City & Guilds Level 3 End-point Assessment for Refrigeration Air Conditioning and Heat Pump Engineering Technician (6090-51)

Standard: ST0322

EPA Plan Version: V1.2 and V1.3

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Multiple-choice Test Content Handbook

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1.0 November 2024	First published	N/A
1.1 January 2024	Minor copyediting revisions	All
1.2 April 2026	This pack is also relevant for V1.3 of the EPA plan Removal of reference to CGLI	

Contents

Introduction

This document sets out the content to be delivered to apprentices to prepare for the multiple-choice test component of the City & Guilds Level 3 End-point Assessment for ST0322 Refrigeration Air Conditioning and Heat Pump Engineering Technician (6090-51). The content amplified from the Skills England Assessment Plan is set out to cover the knowledge within the assessment component.

Content

K1 Health and Safety legislation and safe working practices applicable to working with pressure systems, electrical circuits and flammable substances

Topic	Content – What needs to be covered
K1.1 Legislation and safe working practices	K1.1 Legislation and safe working practices i. Health and Safety at Work Act (HASWA) • Follow workplace procedures and systems • Follow slip, trip and fall prevention methods • Use equipment and personal protective equipment (PPE) properly • Report any issues or risks • Know the rules for employing more than five employees • Be aware of responsibility for own safety and safety of others (all responsible for health and safety in the workplace) • Attend provided safety training ii. Reporting Injuries Diseases and Dangerous Occurrences Regulations (RIDDOR) • Report any work-related incidents • inform relevant enforcing authority that a work-related accident or incident has happened. • Provide details for reporting purposes • Comply with reporting procedures iii. Control of Substances Hazardous to Health (COSHH) • Follow instructions for safe use • Use control measures properly • Report exposure incidents iv. Construction (Design and Management) (CDM) regulations • Take care of own health and safety • Be aware of safety of others who may be affected by one's actions • Report potential safety issues to the employer • Duties under CDM ○ Commercial clients ○ Designer ○ Principal designers ○ Principlal contactors ○ Contractors v. Provision and Use of Work Equipment Regulations (PUWER) • Use equipment only if trained • Report any faulty equipment • Follow safety instructions provided vi. Manual Handling Operations Regulations (MHR) • Follow safe lifting techniques • Use aids where provided • Report unsafe loads or practices

Topic	Content – What needs to be covered

vii. Personal Protective Equipment (PPE) at Work Regulations
- Use PPE correctly as instructed
- Help maintain PPE properly
- Report any defects or issues

viii. Work at Height Regulations (WAHR)
- Use safety equipment provided
- Follow training and procedures
- Do not undertake unsafe practices

ix. Control of Noise at Work Regulations (CNWR)
- Wear hearing protection when required
- Follow noise control procedures
- Report potential issues or over-exposure

x. Control of Vibration at Work Regulations (CVWR)
- Take regular rest breaks from use of vibrating tools
- Report potential symptoms of vibration exposure
- Follow control measures implemented

xi. Electricity at Work Regulations (EAWR)
- Visually check equipment before use
- Report any defects immediately
- Follow safe systems of work

xii. Lifting Operations and Lifting Equipment Regulations (LOLER)
- Do not use equipment unless trained
- Follow safe lifting practices
- Report any defective equipment

xiii. Confined Spaces Regulations (CSR)
- Avoid entry into confined spaces whenever possible
- If entry is unavoidable, follow a safe system of work
- Put in place adequate emergency arrangements before starting work in confined spaces

xiv. Building Safety Act
- Comply with building regulations and fire safety orders
- Enhance accountability for construction and maintenance fire safety in the UK
- Escalate/report significant fire and structural safety concerns

xv. The Control of Lead at Work Regulations
- Use appropriate PPE
- Follow safe working practices

xvi. Environmental Protection Act
- hazards from vapour compression
- environment management and control systems
- signage and notices

