ICTQual AB

Qualification Specification

Level 2 Diploma in Electrical Engineering
30 Credits – 3 Months

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Qualification Specifications about

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About ICTQual AB

ICTQual AB UK Ltd. is a distinguished awarding body based in the United Kingdom, dedicated to fostering excellence in education, training, and skills development. Committed to global standards, ICTQual AB provides internationally recognized qualifications that empower individuals and organizations to thrive in an increasingly competitive world. Their offerings span diverse industries, including technical fields, health and safety, management, and more, ensuring relevance and adaptability to modern workforce needs.

The organization prides itself on delivering high-quality educational solutions through a network of Approved Training Centres worldwide. Their robust curriculum and innovative teaching methodologies are designed to equip learners with practical knowledge and skills for personal and professional growth. With a mission to inspire lifelong learning and drive positive change, ICTQual AB continuously evolves its programs to stay ahead of industry trends and technological advancements.

ICTQual AB's vision is to set benchmarks for educational excellence while promoting inclusivity and integrity. Their unwavering focus on quality and accessibility makes them a trusted partner in shaping future-ready professionals and advancing societal progress globally.

Course Overview

The ICTQual Level 2 Diploma in Electrical Engineering provides a comprehensive foundation for those pursuing a career in electrical engineering. This 30-credit qualification, completed in just three months, covers essential areas such as electrical safety, circuit design, and power systems. The course is designed to equip learners with the practical skills and theoretical knowledge needed for roles in electrical maintenance, installation, and technical operations. Students gain hands-on experience while adhering to industry safety protocols, ensuring they are prepared for real-world electrical challenges.

With a focus on modern electrical technologies and energy efficiency, this diploma also prepares graduates for further professional development. Upon completion, students can pursue advanced qualifications, apprenticeships, or roles such as electrical technicians or installation specialists. The qualification ensures that learners are well-positioned to meet the demands of the electrical engineering sector and adapt to future innovations in the field.

Certification Framework

Qualification title	**ICTQual Level 2 Diploma in Electrical Engineering 30 Credits – 3 Months**
Course ID	EE0005
Qualification Credits	30 Credits
Course Duration	3 Months
Grading Type	Pass / Fail
Competency Evaluation	Coursework / Assignments / Verifiable Experience
Assessment	The assessment and verification process for ICTQual qualifications involves two key stages: **Internal Assessment and Verification:** ✓ Conducted by the staff at the Approved Training Centre (ATC). Ensures learners meet the required standards through continuous assessments. ✓ Internal quality assurance (IQA) is carried out by the centre's IQA staff to validate the assessment processes. **External Quality Assurance:** ✓ Managed by ICTQual AB verifiers, who periodically review the centre's assessment and IQA processes. ✓ Verifies that assessments are conducted to the required standards and ensures consistency across centres

Entry Requirements

To enrol in the ICTQual Level 2 Diploma in Electrical Engineering 30 Credits – 3 Months, candidates must meet the following entry requirements:

- ✓ Applicants must be at least 16 years old.
- ✓ A minimum of Level 1 qualification (or equivalent) in a related field such as construction, engineering, or science. Alternatively, applicants should have at least GCSEs or equivalent qualifications, including Mathematics and English.
- ✓ While no prior engineering experience is required, applicants with a background or basic exposure to technical or engineering concepts may find the course easier to navigate.
- ✓ For non-native English speakers, proof of English language proficiency may be required.

Qualification Structure

This qualification comprises 3 mandatory units, totalling 30 credits. Candidates must successfully complete all mandatory units to achieve the qualification.

Course Code	Unit Title	Credits
EE0005-1	Fundamentals of Electrical Engineering	10
EE0005-2	Electrical Wiring and Installation Techniques	10
EE0005-3	Electrical Maintenance and Fault Diagnosis	10

Centre Requirements

Even if a centre is already registered with ICTQual AB, it must meet specific requirements to deliver the ICTQual Level 2 Diploma in Electrical Engineering 30 Credits – 3 Months. These standards ensure the quality and consistency of training, assessment, and learner support.

1. Approval to Deliver the Qualification

- ✓ Centres must obtain formal approval from ICTQual AB to deliver this specific qualification, even if they are already registered.
- ✓ The approval process includes a review of resources, staff qualifications, and policies relevant to the program.

2. Qualified Staff

- ✓ **Tutors:** Must have relevant qualifications in Electrical Engineering at Level 3 or higher, alongside teaching/training experience.
- ✓ **Assessors:** Must hold a recognized assessor qualification and demonstrate expertise in Electrical Engineering
- ✓ **Internal Quality Assurers (IQAs):** Must be appropriately qualified and experienced to monitor the quality of assessments.

