ICTQual AB

Qualification Specification

ICTQual Level 7 International Diploma in Health, Safety and Environmental Engineering

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ICTQual AB's

Level 7 International Diploma in Health, Safety and Environmental Engineering

Contents

Qualification Specification about

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About ICTQual AB's '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's Level 7 International Diploma in Health, Safety and Environmental Engineering (Course ID: HSE0003) is a globally recognized, advanced professional qualification awarded by ICTQual AB —a respected body for competency-based vocational education and international accreditation. This program has been meticulously designed for experienced professionals seeking to lead, innovate, and influence health, safety, and environmental (HSE) systems within complex and high-risk industrial settings.

The qualification delivers a multidisciplinary approach, combining engineering principles, occupational health and safety regulations, and environmental management strategies. Learners engage with advanced concepts in process safety, hazard control, systems thinking, safety-critical infrastructure, and sustainable engineering practices. The course addresses real-world challenges through applied case studies, enabling participants to develop tailored HSE solutions that align with international standards and corporate governance requirements.

The diploma particularly suits a unique cohort of professionals—those who already shape or aspire to shape operational safety and environmental integrity at an organizational or national level. It caters to senior HSE managers, environmental and process engineers, lead safety auditors, compliance officers, sustainability advisors, and consultants who must navigate regulatory complexity, technical risk, and global sustainability demands.

What sets this qualification apart is its ability to empower participants to:

- Strategically lead HSE performance across sectors such as oil & gas, construction, manufacturing, and utilities.
- Influence corporate policy and culture through technical insight and ethical responsibility.
- Design, evaluate, and implement integrated HSE systems that ensure legal compliance and operational resilience.
- Tackle emerging challenges in environmental protection, climate risk, and sustainability.

Participants benefit from flexible learning modes—whether online, blended, or part-time—allowing them to balance professional commitments with academic advancement. The international orientation of the program ensures that competencies acquired are transferable across regulatory jurisdictions and applicable in both developed and developing industrial economies.

The overarching objective of this diploma is to develop critical thinkers, technical experts, and visionary leaders who can proactively manage health, safety, and environmental risks while fostering a culture of continuous improvement and responsible engineering. Graduates of this program will be uniquely positioned to influence strategic decision-making, meet global compliance benchmarks, and enhance sustainable performance across industries.

Certification Framework

Qualification title	**ICTQual Level 7 International Diploma in Health, Safety and Environmental Engineering**
Course ID	HSE0003
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 ICTQual AB's Level 7 international Diploma in Health, Safety and Environmental Engineering may vary depending on the institution offering the program. However, typical entry requirements for such a course may include:

- ✓ Candidates should hold a bachelor's degree or equivalent qualification in a relevant field such as engineering, environmental science, occupational health and safety, or a related discipline from a recognized institution. A minimum GPA or equivalent academic performance may be required, typically at least a 2:1 or equivalent.
- ✓ While not mandatory, applicants with relevant professional experience in areas such as engineering, health and safety management, environmental management, or ICT-related industries are preferred. Professional experience provides valuable context and practical insights that enhance the learning experience.
- ✓ Proficiency in the English language is essential for successful participation in the program. Candidates may be required to provide evidence of English language proficiency.

Qualification Structure

This qualification comprises 7 mandatory units; Candidates must successfully complete all mandatory units to achieve the qualification.

Mandatory Units	
Unit Ref#	**Unit Title**
HSE0003-01	Foundations of Health, Safety, and Environmental Engineering
HSE0003-02	Risk Assessment and Management
HSE0003-03	Occupational Health and Safety Management
HSE0003-04	Environmental Management Systems
HSE0003-05	Emergency Preparedness and Response
HSE0003-06	Sustainability and Corporate Social Responsibility
HSE0003-07	Applied Health, Safety, and Environmental Engineering

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

HSE0003-01-Foundations of Health, Safety, and Environmental Engineering

This unit introduces the multidisciplinary foundations of HSE engineering by exploring the core principles that underpin occupational health, safety systems, and environmental protection. Learners will examine key legislative frameworks, historical developments, and modern expectations of engineering professionals in ensuring safe, healthy, and sustainable industrial operations. Emphasis is placed on understanding the ethical, legal, and technical responsibilities of engineers and safety managers within complex organisational structures and across high-risk industries.

