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EUIAS End-point Assessment Specification for

Level 3 Utilities Engineering Technician (AP03)
QAN 603/7317/9

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EUIAS End-point Assessment Specification for

Level 3 Utilities Engineering Technician

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Updates to this specification

Since the first publication of the EUIAS UET Specification the following updates have been made.

Version	Date first published	Section updated	Page(s)
V2.1	August 2023	ICA grading / distinction criteria for fault finding added	62
V2.0	June 2023	Rebranded	All
V1.0	Nov 2021	First published	All

Section 1: At a Glance EPA Summary

Qualification name	EUIAS Level 3 End-point Assessment for Utilities Engineering Technician
Ofqual qualification number	603/7317/9
Standard reference	ST0159
Assessment plan	AP03
Standard title	Utilities Engineering Technician
Options	• Electrical • Mechanical • Instrumentation Control and Automation (ICA)
Level	3
Gateway pre-requisites submitted to EUIAS	Apprentice has: • achieved English and mathematics at level 2 • compiled and submitted a portfolio of evidence, which will underpin the interview
On-programme duration	Typically 48 months
Gateway readiness	Apprentice has met all Gateway pre-requisites.
End-point assessment duration	Employer completes, signs and submits Gateway Eligibility Review (GER) form to EUIAS
End-point assessment methods and their order	Can be delivered in any order

	The result of one assessment method does not have to be known before an apprentice starts the next one EUIAS recommend that the Multiple-choice Test is completed first and the Interview completed last
End-point assessment methods and component grading	Observation with questions: Fail, Pass or Distinction Interview - based on a portfolio of evidence: Fail, Pass or Distinction Multiple-choice test: Fail or Pass
Overall Grading	Fail; Pass; or Distinction
Certification	EUIAS request Apprenticeship completion certificates from the ESFA

Objective

The purpose of the Utilities Engineering Technician (UET) end-point assessment (EPA) is to test that an apprentice is fully capable of doing their job before they receive their apprenticeship certificate. It also helps to demonstrate that what an apprentice has learned can be applied in the real world.

Once the apprentice has completed the UET end-point assessment requirements successfully and has been certified, they could perform reactive and routine maintenance on water and waste-water equipment to ensure safe and efficient running of the sites, supporting other disciplines as necessary. There are three main roles within the occupation: Electrical; Mechanical; Instrumentation Control and Automation (ICA).

Professional recognition

The apprenticeship standard meets the professional standards of the Engineering Council for registration as Engineering Technician (Eng Tech) by an appropriate Professional engineering Institution

Gateway Readiness

The employer must be satisfied that the apprentice is consistently working at, or above, the level of the occupational standard. Gateway pre-requisites are listed in the summary table above.

Recognition of prior learning (RPL)

EUIAS does not recognise any apprentice prior learning (RPL) or prior achievement (RPA) for the purpose of amending the assessment requirements of any end-point assessments.

Please refer to the EUIAS RPL and RPA policy at www.euias.co.uk/end-point-assessment/policies-and-fees

In order for EUIAS to award an end-point assessment qualification, the apprentice must successfully complete all required assessment components with EUIAS. This means that:

- each of the EPA components must be completed in full with EUIAS
- where an apprentice transfers to EUIAS from another EPAO they have to undertake the entire EPA with EUIAS
- components of the EPA cannot be certificated in isolation
- evidence produced for the portfolio must be related to the time the apprentice is on their apprenticeship programme to demonstrate current practice
- examples used by the apprentice, during the interview, must relate to the time they were on their apprenticeship programme

This does not affect the Gateway requirements which must be met in order for an apprentice to be eligible for end-point assessment.

This does not affect any reasonable adjustments that may be granted.

Section 2: End-point Assessment Components

Component 1: Observation with Questions

Overview

In an observation with questions, an independent assessor observes an apprentice in their workplace. The apprentice completes their day-to-day duties under normal working conditions. This allows the apprentice to demonstrate the required KSBs through naturally occurring evidence. The independent assessor will ask questions in relation to underpinning knowledge or where an opportunity to observe an activity has not naturally occurred. To remain as unobtrusive as possible, independent assessors will ask questions during natural stops between tasks and after completion of work rather than disrupting the apprentice's flow. Simulation is not permitted during the observation.

Step by Step Guide

The table below provides a step-by-step guide on how the observation with questions will be carried out:

Assessors	1 independent assessor, appointed by EUIAS.
Practical structure	The observation must take 4 hours. It cannot be split, other than to allow comfort breaks as necessary or to allow the apprentice to move from one location to another as required. During these breaks, the clock must be stopped and then restarted to ensure that the assessment duration is not reduced. Questioning may occur both during and after the observation. The time for questioning is included in the overall time
Where will the	The observation will take place in the apprentice's normal place of work. Questioning that occurs after the observation should take place in a quiet location free from distractions and influence

assessment take place?	
What are the tasks that will be covered?	The apprentice will undertake the following activities: • plan and prepare for work activities • complete risk assessment and identify control measures • communicate with a stakeholder/colleague for example, to outline work required/completed • complete task documentation • conduct planned, preventative or reactive specialist maintenance clean water/waste water equipment, covering ▪ two-three different types of maintenance tasks ▪ two different types of equipment; equipment must have multiple parts/elements ▪ use of at least three different tools and equipment, including 'test equipment' ▪ equipment isolation It is sufficient for the maintenance activity to be completed on clean water or waste water equipment. The specialism is determined by the option taken by the apprentice: electrical, mechanical or instrumentation control and automation.
Who sets the task(s)?	Employers set the task based on the EUIAS template provided within in the Supporting Documents (Appendix E: Observation with Questions Planning Sheet). The task must provide apprentices with the opportunity to achieve all the KSBs assessed in the observation. Tasks completed during the observation should contribute to workplace productivity and must be valid.

What resources can the apprentice use?	Equipment and resources needed for the observation must be • provided by the employer • the tools, equipment and PPE required for the job • in good and safe working condition Work instructions/manuals must be available in hard copy or electronically.
How many questions will the apprentice be asked?	The independent assessor: • will ask a minimum of five questions across the tasks • may ask follow-up questions in order to seek clarification • will ask questions about KSBs that were not observed to gather assessment evidence. These questions are in addition to the minimum five questions for the observation
What will the questions focus on?	Underpinning knowledge and/or skills and behaviours where an opportunity to observe them has not occurred.
Grading	Fail, Pass or Distinction

Observation with questions Knowledge, Skills and Behaviours (KSBs) coverage

The observation with questions covers:

Observation Elements: All pathways	Amplification and Guidance (where required)
K2 Maintenance practices, processes and procedures covering a range of waste and water systems, plant and equipment **K5** Planned, reactive, and predictive maintenance processes, practices and procedures **S4** Carry out maintenance activities on a range of waste and water systems, plant and equipment **S6** Carry out and follow planned, reactive and predictive plant and equipment maintenance procedures	**Maintenance practices, processes and procedures,** depending on pathway, to include • Water treatment processes (water dosing, filtration, disinfection) • Maintenance of plant and equipment within the utilities sector • RAMS (Risk Assessment and Method Statements) • Operate control and maintain process control equipment and instrumentation **Range of waste and water systems, plant and equipment** such as, but not limited to • Electrical equipment: switchgear, circuit breakers, motors, transformers, motor control centres, drive mechanisms • ICA equipment: SCADA units, sensors, analysers, pressure transmitter, level transmitter, flow transmitter, temperature transmitter, valve positioner • Mechanical equipment: Bearing types, couplings type, belt/chains driven devices, gaskets, gearboxes, gland packing, impellors,

Observation Elements: All pathways	Amplification and Guidance (where required)
	mechanical seals, valves and penstocks, process equipment, position sensors, heat exchangers, proximity devices including sensors, solenoids, limit switches, pumping systems, aerators, filters and filter systems, scrapers and scraper systems, rotating biological contactors, digesters, actuators, blowers, compressors, air absorption vessels, air receivers, inlet and screening components, chemical dosing equipment
S2 Follow and comply with industry health and safety and environmental working practices and regulations **S10** Adhere to safe working practices and procedures and carry out risk assessments	**Working practices and regulations / working practices and procedures** such as but not limited to • Health and Safety: The Health and Safety at Work Act; The Management of Health and Safety at Work Regulations; Provision and Use of Work Equipment Regulations; The Electricity at Work Regulations; Workplace (Health and Safety and Welfare) Regulations; COMAH; Control of Substances Hazardous to Health (COSHH); RIDDOR • Environment: Environmental Protection Act; Control of Asbestos at Work Regulations; The Hazardous Waste Regulations; Pollution Prevention and Control Act; Control of Pollution Act; The Control of Noise at Work Regulations; The Waste Electrical and Electronic Equipment Regulations

Observation Elements: All pathways	Amplification and Guidance (where required)
	• Personal Protective Equipment (PPE) • Awareness of Confined Space • Warning signs for the main groups of hazardous substances • Roles and responsibilities of employers and employees with regard to current relevant protection of health, safety and the environment in the workplace • The meaning of the term 'risk' and how to rate the level of risk in the workplace • The meaning of the term 'hazard' and how to identify specific hazards associated with maintenance and operations • Company practices and procedures for addressing hazards, accidents and emergencies; appropriate responsible persons; RIDDOR; first aid; handling, maintenance and storage of tools, equipment and materials **Safe working practices**, such as, but not limited to • isolation and locking-off procedures • RAMS – as above • Permits to work • Hot works permit

Observation Elements: All pathways	Amplification and Guidance (where required)
S7i Communicate with and provide information and guidance to colleagues in line with personal role and responsibilities	**Communicate with and provide information and guidance** • Provision of accurate verbal and written reports in line with company policy and procedures • A polite and courteous service to relevant people
S8 Handover and confirm completion of engineering activities	**Handover** to include • chain of command • verbal handovers • written handovers • handover documentation • correct sign-off procedure **Engineering activities** • Maintenance procedures • Operation and control of process equipment • Inspection and testing of equipment (electrical, mechanical and instrumentation)
S9ii Work to technical specifications and supporting documentation	**Technical specifications** • RAMS (Risk Assessment Method Statements)

Observation Elements: All pathways	Amplification and Guidance (where required)
	• Operational manuals • Manufacturers data sheet • Commissioning reports **Supporting documentation** • Company recording and reporting documents
S11 Carry out safe isolation of equipment, using permit and lock-off systems as required	Safely isolate equipment from all sources of energy
S13i Maintain equipment and components as required	**Range of equipment and components** such as but not limited to • Electrical equipment: switchgear, circuit breakers, motors, transformers, motor control centres, drive mechanisms, LV (low voltage) ELV (extra low voltage) circuits • ICA equipment: SCADA units, sensors, analysers, pressure transmitter, level transmitter, flow transmitter, temperature transmitter, valve positioner • Mechanical equipment: Bearing types, couplings type, belt/chains driven devices, gaskets, gearboxes, gland packing, impellors, mechanical seals, valves and penstocks, process equipment, position sensors, heat exchangers, proximity devices including sensors,

Observation Elements: All pathways	Amplification and Guidance (where required)
	solenoids, limit switches, pumping systems, aerators, filters and filter systems, scrapers and scraper systems, rotating biological contactors, digesters, actuators, blowers, compressors, air absorption vessels, air receivers, inlet and screening components, chemical dosing equipment
Behaviours **B1** Display a self-disciplined, self-motivated approach whilst recognising personal limitations and seeking advice from fact holders and specialists when required **B2** Accept responsibility for work of self or others **B4i** Work effectively and safely when undertaking tasks to approved standards and safe working practices when working alone **B5** Undertake and complete work in a way that contributes to sustainable development **B6** Be risk aware and minimise risks to life, property and the environment when undertaking work activities	

Observation Elements: All pathways	Amplification and Guidance (where required)
B7i Be quality focused **B8** Identify, organise and use resources effectively to complete tasks, with consideration for cost, quality, safety, security and environmental impact.	

Observation Elements: Electrical	Amplification and Guidance (where required)
E4 Use electrical theories and principles to use test equipment for voltage, current and earth resistance testing to maintain the integrity of the electrical system	**Electrical theories and principles** such as, but not limited to • Ohms Law • Watt's Law • Fleming / left hand right hand rule • Single phase power • Three phase power • Frequency
E9 Carry out electrical procedures on industrial low voltage systems (up to 1000V AC) operating switchgear, fuses, motor control centres, transformers, manual and automatically controlled drives and motors	**Electrical procedures** • Start up and shutdown • Safe isolations • Handover • Fault finding • Planned and reactive maintenance • Inspection and testing • Visual inspections • Sensory perception: smell touch sight sound

Observation Elements: Mechanical	Amplification and Guidance (where required)
M2i Inspect and monitor mechanical systems and maintain mechanical equipment and components **M8i** Test and service mechanical equipment as part of planned preventative maintenance and/or reactive maintenance programmes	**Mechanical systems / mechanical equipment and components** such as, but not limited to • Bearing types, couplings type, belt/chains driven devices, gaskets, gearboxes, gland packing, impellors, mechanical seals, valves and penstocks, process equipment, position sensors, heat exchangers, proximity devices including sensors, solenoids, limit switches • Pumping systems • Aerators, filters and filter systems, scrapers and scraper systems, rotating biological contactors, digesters • Actuators, blowers, compressors, air absorption vessels, air receivers • Inlet and screening components • Chemical dosing equipment

