



LICQual

Level 6 Diploma in Civil Quality Control and Quality Assurance QC / QA

Qualification Specification

Address:

27 Old Gloucester
Street, London, United
Kingdom, WC1N 3AX

LICQual

Level 6 Diploma in Civil Quality Control and Quality Assurance QC / QA

Contents

About LICQual	2
Course Overview	2
Certification Framework	3
Entry Requirements	3
Qualification Structure.....	3
Centre Requirements	4
Support for Candidates	6
Assessment.....	6
Unit Descriptors.....	7

Qualification Specifications about

LICQual Level 6 Diploma in Civil Quality Control and Quality Assurance QC / QA

About LICQual

LICQual is a globally recognized awarding body based in the United Kingdom. Renowned for its commitment to excellence in education, LICQual specializes in delivering high-quality qualifications designed to meet the evolving needs of international learners, professionals, and industries. LICQual is dedicated to fostering innovative and flexible learning pathways, providing learners with the tools and knowledge to excel in dynamic professional landscapes. The organization emphasizes adherence to international qualification frameworks and standards, ensuring global recognition and applicability of its certifications.

The vision of LICQual is to establish itself as a global benchmark in quality education and skills development. Its mission is to equip individuals and organizations with internationally recognized qualifications that enhance employability, professional productivity, and academic progression.

Underpinned by a team of experienced professionals, including examiners, moderators, and assessors, LICQual ensures the highest standards of quality assurance and continuous improvement. Its qualifications are designed to empower individuals with the expertise and competencies necessary to thrive in today's competitive and ever-changing global environment.

Course Overview

The LICQual Level 6 Diploma in Civil Quality Control and Quality Assurance (QC/QA) is a prestigious qualification designed to equip professionals with the expertise to lead and implement quality management practices in civil engineering and construction projects. This program bridges the gap between theoretical knowledge and practical application, preparing learners for pivotal roles in project quality management.

Aligned with international standards, the diploma offers an in-depth exploration of QC/QA principles, practices, and tools specific to civil engineering. The curriculum is structured into six comprehensive study units, each carrying 20 credits, ensuring a robust educational experience that covers all facets of quality management in the civil engineering sector.

Each unit is meticulously designed to provide learners with the necessary skills and knowledge to excel in quality management roles within the civil engineering industry. Upon completion, graduates will be proficient in developing quality plans, conducting inspections and tests, ensuring compliance with standards, managing risks, and leading quality assurance initiatives in construction projects.

This diploma not only enhances employability but also empowers professionals to contribute significantly to the success and integrity of civil engineering projects by upholding the highest quality standards.

Certification Framework

Qualification title	LICQual Level 6 Diploma in Civil Quality Control and Quality Assurance QC/ QA
Course ID	LICQ2200174
Qualification Credits	120 Credits
Course Duration	6 to 12 Months
Grading Type	Pass / Fail
Competency Evaluation	Coursework / Assignments / Verifiable Experience
Assessment	<p>The assessment and verification process for LICQual qualifications ensures that learners achieve the required standards and maintain consistency across all Approved Training Centres (ATCs). This process is divided into two key stages:</p> <p>Internal Assessment and Verification:</p> <ul style="list-style-type: none"> ✓ This stage is conducted by the staff at the ATC, ensuring that learners meet the qualification standards through ongoing assessments. ✓ Internal Quality Assurance (IQA) is performed by the centre's designated IQA staff to validate and maintain the integrity of the assessment processes. <p>External Quality Assurance:</p> <ul style="list-style-type: none"> ✓ This stage is overseen by LICQual AB verifiers, who periodically review the centre's assessment and IQA procedures. ✓ The external verification ensures that assessments adhere to the required standards and that consistent practices are maintained across all centres.

Entry Requirements

To enroll in the LICQual Level 6 Diploma in Civil Quality Control and Quality Assurance QC / QA, candidates should meet the following criteria:

- ✓ A Level 5 qualification in a related field (e.g., Civil Engineering, Construction Management) or equivalent experience.
- ✓ Proficiency in English (IELTS 5.5 or equivalent for non-native speakers).
- ✓ Relevant professional experience in civil engineering or construction is advantageous.

Qualification Structure

This qualification comprises 6 mandatory units, totaling 120 credits. Candidates must successfully complete all mandatory units to achieve the qualification.

Mandatory Units		
Unit Ref#	Unit Title	Credits
LICQ2200174 - 1	Principles of Quality Control and Assurance in Civil Engineering	20
LICQ2200174 - 2	Quality Planning and Documentation	20
LICQ2200174 - 3	Inspection and Testing in Civil Construction	20
LICQ2200174 - 4	Standards and Compliance in Civil Engineering	20
LICQ2200174 - 5	Risk Management and Continuous Improvement	20
LICQ2200174 - 6	Project Management and Leadership for Quality Assurance	20

Centre Requirements

To ensure the quality and consistency of training, assessment, and learner support for the LICQual Level 6 Diploma in Civil Quality Control and Quality Assurance QC / QA , centres must meet the following requirements:

1. Approval to Deliver the Qualification

- ✓ Centres must obtain formal approval from LICQual to deliver this specific qualification, regardless of prior registration.
- ✓ The approval process involves a review of resources, staff qualifications, and policies to confirm alignment with the program's standards.

