

ICTQual AB



Qualification Specification

ICTQual Level 3 Diploma in Process Safety Management



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ICTQual AB's

Level 3 Diploma in Process Safety Management

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Qualification Specification about

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About ICTQual AB's

ICTQual AB's 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's 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.

ICTQual AB's delivers high-quality educational solutions through a network of Approved Training Centres worldwide. Their robust standards and innovative teaching methodologies 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's continuously evolves its programs to stay ahead of industry trends and technological advancements.

Course Overview

The ICTQual AB Level 3 Diploma in Process Safety Management has been designed to equip learners with the fundamental knowledge, applied understanding, and operational competence required to manage process safety effectively across various industrial settings. This qualification supports the development of safe systems of work, incident prevention techniques, and regulatory compliance frameworks in line with international occupational safety standards. Through the study of recognised safety principles and the implementation of control measures, learners will explore a range of essential process safety topics such as hazard identification, risk control, human factors, permit-to-work systems, emergency preparedness, and operational integrity. The focus of this qualification is to embed critical thinking and decision-making abilities that align with modern safety objectives, helping individuals contribute to sustainable and resilient safety cultures. Learners will engage in a combination of theoretical instruction and practice-based learning designed to simulate realistic workplace challenges and solutions. Upon successful completion, individuals will be well-

prepared to take on responsibilities within process safety management functions across a wide array of sectors including manufacturing, petrochemicals, energy, and general industry.

Who This Course Is For:

This qualification is suitable for:

- Individuals currently working in operational, engineering, or supervisory roles who wish to gain formal knowledge of process safety management.
- Early-career professionals and technicians seeking to enter safety-critical industries with a strong foundation in process safety principles.
- Health and safety representatives, team leaders, or coordinators aiming to enhance their ability to identify and control process-related risks.
- Maintenance personnel, control room operators, and production staff who need to understand process safety protocols within their daily operations.
- Individuals preparing for future responsibilities in safety compliance, auditing, or plant operations across high-risk environments.

This course is also appropriate for those pursuing personal or professional development in safety-focused roles, and for those supporting the development of a positive safety culture in their workplace.

Standards & Objectives:

The qualification aims to ensure learners can:

- Understand the core principles and key terminology associated with process safety management.
- Identify and evaluate hazards associated with industrial operations and implement risk reduction controls.
- Apply knowledge of safety instrumented systems, pressure relief mechanisms, and isolation techniques.
- Promote effective communication and workforce engagement strategies in high-risk environments.
- Ensure adherence to permit-to-work systems and maintain process integrity through change control and operational discipline.
- Develop preparedness for emergencies through structured response planning and incident investigation.

Certification Framework

Qualification title	ICTQual Level 3 Diploma in Process Safety Management
Course ID	HSE0049
Grading Type	Pass / Fail
Competency Evaluation	Coursework / Assignments / Verifiable Experience
Assessment	The assessment and verification process for ICTQual AB's qualifications involves two key stages: Internal Assessment and Verification: ✓ Conducted by the staff at the Approved Training Centre (ATC) to ensure 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 process. External Quality Assurance: ✓ Managed by ICTQual AB's 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

Entry requirements for an ICTQual Level 3 Diploma in Process Safety Management may vary depending on the institution offering the program. However, typical entry requirements for such a course may include:

- ✓ Candidates must be at least 18 years old.
- ✓ Applicants should have at least a high school diploma or a Level 2 qualification in a related discipline, such as Occupational Health and Safety, Engineering, or Chemical Process Technology, which can be beneficial but is not mandatory.
- ✓ Participants should have basic literacy and numeracy skills. This is important as the course materials, including the training manual and assessment, require reading, comprehension, and basic mathematical understanding.
- ✓ Since the course is in English, participants should have proficient English language skills to engage with course materials effectively, participate in discussions, and complete written assignments.

Qualification Structure

This qualification comprises 6 mandatory units; Candidates must successfully complete all mandatory units to achieve the qualification.