3. Learning Facilities

Centres must have access to appropriate learning facilities, which include:

- ✓ **Classrooms:** Modern and well-equipped with multimedia tools, ensuring a dynamic learning environment for theoretical instruction in electrical engineering concepts and principles.
- ✓ **Practical Areas**: Hands-on training areas featuring state-of-the-art electrical tools, wiring kits, circuit boards, and testing equipment for comprehensive practical experience and skill assessments.
- ✓ **Technology Access**: High-performance computers with specialized software (e.g., AutoCAD, simulation tools) and reliable internet connectivity to support digital tasks, design projects, and technical analysis.

4. Health and Safety Compliance

- ✓ Centres must ensure that practical training environments comply with relevant health and safety regulations.
- ✓ Risk assessments must be conducted regularly to maintain a safe learning environment.

5. Resource Requirements

- ✓ **Learning Materials:** Approved course manuals, textbooks, and study guides aligned with the curriculum.
- ✓ **Assessment Tools:** Templates, guidelines, and resources for conducting and recording assessments.
- ✓ **E-Learning Systems:** If offering online or hybrid learning, centres must provide a robust Learning Management System (LMS) to facilitate remote delivery.

6. Assessment and Quality Assurance

- ✓ Centres must adhere to ICTQual's assessment standards, ensuring that all assessments are fair, valid, and reliable.
- ✓ Internal quality assurance (IQA) processes must be in place to monitor assessments and provide feedback to assessors.
- ✓ External verification visits from ICTQual will ensure compliance with awarding body standards.

7. Learner Support

- ✓ Centres must provide learners with access to guidance and support throughout the program, including:
- ✓ Academic support for coursework.
- ✓ Career guidance for future progression.
- ✓ Additional support for learners with specific needs (e.g., disabilities or language barriers).

8. Policies and Procedures

Centres must maintain and implement the following policies, as required by ICTQual:

- ✓ Equal Opportunities Policy.
- ✓ Health and Safety Policy.
- ✓ Safeguarding Policies and Procedures.
- ✓ Complaints and Appeals Procedure.
- ✓ Data Protection and Confidentiality Policy.

9. Regular Reporting to ICTQual

- ✓ Centres must provide regular updates to ICTQual AB on learner enrolment, progress, and completion rates.
- ✓ Centres are required to maintain records of assessments and learner achievements for external auditing purposes.

Support for Candidates

Centres should ensure that materials developed to support candidates:

- ✓ Facilitate tracking of achievements as candidates progress through the learning outcomes and assessment criteria.
- ✓ Include information on how and where ICTQual's policies and procedures can be accessed.
- ✓ Provide mechanisms for Internal and External Quality Assurance staff to verify and authenticate evidence effectively.

This approach ensures transparency, supports candidates' learning journeys, and upholds quality assurance standards.

Assessment

This qualification is competence-based, requiring candidates to demonstrate proficiency as defined in the qualification units. The assessment evaluates the candidate's skills, knowledge, and understanding against the set standards. Key details include:

1. **Assessment Process:**

   - ✓ Must be conducted by an experienced and qualified assessor.
   - ✓ Candidates compile a portfolio of evidence that satisfies all learning outcomes and assessment criteria for each unit.

2. **Types of Evidence:**

   - ✓ Observation reports by the assessor.
   - ✓ Assignments, projects, or reports.
   - ✓ Professional discussions.
   - ✓ Witness testimonies.
   - ✓ Candidate-produced work.
   - ✓ Worksheets.
   - ✓ Records of oral and written questioning.
   - ✓ Recognition of Prior Learning (RPL).

3. **Learning Outcomes and Assessment Criteria:**

   - ✓ **Learning Outcomes:** Define what candidates should know, understand, or accomplish upon completing the unit.
   - ✓ **Assessment Criteria:** Detail the standards candidates must meet to demonstrate that the learning outcomes have been achieved.

This framework ensures rigorous and consistent evaluation of candidates' competence in line with the qualification's objectives.

Unit Descriptors

EE0005 -1: Construction Principles and Techniques

To equip learners with a comprehensive understanding of foundational concepts in construction and civil engineering, focusing on the principles, materials, and techniques essential to industry practices. This unit aims to develop the ability to analyse and apply sustainable methods, conduct basic site surveys, and address practical challenges in structural design and material selection, fostering competence in modern construction practices aligned with global standards.