2. Qualified Staff

- ✓ **Tutors:** Tutors delivering this program must hold qualifications relevant to civil engineering, construction quality control, or related disciplines at Level 7 or higher. Additionally, they should have experience in teaching or industrial QC/QA practices to ensure effective knowledge transfer and application.
- ✓ **Assessors:** Assessors must possess recognized assessor qualifications, such as TAQA or equivalent, and demonstrate expertise in civil quality assurance practices. Hands-on experience in construction quality control, including inspection, testing, and compliance, is essential to maintain assessment integrity.
- ✓ **Internal Quality Assurers (IQAs):** IQAs are required to hold formal IQA certifications with proven experience in managing and overseeing assessment quality in civil engineering or related fields. They must ensure compliance with high-quality standards and promote continuous improvement in assessment processes.

3. Learning Facilities

Centres must provide appropriate learning environments to support both theoretical and practical components of the program:

- ✓ **Classrooms:** Modern, well-equipped classrooms should be available, featuring multimedia capabilities to facilitate interactive lectures, discussions, and presentations on civil quality control principles. Resources must include access to construction standards, codes, and QA/QC frameworks relevant to civil engineering, such as ISO 9001 and building regulations.
- ✓ **Practical Areas:** Hands-on learning environments are crucial, including construction testing labs, inspection facilities, or simulated audit setups to practice quality control procedures. These facilities should be equipped with tools for defect analysis, material testing, and preparation of compliance reports to replicate real-world scenarios effectively.
- ✓ **Technology Access:** Centers should ensure learners have access to advanced computers with civil engineering software (e.g., AutoCAD, Primavera, QA/QC tracking tools) and reliable internet connectivity. Resources should also include platforms for digital QA/QC management and data analysis, supporting collaborative project work, research, and practical learning in construction quality assurance.

4. Health and Safety Compliance

- ✓ Centres must comply with relevant health and safety regulations, ensuring that learning environments are safe and accessible.

- ✓ Regular risk assessments must be conducted to uphold safety standards, particularly during practical training or fieldwork activities.

5. Resource Requirements

- ✓ **Learning Materials:** Approved manuals, textbooks, and supplementary resources aligned with the curriculum and learning outcomes.
- ✓ **Assessment Tools:** Templates, marking guides, and standardized forms for conducting and recording assessments.
- ✓ **E-Learning Systems:** If offering online or hybrid learning, centres must provide a robust Learning Management System (LMS) to deliver course content and facilitate assessments remotely.

6. Assessment and Quality Assurance

- ✓ Centres must follow LICQual's standards for assessments, ensuring they are fair, valid, and reliable.
- ✓ Internal Quality Assurance (IQA) processes must be implemented to monitor assessments and offer constructive feedback to assessors.
- ✓ External verification visits by LICQual will be conducted periodically to ensure compliance with awarding body standards.

7. Learner Support

Centres must provide learners with access to guidance and support throughout the program, including:

- ✓ Academic assistance for coursework and assessments.
- ✓ Career guidance to support professional progression.
- ✓ Additional support for learners with specific needs, such as disabilities or language barriers.

8. Policies and Procedures

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

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

9. Regular Reporting to LICQual

- ✓ Centres must submit periodic updates to LICQual, including details on learner enrollment, progress, and completion rates.
- ✓ Comprehensive records of assessments and learner achievements must be maintained and made available for external auditing.

By meeting these rigorous requirements, centres can ensure the successful delivery of the LICQual Level 6 Diploma in Civil Quality Control and Quality Assurance QC / QA, providing learners with the highest quality education and professional development opportunities.

Support for Candidates

Centres should ensure that materials developed to support candidates:

- ✓ Enable the tracking of learners' progress as they achieve the specified learning outcomes and assessment criteria.
- ✓ Provide clear guidance on accessing LICQual's policies and procedures.
- ✓ Establish robust mechanisms to allow Internal and External Quality Assurance personnel to verify and authenticate evidence efficiently.

This structured approach promotes transparency, enhances the learning experience for candidates, and ensures adherence to high-quality assurance standards.