Mandatory Units	
Unit Ref#	Unit Title
HSE0049-01	Introduction to Process Safety Management
HSE0049-02	Hazard Identification and Risk Assessment
HSE0049-03	Safety Management Systems
HSE0049-04	Process Hazard Analysis
HSE0049-05	Emergency Response Planning
HSE0049-06	Regulatory Framework and Compliance

Centre Requirements

To ensure quality training delivery, centres must adhere to the following standards:

1. Centre Approval

- ✓ Centres must be formally approved by ICTQual AB's before delivering this qualification.
- ✓ Approval involves a review of facilities, policies, and staff qualifications.

2. Qualified Staff

- ✓ **Tutors:** Must hold at least a Level 7 qualification (or equivalent) in a relevant field such as HSE, Environmental Engineering, Occupational Safety, or Process Engineering.
- ✓ **Assessors:** Must hold a recognized assessor qualification (e.g., CAVA, AVRA) or equivalent)
- ✓ **Internal Quality Assurers (IQAs):** Must be appropriately qualified and experienced to oversee assessment standards.

3. Learning Facilities

Centre must offer:

- ✓ Private study areas and internet-enabled workspaces (for blended or physical delivery)
- ✓ Academic and pastoral support for learners
- ✓ Administrative support must be available to manage enrolment, tracking, and learner queries efficiently

4. Health and Safety Compliance

- ✓ All training facilities must comply with health and safety regulations.
- ✓ Centres must conduct regular risk assessments for practical activities.

5. Learning Resources

- ✓ **Course Materials:** Approved textbooks, study guides, and digital content must align with the qualification standards.
- ✓ **Assessment Tools:** Templates and guidelines must be provided to ensure standardized evaluation processes.
- ✓ **E-Learning Support:** Centres offering online or blended learning must implement an effective Learning Management System (LMS).

6. Assessment and Quality Assurance

- ✓ Centres must ensure assessments meet ICTQual AB's competency standards.
- ✓ Internal quality assurance (IQA) must be conducted to maintain consistency.
- ✓ External verifiers from ICTQual AB's will review assessment and training practices.

7. Learning Resources and Infrastructure

The centre must provide learners with access to adequate academic resources, including:

- ✓ Virtual Learning Environment (VLE) or Learning Management System (LMS)
- ✓ Engineering and safety case studies, simulation tools, and software.
- ✓ Access to digital libraries, e-books, and relevant professional standards (ISO, OSHA, HSE, etc.)

8. Policies and Compliance

Centres must uphold the following policies in accordance with ICTQual AB's standards:

- ✓ Equality, Diversity, and Inclusion Policy.
- ✓ Health and Safety Policy.
- ✓ Safeguarding and Learner Protection Policy.
- ✓ Complaints and Appeals Procedure.
- ✓ Data Protection and Confidentiality Policy.

9. Reporting Requirements

- Centres must provide ICTQual AB's with regular reports on learner registrations, progress, and certification outcomes.
- Assessment records must be maintained for external auditing and quality assurance purposes.

Support for Candidates

Centres should ensure that materials developed to support candidates:

- ✓ Facilitate tracking of achievements as candidate's progress through the learning outcomes and assessment criteria.
- ✓ Include information on how and where ICTQual AB'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

HSE0049-01- Introduction to Process Safety Management

This unit gives learners a clear understanding of what process safety management (PSM) is and why it is important in industries where hazardous substances or high-risk equipment are used. It explains the difference between occupational safety and process safety, highlighting how failures in systems or equipment can lead to major accidents. Learners will study the key principles, history of major incidents, and the purpose of applying PSM in high-risk environments. The unit also introduces the roles and responsibilities of people involved in maintaining safe operations.

Learning Outcome:

- 1. Understanding of Process Safety:**
Gain a clear understanding of the concept of process safety management and its significance in industrial operations.
- 2. Knowledge of Historical Incidents:**
Learn from historical incidents and understand the lessons learned to prevent similar occurrences in the future.
- 3. Familiarity with Regulatory Frameworks:**
Acquire knowledge of the regulatory frameworks and standards governing process safety to ensure compliance within organizations.

Assessment Criteria:

- 1.1 Define the key principles of process safety and how it differs from occupational safety.
- 1.2 Explain the purpose and objectives of process safety management in high-risk industries.
- 1.3 Describe the main elements of a typical process safety management system.
- 2.1 Summarise at least two major historical industrial incidents related to process safety.
- 2.2 Identify the root causes and failures that led to these incidents.
- 2.3 Explain how lessons from past incidents can be applied to prevent future occurrences.
- 2.4 Evaluate how changes in process safety practices have developed as a result of past events.
- 3.1 List key process safety regulations relevant to industrial operations.
- 3.2 Describe the roles of regulatory authorities in enforcing process safety laws.
- 3.3 Explain the importance of following standards and legal requirements for safe operations.