Topic	Content – What needs to be covered
	• recycle, re-use and reduce waste

K2 Industry codes of practice and standards, legislation and sources of information and advice applicable to working with pressure systems, electrical circuits and flammable substances

Topic	Content – What needs to be covered
K2.1 Industry codes of practice and standards	K2.1 Industry codes of practice and standards i. Chartered Institution of Building Services Engineers CIBSE Guide M 1-16 • relates to maintenance engineering and management: • provides guidance for designers, maintainers, building owners and operators, and facilities managers. • includes advice on planned preventative maintenance and procedures. ii. Institute of Refrigeration Guide 80 (Risk Assessments) • provides guidance on risk assessments associated with refrigerant use. • details hazards associated with refrigerants, including toxicity, flammability, and environmental impact. • emphasises adherence to regulations such as F Gas. iii. Institute of Refrigeration Guide 74 • provides guidance on the common leakage points of refrigerants • outlines the likely causes of refrigerant leakage iv. Institute of Refrigeration Guide 58 • the guide provides advice on fault finding • details key points regarding troubleshooting small cold rooms v. Institute of Refrigeration Guide 21 • provides details about pressure systems • outlines guidance and regulations related to pressure system regulations vi. Institute of Refrigeration Good Practice Guide 64 • provides information about electricity and the impact on human health • includes standards and codes related to safe maintenance vii. Building Services Research and Information Association Guide BG 58/2015 Legionella • provides comprehensive advice on the prevention and control of Legionella bacteria

Topic	Content – What needs to be covered
	• outlines control measures including use of biocides, cleaning and disinfection and temperature control. viii Building Services Research and Information Association Commissioning Guide BG 8 2009 • outlines scope and responsibilities, processes, schedules and documentation requirements of commissioning procedure for a construction project. • intended to help understand and record the commissioning activities that need to be carried out during different stages of the project to produce operationally ready facilities. ix. British Refrigeration Association Jointing of Pipework for Refrigeration Systems. • outlines brazing procedures required for jointing for refrigeration, air conditioning and heat pump (RACHP) systems. • details guidance on best practice for competency in brazing processes. x. British Standard BS EN 378 defines the method for test pressure calculation
K2.2 Legislation	K2.2 Legislation i. DSEAR Dangerous Substance Explosive Atmosphere Regulations flammable refrigerants (R290, R600a) • carry out a risk assessment for any work activities involving dangerous substances • reduce risk to persons from fires, explosions and similar energetic (energy releasing) events ii. Pressure Equipment (Safety) Regulations • applies to pressure equipment and assemblies with a maximum allowable pressure (PS) greater than 0.5 bar • details requirements that must be followed to ensure safe installation, operation, and maintenance of pressure equipment and systems iii. Pressure Systems Safety Regulations (PSSR) • covers the safe design and use of pressure systems • aims to reduce serious injury from hazard of stored energy (pressure) because of the failure of a pressure system/component
K2.3 Sources of information	K2.3 Sources of information i. site maintenance manuals – record of previous maintenance activities and issues. ii. permit to work systems for safe isolation – guidance and local site-specific procedures.

Topic	Content – What needs to be covered
	iii. manufacturers' instructions – equipment position in relation to air circulation. iv. F-Gas records/logbooks/diagrams • records of additions and removals of F-gases and oils. • provides past leak data