Assessment

This qualification is competence-based, requiring candidates to demonstrate their skills, knowledge, and understanding as outlined in the qualification units. The assessment is designed to measure candidates' proficiency against established standards. Key aspects include:

1. Assessment Process:

- ✓ Assessments must be conducted by qualified and experienced assessors.
- ✓ Candidates are required to compile a portfolio of evidence demonstrating achievement of 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

LICQ2200174 – 1: Principles of Quality Control and Assurance in Civil Engineering

The aim of this unit is to provide learners with a comprehensive understanding of the foundational principles and objectives of quality control and assurance within the context of civil engineering projects. This unit seeks to equip learners with the knowledge to distinguish between quality control and assurance practices, analyze the historical evolution and importance of quality management in the construction industry, and understand the critical roles and responsibilities of various stakeholders in upholding quality standards. Through this unit, learners will develop the skills needed to contribute effectively to quality management processes in civil engineering projects, ensuring compliance with established standards and enhancing project outcomes.

Learning Outcome:	1. Define the principles and objectives of quality control and assurance in civil engineering projects.
Assessment Criteria:	<ol style="list-style-type: none"> 1.1. Accurately define the key principles of quality control and assurance in civil engineering projects, including their roles in ensuring quality outcomes. 1.2. Explain the fundamental objectives of quality control and assurance, focusing on consistency, reliability, and safety in civil engineering practices. 1.3. Identify and describe the importance of quality standards and regulations in achieving desired project outcomes. 1.4. Demonstrate an understanding of how quality control and assurance contribute to meeting project specifications, timelines, and budgets. 1.5. Discuss the relationship between quality management and project risk reduction in the context of civil engineering. 1.6. Provide examples of quality control and assurance techniques used in civil engineering projects to ensure compliance with industry standards. 1.7. Evaluate the role of quality control and assurance in fostering stakeholder confidence and project success. 1.8. Show how effective implementation of these principles can lead to improved efficiency, reduced errors, and enhanced safety on construction sites. 1.9. Illustrate the significance of continuous monitoring and evaluation in maintaining quality throughout the project lifecycle.
Learning Outcome:	2. Explain the differences between quality control and assurance in the construction process.
Assessment Criteria:	<ol style="list-style-type: none"> 2.1 Demonstrate a clear understanding of the concepts of quality control and quality assurance in the construction industry. 2.2 Identify and explain the main functions and objectives of quality control and quality assurance. 2.3 Provide examples of quality control and quality assurance activities commonly used in construction projects. 2.4 Differentiate between the roles of quality control and quality assurance in the project lifecycle. 2.5 Explain how quality control and assurance contribute to project success and compliance with specifications. 2.6 Describe how quality control is typically implemented at various stages of construction, including inspection and testing. 2.7 Explain the systematic processes involved in quality assurance, such as audits,

	<p>reviews, and continuous improvement.</p> <p>2.8 Discuss the impact of quality control and quality assurance on cost, time, and safety in construction projects.</p> <p>2.9 Provide a comparative analysis of the tools, techniques, and documentation used in quality control versus quality assurance.</p>
Learning Outcome:	3. Analyze the historical evolution and significance of quality management in civil engineering.
Assessment Criteria:	<p>3.1 Identify key milestones in the historical development of quality management practices within the civil engineering industry.</p> <p>3.2 Examine the impact of historical events and innovations on the evolution of quality management in civil engineering.</p> <p>3.3 Analyze the significance of early quality management principles and their influence on modern practices.</p> <p>3.4 Evaluate the role of regulatory bodies and standards in shaping the history of quality management in civil engineering.</p> <p>3.5 Discuss the influence of major construction projects and their quality control practices on industry-wide standards.</p> <p>3.6 Compare and contrast historical and contemporary approaches to quality management in civil engineering.</p> <p>3.7 Investigate the contributions of notable figures or organizations to the development of quality management systems in civil engineering.</p> <p>3.8 Assess how past challenges and failures in quality management have shaped current industry practices and standards.</p> <p>3.9 Provide evidence of how historical trends continue to influence present-day quality management strategies in civil engineering.</p>
Learning Outcome:	4. Identify the roles and responsibilities of stakeholders in maintaining quality standards.
Assessment Criteria:	<p>4.1 Describe the key stakeholders involved in maintaining quality standards within a civil engineering project.</p> <p>4.2 Explain the specific roles of stakeholders, such as project managers, engineers, contractors, and inspectors, in ensuring quality control and assurance.</p> <p>4.3 Identify the legal and ethical responsibilities of stakeholders in upholding quality standards throughout the project lifecycle.</p> <p>4.4 Demonstrate an understanding of how effective communication between stakeholders contributes to maintaining quality standards.</p> <p>4.5 Analyze the interaction between various stakeholders and how their roles interrelate in the quality management process.</p> <p>4.6 Assess the impact of non-compliance by any stakeholder on the overall quality standards and project success.</p> <p>4.7 Evaluate the effectiveness of stakeholder collaboration in managing quality risks and ensuring adherence to quality standards.</p> <p>4.8 Identify potential conflicts between stakeholders' roles and recommend strategies for resolving these conflicts to ensure quality standards are maintained.</p> <p>4.9 Apply knowledge of stakeholder responsibilities to a given case study or scenario, demonstrating the importance of their contributions to quality assurance.</p>

LICQ2200174 – 2: Quality Planning and Documentation

The aim of this unit is to enable learners to understand and implement the principles of quality planning and documentation in civil engineering projects. Learners will gain the skills necessary to develop comprehensive quality plans that align with project-specific requirements and industry standards. This unit also focuses on equipping learners with the ability to create, manage, and maintain effective quality documentation, including manuals, checklists, and records. Additionally, learners will explore the critical role of quality planning in ensuring project success, minimizing risks, and promoting efficient and consistent practices in the civil engineering sector.