HSE0049-02- Hazard Identification and Risk Assessment

In this unit, learners will gain practical knowledge on how to identify hazards and carry out effective risk assessments. The focus is on recognising unsafe conditions, hazardous substances, and unsafe acts that could lead to incidents. Learners will learn how to assess the level of risk by looking at the likelihood of an event happening and its potential consequences. The unit explores different types of control measures, including physical, procedural, and behavioural, to reduce or eliminate risks. Real-life examples and case studies will be used to build learners' confidence in applying these skills in the workplace.

Learning Outcome:	Assessment Criteria:
1. Hazard Identification Skills: Develop the ability to identify potential hazards associated with industrial processes, including chemical, mechanical, and environmental hazards.	1.1 Identify common chemical, mechanical, and environmental hazards in process industries. 1.2 Demonstrate the use of hazard identification tools in a given scenario. 1.3 Explain how workplace conditions and human behaviour contribute to hazards.
2. Risk Assessment Proficiency: Acquire skills in conducting risk assessments using various methodologies such as HAZID, HAZOP, and FMEA to prioritize risks effectively.	2.1 Compare different risk assessment methods such as HAZID, HAZOP, and FMEA. 2.2 Apply a selected risk assessment method to a simulated industrial case study. 2.3 Interpret the results of a risk assessment and prioritise the risks identified. 2.4 Justify the choice of control measures based on assessed risks.
3. Implementation of Risk Controls: Learn how to implement controls and safeguards to mitigate identified risks and prevent incidents from occurring.	3.1 Recommend suitable engineering or procedural controls to manage identified risks. 3.2 Explain how to apply the hierarchy of control in process safety. 3.3 Assess the effectiveness of existing safeguards in preventing incidents.

HSE0049-03- Safety Management Systems

This unit explains the structure and purpose of a Safety Management System (SMS) and how it supports safe working conditions. Learners will explore the main parts of a good SMS, including policies, leadership commitment, risk control, communication, monitoring, and learning from incidents. The unit highlights the need for a clear safety culture, regular reviews, and worker involvement. Learners will also understand how SMS connects with legal requirements and how it helps organisations stay in control of their safety responsibilities.

Learning Outcome:	Assessment Criteria:
1. Design and Implementation of SMS: Gain the expertise to design and implement robust safety management systems tailored to the specific needs and complexities of industrial processes.	1.1 Outline the key components of a safety management system. 1.2 Create a basic structure of an SMS tailored to a specific industrial operation. 1.3 Explain how leadership and clear responsibilities contribute to successful SMS implementation.
2. Promotion of Safety Culture: Understand the importance of fostering a strong safety culture within organizations and learn strategies for promoting safety leadership and employee engagement.	2.1 Describe what a positive safety culture looks like within an organisation. 2.2 Identify methods to improve employee involvement in safety initiatives. 2.3 Evaluate the role of management in shaping and sustaining safety culture. 2.4 Propose initiatives that support behavioural safety and leadership commitment.
3. Continuous Improvement: Learn how to establish processes for continuous improvement of safety management systems through audits, evaluations, and feedback mechanisms.	3.1 Explain the importance of regular audits and inspections in SMS performance. 3.2 Identify how feedback and incident reports contribute to system improvements. 3.3 Recommend changes to an SMS based on evaluation outcomes.

HSE0049-04- Process Hazard Analysis

This unit focuses on analysing complex processes to identify where things could go wrong. Learners will explore structured techniques used in process industries to study risks, such as HAZOP (Hazard and Operability Study), What-If analysis, and Failure Modes and Effects Analysis (FMEA). These methods help teams find possible system failures before they happen. The unit teaches how to break down a process, ask the right safety questions, and record the results clearly. Learners will gain skills in identifying high-risk situations and recommending controls to prevent serious incidents.