Observation Elements: Instrumentation Control and Automation	Amplification and Guidance (where required)
I2i Maintain instrumentation and control equipment and circuits **I4i** Use Instrumentation and Control Systems knowledge and skills to maintain instruments, controllers, probes, attachments, cabling, meters and display units	**Instrumentation and control equipment / instruments**, such as but not limited to • SCADA units, sensors, analysers, pressure transmitter, level transmitter, flow transmitter, temperature transmitter, valve positioner
I7 Test, calibrate and validate fixed and portable analogue and digital instrumentation using approved procedures and standards **I8i** Maintain and calibrate field instrumentation, communication devices and associated equipment used in system and process control, such as Programmable Logic Controllers (PLC) and Supervisory Control and Data Acquisition (SCADA) systems	**Analogue and digital instrumentation** • Level measurement devices such as transmitters, switches, displacement, RF Probe, ultrasonic • Flow measurement devices such as transmitters, switches, turbine, magmeter, ultrasonic, rotameters and differential pressure devices e.g. Venturi, Dall tube, Orifice plate, pitot tube • Analytical instruments such as gas detection, turbidity, dissolved oxygen • Digital sensors including proximity, electro-magnetic, infra-red • Pressure measurement devices such as transmitters, switches, gauges • Temperature measurement devices such as transmitters, switches, RTD's, thermocouples, thermometers, temperature gauges

Observation Elements: Instrumentation Control and Automation	Amplification and Guidance (where required)
I11 Carry out isolation procedures to ensure process or system stability and personnel safety when carrying out operations	**Isolation procedures** • Safely isolate equipment from all sources of energy

Observation Roles and Responsibilities

Role	Responsibility
Independent Assessor	Record and report assessment outcome decisions, for each apprentice, following instructions and using assessment recording documentation provided by EUIAS
Employer/Training provider	Provide the venue for the observation with questions which must be suitably equipped to allow the apprentice to attempt all aspects of the observation with questions Provide all necessary tools and equipment for the apprentice Ensure the apprentice has access to the resources used on a daily basis
EUIAS	Arrange for the observation to take place, in consultation with the employer/training provider and assessor

Component 2: Interview

Overview

The interview is based on the apprentice's portfolio of evidence. The interview will allow an independent assessor and an apprentice to have a formal two-way conversation. It will give the apprentice the opportunity to demonstrate their competency across the required KSBs.

Step-by-Step Guide

The table below provides a step by step guide on how the interview based on the portfolio of assessment will be carried out:

Assessors	An independent assessor appointed by EUIAS
Interview structure	Number of questions: A minimum of nine open questions. Additional follow up questions are allowed, to seek clarification Location: a quiet room, free from distractions and influence Time: 60 minutes The interview will be: • face to face or remote, as agreed • recorded in writing using an interview record template provided by EUIAS • video recorded using relevant technology such as Microsoft Teams or an audio recording device • conducted under controlled conditions The apprentice will have access to their portfolio of evidence throughout the interview The apprentice will have at least two weeks notice of the interview

What topics will be covered?	Questions will cover the following topics: • make components (S5) • work allocation/supervision (B9 B4ii) • professionalism (B3 B7ii) • diversity and equality (B10) • continued professional development (B11) • ethical manner (B12) • specialist duties (S1 S12 S14 plus Electrical: E1 E3 E7; Mechanical: M2ii M5 M8ii M9 M10; ICA: I5 I6 I9 I10 I11 I12 I13) • specialist installation and commission of clean/waste water equipment; decommission (S13ii plus Electrical: E2 E6 E8; Mechanical: M3 M4 M7; ICA: I3 I4ii) • specialist fault finding and repairs (K4 S3 plus Electrical: E5 E10; Mechanical: M1 M6; ICA: I1 I2ii I8ii) The specialism is determined by the option taken by the apprentice: electrical, mechanical or instrumentation control and automation
How many questions will the apprentice be asked?	The independent assessor: • will ask a minimum of nine questions based on a question in a question bank • may ask follow-up questions in order to seek clarification
When will the portfolio of evidence be submitted and referred to?	The portfolio of evidence: • will be reviewed by the independent assessor before the interview • can be referred to by the apprentice to illustrate their answers Note: the portfolio of evidence • is not directly assessed • must be submitted to EUIAS at Gateway
Grading	Fail, Pass or Distinction

Portfolio of Evidence Requirements

The requirements are as follows:

Portfolio Mapping Document The apprentice must map their portfolio of evidence to the KSBs as this evidence will be used by the independent assessor to assess the apprentice during the interview. The portfolio mapping document must be clearly referenced and included at the front of the portfolio. For further guidance on mapping refer to: • Section 5 Guidance on portfolio of evidence and apprentice mapping • Appendix D, Supporting Documents 'Portfolio Mapping Document.'
How will the training provider submit the apprentice's portfolio to EUIAS? As part of the pre-requisite gateway requirements the apprentice must have complied and completed a portfolio of evidence The training provider must submit the portfolio of evidence to EUIAS, either in an electronic or paper format, at the same time as the other Gateway pre-requisites

Interview Knowledge, Skills and Behaviours (KSBs) coverage

The interview based on a portfolio of evidence covers:

Interview Elements: All pathways	Amplification and guidance (where required)
K4 Principles and processes that underpin the location, diagnosis and rectification of faults **S3** Locate, diagnose and rectify faults on plant and equipment	**Principles and processes** such as, but not limited to • Sensory perception: visual, smell, touch, sound • Six point technique • Half split method • Input to output technique • Functional testing • Unit substitution • Injection and sampling techniques • Equipment self-diagnostics
S1 Apply technical knowledge to carry out inspections, condition monitoring and reporting (see E1, E3, M2, M10, I2)	**Technical knowledge** • Maintenance and repairing of equipment • Defects and their causes • Calibration of equipment • Company recording and reporting procedures

Interview Elements: All pathways	Amplification and guidance (where required)
S5 Use workshop machinery and equipment to create, repair and modify component and apparatus	**Workshop machinery and equipment** including, but not limited to • Drills, grinders, bearing heaters and/or pullers, test bench • Safe operating of equipment **Component and apparatus** including but not limited to • Electrical equipment: switchgear, circuit breakers, motors, transformers, motor control centres, drive mechanisms, LV (low voltage) ELV (extra low voltage) circuits • ICA equipment: SCADA units, sensors, analysers, pressure transmitter, level transmitter, flow transmitter, temperature transmitter, valve positioner • Mechanical equipment: Bearing types, couplings type, belt/chains driven devices, gaskets, gearboxes, gland packing, impellors, mechanical seals, valves and penstocks, process equipment, position sensors, heat exchangers, proximity devices including sensors, solenoids, limit switches, pumping systems, aerators, filters and filter systems, scrapers and scraper systems, rotating biological contactors, digesters, actuators, blowers, compressors, air absorption vessels, air