Learning Outcome:	1. Develop quality plans tailored to civil engineering project requirements.
Assessment Criteria:	<ol style="list-style-type: none"> 1.1. Demonstrate the ability to identify project-specific quality requirements through detailed analysis of project scope and objectives. 1.2. Develop a comprehensive quality plan that outlines clear quality objectives, standards, and procedures relevant to the project. 1.3. Ensure the quality plan aligns with international standards and local regulatory requirements. 1.4. Identify key quality assurance and quality control activities within the project timeline and integrate them effectively into the quality plan. 1.5. Establish measurable quality targets and performance indicators that are specific, attainable, and relevant to the civil engineering project. 1.6. Define the roles and responsibilities of stakeholders in quality management, ensuring clear accountability. 1.7. Incorporate risk management strategies into the quality plan, identifying potential risks and proposing preventive actions. 1.8. Ensure the quality plan includes appropriate documentation, such as checklists, inspection reports, and compliance records, to monitor quality throughout the project lifecycle. 1.9. Review and revise the quality plan periodically to adapt to changing project conditions and ensure continuous improvement.
Learning Outcome:	2. Describe the components of effective quality documentation (e.g., quality manuals, checklists, records).
Assessment Criteria:	<ol style="list-style-type: none"> 2.1 Accurately identify and describe the essential components of quality documentation, including quality manuals, checklists, and records. 2.2 Demonstrate an understanding of the purpose and significance of each component in the context of civil engineering projects. 2.3 Explain the role of quality documentation in ensuring project consistency, compliance, and traceability. 2.4 Provide examples of how quality manuals are structured and utilized in project management and quality control. 2.5 Describe the function and content of checklists used for quality assurance, specifying how they help in maintaining project standards. 2.6 Identify types of records (e.g., test results, inspection logs) used in quality documentation and their importance in monitoring quality performance. 2.7 Discuss how quality documentation supports audits and inspections in line with industry standards.

	<p>2.8 Explain the process of updating and maintaining quality documentation to reflect changes and improvements in project practices.</p> <p>2.9 Illustrate the connection between effective quality documentation and overall project success, including cost control and risk mitigation.</p>
Learning Outcome:	3. Apply systematic approaches to preparing and maintaining accurate quality documentation.
Assessment Criteria:	<p>3.1 Demonstrates the ability to organize and structure quality documentation in a clear and accessible format.</p> <p>3.2 Identifies the key components required for effective quality documentation, such as quality manuals, checklists, and inspection records.</p> <p>3.3 Applies relevant industry standards and guidelines in the creation and maintenance of quality documentation.</p> <p>3.4 Ensures that all documentation is consistent with the project's quality management plan and specifications.</p> <p>3.5 Uses appropriate software tools to create, store, and manage quality documentation efficiently.</p> <p>3.6 Verifies the accuracy of quality documentation through systematic checks and review processes.</p> <p>3.7 Maintains up-to-date records of quality assurance and control activities, ensuring traceability and accountability.</p> <p>3.8 Demonstrates an understanding of the legal and regulatory requirements for maintaining quality documentation in civil engineering projects.</p> <p>3.9 Implements a systematic approach to regularly update and review quality documentation throughout the project lifecycle.</p>
Learning Outcome:	4. Evaluate the role of quality planning in project success and risk mitigation.
Assessment Criteria:	<p>4.1 Assess the impact of quality planning on achieving project objectives and timelines.</p> <p>4.2 Examine how quality planning contributes to the identification and management of potential risks in the project lifecycle.</p> <p>4.3 Analyze the link between quality planning and the successful allocation of resources.</p> <p>4.4 Evaluate the effectiveness of quality planning in minimizing rework, delays, and cost overruns.</p> <p>4.5 Critically review the role of quality planning in maintaining compliance with industry standards and regulations.</p> <p>4.6 Investigate how quality planning enhances stakeholder communication and collaboration.</p> <p>4.7 Assess the integration of risk management strategies within the quality planning process.</p> <p>4.8 Demonstrate the ability to apply quality planning principles to mitigate project risks and ensure project success.</p> <p>4.9 Provide examples from industry case studies to support the evaluation of quality planning's role in reducing project uncertainties and improving outcomes.</p>

LICQ2200174 – 3: Inspection and Testing in Civil Construction

The aim of this unit is to provide learners with a detailed understanding of the principles and practices of inspection and testing in civil construction. Learners will explore the significance of inspection and testing in ensuring the quality and compliance of construction materials and processes with industry standards. The unit focuses on equipping learners with practical skills to perform key testing methods for materials such as concrete, steel, and soil, as well as the ability to interpret data to verify adherence to project specifications. Furthermore, learners will identify common challenges in inspection and testing and develop solutions to enhance the effectiveness and reliability of these critical processes.