Learning Outcome:	Assessment Criteria:
1. Proficiency in PHA Techniques: Develop proficiency in various process hazard analysis (PHA) techniques such as HAZOP, What-If analysis, and Layers of Protection Analysis (LOPA) to identify and mitigate potential hazards.	1.1 Compare key PHA methods including HAZOP, What-If, and LOPA. 1.2 Demonstrate the steps to conduct a basic hazard and operability study (HAZOP). 1.3 Identify deviations and hazards from a simplified process diagram.
2. Human Factors Awareness: Gain an understanding of the role of human factors in process safety and learn how to integrate human factors considerations into hazard analysis processes.	2.1 Define human factors and their impact on process safety. 2.2 Describe examples of human error and how they lead to process failures. 2.3 Suggest design and procedural improvements that reduce the likelihood of human error. 2.4 Assess how training and communication influence human reliability in operations.
3. Application of PHA Results: Learn how to effectively apply the results of process hazard analyses to improve safety practices and procedures within industrial processes.	3.1 Translate findings from a PHA into practical safety recommendations. 3.2 Update procedures or maintenance tasks based on PHA outcomes. 3.3 Monitor how changes implemented from PHA affect process safety performance.

HSE0049-05- Emergency Response Planning

In this unit, learners will understand the importance of being ready for emergencies. The unit covers how to plan for fires, gas leaks, chemical spills, equipment failure, and other unexpected situations. Learners will study the steps needed to create an emergency plan, including communication, evacuation, emergency roles, and first aid. The importance of training, drills, and reviewing emergency responses will be discussed. This unit helps learners contribute to effective emergency management and reduce the impact of incidents on people and the environment.

Learning Outcome:	Assessment Criteria:
1. Development of Emergency Response Plans: Acquire the skills to develop comprehensive emergency response plans that outline procedures for responding to incidents effectively and minimizing their impact.	1.1 Outline the key parts of an emergency response plan for process industries. 1.2 Design a basic emergency response procedure for a given type of incident. 1.3 Evaluate how pre-planning helps reduce harm during emergencies.
2. Incident Command Systems (ICS): Understand the principles of incident command systems (ICS) and learn how to establish effective command structures during emergencies.	2.1 Describe the structure and roles within an incident command system. 2.2 Explain how ICS supports decision-making during a crisis. 2.3 Identify the responsibilities of response personnel in a simulated emergency.
3. Communication and Coordination: Learn how to facilitate effective communication and coordination among stakeholders during emergency response efforts to ensure a timely and organized response.	3.1 Explain why clear communication is critical in emergency situations. 3.2 Identify methods for sharing information quickly during an emergency. 3.3 Evaluate the importance of coordination with internal and external responders. 3.4 Recommend improvements to communication procedures in emergency plans.

HSE0049-06- Regulatory Framework and Compliance

This unit helps learners understand the laws, standards, and responsibilities involved in process safety. It introduces the basic legal duties of employers, employees, and duty holders under health, safety, and environmental regulations. Learners will study how organisations must comply with safety rules, report incidents, and maintain documentation. The unit also covers the role of inspections, audits, and enforcement actions taken by regulators. By the end, learners will understand how following the law helps protect workers, the public, and the environment.

Learning Outcome:	Assessment Criteria:
1. Understanding of Regulatory Requirements: Gain a thorough understanding of the legal and regulatory requirements related to process safety, including relevant OSHA regulations and process safety management (PSM) standards.	1.1 List the major laws and standards related to process safety. 1.2 Explain the legal duties of employers and workers in maintaining process safety. 1.3 Describe the consequences of non-compliance with safety regulations.
2. Compliance Management: Learn strategies for ensuring compliance with regulatory requirements and maintaining up-to-date documentation and records to demonstrate compliance. Integration of Regulatory	2.1 Identify ways to monitor and maintain compliance within an organisation. 2.2 Demonstrate how to manage safety documentation and records. 2.3 Assess how regular reviews and audits help ensure ongoing compliance. 2.4 Develop a checklist for regulatory inspections and reporting requirements.
3. Requirements: Understand how to integrate regulatory requirements into safety management systems and operational practices to ensure a comprehensive approach to compliance.	3.1 Explain how to align company safety policies with legal standards. 3.2 Identify gaps between current practice and regulatory expectations. 3.3 Recommend updates to safety procedures to reflect changing legal requirements.

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