Interview Elements: All pathways	Amplification and guidance (where required)
	receivers, inlet and screening components, chemical dosing equipment
S7ii Communicate with and provide information and guidance to contractors, suppliers in line with personal role and responsibilities	**Communicate with and provide information and guidance** • Provision of accurate verbal and written reports in line with company policy and procedures • A polite and courteous service to relevant people
S12 Drive vehicles equipped with tools and materials to job sites	**Drive vehicles**, if required • Full driving licence or demonstrate progress to working towards achieving a full driving licence • Complying with company driving procedures • Carry out vehicle checks • Safely load vehicles
S13ii Install, replace and commission equipment and components as required	**Equipment and components** including • Electrical equipment: switchgear, circuit breakers, motors, transformers, motor control centres, drive mechanisms, LV and ELV circuits

Interview Elements: All pathways	Amplification and guidance (where required)
	• ICA equipment: SCADA units, sensors, analysers, pressure transmitter, level transmitter, flow transmitter, temperature transmitter, valve positioner • Mechanical equipment: Bearing types, couplings type, belt/chains driven devices, gaskets, gearboxes, gland packing, impellors, mechanical seals, valves and penstocks, process equipment, position sensors, heat exchangers, proximity devices including sensors, solenoids, limit switches, pumping systems, aerators, filters and filter systems, scrapers and scraper systems, rotating biological contactors, digesters, actuators, blowers, compressors, air absorption vessels, air receivers, inlet and screening components, chemical dosing equipment
S14 As required, undertake standby duties to provide 24-hour cover to remedy fault situations requiring diagnostic testing procedures	**Standby duties if required** • A willingness to undertake priority out of hours work activities • Provide an explanation of the hazards of working alone out of hours in line with the company procedures

Interview Elements: All pathways	Amplification and guidance (where required)
Behaviours **B3** Deliver a polite, courteous professional service to customers and members of the public **B4ii** Work effectively and safely when undertaking tasks to approved standards and safe working practices as part of a team or with appropriate supervision **B7ii** Be professional in work and in personal standards **B9** Accept, allocate and supervise technical and other tasks **B10** Be aware of the needs and concerns of others, especially where related to diversity and equality **B11** Carry out and record CPD necessary to maintain and enhance competence **B12** Exercise responsibilities in an ethical manner	

Interview Elements: Electrical	Amplification and Guidance (where required)
E1 Inspect and monitor electrical systems, and inspect, monitor, maintain and repair electrical equipment **E3** Access a range of sites to install, maintain, test, repair and dismantle electrical equipment **E2** Test electrical equipment and systems and assist in installing electrical systems and equipment **E7** Test, service and repair electrical equipment as part of planned preventative maintenance and/or reactive maintenance programmes **E5** Consult design specifications to analyse and calculate electrical system parameters and rectification procedures	**Electrical systems and equipment** include • LV (low voltage) ELV (extra low voltage) systems • AC and DC power systems • Motors and starters • Switchgear and distribution panels • Control systems and components • Lighting systems • Switchgear, circuit breakers, motors, transformers, motor control centres, drive mechanisms
E6 Interpret electrical drawings to install, position or re-locate electrical equipment and cabling **E8** Install and connect electrical cables, switchgear, circuit breakers, motors, transformers and other associated equipment	**Electrical drawings** • Refer to technical drawings to confirm specification

Interview Elements: Electrical	Amplification and Guidance (where required)
E10 Carry out basic fault diagnostics on Programmable Logic Controllers (PLC) and Supervisory Control and Data Acquisition (SCADA) systems	**Basic fault diagnostics** • Using diagnostic equipment such as multimeter, multi-functional tester, network analysers, insulation resistance testers to identify faults such as ▪ Input/output ▪ Bad limit switch, bad motor ▪ Power supply ▪ Broken / damaged equipment ▪ Equipment not earthed ▪ Faulty sensors ▪ Closed/open circuit devices

Interview Elements: Mechanical	Amplification and Guidance
M1 Apply mechanical theories and principles in order to carry out diagnostic fault finding procedures	**Mechanical theories and principles** ▪ Forces, motion, space, time, mass, work, energy ▪ Newton's Laws ▪ Torque

Interview Elements: Mechanical	Amplification and Guidance
	Fault finding procedures ▪ Sensory perception: visual, smell, touch, sound ▪ Six point technique ▪ Half split method ▪ Input to output technique ▪ Functional testing ▪ Unit substitution ▪ Injection and sampling techniques ▪ Equipment self-diagnostics
M2ii Inspect and monitor mechanical systems, and inspect, monitor, dismantle and repair mechanical equipment and components **M10** Inspect and maintain condition monitoring equipment **M3** Test mechanical equipment and systems and assist in installing mechanical systems and equipment	**Mechanical systems / mechanical equipment and components** ▪ Bearing types, couplings type, belt/chains driven devices, gaskets, gearboxes, gland packing, impellors, mechanical seals, valves and penstocks, process equipment, position sensors, heat exchangers, proximity devices including sensors, solenoids, limit switches, pumping systems, aerators, filters and filter systems, scrapers and scraper systems, rotating biological contactors, digesters, actuators, blowers, compressors, air absorption vessels, air receivers, inlet and screening components, chemical dosing equipment

Interview Elements: Mechanical	Amplification and Guidance
M7 Interpret plans and drawings to install, position or re-locate mechanical equipment and components **M8ii** Repair mechanical equipment as part of planned preventative maintenance and/or reactive maintenance programmes **M9** Install and maintain mechanical components including motors, pumps and gearboxes, maintaining and replacing lubricants	**Condition monitoring equipment** such as, but not limited to ▪ Vibration analysis, thermal imaging, ultrasonics, motor testing, laser alignment
M4 Basic fabrication and welding of structures and components	**Fabrication** including ▪ Sheet metal, plate **Welding techniques and positions** such as, but not limited to ▪ Lap, fillet, tee, butt, horizontal-vertical, vertical up, overhead, vertical down
M5 Use mechanical knowledge and skills to install, maintain and dismantle a wide range of complex plant, machinery and components	**Plant, machinery and components** ▪ Bearing types, couplings type, belt/chains driven devices, gaskets, gearboxes, gland packing, impellors, mechanical seals, valves and penstocks, process equipment, position sensors, heat exchangers,

Interview Elements: Mechanical	Amplification and Guidance
	proximity devices including sensors, solenoids, limit switches, pumping systems, aerators, filters and filter systems, scrapers and scraper systems, rotating biological contactors, digesters, actuators, blowers, compressors, air absorption vessels, air receivers, inlet and screening components, chemical dosing equipment
M6 Consult design specifications to analyse and calculate mechanical system parameters and rectification procedures	**Mechanical system parameters** including ▪ Vibration ▪ Pressure ▪ Contamination ▪ Purity ▪ Level ▪ Flow ▪ Trend analysis

Interview Elements: Instrumentation Control and Automation	Amplification and Guidance
I1 Apply theories and principles of electronics to use equipment to carry out diagnostic fault finding procedures	**Theories and principles** ▪ Voltage, current, power, sine waves ▪ Single phase circuits, series and parallel circuits ▪ Electronic amplifier circuits, AC and DC circuits ▪ Design and test of digital electronic circuits used in electro-mechanical systems ▪ Bernoulli's Principle ▪ Norton's Theorem **Fault finding procedures** ▪ Sensory perception: visual, smell, touch, sound ▪ Six point technique ▪ Half split method ▪ Input to output technique ▪ Functional testing ▪ Unit substitution ▪ Injection and sampling techniques ▪ Equipment self-diagnostics ▪ Trend analysis