Learning Outcome:	1. Explain the purpose and importance of inspection and testing in civil construction.
Assessment Criteria:	<ol style="list-style-type: none"> 1.1. Clearly describe the role of inspection and testing in ensuring the quality and safety of civil construction projects. 1.2. Identify the key objectives of inspection and testing throughout the construction lifecycle. 1.3. Explain how inspection and testing contribute to compliance with industry standards and regulatory requirements. 1.4. Discuss the impact of inspection and testing on identifying defects, ensuring material quality, and preventing construction delays. 1.5. Illustrate the relationship between effective inspection and testing and the overall success of a construction project. 1.6. Provide examples of how inspection and testing help mitigate risks and improve project outcomes. 1.7. Explain the importance of accurate documentation and reporting in the inspection and testing process. 1.8. Demonstrate knowledge of the legal and ethical responsibilities involved in conducting inspections and tests. 1.9. Evaluate the long-term benefits of rigorous inspection and testing practices on the sustainability and safety of civil engineering projects.
Learning Outcome:	2. Perform key testing methods for materials like concrete, steel, and soil in compliance with industry standards.
Assessment Criteria:	<ol style="list-style-type: none"> 2.1 Accurately identify and select appropriate testing methods for materials such as concrete, steel, and soil based on industry standards and project requirements. 2.2 Demonstrate proper preparation and handling of materials before conducting tests to ensure validity and reliability of results. 2.3 Follow relevant safety protocols and procedures during testing to minimize risks and ensure compliance with health and safety regulations. 2.4 Perform material tests (e.g., compressive strength for concrete, tensile strength for steel, compaction tests for soil) in accordance with recognized international standards such as ASTM, ISO, or EN. 2.5 Record test data clearly and systematically, ensuring traceability and transparency for future reference or audits. 2.6 Interpret and analyze test results to ensure they meet the specified requirements of the project, highlighting any discrepancies or failures. 2.7 Compare results with relevant material specifications and project design criteria

	<p>to assess compliance and performance.</p> <p>2.8 Identify and report any issues, anomalies, or non-compliance during testing, and suggest corrective actions or alternative approaches.</p> <p>2.9 Maintain accurate and detailed documentation of testing processes, results, and actions taken, ensuring compliance with quality management systems and standards.</p>
Learning Outcome:	3. Interpret inspection and testing data to ensure compliance with project specifications.
Assessment Criteria:	<p>3.1 Analyze inspection and testing data to identify key performance indicators and compare results with project specifications.</p> <p>3.2 Apply relevant industry standards and regulations to assess the accuracy and reliability of inspection and testing data.</p> <p>3.3 Evaluate the effectiveness of the inspection and testing methods used in the project, ensuring they meet established criteria.</p> <p>3.4 Identify any discrepancies or deviations in inspection and testing results from the project specifications.</p> <p>3.5 Interpret the data to make informed decisions regarding the quality of materials and construction processes.</p> <p>3.6 Provide clear recommendations for corrective actions when inspection and testing data indicates non-compliance with specifications.</p> <p>3.7 Document and report inspection and testing results accurately and in accordance with project requirements and regulatory standards.</p> <p>3.8 Ensure all data is properly archived for future reference and auditing purposes.</p> <p>3.9 Demonstrate the ability to communicate the interpretation of inspection and testing data effectively to stakeholders, ensuring clarity and understanding.</p>
Learning Outcome:	4. Identify common challenges and solutions in inspection and testing processes.
Assessment Criteria:	<p>4.1 Describe at least three common challenges faced during inspection and testing processes in civil construction projects.</p> <p>4.2 Explain the root causes of these challenges in relation to materials, methods, or project conditions.</p> <p>4.3 Identify solutions or best practices to address each of the listed challenges.</p> <p>4.4 Assess the effectiveness of common testing methods in overcoming challenges in inspection and testing.</p> <p>4.5 Analyze how quality assurance and control procedures can be modified to minimize testing challenges.</p> <p>4.6 Discuss the role of stakeholders (e.g., engineers, contractors) in addressing inspection and testing challenges.</p> <p>4.7 Evaluate the impact of these challenges on the overall quality and safety of the construction project.</p> <p>4.8 Propose preventive measures to avoid recurring issues in inspection and testing.</p> <p>4.9 Justify the importance of continuous improvement in overcoming challenges in the testing and inspection phases</p>

LICQ2200174 – 4: Standards and Compliance in Civil Engineering

The aim of this unit is to provide learners with an in-depth understanding of the critical role that standards and compliance play in civil engineering projects. Learners will gain the knowledge to identify and interpret key international and regional standards applicable to the construction industry and explore the legal and ethical responsibilities associated with adhering to these standards. This unit also aims to develop the learners' ability to assess compliance requirements in various project scenarios, recommend corrective actions where needed, and analyze the consequences of non-compliance on safety, sustainability, and project costs through case studies.