Learning Outcome:	Assessment Criteria:
1. Understand the fundamental concepts and processes of construction and civil engineering.	1.1. Demonstrates a clear understanding of the key principles underpinning construction and civil engineering. 1.2. Accurately explains the essential processes involved in construction project management and civil engineering practices. 1.3. Effectively identifies and discusses the roles of various stakeholders in construction and civil engineering projects. 1.4. Applies knowledge of construction materials, methods, and technologies to solve basic engineering problems. 1.5. Critically evaluates the relationship between design, planning, and execution in construction and civil engineering. 1.6. Demonstrates awareness of industry standards, regulations, and best practices relevant to the construction and civil engineering sectors.
2. Identify and explain the functions and characteristics of various construction materials.	2.1. Accurately identifies a range of construction materials used in various projects. 2.2. Clearly explains the functional properties of each material and their suitability for different construction applications. 2.3. Demonstrates an understanding of the physical and chemical characteristics of common construction materials. 2.4. Applies knowledge of material properties to evaluate their performance under various environmental conditions. 2.5. Critically discusses the impact of material selection on project cost, durability, and sustainability. 2.6. Recognises industry standards and guidelines governing the use of construction materials.

3. Demonstrate basic surveying and measurement techniques for site preparation.	3.1. Accurately uses basic surveying equipment to measure and assess site conditions. 3.2. Demonstrates proficiency in applying measurement techniques to determine distances, elevations, and angles on a construction site. 3.3. Correctly interprets survey data and applies it to site preparation tasks. 3.4. Effectively establishes reference points and benchmarks for accurate site layout. 3.5. Identifies and addresses potential issues in the accuracy of measurements and adjustments during site preparation. 3.6. Adheres to industry standards and health and safety protocols while conducting surveying and measurement activities.
4. Apply sustainable construction methods and evaluate their impact on project outcomes.	4.1. Demonstrates knowledge of sustainable construction techniques and their benefits for the environment and society. 4.2. Accurately applies sustainable methods in the planning and execution of construction projects. 4.3. Evaluates the impact of sustainable practices on project cost, timeline, and resource efficiency. 4.4. Assesses the long-term environmental impact of construction methods, including energy use, waste reduction, and material sourcing. 4.5. Identifies challenges and solutions related to integrating sustainability into construction projects. 4.6. Complies with relevant sustainability standards, regulations, and certifications in the construction industry.
5. Solve practical problems related to structural components and material selection.	5.1. Accurately identifies and analyses practical issues related to structural components in construction projects. 5.2. Applies knowledge of material properties and structural design principles to solve problems effectively. 5.3. Demonstrates the ability to select appropriate materials based on project requirements, environmental conditions, and cost constraints. 5.4. Evaluates the performance and durability of materials in relation to their intended structural function.

	5.5. Effectively collaborates with relevant stakeholders to address material selection challenges in the context of project specifications. 5.6. Adheres to industry standards and regulations when solving structural problems and selecting materials.

EE0005 -2: Health, Safety, and Environmental Standards

To provide learners with in-depth knowledge of health, safety, and environmental standards in the construction industry. This unit focuses on equipping learners with the skills to interpret and apply relevant legislation, perform risk assessments, recommend sustainable practices, and implement effective safety and waste management strategies. It aims to foster a proactive approach to maintaining a safe and environmentally responsible working environment, in alignment with international best practices.

Learning Outcome:	Assessment Criteria:
1. Explain the key health and safety legislation relevant to construction projects.	1.1. Accurately identifies and explains the key health and safety legislation applicable to construction projects. 1.2. Demonstrates an understanding of the responsibilities of employers, employees, and contractors under health and safety laws. 1.3. Clearly outlines the role of risk assessments and safety plans in compliance with legislation. 1.4. Discusses the significance of the Health and Safety at Work Act and Construction (Design and Management) Regulations in ensuring site safety. 1.5. Evaluates the impact of health and safety legislation on construction project planning, execution, and management. 1.6. Ensures adherence to legal requirements and best practices for health and safety throughout the construction process.
2. Conduct risk assessments and propose measures to mitigate potential site hazards.	2.1. Identifies potential site hazards through a systematic risk assessment process. 2.2. Evaluates the severity and likelihood of identified risks to determine their priority. 2.3. Proposes appropriate control measures to mitigate or eliminate site hazards effectively. 2.4. Demonstrates the ability to develop and implement risk management strategies in line with industry standards. 2.5. Ensures that risk assessments are regularly reviewed and updated throughout the project lifecycle. 2.6. Adheres to relevant health and safety legislation and best practices when conducting risk assessments and proposing mitigation measures.
3. Evaluate the environmental impact of construction activities and recommend sustainable practices.	3.1. Identifies and assesses the key environmental impacts of construction activities, such as resource use, emissions, and waste