K4 Principles of thermodynamics, gas laws, psychrometrics and fluid flow

Topic	Content – What needs to be covered
K4.1 Principles of thermodynamics	K4.1 Thermodynamics i. First law • "During an interaction between a system and its surroundings, the amount of energy gained by the system must be exactly equal to the amount of energy lost by the surroundings" • "energy can neither be created nor destroyed only altered" ii. Second law • "Heat will move from a warm body to a cold body" • temperature difference • temperature glide • heat transfer
K4.2 Gas laws	K4.2 Gas law calculations including relationship of units i. Boyle's law (pressure x volume = constant) ii. Charles's law (volume/temperature = constant) iii. Gay-Lussac's law (pressure/temperature = constant) iv. Combined gas law ((pressure x volume)/temperature = constant) v. Dalton's law (pressure total = P1 + P2+ P3+....)
K4.3 Psychrometrics	K4.3 Psychrometrics 4.3.1 Characteristics i. physical make-up: a. elements b. percentage saturation c. temperatures (dry bulb/wet bulb) d. moisture content e. dew point 4.3.2 Difference between: i. dry-bulb temperature ii. wet-bulb temperature 4.3.3 Characteristics: i. temperature ii. moisture content iii. air flow 4.3.4 Measuring instruments: i. dry-bulb thermometer ii. sling psychrometer iii. hygrometer 4.3.4 Condition on a psychrometric chart given two variables: List of variables: i. dry-bulb ii. wet-bulb iii. moisture content iv. constant humidity line

Topic	Content – What needs to be covered
	v. enthalpy vi. specific volume
K4.4 Fluid flow	4.4.1 Force and pressure calculations using SI units: i. Force (Newtons) N = ma ii. Gravitation Force (N) = mg iii. g = acceleration due to gravity (9.8m/s^2) iv. P = F/A (N/m2) 4.4.2 Units of pressure and methods of conversion between: i. pascal (Pa) ii. kPa iii. bar iv. torr / micron v. PSI vi. inches of mercury 4.4.3 Atmospheric pressure (ATM) and its units. i. ATM = 101325Pa at sea level 4.4.4 Units of flow rate and conversion between them: i. Velocity (m/s) ii. Volume flow rate (VFR) (m^3/s, L/s) iii. Calculation VFR = velocity x area iv. Mass flow rate (MFR) (kg/s) v. Calculation of MFR = VFR x density 4.4.5 Calculations relating to force and pressure using formulas: i. F = ma ii. F = mg iii. P = F/A 4.4.6 Definitions and difference between static and dynamic pressure and carry out basic calculations i. Static pressure (pressure exerted by a fluid at rest) P = hρg ii. Dynamic pressure (pressure exerted by a fluid in motion) P = ½ mv2

K5 Properties of refrigerant fluids and lubricants and their suitability for use in vapour compression systems – Applications and environmental impact

Topic	Content – What needs to be covered
K5.1 Properties of refrigerant fluids and lubricants	5.1.1 Types of primary refrigerants: i. Chlorofluorocarbons (CFCs) ii. Hydrochlorofluorocarbons (HCFCs) iii. Hydrofluorocarbon (HFCs) iv. Hydrofluroolefins (HFOs) v. Hydrocarbons (HCs) vi. Ammonia (NH3) vii. CO2 viii. Secondary (water, glycols, brine) ix. Pure fluids x. Zeotropes xi. Azeotropes 5.1.2 Properties of primary refrigerants: i. Saturation ii. Temperatures iii. Pressures iv. Ozone Depletion Potential (ODP) v. Global Warming Potential (GWP) vi. Hazard class (flammability, toxicity) vii. Cost viii. Availability ix. Phase-outs x. Bans xi. Temperature glide • dew point (saturate vapour temperature) • bubble point (saturated liquid temperature) 5.1.3 Properties of secondary fluids: i. Viscosity ii. Sensible heat capacity iii. Eutectic point iv. Freezing point v. Use of inhibitors vi. Additives 5.1.4 Types of lubricant: i. Mineral ii. Synthetic 5.1.5 Properties of lubricants: i. Viscosity ii. Miscibility iii. Flammability iv. Dielectric strength v. Pour point vi. Wax (floc) point

Topic	Content – What needs to be covered
	vii. hydroscopic
K5.2 Application and suitability of different refrigerants	5.2 Application and suitability of different refrigerants for: i. refrigeration systems: • domestic • commercial • industrial ii. air conditioning systems: • primary • secondary iii. heat pump systems: • air • water-source
K5.3 Environmental impact	5.3 Environmental impact of refrigerants and lubricants: i. environmental damage: • HFCs can lead to global warming due to high GWP • risk of toxicity from some refrigerants (such as ammonia) that can cause harm to humans and animals • Ozone Depletion Potential (ODP) - Refrigerants with high ODP can cause damage to the ozone layer. (HCFC and CFC) ii. recycling and re-use iii. disposal and waste