Learning Outcome:	1. Identify key international and regional standards applicable to civil engineering.
Assessment Criteria:	<ol style="list-style-type: none"> 1.1. Accurately list key international and regional standards relevant to civil engineering, including ISO, EN, ASTM, and local building codes. 1.2. Demonstrate an understanding of how these standards apply to various civil engineering disciplines such as structural, environmental, and geotechnical engineering. 1.3. Explain the relevance of each identified standard in the context of ensuring quality, safety, and environmental sustainability in civil engineering projects. 1.4. Identify the organizations responsible for developing and maintaining these standards, such as ISO, ASTM, or national standards bodies. 1.5. Discuss the process by which civil engineering standards are reviewed and updated to maintain their applicability and relevance in the industry. 1.6. Demonstrate knowledge of how to access and interpret these standards from reliable sources, including standards organizations and industry publications. 1.7. Describe the role of compliance with these standards in achieving project success and minimizing risks. 1.8. Provide examples of civil engineering projects where adherence to international and regional standards has played a critical role in project execution and outcomes. 1.9. Evaluate the potential consequences of failing to adhere to relevant standards in civil engineering projects, such as safety hazards, legal issues, and cost overruns.
Learning Outcome:	2. Explain the legal and ethical implications of adhering to construction standards.
Assessment Criteria:	<ol style="list-style-type: none"> 2.1 Demonstrate understanding of the key legal frameworks governing construction standards in relevant jurisdictions. 2.2 Identify and explain the ethical responsibilities of stakeholders in ensuring compliance with construction standards. 2.3 Discuss the potential legal consequences of non-compliance with construction standards, including penalties, fines, and project delays. 2.4 Analyze the impact of non-compliance on public safety, environmental sustainability, and the reputation of the construction industry. 2.5 Explain how ethical considerations, such as integrity and accountability, influence decision-making in construction projects. 2.6 Evaluate the role of professional codes of conduct in guiding ethical behavior in the construction industry. 2.7 Discuss the legal obligations of contractors, engineers, and project managers regarding quality assurance and control.

	<p>2.8 Assess case studies where failure to adhere to standards led to legal or ethical issues, highlighting lessons learned.</p> <p>2.9 Provide recommendations for improving legal and ethical compliance within the construction industry.</p>
Learning Outcome:	3. Assess compliance requirements in project scenarios and recommend corrective actions.
Assessment Criteria:	<p>3.1 Accurately identify the compliance requirements relevant to the project scenario, referencing applicable standards, regulations, and contractual obligations.</p> <p>3.2 Demonstrate the ability to assess the project's alignment with legal, regulatory, and industry standards.</p> <p>3.3 Analyze the project's compliance gaps by comparing actual practices against the required standards.</p> <p>3.4 Evaluate the potential risks or consequences of non-compliance on project outcomes, including safety, quality, and cost.</p> <p>3.5 Recommend specific corrective actions to address compliance issues, ensuring they align with legal and regulatory frameworks.</p> <p>3.6 Justify the proposed corrective actions with clear reasoning, highlighting the benefits of compliance for the overall project success.</p> <p>3.7 Provide an implementation plan for the corrective actions, considering resource allocation, timelines, and stakeholder engagement.</p> <p>3.8 Use industry best practices to ensure that corrective actions are realistic, achievable, and sustainable.</p> <p>3.9 Document the compliance assessment and recommended corrective actions in a clear and structured manner, ensuring traceability and accountability.</p>
Learning Outcome:	4. Analyze case studies to evaluate the impact of non-compliance on safety, sustainability, and project costs.
Assessment Criteria:	<p>4.1 Identify the key factors in the case studies that contribute to non-compliance in civil engineering projects.</p> <p>4.2 Evaluate the direct and indirect consequences of non-compliance on project safety.</p> <p>4.3 Assess how non-compliance affects the sustainability of the project and surrounding environment.</p> <p>4.4 Quantify the impact of non-compliance on overall project costs, including delays, fines, and rework.</p> <p>4.5 Examine any legal or regulatory repercussions resulting from non-compliance and their effect on project outcomes.</p> <p>4.6 Provide a comparison of compliant versus non-compliant scenarios and their respective impacts on the project.</p> <p>4.7 Propose corrective actions that could have mitigated the risks associated with non-compliance in the case studies.</p> <p>4.8 Support analysis with data from industry standards, regulations, or guidelines relevant to the case studies.</p> <p>4.9 Reflect on the lessons learned from the case studies and their implications for future project planning and execution.</p>

LICQ2200174– 5: Risk Management and Continuous Improvement

The aim of this unit is to equip learners with the knowledge and skills to identify, assess, and manage risks that impact quality assurance and control in civil engineering projects. Learners will develop strategic approaches to mitigate quality-related challenges and explore the principles of continuous improvement as a framework for enhancing quality management practices. The unit also emphasizes the evaluation and application of tools and techniques such as root cause analysis and lean methodologies to drive efficiency, reduce defects, and foster a culture of excellence in civil engineering projects.