Interview Elements: Instrumentation Control and Automation	Amplification and Guidance
I2ii Repair and overhaul instrumentation and control equipment **I3** Test and calibrate instrumentation and control equipment and circuits, and assist in installing instrumentation and control equipment	**Instrumentation and control equipment** ▪ SCADA units, sensors, analysers, pressure transmitter, level transmitter, flow transmitter, temperature transmitter, valve positioner **Circuits** ▪ Single phase circuits, series and parallel circuits ▪ Electronic amplifier circuits, AC and DC circuits ▪ Test of digital electronic circuits used in electro-mechanical systems
I5 Carry out telemetry outstation and internal system configuration **I6** Identify and resolve data quality and calibration issues **I9** Use standards and specifications to improve the information gathered by telemetry data	**Telemetry** ▪ Sensors ▪ Transmitters ▪ Communications technologies ▪ Software **Calibration issues** ▪ Hysteresis ▪ Repeatability ▪ Linearity

Interview Elements: Instrumentation Control and Automation	Amplification and Guidance
	▪ Temperature ▪ Gravity
I4ii Use Instrumentation and Control Systems knowledge and skills to install, and dismantle instruments, controllers, probes, attachments, cabling, meters and display units **I8ii** Repair and configure field instrumentation, communication devices and associated equipment used in system and process control, such as Programmable Logic Controllers (PLC) and Supervisory Control and Data Acquisition (SCADA) systems **I10** Inspect and maintain security equipment, telecommunication devices and alarm systems	**Instruments** ▪ SCADA units, sensors, analysers, pressure transmitter, level transmitter, flow transmitter, temperature transmitter, valve positioner
I12 Provide support to day-to-day users of instrumentation and control systems	**Instrumentation and control systems** ▪ SCADA units, sensors, analysers, pressure transmitter, level transmitter, flow transmitter, temperature transmitter, valve positioner

Interview Elements: Instrumentation Control and Automation	Amplification and Guidance
I13 Complete data cleansing to ensure consistent and valid data is available for business and regulation purposes	▪ Ensuring data is captured and presented in the relevant format ▪ Ensuring data is relevant and of the quality required

Interview Roles and Responsibilities

Role	Responsibility
Independent Assessor	Record and report assessment outcome decisions, for each apprentice, following instructions and using assessment recording documentation provided by EUIAS
Employer/Training provider	Ensure that the portfolio of evidence has been submitted to EUIAS at Gateway. Ensure the interview based on the portfolio is scheduled with EUIAS for a date and time which allow the apprentice to be well prepared Ensure the apprentice has access to their portfolio before and on the day of the interview
EUIAS	Arrange for the interview to take place, in consultation with the employer/training provider and independent assessor

Component 3: Multiple-choice Test

Overview

The multiple-choice test is paper based. Apprentices have 60 minutes to complete the test. It consists of 40 questions.

The multiple-choice questions will have four possible answers. One answer will be correct.

The test is closed which means that the apprentice cannot refer to reference books or materials

Apprentices must take the test in a quiet space, free from distractions and influence, in the presence of an invigilator.

Multiple-choice Test, Skills and Behaviours (KSBs) coverage

The table below lists each of the elements, assessed in the knowledge test, with additional amplification and guidance, where appropriate, from EUIAS on the range and depth expected. EUIAS has worked with employers and subject matter experts to develop the amplification and guidance.

Number of Questions	Knowledge	Amplification and Guidance (where required)
19-21	**K1** Relevant industry health and safety standards and regulations, and environmental; and regulatory requirements	To include ▪ Health and Safety: The Health and Safety at Work Act; The Management of Health and Safety at Work Regulations; Provision and Use of Work Equipment Regulations; The Electricity at Work Regulations; Workplace (Health and Safety and Welfare) Regulations; COMAH; Control of Substances Hazardous to Health (COSHH); RIDDOR ▪ Environment: Environmental Protection Act; Control of Asbestos at Work Regulations; The Hazardous Waste Regulations; Pollution Prevention and Control Act; Control of Pollution Act; The Control of Noise at Work Regulations; The Waste Electrical and Electronic Equipment Regulations ▪ Personal Protective Equipment (PPE)

Number of Questions	Knowledge	Amplification and Guidance (where required)
		▪ Manual Handling ▪ Working at Height ▪ Awareness of Confined Space ▪ Awareness of Permit to Work ▪ Warning signs for the main groups of hazardous substances: COSHH, CLP, ISO ▪ Roles and responsibilities of employers and employees with regard to current relevant protection of health, safety and the environment in the workplace ▪ The meaning of the term 'risk' and how to rate the level of risk in the workplace ▪ The meaning of the term 'hazard' and how to identify specific hazards associated with maintenance and operations ▪ Company practices and procedures for addressing hazards, accidents and emergencies; appropriate responsible persons; RIDDOR; first aid; handling, maintenance and storage of tools, equipment and materials; safe working practices; isolation and locking-off procedures

Number of Questions	Knowledge	Amplification and Guidance (where required)
11-13	**K3** Relevant level of theory and principles that underpin the design and function of electromechanical and instrumentation systems and equipment	For all pathways to include • Engineering mathematics: ▪ appropriate degree of accuracy ▪ use formulae and algebraic expressions to solve problems ▪ use Sine, Cosine and Tangent to solve typical engineering problems ▪ apply Pythagoras' Theorem • Engineering theories and principals: ▪ energy: electrical; kinetic (rotational and linear movement); potential; heat; chemical ▪ primary units of the SI system: length, mass, time, temperature ▪ derived units of the SI system: force, stress, density, conductivity, power, capacity • Common engineering materials: ▪ characteristics of metallic and non-metallic materials used in engineering ▪ causes of corrosion in materials

Number of Questions	Knowledge	Amplification and Guidance (where required)
		▪ defects that can occur in materials/products ▪ select materials to meet specification requirements in a typical engineering environment • Quality control: ▪ understand quality control in function and maintenance of equipment ▪ making recommendations whether to re-work, adjust or scrap items/components that do not meet required standards ▪ basic principles of document control ▪ the importance of quality records and the type of inspection records needed • Engineering information: ▪ extract information from drawings ▪ abbreviations and notation used on various standard engineering drawings ▪ interpret the information that can be extracted from reference charts, tables, graphs and BS EN standards • interpret drawings and labelling

