



Technician Scientist Level 5

Apprenticeship Standard

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Overview

A Technician Scientist carries out established laboratory-based investigations and basic scientific experimentation using bench and instrumentation techniques within chemical, pharmaceutical, biotechnology, formulated products or analytical services.

They carry out routine lines of enquiry, development or investigation, taking responsibility for the quality of the work they undertake. They work safely and ethically often under highly regulated conditions because of the need to control quality and safety of scientific products.



Duration:

36 months + 3 months for the End Point Assessment (EPA).

Entry Guidelines:

English and maths at GCSE grade A*-C/4-9 or Functional Skills level 2 and relevant Science qualification at level 3, providing UCAS points for entry to a level 5 Higher Education programme.

N.B. All apprenticeship standards require apprentices to provide evidence of their English and maths grades before they can progress through the Gateway to their End Point Assessment and achieve the apprenticeship qualification.



Technician Scientist Level 5

Course Overview

Pre-programme	On Programme Learning → covering Skills, Knowledge & Behaviours	Gateway →	Independent End Point Assessment
Initial assessment English & Maths	Technician Scientist Level 5 Foundation Degree (Science) (Day release, Twelve Quays Campus)	Foundation Degree Level 5 Science	Presentation & Discussion
Skills Scan	Workplace problem solving project	Vocational competence evaluation log	Workplace problem solving project report
Induction with Trainer Assessor	On Programme Assessments & Reviews: 6-8 weekly sessions with Trainer Assessor & 8-10 week Progress Reviews with apprentice and employer	English Level 2 Maths Level 2	Vocational Competence Discussion

Course Details

This apprenticeship programme is designed to develop the knowledge, skills and behaviours required to be an effective Technician Scientist.

The apprentice's Knowledge element of the course will cover:

- The principles of non-complex laboratory techniques and scientific experimentation and how to contribute to the development of technical projects and implement new processes according to the literature.
- A theoretical knowledge of chemistry or life sciences plus specialised science and technology relevant to the job role.
- The requirements and significance of reporting results, considering the importance of accuracy, precision and recognising trends.
- How to use mathematical concepts and techniques: units, dimensions, exponentials logarithms and elementary probability and basic statistical analysis relating to sampling and data to evaluate results.
- The basic principles and procedures of project management: project plan, project timeline & milestones, risk log, outcome reviews, product definitions and product owners, key performance measures, action logs, project documentation, project budgets and how to contribute to project plans with other team members.
- How to comply with business rules pertaining to record keeping, traceability & confidentiality and quality systems.
- The internal and external regulatory environment pertinent to the science sector and how to comply with regulations.
- The business environment in which the company operates including personal role within the organisation, ethical practice and codes of conduct.

The Occupational Skills element of the course will include:

- Perform laboratory-based investigations and basic scientific experimentation using the appropriate scientific techniques, procedures and methods of relevance to the activities of the laboratory.
- Comply with the quality standards, safe working practices, environment and risk management systems relevant to the workplace.
- Explain the main concepts of the scientific principles according to the literature applicable to the laboratory-based techniques and scientific experimentation used in the laboratory.
- Contribute to the development of new processes and methodologies and support their implementation as part of a wider team.
- Work with minimal supervision to produce and analyse scientific data and present the results of laboratory work and problem solving clearly and concisely in written and oral form
- Use computer-based data analysis tools including spreadsheets and relevant company software packages.
- Plan and prioritise own tasks, review and evaluate progress against objectives and project plans as part of a wider project team.
- Contribute to recommendations on the appropriate workflows, improvements or scientific solutions to meet the requirements of internal or external customers.

- Find solutions to routine and non-routine problems and contribute to developing solutions to complex problems using techniques such as root cause analysis.
- Contribute to continuous performance improvement within the scientific and technical environment.
- Communicates effectively using a full range of skills: speaking to a scientific and non-scientific audience, active listening, professional writing, and scientific presentation.
- Works with minimal supervision and interacts effectively within a wide, scientific team.
- Manages time effectively, being able to plan and complete work to schedule with thoroughness and attention to detail.



Skills & Behaviours

The **Skills & Behaviours** element of the apprenticeship is to be completed with support from a Trainer Assessor making periodic visits to the apprentice in the workplace. The Trainer Assessor will support and guide the apprentice to ensure that they are developing the skills and competency required in accordance with the apprenticeship standard, including:

Demonstrating reliability, integrity and respect for confidentiality; handling and responding positively to change and taking responsibility for personal development.

The apprentice will use the e-portfolio system called OneFile to build a portfolio of work throughout the development stage, which is a key component of End Point Assessment and demonstrates their occupational competency.

Gateway

To pass through the Gateway, the apprentice must have achieved the following:

Level 5 Foundation Degree or HND:

- FdSc Chemical Science
- FdSc Applied Bioscience
- HND Applied Chemistry
- HND Applied Biology

English and maths Level 2 Qualification

Vocational competence evaluation log:

- A summary record of on-programme vocational competence evaluation, signed off by a technical expert nominated by the apprentice's employer, must be recorded in a log. Typical evidence may include, for example, a course assessments portfolio, a company workbook, performance review record, or certificate of training.

Workplace problem solving project:

- The apprentice will develop and implement a plan for a workplace problem solving project that demonstrates the practical application of science, which they will conduct over a maximum 6-month period prior to the end-point assessment period. The project will involve the apprentice identifying a problem with a laboratory technique, laboratory workflow process or other laboratory problem that, once addressed, will deliver benefit to the business.



End Point Assessment

The End Point Assessment must only start once the employer is satisfied that the apprentice is consistently working at or above the level set out in the occupational standard, that means they have achieved occupational competence.

End Point Assessment (EPA) normally takes 3 months to complete and consists of:

Assessment Method 1: Workplace Problem Solving Project Report & Presentation with Questioning

The project report must cover:

- Problem definition and data analysis
- Problem solving method
- Problem solution
- Business impact, results and conclusions

Assessment Method 2: Presentation of Workplace Problem Solving Project Report

The formal presentation will be followed immediately with a structured discussion.

Assessment Method 3: Vocational Competence Discussion

- The purpose of the discussion is to determine the extent to which the apprentice understands the requirements of his/her role as defined by the apprenticeship standard and to explore them through discussion.
- The apprentice may bring along their vocational competence evaluation log and evidence reference in it to refer to during the vocational competence discussion.

Grading & Progression



Apprenticeship grading

The available grades for this apprenticeship programme are **Distinction, Pass or Fail.**

Where can apprentices progress to?

The apprentice may choose to progress on to a more senior role in their organisation.