Learning Outcome:	1. Identify risks to quality assurance and control in civil engineering projects.
Assessment Criteria:	<ol style="list-style-type: none"> 1.1. Identify potential risks to quality assurance and control in various stages of civil engineering projects, including design, construction, and post-construction phases. 1.2. Evaluate the impact of external factors such as regulatory changes, environmental conditions, and supply chain disruptions on quality assurance. 1.3. Recognize common quality control issues such as material defects, workmanship errors, and non-compliance with industry standards. 1.4. Assess the influence of project management factors, including schedule pressures, budget constraints, and resource limitations, on quality control. 1.5. Examine the risks associated with the use of new or untested technologies and methods in construction processes. 1.6. Identify human factors, including skill gaps, training deficiencies, and communication breakdowns, as risks to maintaining quality standards. 1.7. Analyze the potential risks posed by stakeholder involvement, including misalignment of expectations or lack of cooperation. 1.8. Identify risks related to inadequate inspection, testing, and monitoring procedures during the construction phase. 1.9. Evaluate the risk of non-compliance with health, safety, and environmental regulations impacting the overall quality of the project.
Learning Outcome:	2. Develop risk management strategies to address quality-related challenges.
Assessment Criteria:	<ol style="list-style-type: none"> 2.1 Identify key quality-related risks within civil engineering projects. 2.2 Analyze the potential impact of identified risks on project quality and timelines. 2.3 Assess the probability and severity of risks related to quality assurance and control. 2.4 Develop strategies to mitigate the identified quality risks and minimize their impact. 2.5 Integrate risk management strategies into the overall project management plan. 2.6 Identify relevant stakeholders and their roles in the implementation of risk management strategies. 2.7 Evaluate the effectiveness of proposed risk management strategies in addressing quality challenges. 2.8 Recommend corrective actions and contingency plans to address potential risks during the project lifecycle. 2.9 Demonstrate the ability to update and refine risk management strategies based on ongoing project developments and feedback

Learning Outcome:	3. Explain the principles of continuous improvement and their application to quality management.
Assessment Criteria:	<p>3.1 Describe the key concepts of continuous improvement in the context of quality management.</p> <p>3.2 Explain the importance of continuous improvement in maintaining and enhancing quality standards.</p> <p>3.3 Identify the principles of well-known continuous improvement methodologies, such as Plan-Do-Check-Act (PDCA) or Six Sigma.</p> <p>3.4 Demonstrate an understanding of how continuous improvement contributes to reducing defects and improving efficiency in processes.</p> <p>3.5 Provide examples of how continuous improvement can be applied to quality management in real-world scenarios.</p> <p>3.6 Analyze the relationship between continuous improvement and quality assurance practices.</p> <p>3.7 Assess the effectiveness of continuous improvement initiatives in enhancing the overall quality of products or services.</p> <p>3.8 Evaluate how feedback loops and data-driven decision-making are integral to continuous improvement efforts.</p> <p>3.9 Explain the role of leadership and employee involvement in fostering a culture of continuous improvement within an organization.</p>
Learning Outcome:	4. Evaluate tools and techniques such as root cause analysis and lean methodologies for quality enhancement.
Assessment Criteria:	<p>4.1 Critically analyze the principles and objectives of root cause analysis and lean methodologies in the context of quality enhancement in civil engineering.</p> <p>4.2 Identify and describe various tools and techniques within root cause analysis, such as the 5 Whys, Fishbone diagram, and Failure Mode and Effect Analysis (FMEA).</p> <p>4.3 Assess the application of lean methodologies, including value stream mapping, Kaizen, and Just-in-Time (JIT), in improving quality and reducing waste in construction processes.</p> <p>4.4 Evaluate the advantages and limitations of using root cause analysis and lean techniques for identifying and resolving quality issues in civil engineering projects.</p> <p>4.5 Demonstrate the ability to select and apply appropriate tools and techniques to address specific quality-related challenges in project scenarios.</p> <p>4.6 Examine case studies to assess the effectiveness of root cause analysis and lean methodologies in past civil engineering projects and their impact on quality outcomes.</p> <p>4.7 Compare the effectiveness of different quality enhancement tools and recommend best practices for implementing root cause analysis and lean techniques in civil construction projects.</p> <p>4.8 Analyze how the integration of root cause analysis and lean methodologies contributes to continuous improvement and long-term sustainability in quality management practices.</p> <p>4.9 Justify the use of specific tools and techniques in quality enhancement, taking into account project size, complexity, and industry standards</p>

LICQ2200174 – 6: Project Management and Leadership for Quality Assurance

The aim of this unit is to develop learners' understanding of the essential project management principles and leadership strategies required to ensure effective quality assurance in civil engineering projects. Learners will gain the skills to integrate quality assurance processes into comprehensive project management plans while emphasizing the importance of leadership in promoting a culture of quality within teams. The unit will also explore the impact of effective communication and collaboration on achieving high-quality outcomes, equipping learners to apply these principles in real-world project settings to drive success and continuous improvement.