K7 Scientific and mechanical principles applicable to vapour compression systems

Topic	Content – What needs to be covered
7.1 Base System International(SI) and derived System International (SI) units and their application in the RACHP industry	7.1.1 Base SI units of measurement. a) Base SI units: i. Metre (length) m ii. Kilogram (mass) kg iii. Second (time) s iv. Kelvin (temperature) K v. Ampere (A) b) Application in RACHP: i. length ii. mass iii. time iv. temperature v. electrical current 7.1.2 Derived SI units of measurement. a) Derived SI units: i. Area (m^2) ii. Volume (m^3) iii. Litres (L) iv. Density (kg/ m^3) v. Velocity (m/s) vi. Acceleration (m/s^2) vii. Pressure (pascal) viii. Energy (joules) ix. Power (watts) x. Enthalpy xi. Entropy xii. Specific volume b) Application in RACHP: i. heat loss calculations ii. volume flow rates iii. pressure test calculations iv. system work done v. co-efficient of performance
7.2 Scientific relationship between temperature scales and conversion method	7.2 Differences between temperature scales and conversion method. a) Temperature scales: i. Celsius ii. Kelvin iii. Fahrenheit

Topic	Content – What needs to be covered
	iv. Rankine b) Conversion method: i. K = °C + 273 (Celsius to Kelvin) ii. °C = K-273 (Kelvin to Celsius) iii. °C = (°F-32) x 5/9 (Fahrenheit to Celsius) iv. °R = °F + 459.67(Fahrenheit to Rankine) c) Differences between scales: i. Boiling point ii. Freezing point iii. Absolute zero
7.3 Terminology associated with changes of state of matter	7.3 Terminology associated with changes of state of matter. a) Mollier diagram (pressure enthalpy (Ph) chart): i. work done by compressor. ii. heat rejected by condenser. iii. refrigeration effect in evaporator iv. useful superheat v. non-useful superheat vi. capacity calculations vii. superheat viii. subcooling ix. dew x. bubble xi. specific volume b) States of matter: i. solid ii. liquid iii. gas c) Change of state: i. melting ii. freezing iii. boiling iv. evaporating (Evaporation / Vaporisation) v. condensing (Condensation) vi. fusion
7.4 Heat	7.4.1 Heat a) Types of heat applicable to three states of matter: i. sensible heat (specific heat capacity (J/kgK) ii. latent heat of vaporisation (kJ/kg) iii. latent heat of fusion (kJ/kg) b) Methods of heat transfer i. conduction – heat transfer in solids ii. convection – heat transfer in fluids

Topic	Content – What needs to be covered
	iii. radiation – emission/transmission of energy in the form of waves/particles through space or a material medium c) Definitions and units related to energy and power: i. Energy – heat content of a substance (joules) J ii. Power – flow rate of energy from a substance (Joules/second) watts W d) Calculations to determine the heat required to raise or lower the temperature of a substance: Sensible heat (joules = mass (kg) x specific heat capacity (J/kgK) x temperature difference (K) $Q = mc\Delta t$ e) Calculations to determine the heat required to change the state of a substance: Latent heat (kilojoules) = mass (kg) x latent heat capacity (KJ/kg) $Q = mL$ f) Calculations to determine the power (W) needed to cool or heat a substance: Power (watts) = energy (joules)/time (seconds) $Q = J/s$
7.5 Units or force, pressure and fluid/vapour flow rate	7.5.1 Calculating force and pressure: i. Force (newtons) N = ma ii. Gravitation force (N) = mg iii. G = acceleration due to gravity ($9.8m/s^2$) iv. P = F/A (N/m^2) 7.5.2 Pressure units and conversion methods: i. Pascal (Pa) ii. kPa iii. Bar iv. Torr / micron v. PSI vi. Inches of mercury 7.5.3 Atmospheric pressure ATM = 101325Pa at sea level 7.5.4 Flow rate units and conversion methods i. Velocity (m/s) ii. VFR (m^3/s, L/s) iii. Calculation of VFR = Velocity x area iv. MFR (kg/s) v. calculation of MFR = VFR x Density 7.5.5 Force and pressure: i. F = ma ii. F = mg iii. P = F/A 7.5.6 Static and dynamic pressure i. Static pressure (pressure exerted by a fluid at rest) $P = h\rho g$

