution, including estimation of both costs and benefits.

**K3:** Contemporary techniques for design, developing, testing, correcting, deploying and documenting software systems from specifications, using agreed standards and tools.

**K4:** How teams work effectively to produce technology solutions.

**K5:** The role of data management systems in managing organisational data and information.

**K6:** Common vulnerabilities in computer networks including unsecure coding and unprotected networks.

**K7:** The various roles, functions and activities related to technology solutions within an organisation.

**K8:** How strategic decisions are made concerning acquiring technology solutions resources and capabilities including the ability to evaluate the different sourcing options.

**K9:** How to deliver a technology solutions project accurately consistent with business needs.

**K10:** The issues of quality, cost and time for projects, including contractual obligations and resource constraints.

## **Core Behavioural Skills (B)**

**B1:** Fluent in written communications and able to articulate complex issues.

**B2:** Makes concise, engaging and well-structured verbal presentations, arguments and explanations.

**B3:** Able to deal with different, competing interests within and outside the organisation with excellent negotiation skills.

**B4:** Is able to identify the preferences, motivations, strengths and limitations of other people and apply these insights to work more effectively with and to motivate others.

**B5:** Competent in active listening and in leading, influencing and persuading others.

**B6:** Able to give and receive feedback constructively and incorporate it into his/her own development and life-long learning.

**B7:** Applies analytical and critical thinking skills to Technology Solutions development and to systematically analyse and apply structured problem solving techniques to complex systems and situations.

**B8:** Able to put forward, demonstrate value and gain commitment to a moderately complex technology-oriented solution, demonstrating understanding of business need, using open questions and summarising skills and basic negotiating skills.

**B9:** Able to conduct effective research, using literature and other media, into IT and business related topics.

**B10:** Have demonstrated that they have mastered basic business disciplines, ethics and courtesies, demonstrating timeliness and focus when faced with distractions and the ability to complete tasks to a deadline with high quality.

**B11:** Flexible attitude.

**B12:** Ability to perform under pressure.

**B13:** A thorough approach to work.

**B14:** Logical thinking and creative approach to problem solving.

## **Specialism Outcomes: Software Engineer**

### **Skills**

Be able to:

**1:** Create effective and secure software solutions using contemporary software development languages to deliver the full range of functional and non-functional requirements using relevant development methodologies.

**2:** Undertake analysis and design to create artefacts, such as use cases to produce robust software designs.

**3:** Produce high quality code with sound syntax in at least one language following best practices and standards.

**4:** Perform code reviews, debugging and refactoring to improve code quality and efficiency.

**5:** Test code to ensure that the functional and non-functional requirements have been met.

**6:** Deliver software solutions using industry standard build processes, and tools for configuration management, version control and software build, release and deployment into enterprise environments.

### **Technical Knowledge**

Knows and understands:

**7:** How to operate at all stages of the software development lifecycle.

**8:** How teams work effectively to develop software solutions embracing agile and other development approaches.

**9:** How to apply software analysis and design approaches.

**10:** How to interpret and implement a design, compliant with functional, non-functional and security requirements.

**11:** How to perform functional and unit testing.

**12:** How to use and apply the range of software tools used in Software engineering.

## **Specialism Outcomes: Data Analyst**

### **Skills**

Be able to:

1. Import, cleanse, transform, and validate data with the purpose of understanding or making conclusions from the data for business decision making purposes.
2. Present data visualisation using charts, graphs, tables, and more sophisticated visualisation tools.
3. Perform routine statistical analyses and ad-hoc queries.
4. Use a range of analytical techniques such as data mining, time series forecasting and modelling techniques to identify and predict trends and patterns in data.
5. Report on conclusions gained from analysing data using a range of statistical software tools.
6. Summarise and present results to a range of stakeholders making recommendations.

### **Technical Knowledge**

Knows and understands:

7. The quality issues that can arise with data and how to avoid and/or resolve these.
8. The processes involved in carrying out data analysis projects.
9. How to use and apply industry standard tools and methods for data analysis.
10. The range of data protection and legal issues.
11. The fundamentals of data structures, database system design, implementation and maintenance.
12. The organisation's data architecture.

## **Specialism Outcomes: IT Consultant**

### **Skills**

Be able to:

1. Perform technical process improvement tasks in a range of environments to solve business problems.
2. Present optimised solutions to improve business process and workflows through improved technology.
3. Recommend options based upon risks, costs vs benefits, and impact on other business processes.
4. Participate in walk-throughs for IT, to identify and document key risks within a client's organisation.
5. Support training of end-users in preparation for system activation.
6. Evaluate the success of a new system, process, initiative, etc.

### Technical Knowledge

Knows and understands:

7. How consulting ties into project management, business analysis and business management.
8. The barriers to solving problems or maximizing opportunities.
9. How to present recommendations and influence action.
10. The different structured process approaches for digital technology consulting.
11. How to frame/define business problems objectively before solving them.
12. How to discover hidden requirements using probing techniques to establish trust, using open and closed questions