Learning Outcome:	1. Demonstrate knowledge of project management principles relevant to quality assurance.
Assessment Criteria:	<ol style="list-style-type: none"> 1.1. Define key project management principles and their relevance to quality assurance in civil engineering projects. 1.2. Explain the relationship between project management and quality assurance in ensuring successful project outcomes. 1.3. Identify the main project management methodologies and tools used in quality assurance processes. 1.4. Describe the role of project planning, scheduling, and budgeting in maintaining quality standards throughout a project. 1.5. Analyze the impact of effective project management on quality control and assurance. 1.6. Discuss the importance of stakeholder management in ensuring quality outcomes in projects. 1.7. Evaluate the effectiveness of risk management techniques in relation to maintaining quality assurance in project execution. 1.8. Demonstrate understanding of how project monitoring and evaluation contribute to continuous quality improvement. 1.9. Apply project management principles to real-world scenarios, showing how they support the implementation of quality assurance measures.
Learning Outcome:	2. Identify leadership strategies for fostering a culture of quality in civil engineering teams.
Assessment Criteria:	<ol style="list-style-type: none"> 2.1 Describe the key leadership strategies that promote a culture of quality in civil engineering teams. 2.2 Evaluate the role of leadership in setting quality expectations and standards within a team. 2.3 Discuss how effective leadership influences team motivation and commitment to quality objectives. 2.4 Identify specific leadership behaviors that encourage continuous improvement in quality management. 2.5 Analyze how leaders can foster a collaborative environment that supports quality assurance goals. 2.6 Demonstrate the ability to apply leadership strategies in hypothetical civil engineering project scenarios. 2.7 Examine the impact of leadership decisions on team performance and quality outcomes in civil engineering projects.

	<p>2.8 Assess the effectiveness of different leadership styles in enhancing quality culture within civil engineering teams.</p> <p>2.9 Propose strategies for addressing challenges and obstacles to quality management through effective leadership.</p>
Learning Outcome:	3. Analyze the impact of effective communication and collaboration on quality outcomes.
Assessment Criteria:	<p>3.1 Clearly explain the relationship between communication and collaboration and their influence on quality outcomes in civil engineering projects.</p> <p>3.2 Evaluate how different communication methods (e.g., verbal, written, digital) affect the accuracy and efficiency of quality assurance processes.</p> <p>3.3 Identify key stakeholders in a project and assess the impact of their communication and collaboration on overall quality control.</p> <p>3.4 Assess the role of project teams and leadership in promoting effective communication for quality outcomes.</p> <p>3.5 Examine case studies that demonstrate both successful and unsuccessful communication practices in relation to project quality.</p> <p>3.6 Analyze how poor communication and lack of collaboration can lead to errors, delays, and cost overruns in civil engineering projects.</p> <p>3.7 Review the use of collaborative tools and technologies in improving communication for quality assurance.</p> <p>3.8 Discuss strategies for improving communication and collaboration within cross-functional teams to ensure quality standards are met.</p> <p>3.9 Propose solutions to common communication challenges that may hinder quality outcomes in civil engineering projects.</p>
Learning Outcome:	4. Develop project management plans that integrate quality assurance and leadership best practices.
Assessment Criteria:	<p>4.1 Demonstrate the ability to outline the key elements of a project management plan, focusing on quality assurance and leadership practices.</p> <p>4.2 Identify relevant quality assurance processes and integrate them into the overall project management framework.</p> <p>4.3 Apply leadership strategies to enhance team performance and ensure quality management objectives are met.</p> <p>4.4 Develop clear project goals, timelines, and milestones that align with quality assurance standards and leadership goals.</p> <p>4.5 Incorporate risk management strategies within the project management plan to address potential quality issues.</p> <p>4.6 Ensure that communication protocols and roles within the project team are defined to support quality assurance and leadership.</p> <p>4.7 Evaluate the alignment of project management activities with international quality standards and best practices in leadership.</p> <p>4.8 Demonstrate the use of project management tools and software to track quality assurance and leadership performance.</p> <p>4.9 Provide evidence of stakeholder involvement in the development and review of the project management plan to ensure quality and leadership objectives are met.</p>

LICQual UK LTD

Address

27 Old Gloucester Street, London,
United Kingdom, WC1N 3AX

Contact Us

+44 744 139 8083

Website

www.licqual.co.uk

Email

Licqual@licqual.co.uk

[Visit Official Web page](http://www.licqual.co.uk)