Topic	Content – What needs to be covered
	ii. Dynamic pressure (pressure exerted by a fluid in motion) $P = ½ mv^2$
7.6 Impact of changing pressure on saturation temperature for a range of substances (water, primary refrigerants)	7.6 Definitions **Saturation temperature** - at which state change occurs (boiling point) **Saturation pressure** - pressure at which saturation temperature occurs 7.6.1 Changes of state: i. liquid ii. two-phase mixture iii. vapour 7.6.2 Sensible cooling processes: i. super-heat ii. sub-cooling
7.7 Plotting of the mechanical vapour compression cycle onto Ph diagram	7.7.1 Plotting of the mechanical vapour compression cycle onto Ph diagram i. Pressure ii. Enthalpy iii. Entropy iv. Liquid / vapour/ two-phase mixture zones v. Latent and sensible heat processes vi. Refrigeration effect (heat gained in the evaporator) vii. Compressor work done viii. Total heat rejection ix. Discharge temperature x. Sub-cooling xi. Suction superheat xii. Dryness fraction / quality xiii. Coefficient of performance 7.7.2 Calculations using range of variables to maximise performance: i. Work done ii. Refrigeration effect iii. Total heat rejection iv. Coefficient of performance v. Mass flow rate vi. Compression ratio vii. Component selection and system balance 7.7.3 Impact of changing suction superheat on: i. Refrigeration effect ii. Compressor work done iii. Total heat rejection iv. Discharge temperature v. Coefficient of performance 7.7.4 Impact of changing subcooling on: i. Refrigeration effect ii. Quality / dryness fraction

Topic	Content – What needs to be covered
	iii. Coefficient of performance

K8 Function and operation of refrigerant system components and how they interact in vapour compression systems

Topic	Content – What needs to be covered
8.1.1 Types of system components	8.1.1 Types of system components: a) Compressors: i. Hermetic ii. Semi-hermetic iii. Open-type (greater risk of causing global warming) iv. Reciprocating v. Scroll vi. Rotary (screw, vane, lobe) vii. Centrifugal b) Condensers: i. Natural convection ii. Forced draft iii. Plate iv. Evaporative v. Liquid cooled vi. Air cooled c) Expansion/metering devices: i. Capillary tube ii. Short tube restrictor iii. Thermostatic expansion valve (TEV) iv. Electronic linear expansion valve v. Liquid level control vi. Low side float valve vii. Stepper valve viii. Constant pressure d) Evaporators: i. Natural convection ii. Forced draft (cassette unit) iii. Inducted draft (wall mounted system) iv. Liquid cooling v. Plate vi. Direct expansion vii. Flooded e) ancillary components: i. Liquid and suction filter-driers ii. Pressure relief valves iii. Strainers iv. Oil separators v. Moisture indicating sight glass vi. Service valves f) Storage vessels i. High pressure liquid receivers ii. Suction line accumulators g) Control valves