Number of Questions	Knowledge	Amplification and Guidance (where required)
		▪ use charts, tables, graphs and BS EN standards To include for individual pathways • Electrical ▪ Equipment: switchgear, circuit breakers, motors, transformers, motor control centres, drive mechanisms ▪ Engineering mathematics: calculations involving power, electromotive force and resistance ▪ Engineering theories and principals: basic electrical principles • ICA ▪ Equipment: SCADA units, sensors, analysers, pressure transmitter, level transmitter, flow transmitter, temperature transmitter, valve positioner ▪ Engineering mathematics: calculations involving power, voltage, current ▪ Engineering theories and principals: theory of analogue and digital systems, basic principles of digital

Number of Questions	Knowledge	Amplification and Guidance (where required)
		monitoring, basic principles of instrumentation for process monitoring and control • Mechanical ▪ Equipment: bearing types, couplings type, belt/chains driven devices, gaskets, gearboxes, gland packing, impellors, mechanical seals, valves and penstocks, process equipment, position sensors, heat exchangers, proximity devices including sensors, solenoids, limit switches, pumping systems, aerators, filters and filter systems, scrapers and scraper systems, rotating biological contactors, digesters, actuators, blowers, compressors, air absorption vessels, air receivers, inlet and screening ▪ Engineering mathematics: calculations involving forces, friction, work done and power ▪ Engineering theories and principals: work and power transmission; laws of friction; the relationship between temperature changes and changes in length; define moments of a force

Number of Questions	Knowledge	Amplification and Guidance (where required)
7-9	**S9i** Read, understand and interpret computer data and displays	Data from systems including • flow statistics • pH • dissolved oxygen (DO) measurements • air flows • turbidity • chemical concentrations Interpretation to include • process performance – within acceptable parameters or not • identification of faults and problems • compliance with relevant standards

Multiple-choice test Roles and Responsibilities

Role	Responsibility
Invigilator	Is typically provided by the employer or training provider Attend induction training as directed by EUIAS Have no direct connection or conflict of interest with the apprentice, their employer or training provider; in all instances Invigilate and supervise apprentices during tests and in breaks to prevent malpractice
Employer/Training provider	Ensure that the test is scheduled with EUIAS for a date and time which allow the apprentice to be well prepared
EUIAS	Arrange for the test to take place, in consultation with the employer/lead provider Mark multiple-choice test answers accurately according to the mark scheme and procedures

Section 3: Grading and Grading Criteria

Component 1: Observation with Questions

Fail - does not meet pass criteria

Topic KSBs - Observation	Pass Apprentices must meet all of the following pass descriptors statements	Distinction Apprentices must meet all the pass descriptors and all the following distinction descriptors statements
Core - Health, safety and environment S2 S10 B4i B5 B6 B8	Completes risk assessment to identify risks and hazards in the workplace and applies suitable control measures to minimise risks to life, property and the environment Conducts work in line with health and safety and environment practices, procedures and regulations Monitors and maintains safe working conditions and practices	

Topic KSBs - Observation	Pass Apprentices must meet all of the following pass descriptors statements	Distinction Apprentices must meet all the pass descriptors and all the following distinction descriptors statements
	Conducts work in a way that contributes to sustainable development for example, considers use of resources, recycles waste materials, disposes of waste material following safe practice	
Core - Communication S7i S8	Communicates with colleagues as required by the task; communication style is appropriate to the audience Provides technically correct information and guidance Handovers and confirms completion of engineering activities to the appropriate person Uses industry terminology accurately and appropriately	Takes responsibility to explain the added benefits of the task completion and checks understanding with contractor, supplier or colleague answering any outstanding queries accurately.

Topic KSBs - Observation	Pass Apprentices must meet all of the following pass descriptors statements	Distinction Apprentices must meet all the pass descriptors and all the following distinction descriptors statements
	Completes task documentation in full, accurately and legibly	
Core - Maintenance task K2 K5 S4 S6 S9ii S11 S13i B1 B2 B4i B7i B8	Identifies and organises required resource from information provided, including tools, equipment, materials for tasks. Considers the implications of cost, quality and security when making their choices Conducts maintenance tasks to specification and in-line with company processes, practices and procedures Carries out safe isolation of equipment using permit and lock-off systems as required	Justifies choice and use of resources, based on balancing the impact of cost, quality, safety, security and environment impact Considers options and choses the most efficient and effective approach for example, plans tasks, multi-tasks, reducing the need for self-correction after the task has commenced.

Topic KSBs - Observation	Pass Apprentices must meet all of the following pass descriptors statements	Distinction Apprentices must meet all the pass descriptors and all the following distinction descriptors statements
	Asks for specialist advice when required	Analyses and explains the potential consequences of not undertaking the maintenance Identifies and explains the potential issues that could arise during the work and how they mitigate against them
Electrical option – Maintenance E4 E9	Uses electrical theories, principles and procedures to use test equipment as part of a planned preventative and/or reactive maintenance programme Carries out electrical procedures on industrial low voltage systems (up to 1000V AC; operates switchgear, fuses, motor control centres, transformers, manual and automatically controlled	

Topic KSBs - Observation	Pass Apprentices must meet all of the following pass descriptors statements	Distinction Apprentices must meet all the pass descriptors and all the following distinction descriptors statements
	drives and motors to ensure they are electrically safe	
Mechanical option – Maintenance M8i M2i	Tests and services mechanical equipment as part of a planned preventative and/or reactive maintenance programme	
ICA option – Maintenance I2i I4i I7 I8i I11	Tests, maintains, calibrates and validates fixed and portable analogue and digital instrumentation as part of a planned preventative and/or reactive maintenance programme	

Component 2: Interview based on Portfolio of Evidence

Fail - does not meet pass criteria.

Topic KSBs - Interview	Pass Apprentices must meet all of the following pass descriptors statements	Distinction Apprentices must meet all the pass descriptors and all the following distinction descriptors statements
Core – Health and safety B4ii	Describes how they have monitored and maintained safe working conditions and practices when working as part of a team or when supervised Explains the implications of non-compliance with relevant health and safety standards, regulations and practice	
Core – Make components S5	Describes how they have used workshop machinery and equipment to create, repair and modify component and apparatus appropriately	

Topic KSBs - Interview	Pass Apprentices must meet all of the following pass descriptors statements	Distinction Apprentices must meet all the pass descriptors and all the following distinction descriptors statements
Core – Communicate S7ii	Describes how they communicate with contractors and suppliers and provide information and guidance in line with personal role and responsibilities	
Core - Work allocation/ supervision B4ii B9	Describes how they have managed tasks, including delegation and supervision Describes how their contributions to a team project made a difference, whilst working to approved standards and safe working practices	
Core - Professionalism B3 B7ii	Describes how they have delivered a polite, courteous and professional service to customers and members of the public	
Core - Diversity and equality B10	Describes how they have taken account of the needs and concerns of others in relation to diversity and equality	

