Qualification Description

T Level Technical Qualification in Science

T Levels are new qualifications that follow GCSEs and are equivalent to three A Levels. T Levels will combine classroom theory and practical learning, and are made up of the following:

- Technical Qualification: the substantial component of your course
- Industry placement: of at least 315 hours (approximately 45 days) with an employer to make sure you have authentic experience of the workplace.

The Technical Qualification is the main classroom-based element of the T Level. During your two-year course, you will learn the core knowledge that underpins the sector, and you will also develop occupationally specific skills that will allow you to enter skilled employment within a specific occupation.

This T Level Technical Qualification has been developed in collaboration with employers, so the content meets the needs of industry and prepares you for work. It will provide the knowledge and experience needed to open the door to skilled employment, an apprenticeship or higher-level study.

What is the science industry?

The science industry is of critical importance to the United Kingdom, spanning societal, health and economic dimensions. Advancements in healthcare, agriculture and energy production have seen the UK being hailed a global leader in scientific research. Every year the life sciences sector contributes over £70 billion a year to the UK economy, with 8,800 people directly employed in the biotechnology sector alongside an additional 11,00 indirectly through related activities. Despite this the UK is currently facing a significant workforce shortage in this sector, with approximately 430,000 vacancies in STEM related sectors at the end of 2023.

Who is this Technical Qualification for?

This Technical Qualification can only be taken as part of a T Level course and is not available as a stand-alone qualification. It is for post-16 students and is ideal if you are looking to progress directly into employment within the science sector in roles such as laboratory

technician, biomedical scientist, food industry technologist, or to science-related apprenticeships, or further studies in the science sector.

What does the Technical Qualification cover?

The content is split into a Core Component that has been created for this Technical Qualification in Science, and the following Occupational Specialisms:

- Laboratory Science
- Food Science

The Core Component provides a broad understanding of the science sector inclusive of the following topics:

- Units and quantities used in science
- Biological molecules
- Cell structures
- Microbiology
- Immunology
- Chemical reactions
- Rates of reaction
- Formulae and equations
- Particles and radiation
- Electricity
- Magnetism and electromagnetism
- Waves
- Gas laws
- Health and safety in a laboratory environment
- Ethical considerations in scientific research

The Core Component will be assessed by two examinations and an Employer Set Project.

Your Occupational Specialism will allow you to develop the relevant skills in preparation for your career in the science sector. The Occupational Specialism is assessed via a project that is created collaboratively with employers. The content covers the following topics:

Laboratory Science

- Scientific laboratory techniques
- Standard operating procedures
- Relevant health and safety legislation
- Chemical calculations
- Organic chemistry
- Enthalpy
- Metabolic pathways and bioenergetics
- Genetic applications
- Electronics
- Data collection and analysis
- Good laboratory practice
- Good manufacturing practice

Food Science

- Scientific laboratory techniques
- Safety and quality in the food and drink industry
- Legislation, regulations and ethical considerations in the food and drink industry
- HACCP in the food and drink industry
- Microbiology in the food and drink industry
- Raw materials in the food and drink industry
- Food technology
- Packaging and processing in the food and drink industry

As part of this Technical Qualification, you will also enhance your broader skills in literacy and numeracy, which will facilitate progression in other areas. In addition, you will develop transferable skills in communication, organisation, primary and secondary research, alongside critical thinking and problem-solving skills.

What could this Technical Qualification lead to?

Achieving this Technical Qualification will provide several progression options. These could include:

Skilled employment:

- Laboratory Research Scientist
- Biomedical Scientist
- Medical Laboratory Assistant
- Food Safety Analyst

Higher level apprenticeship in:

- Healthcare Science Associate Level 4
- Technician scientist Level 5

Degree related programmes:

- Biomedical Science
- Applied Science
- Food Science/Nutrition
- Agricultural Science
- Environmental Science

Careful consideration of the content of any course prior to selection is key, as course titles may not accurately reflect the content. The science sector is continually evolving and developing, as such degrees are subject to annual review and adaptation. Students are encouraged to look out for new elements and options which may develop during the course.

Specific entry requirements vary, depending on the focus of the course, and therefore we would recommend you check entry requirements with universities or colleges.

Who supports this Technical Qualification?

This Technical Qualification has been developed in collaboration with several stakeholders:

- Royal Society of Chemistry
- Royal Society of Biology
- Institute of Physics

Further Information

Further Information about this Technical Qualification can be accessed at:

T Levels | Pearson qualifications

For further Information on the other components please see the DfE website at:

Introduction of T Levels - GOV.UK