Topic	Content – What needs to be covered
	i. Solenoid ii. Four-way reversing iii. Evaporator pressure regulator iv. Suction pressure regulator v. Crankcase vi. Oil differential vii. Hot gas h) Fans i. Propeller ii. Axial iii. Centrifugal (forward curve, backward curve) iv. Tangential
8.1.2 Function of system components	8.1.2 Function of system components: i. compressors • used to develop and maintain the flow of refrigerant through the system ii. condensers • heat transfer devices that allow heat to be conducted to a space or a fluid iii. expansion/metering device • used to vary or maintain the flow of refrigerant into the evaporator and control superheat iv. evaporators • heat transfer devices allowing heat to be conducted from a space or fluid v. ancillary components and control valves • added to a basic system to enhance its operation or to protect system components vi. storage vessels/receivers • used to accommodate variations in load in none critically charged systems vii. fans • used to provide airflow to spaces and components
8.1.3 Operating principles of components	8.1.3 Operating principles of components: i. compressor • the compressor increases the pressure of the refrigerant, making it possible for heat to be rejected in the condenser. • the compressor adds sensible heat to the refrigerant increasing its temperature. ii. condenser • condensers primarily reject latent heat. • the refrigerant enters the condenser as high pressure and temperature vapour. As it passes through the condenser it releases heat to the surroundings causing it to change to high pressure liquid.

Topic	Content – What needs to be covered
	iii. expansion/metering devices • expansion valves restrict the flow of refrigerant from the high-pressure side to the low-pressure side causing a pressure drop. This allows the refrigerant to expand and cool rapidly as it enters the evaporator maintaining evaporator outlet superheat. iv. evaporator • evaporators absorb latent heat mainly. The refrigerant enters the evaporator as low-pressure liquid-vapour mixture. By absorbing the latent heat from its surroundings, it evaporates changing from liquid to vapour.
8.1.4 Interaction of components in vapour compression systems	8.1.4 Interaction of components in vapour compression systems: i. compressor receives low pressure superheated vapour from the evaporator and raises its pressure and temperature ii. condenser receives the high pressure and high temperature refrigerant from the compressor to cool it down changing it into liquid. Worn out compressor valves will cause lower than normal pressure in the condenser iii. the expansion device drops the pressure of the liquid arriving from the condenser cooling it down rapidly iv. the low pressure and low temperature mixture enters the evaporator is now able to absorb the heat of product/space changing into superheated vapour v. ancillary components, vessels, liquid receivers and valves are added to enable the system to operate efficiently and safely.

K9 Methods of maximising efficient vapour compression refrigerant system performance: heating and cooling loads, component selection and balancing techniques

Topic	Content - What needs to be covered
K9.1 Heat load (heating and cooling) calculations	K9.1 heat load (heating and cooling) calculations: a) Heat losses (building structure) • Material selection U Values b) Heat gains (building structure) • Material selection U Values
K9.2 Component selection and system balancing	K9.2 Component selection and system balancing: a) Component selection: i. Expansion device: • Expansion valve orifice sizing and impact • Impact and efficiency of different expansion valve/metering devices ii. filter drier iii. liquid receiver: • Capacity limits iv. pipe sizing: • Effects of MFR • Oil return • Pressures b) System balancing: • Compressor matched to condenser and evaporator • Expansion valve selected for correct refrigerant and load • Drier sized to accommodate correct mass flow rate

K10 Methods of working with gases under pressure, including brazing work and pressure testing

Topic	Content – What needs to be covered
K10.1 Brazing work	K10.1 Brazing work Braze (oxy-fuel): i. Ensure equipment is set to the correct pressure (0.2 bar) ii. Choose correct size nozzle iii. Set the torch to the correct flame • neutral flame • oxidizing flame • carburizing flame iv. Equipment safety • leak checking (proprietary leak detection spray) • use of shaded safety goggles
K10.2 Pressure testing	K10.2 Pressure testing: i. Ensure the pressure is tested to BS EN 378 ii. Use Oxygen Free Nitrogen (OFN) iii. Set the pressure to the equivalent of 55°C (high side) and 32°C (low side) iv. Do a strength test (for new systems only) v. It is recommended to leave the pressure test for one hour minimum vi. Do a pressure test calculation due to changes in ambient temperature.