Topic KSBs - Interview	Pass Apprentices must meet all of the following pass descriptors statements	Distinction Apprentices must meet all the pass descriptors and all the following distinction descriptors statements
Core - Continued professional development B11	Describes the CPD activities they have completed and explains how it enhanced their competence	
Core –Ethical manner B12	Describes how they exercise responsibilities in an ethical manner	
Electrical option - Duties S1 S12 S14 E1 E3 E7	Describes how they have applied technical knowledge in their electrical duties: inspecting, condition monitoring and reporting; and testing servicing/maintaining and repairing electrical equipment Describes the different contexts/settings in which they have installed, maintained and tested electrical equipment	

Topic KSBs - Interview	Pass Apprentices must meet all of the following pass descriptors statements	Distinction Apprentices must meet all the pass descriptors and all the following distinction descriptors statements
	If appropriate to the apprentice's workplace, describes their role in driving vehicles equipped with tools and materials to job sites If appropriate to the apprentice's workplace, describes how they provide 24 hour cover to remedy fault situations requiring diagnostic testing procedures	
Electrical option - Electrical installation and commission of clean/waste water equipment S13ii E2 E6 E8	Explains how they have installed or replaced and commissioned equipment and components (electrical cables, switchgear, circuit breakers, motors, transformers and other associated equipment), including interpretation of electrical drawings and testing	Identifies and explains the potential issues that could arise during the work and how they mitigate against them
Electrical option - Electrical fault finding and repair	Describes how they have located, diagnosed and rectified faults on Programmable Logic Controllers	Describes different fault-finding methods they have used, justifying their choices

Topic KSBs - Interview	Pass Apprentices must meet all of the following pass descriptors statements	Distinction Apprentices must meet all the pass descriptors and all the following distinction descriptors statements
K4 S3 E5 E10	(PLC) and Supervisory Control and Data Acquisition (SCADA) systems or similar Explains how they consulted design specifications to analyse and calculate electrical system parameters and rectification procedures	
Mechanical option – Duties S1 S12 S14 M2ii M5 M8ii M9 M10	Describes how they have applied technical knowledge in their mechanical duties: inspecting, condition monitoring and reporting, testing, installing, dismantling, repairing mechanical equipment and components Describes different types of complex plant, machinery and components they have worked on including motors, pumps and gear boxes	

Topic KSBs - Interview	Pass Apprentices must meet all of the following pass descriptors statements	Distinction Apprentices must meet all the pass descriptors and all the following distinction descriptors statements
	If appropriate to the apprentice's workplace, describes their role in driving vehicles equipped with tools and materials to job sites If appropriate to the apprentice's workplace, describes how they provide 24 hour cover to remedy fault situations requiring diagnostic testing procedures	
Mechanical option – Mechanical installation and commission of clean/waste water equipment S13ii M3 M4 M7	Explains how they have installed/repositioned, replaced, and commissioned equipment and components, including interpretation of plans and testing Describes use of fabrication and welding appropriate to the task	Identifies and explains the potential issues that could arise during the work and how they mitigate against them

Topic KSBs - Interview	Pass Apprentices must meet all of the following pass descriptors statements	Distinction Apprentices must meet all the pass descriptors and all the following distinction descriptors statements
Mechanical option - Mechanical fault finding and repair K4 S3 M1 M6	Describes how they have located, diagnosed and rectified faults Explains how they consulted design specifications to analyse and calculate mechanical system parameters and rectification procedures Describes different fault finding methods they have used, justifying their choices	Describes different fault-finding methods they have used, justifying their choices
ICA option – Duties S1 S12 S14 I5 I6 I9 I10 I12 I13	Describes how they have applied technical knowledge in their ICA duties: inspecting, condition monitoring and reporting, testing telemetry outstation and internal system configuration, inspecting and maintaining security equipment, telecommunication devices and alarm systems, supporting day-to-day users of instrumentation and control systems	

Topic KSBs - Interview	Pass Apprentices must meet all of the following pass descriptors statements	Distinction Apprentices must meet all the pass descriptors and all the following distinction descriptors statements
	If appropriate to the apprentice's workplace, describes their role in driving vehicles equipped with tools and materials to job sites If appropriate to the apprentice's workplace, describes how they provide 24 hour cover to remedy fault situations requiring diagnostic testing procedures Explains how they identify and resolve data quality and calibration issues, use standards and specifications to improve information gathered by telemetry data and complete data cleansing to ensure consistent and valid data is available for business and regulation purposes	

Topic KSBs - Interview	Pass Apprentices must meet all of the following pass descriptors statements	Distinction Apprentices must meet all the pass descriptors and all the following distinction descriptors statements
ICA option – ICA installation and commission of clean/waste water equipment S13ii I3 I4ii	Explains how they have installed, tested, replaced, calibrated and dismantled ICT equipment and components (controllers, probes, attachments, cabling, meters and display units)	Identifies and explains the potential issues that could arise during the work and how they mitigate against them
ICA option - ICA fault finding and repair K4 S3 I1 I2ii I8ii	Describes how they have located, diagnosed and rectified faults Describes how they have repaired instrumentation and control equipment and configured and calibrated field instrumentation, communication devices and associated equipment used in system and process control, such as Programmable Logic Controllers (PLC) and Supervisory Control and Data Acquisition (SCADA) systems	Describes different faultfinding methods they have used, justifying their choices

Component 3: Multiple-choice Test

The following grade boundaries apply to the multiple-choice test:

Grade	Minimum mark	Maximum mark
Fail	0	27
Pass	28	40

Overall grading

All assessment methods are weighted equally in their contribution to the overall EPA grade. Grades from individual assessment methods will be combined in the following way to determine the grade of the overall EPA as a whole.

Observation with questions	Interview	Multiple-choice test	Overall grading
Any Grade	Any Grade	Fail	Fail
Any Grade	Fail	Any Grade	Fail
Fail	Any Grade	Any Grade	Fail
Pass	Pass	Pass	Pass
Distinction	Pass	Pass	Pass
Pass	Distinction	Pass	Pass
Distinction	Distinction	Pass	Distinction

Any grade = fail, pass or distinction

Section 4: Resits and retakes

Apprentices who fail one or more EPA method(s) can take a re-sit or a re-take at their employer's discretion. The apprentice's employer needs to agree that a re-sit or re-take is appropriate. A re-sit does not need further learning, but a re-take does. Apprentices should have a supportive action plan to prepare for a re-sit or a re-take.

The employer and EUIAS agree the timescale for a re-sit or re-take. A re-sit is typically taken within 2 months of the EPA outcome notification. The timescale for a re-take is dependent on how much re-training is required and is typically taken within 4 months of the EPA outcome notification.

Failed EPA methods must be re-sat or re-taken within a 6-month period from the EPA outcome notification, otherwise the entire EPA will need to be re-sat or re-taken in full.

Re-sits and re-takes are not offered to apprentices wishing to move from pass to a higher grade.

An apprentice will get a maximum EPA grade of pass for a re-sit or re-take, unless EUIAS determines there are exceptional circumstances.

