

## T Level: Science

### Occupational Specialism: Technical - Laboratory Sciences

<b>Role Title</b>	<b>Working Pattern</b>	To be agreed between the provider and employer
Technical Laboratory Sciences Trainee	<b>Duration</b>	315 hours
<b>Objective(s)</b>		
Work within a scientific team to provide routine testing and technical support within a scientific laboratory environment in order to deliver a high quality and efficient service to clients		
<b>Typical Activities</b>		
<ol style="list-style-type: none"><li>1. Under supervision, carry out practical scientific techniques (at least twice weekly) to measure a range of physical properties, such as: polarity, temperature, pressure, conductivity and radioactivity, following Standard Operating Procedures, regulatory requirements and all Health and Safety requirements</li><li>2. Under supervision, carry out a range of laboratory techniques (at least twice weekly) to identify, separate and analyse substances, following Standard Operating Procedures, regulatory requirements and all Health and Safety requirements</li><li>3. Under supervision, manage equipment within a scientific laboratory environment, through maintenance, cleaning and calibration using appropriate techniques following Standard Operating Procedures, regulatory requirements and all Health and Safety requirements</li></ol>		
<b>Learning goals</b>		<b>TQ Reference</b>
On the placement, the student will need to further develop and hone through activity 1:  <b>Employability skills</b> <ul style="list-style-type: none"><li>• Communicating: active listening, use of visual, oral and written methods, engaging with individuals, sharing, building rapport, adapting style and tone</li><li>• Working in a team: Working with others with different skills, expertise and experience to accomplish a task or goal</li></ul>		<i>[Insert corresponding reference from the TQ content]</i>

- Assessing risks: Assessing a situation, a proposal, a product or process for potential adverse effects
- Recording: transcribing, noting, capturing, saving and storing scientific data and information

### **Technical skills and understanding**

- Skills and behaviours that demonstrate application of professional practice, including appropriate conduct in the professional scientific laboratory environment, always following this code of conduct, including appropriate dress and punctuality
- Skills in effective planning
- Understanding of regulations appropriate to the sector/ industry and the specific working environment for the placement
- Skills in comply with regulations appropriate to the sector/ industry and the specific working environment for the placement
- Skills in working safely within a scientific laboratory environment; complying with all relevant legislation and regulations in handling and disposing of materials, assessing hazards and risks and using appropriate Personal Protective Equipment (PPE)
- Skills in following Standard Operating Procedures and/or scientific papers when carrying out scientific techniques
- Skills in using appropriate SI units and converting between measurement units if required when undertaking scientific techniques to measure a range of physical properties
- Skills in undertaking practical scientific techniques to measure a range of physical properties
- Knowledge of data handling and recording, interpreting and analysing data and importance of data integrity
- Skills in data handling and recording, interpreting and analysing data
- Skills in producing reliable and verifiable data from undertaking scientific techniques to measure a range of physical properties

On the placement, the student will need to further develop and hone through activity 2:

### **Employability skills**

- Communicating: active listening, use of visual, oral and written methods, engaging with individuals, sharing, building rapport, adapting style and tone
- Working in a team: Working with others with different skills, expertise and experience to accomplish a task or goal

- Assessing risks: Assessing a situation, a proposal, a product or process for potential adverse effects
- Recording: transcribing, noting, capturing, saving and storing scientific data and information

### **Technical skills and understanding**

- Skills and behaviours that demonstrate application of professional practice, including appropriate conduct in the professional scientific laboratory environment, always following this code of conduct, including appropriate dress and punctuality.
- Understanding of regulations appropriate to the sector/ industry and the specific working environment for the placement
- Skills in comply with regulations appropriate to the sector/ industry and the specific working environment for the placement
- Skills in working safely within a scientific laboratory environment; complying with all relevant legislation and regulations in handling and disposing of materials, assessing hazards and risks and using appropriate Personal Protective Equipment (PPE)
- Skills in following Standard Operating Procedures and/or scientific papers when carrying out scientific techniques
- Skills in using appropriate SI units and converting between measurement units if required when undertaking scientific techniques
- Skills in undertaking a range of laboratory techniques to identify, separate and analyse substances
- Skills in producing reliable and verifiable data from undertaking scientific techniques to identify, separate and analyse substances