K20 Environmental technologies employed in the sector: heat recovery, low GWP refrigerants, heat gain, cooling load and energy use equipment

Topic	Content – What needs to be covered
K20.1 Heat recovery	K20.1 heat recovery in air handling units (AHU) i. Cross flow ii. Thermal wheel iii. Run-around coils iv. Discharge heat of compression v. Air conditioning VRF/VRV heat recovery heat pumps.
K20.2 Heat gain, cooling load and energy use equipment.	K20.2 heat gain/cooling load and energy use equipment. i. Cooling/heating single room occupancy ii. Cooling/heating multi room/multi occupancy iii. Small commercial premises utilising ground source heat pump energy equipment iv. Ground coil v. Bore hole vi. Food products chilling/storage application • Heat of respiration • Sensible heat • Latent heat • Occupancy • Infiltration • Equipment vii. Blast freezing application viii. Process cooling
K20.3 Low GWP refrigerants	K20.3 select low GWP refrigerants i. System types ii. Performance iii. Cost iv. Environmental impact • Energy efficiency • Direct emissions(R32) • Indirect emissions • Regulations v. match heat gain/load calculations data

K29 Requirements for component warranty, legislation or regulation related to installation or other protections

Topic	Content – What needs to be covered
K29 Requirements for component warranty, legislation or regulation related to installation or other protections.	K29 Requirements i) Component warranty requirements • Evidence of installation in accordance with manufacturer's instructions to prevent voided warranty from equipment manufacturers. • Record of all system commissioning operational conditions on commissioning sheet to handover to client. • Details of compliance with manufactures pre-commissioning check lists • Documentation detailing system design parameters against actual performance. ii) legislation/regulation requirements • British Standards (BS EN 378) • F-Gas regulations including leak check record requirements • European pressure systems directive • Construction (Design and Management) regulation

Appendix Sources of general information

The following documents contain essential information for centres delivering City & Guilds qualifications. They should be referred to in conjunction with this handbook. To download the documents and to find other useful documents, go to the Centre document library on www.cityandguilds.com or click on the links below:

Centre Handbook: Quality Assurance Standards

This document is for all approved centres and provides guidance to support their delivery of our qualifications. It includes information on:

- centre quality assurance criteria and monitoring activities
- administration and assessment systems
- centre-facing support teams at City & Guilds/ILM
- centre quality assurance roles and responsibilities.

The Centre Handbook should be used to ensure compliance with the terms and conditions of the centre contract.

Centre assessment: Quality Assurance Standards

This document sets out the minimum common quality assurance requirements for our regulated and non-regulated qualifications that feature centre-assessed components. Specific guidance will also be included in relevant qualification handbooks and/or assessment documentation.

It incorporates our expectations for centre internal quality assurance and the external quality assurance methods we use to ensure that assessment standards are met and upheld. It also details the range of sanctions that may be put in place when centres do not comply with our requirements or actions that will be taken to align centre marking/assessment to required standards. Additionally, it provides detailed guidance on the secure and valid administration of centre assessments.

Access arrangements: When and how applications need to be made to City & Guilds provides full details of the arrangements that may be made to facilitate access to assessments and qualifications for candidates who are eligible for adjustments in assessment.

The **Centre document library** also contains useful information on such things as:

- conducting examinations
- registering learners
- appeals and malpractice.

Who we are

City & Guilds Limited (Registered Company 16513878) is the Awarding Organisation for City & Guilds qualifications

About City & Guilds

City & Guilds is the global skills partner, empowering people, organisations and economies to develop the skills they need for growth. With almost 150 years of trusted expertise, we support people into work, help them develop on the job and move into the next job.

We work with Governments, employers, training providers, colleges and industry stakeholders to design and deliver high-quality training, qualifications, assessments and credentials that lead to meaningful career progression. We understand the life changing link between skills development, social mobility and success. Our solutions span critical sectors including construction, engineering, transport, energy and electrical, serving over 1 million learners annually.

Through our comprehensive portfolio of brands and trusted global network, we set industry-wide standards for technical, behavioural and commercial skills to improve performance and productivity. We believe you can achieve your potential - and we're here to help make it happen.

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