The EUIAS resit and re-take policy can be found at https://www.euias.co.uk/end-point-assessment/policies-and-fees/

Section 5: Practice Guidance

Preparing for the Observation with Questions

A template is provided in Supporting Documents Appendix E, Observation with Questions Planning Sheet, to help ensure that the activities assessed during the observation will give complete coverage of the standard. The table below provides a step by step guide on to help prepare and deliver a practice observation with questions:

Structure	**Duration**: 4 hours including the questioning time It cannot be split, other than to allow comfort breaks as necessary or to allow the apprentice to move from one location to another as required Breaks are not included in the assessment time

	The person taking the role of assessor has the discretion to increase the time by up to 10% to allow the apprentice to complete a task or respond to a question **Location**: workplace, over one or more sites, under normal working conditions **Activities**: day-to-day activities. The activities are listed in Section 2. Simulation is not permitted during the observation
Resources	Equipment and resources needed for the observation must be in good and safe working condition Work instructions/manuals relating to the equipment/service for reference purposes. These can be electronic and/or hard copy Quiet room for questioning after the observation Document to record assessment of observation (see Supporting Documents, Appendix F) Bank of open-ended questions
Questions	Develop open-ended questions which focus on • the KSBs assessed in the observation • the Pass / Distinction grading criteria Ask questions both during and after the observation Ask at least five open ended questions Ask additional questions for KSBs not observed to gather assessment evidence. These questions should be kept to a minimum Ask follow-up questions if clarification is required

Delivery of the practice observation	A tutor or supervisor should adopt the role of assessor Assess apprentices in relation to the Apprenticeship Standard option they are completing (Electrical technician, Mechanical technician, ICA technician) Record the assessment of how the apprentice performed using the Observation template (see Supporting Documents, Appendix F)
Starting the practice observation	At the start of the practice observation the person in the role of the assessor should: • introduce themselves as an assessor • confirm their role • provide information on the format of the day, including the timescales • ask the apprentice to ▪ give their full name ▪ their date of birth ▪ their employer name ▪ confirm they are prepared and can continue with the observation ▪ show their identification • state that an unsafe act/task which contravenes Health and Safety, will mean the observation is halted • confirm that ▪ notes will be taken ▪ feedback will not be given during the observation
After the practice observation	Provide feedback to the apprentice with guidance on what to do to improve their performance

Preparing for the Interview

The practice interview should take place between the apprentice and a person acting the role of the independent assessor. The apprentice should draw on evidence in their portfolio during the discussion.

Guidance on Portfolio of Evidence

The portfolio is not assessed. It serves two purposes:

- The assessor reviews it before the interview to help focus and contextualise their questions
- A carefully prepared portfolio supports the apprentice through the interview

Quality vs Quantity

The apprentice should be supported in selecting and mapping evidence for the portfolio.

In theory one comprehensive job-write up could cover all the required KSBs. In practice, this is more likely to be several job write-ups plus a few smaller pieces of evidence targeting specific elements of the standard.

Choose the best pieces of evidence for each KSB covered by the interview. An assessor will look for one suitable piece of evidence for each KSB. To be confident of meeting the standard, apprentices should aim to have two pieces of evidence mapped to each KSB.

Examples of acceptable evidence:

- workplace documentation and records
- workplace policies and procedures, annotated by the apprentice to say how they use them in practice and when they have had to use them
- witness statements signed and dated by coaches/trainers
- annotated photographs/diagrams
- video clips (maximum total duration 20 minutes); the apprentice must be in view and identifiable
- job write-ups by the apprentice.

The above is not a definitive list. The apprentice can include other relevant evidence sources.
Evidence must be:

- produced by the learner (authentic)

- relevant to the standard (K,S or B) that it is mapped to
- produced during the time the apprentice is in training.

What to include in the portfolio

The portfolio evidence:

- must contain a portfolio mapping document where evidence is mapped against the KSBs. A template has been produced to help apprentices with collecting and mapping their evidence. A copy of the template is included in the appendices
- must contain evidence related to the KSBs that will be assessed by the interview
- will typically contain eighteen quality discrete pieces of evidence
- will be available, during the interview, allowing the apprentice to refer to it.

What the apprentice can do

The apprentice should:

- get familiar with the structure of their portfolio
- get to know the KSBs covered by the interview
- get to know the grading criteria, including distinction grading, for the interview
- ensure there is evidence to cover every KSB in the interview
- practise mapping evidence and completing the portfolio mapping document.

The role of the employer/training provider

Employer/training providers are expected to support the apprentice in preparing their portfolio by:

- clarifying responsibility for supporting the apprentice to select and map evidence for the portfolio, including employer coaches/mentors where applicable
- advising on which pieces of evidence to select to ensure that when looked at as a whole, they provide coverage of all the required elements of the standard assessed in the interview

- supporting the mapping of evidence and production of a portfolio mapping document
- authenticating evidence as valid
- signing off the portfolio
- submitting the portfolio to EUIAS as part of Gateway.

What to expect in the practice interview

The practice interview provides the apprentice with the opportunity to practice discussing their KSBs gained throughout their on-programme by referring to the evidence from their portfolio using the mapping document.

Preparing for the Multiple-choice Test

While on-programme, the employer and or training provider should brief the apprentice on the areas to be assessed by the multiple-choice test, as detailed in Section 2. It is good practice to identify the areas within the learning programme where the relevant knowledge is delivered and ensuring that apprentices are aware that elements from each of these criteria might come up in the test.

The multiple-choice test is aligned to the standard rather than a specific job role that the apprentice may be doing. The questions have been written to reflect the relevant Utilities Engineering Technician core and pathway as a whole and are not focussed on specific plant, machinery, or employer-specific processes.

In readiness for end-point assessment, the apprentice should complete a practice test, which is signposted in the Supporting Documents. This should be undertaken in advance of the live multiple-choice test, with enough time to mark the assessment, and provide feedback to the apprentice.

For maximum effect, ensure the test is taken in exam conditions similar to those that will be experienced in a live test.

Section 6: Authenticity and security of apprentice work

The apprentices must be advised by their training provider and employer that copying of any work (whether it is from another apprentice or from internal, external

documents or source) and presenting it as their own will be deemed as malpractice and will lead to their work being disqualified. Apprentices must not share their work or allow any person to copy their work as this is not allowed and would also be deemed as malpractice.

In signing off the portfolio, training providers and employers must be satisfied that the evidence in the portfolio is:

- **adequate**: evidence must cover all relevant KSBs within the assessment plan. Adequate does not mean a large quantity of evidence. The evidence should focus on quality rather than quantity
- **authentic**: apprentices must be able to confirm and talk about the evidence that they submit with the independent assessor, appointed by the EUIAS. It is vitally important apprentices only submit evidence relating to them
- **appropriate**: all evidence must be relevant to the KSBs assessed during the professional discussion
- **recent and up to date**: all evidence must be linked to KSBs must be recent and current which demonstrate the apprentice's competence. The independent assessors, appointed by the EUIAS will assess current competencies, and the apprentice must map the evidence to demonstrate the relevant work to the KSB. Apprentices must gather the evidence during their on-programme training