On the placement, the student will need to further develop and hone through activity 3:

### **Employability skills**

- Communicating: active listening, use of visual, oral and written methods, engaging with individuals, sharing, building rapport, adapting style and tone
- Working in a team: Working with others with different skills, expertise and experience to accomplish a task or goal
- Assessing risks: Assessing a situation, a proposal, a product or process for potential adverse effects
- Recording: transcribing, noting, capturing, saving and storing scientific data and information
- Solving problems: applying a logical approach to identifying issues and proposing solutions to affect a repair

<b>Technical skills and understanding</b> <ul style="list-style-type: none"> <li>• Skills and behaviours that demonstrate application of professional practice, including appropriate conduct in the professional scientific laboratory environment, always following this code of conduct, including appropriate dress and punctuality.</li> <li>• Understanding of regulations appropriate to the sector/ industry and the specific working environment for the placement</li> <li>• Skills in comply with regulations appropriate to the sector/ industry and the specific working environment for the placement</li> <li>• Skills in working safely within a scientific laboratory environment; complying with all relevant legislation and regulations in handling and disposing of materials, assessing hazards and risks and using appropriate Personal Protective Equipment (PPE)</li> <li>• Skills in following Standard Operating Procedures and/or scientific papers when managing and maintaining equipment</li> <li>• Skills in the setting up and calibrating scientific equipment within a scientific laboratory setting</li> <li>• Skills in carrying out and recording routine maintenance and cleaning of scientific equipment</li> <li>• Skills in recognising when scientific equipment is producing inaccurate results</li> <li>• Skills in recognising when scientific equipment is damaged or unsafe to use</li> </ul>	
<b>Minimum starting requirements</b>	
<ul style="list-style-type: none"> <li>• Attendance at induction day at the employer's premises</li> <li>• Health and Safety Training (Mandatory)</li> </ul>	
<b>Required prior learning</b>	
<ul style="list-style-type: none"> <li>• Employability skills and behaviours including appropriate conduct in the professional scientific laboratory environment, appropriate dress and punctuality</li> <li>• Knowledge of the importance of working safely and ethically, following all relevant legislation, regulations and Health and Safety requirements</li> <li>• Knowledge of the health, safety and environmental practices in Science that relate to Technical: Laboratory Sciences when performing scientific techniques, this includes knowledge of all legislation and regulations, use of Personal Protective Equipment (PPE), and completing risk assessments</li> <li>• Knowledge of the reasons for and requirement to work under highly regulated conditions to control quality and safety</li> </ul>	

- Skills in working safely, complying with relevant legislation and assessing risks and hazards, including the writing of risk assessments in a simulated laboratory environment
- Knowledge of laboratory techniques to identify, separate and analyse substances
- Knowledge of laboratory techniques used to measure physical properties
- Knowledge of the scientific principles of laboratory techniques such as separation techniques and techniques to measure physical properties and how this relates to core scientific knowledge such as atomic structure, molecular structure and bonding, materials science etc.
- Skills in carrying out laboratory techniques to identify, separate and analyse substances
- Skills in carrying out laboratory techniques to measure physical properties
- Skills in using appropriate SI units and work with a range of appropriate scales when conducting scientific tasks and be able to convert between measurement units when required
- Knowledge of the importance of appropriate maintenance and cleaning of scientific equipment
- Skills in carrying out appropriate maintenance and cleaning of scientific equipment
- Knowledge of how to set up and calibrate scientific equipment
- Skills in setting up and calibrating scientific equipment
- Typical workplace behaviours needed for role, including:
  - Punctuality
  - Appropriate dress and use of required PPE
  - Use of mobile phones/social media in relation to confidentiality of data/information/results
  - Team work
  - Importance of safety, regulations and need to work in an ethical way at all times