	generation. 3.2. Evaluates the sustainability of construction methods and materials in terms of their environmental footprint. 3.3. Recommends effective sustainable practices to minimise negative environmental effects during construction projects. 3.4. Assesses the potential benefits of incorporating renewable energy sources and waste-reducing technologies into construction practices. 3.5. Considers the long-term environmental impact of construction activities, including lifecycle analysis and resource conservation. 3.6. Ensures compliance with environmental regulations and sustainability standards in the recommendation of construction practices.
4. Implement waste management strategies to minimize environmental footprints.	4.1. Identifies key sources of waste within construction projects and evaluates their environmental impact. 4.2. Implements waste reduction strategies such as material reuse, recycling, and minimisation of waste generation. 4.3. Develops waste management plans that align with environmental regulations and sustainability goals. 4.4. Monitors and assesses the effectiveness of waste management practices throughout the construction process. 4.5. Promotes the use of environmentally friendly materials and processes to reduce waste production. 4.6. Ensures proper disposal and recycling of construction waste in line with industry best practices and legal requirements.
5. Apply safety protocols and procedures effectively in simulated or real-life scenarios.	5.1. Demonstrates a clear understanding of safety protocols and procedures relevant to construction sites. 5.2. Effectively applies safety procedures in simulated or real-life scenarios to prevent accidents and ensure site safety. 5.3. Identifies potential hazards and takes proactive steps to mitigate risks in line with safety protocols. 5.4. Responds appropriately to emergency situations, following established safety procedures and guidelines.

	5.5. Ensures that safety protocols are consistently adhered to by all personnel on site. 5.6. Reviews and updates safety procedures as needed to reflect changes in regulations or site conditions.

EE0005 -3: Civil Engineering Project Planning and Management

To develop learners' expertise in planning, managing, and executing civil engineering projects with efficiency and precision. This unit emphasizes the principles of project planning, scheduling, resource management, and teamwork, while fostering the ability to monitor progress, ensure quality standards, and address challenges. It aims to prepare learners for professional roles by integrating technical knowledge with practical project management skills, aligned with global industry standards.

Learning Outcome:	Assessment Criteria:
1. Understand the principles of project planning, scheduling, and resource allocation in civil engineering.	1.1. Demonstrates a clear understanding of project planning principles, including scope definition, objectives, and timelines. 1.2. Accurately explains the process of scheduling tasks and milestones in civil engineering projects. 1.3. Applies principles of resource allocation to ensure optimal use of materials, equipment, and labour. 1.4. Identifies and addresses potential challenges in planning, scheduling, and resource management to ensure project success. 1.5. Utilises project management tools and techniques to effectively manage timelines, costs, and resources. 1.6. Adheres to industry standards and best practices when planning, scheduling, and allocating resources for civil engineering projects.
2. Create basic project plans, including timelines and budgets, to meet specified objectives.	2.1. Demonstrates the ability to develop clear and concise project plans that align with project objectives. 2.2. Creates realistic project timelines, incorporating key milestones and deadlines. 2.3. Effectively allocates and manages resources to meet project requirements within the specified budget. 2.4. Identifies potential risks and includes contingency plans in the project timeline and budget. 2.5. Monitors project progress and adjusts plans as needed to stay on track with timelines and budget constraints. 2.6. Ensures that project plans comply with relevant standards, regulations, and stakeholder requirements.
3. Collaborate effectively within a team to achieve project goals.	3.1. Actively contributes to team discussions and decision-making processes to achieve project

	objectives. 3.2. Demonstrates effective communication skills, ensuring clear and concise sharing of information within the team. 3.3. Takes responsibility for assigned tasks and collaborates with others to ensure timely completion of project goals. 3.4. Respects diverse perspectives and integrates feedback to improve project outcomes. 3.5. Resolves conflicts or challenges within the team in a constructive and professional manner. 3.6. Supports team members by offering assistance and fostering a collaborative work environment.
4. Monitor project progress and apply quality control measures to ensure standards are met.	4.1. Regularly tracks project milestones and compares them to the established timeline to assess progress. 4.2. Identifies potential delays or issues that may affect project quality and takes corrective actions. 4.3. Applies appropriate quality control procedures to ensure compliance with project specifications and industry standards. 4.4. Conducts regular inspections and tests to verify the quality of work and materials used. 4.5. Ensures that project team members adhere to quality standards and best practices throughout the project lifecycle. 4.6. Documents and reports on quality control activities, providing feedback for continuous improvement.
5. Analyse common challenges in civil engineering project management and propose effective solutions.	5.1. Identifies common challenges in civil engineering project management, such as budget overruns, delays, and resource shortages. 5.2. Analyses the root causes of project management issues, considering factors like scope changes, unforeseen risks, and stakeholder conflicts. 5.3. Proposes practical and effective solutions to address challenges, such as improved risk management and better communication strategies. 5.4. Suggests methods for optimising resource allocation and scheduling to prevent project delays and cost overruns. 5.5. Recommends strategies for managing project

	scope and ensuring alignment with stakeholder expectations throughout the project. 5.6. Evaluates the effectiveness of proposed solutions and adjusts approaches as needed to ensure successful project delivery.

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