Learning Outcome:	Assessment Criteria:
1. Understand the fundamental principles and concepts of health, safety, and environmental engineering.	1.1 Explain the scope and purpose of health, safety, and environmental (HSE) engineering. 1.2 Describe the key ethical and professional responsibilities of HSE engineers. 1.3 Compare historical and contemporary approaches to HSE management. 1.4 Identify core terminology, legislation, and technical standards relevant to the field. 1.5 Examine the role of hazard identification and control within engineering systems. 1.6 Distinguish between proactive and reactive HSE strategies. 1.7 Assess the influence of international standards (e.g., ISO, OSHA) on engineering practices.
2. Identify key factors influencing health, safety, and environmental outcomes in engineering practices.	2.1 Identify human, technical, and organisational factors affecting HSE performance. 2.2 Evaluate the influence of design decisions on safety and environmental integrity. 2.3 Explain how cultural, behavioural, and leadership aspects contribute to outcomes. 2.4 Discuss the role of regulatory bodies and enforcement mechanisms. 2.5 Assess external influences such as climate change, technology, and public expectation.
3. Analyze the interplay between engineering activities and their impact on human health and the environment.	3.1 Analyse the health effects of exposure to physical, chemical, and biological hazards. 3.2 Evaluate the environmental consequences of specific engineering processes or materials. 3.3 Interpret risk data to determine public and environmental health implications. 3.4 Examine case studies where engineering activities contributed to significant HSE failures. 3.5 Assess trade-offs between development, productivity, and environmental protection. 3.6 Recommend actions to reduce negative impacts while

	maintaining operational efficiency.
4. Apply foundational knowledge to assess and mitigate risks associated with engineering projects.	4.1 Conduct a basic hazard identification for a specified engineering activity. 4.2 Use qualitative risk assessment techniques to evaluate potential impacts. 4.3 Propose suitable control measures following the hierarchy of risk control. 4.4 Justify risk mitigation decisions based on legal, technical, and ethical considerations. 4.5 Apply systems-thinking to evaluate interdependencies between risk sources. 4.6 Communicate risk findings and control strategies to stakeholders. 4.7 Reflect on limitations of foundational methods in addressing complex risks.

HSE0003-02-Risk Assessment and Management

This unit develops the knowledge and technical skills required to identify, assess, and manage risks across a range of occupational and environmental contexts. Learners will explore qualitative and quantitative risk assessment techniques, including hazard identification, risk matrices, bow-tie analysis, and probabilistic risk modelling. The unit also addresses the implementation of risk mitigation strategies, cost-benefit analysis of control measures, and the integration of risk management into organisational decision-making frameworks.

Learning Outcome:	Assessment Criteria:
1. Develop skills to identify potential hazards and assess risks in various engineering contexts.	1.1 Identify different types of hazards (physical, chemical, biological, ergonomic, environmental) relevant to engineering operations. 1.2 Distinguish between hazards, risks, and exposures within defined scenarios. 1.3 Conduct a preliminary hazard identification (HAZID) for a given engineering project. 1.4 Analyse workplace conditions and operational processes to detect potential sources of harm. 1.5 Prioritise hazards based on severity, likelihood, and potential consequences. 1.6 Explain the relevance of past incidents and near misses in identifying future risks.
2. Utilize appropriate methodologies and tools to quantify and evaluate risks.	2.1 Apply qualitative and semi-quantitative risk assessment tools (e.g., risk matrix, risk ranking). 2.2 Use quantitative methods (e.g., fault tree analysis, event tree analysis, or QRA) in evaluating complex risks. 2.3 Interpret risk scoring results and categorise risk levels based on predefined thresholds. 2.4 Select appropriate methodologies based on the complexity, scale, and nature of the operation. 2.5 Evaluate uncertainties and assumptions within the risk evaluation process. 2.6 Document risk assessment findings in a structured and traceable format.
3. Formulate strategies to manage and control risks effectively.	3.1 Identify control measures aligned with the hierarchy of risk control. 3.2 Recommend engineering, administrative, and procedural controls for specific risks. 3.3 Justify the selection of control strategies based on effectiveness, cost, and feasibility. 3.4 Assess residual risk after applying control measures. 3.5 Develop action plans for risk mitigation and continuous monitoring. 3.6 Ensure proposed control measures comply with relevant legal and industry standards. 3.7 Integrate stakeholder feedback into the risk control

	decision-making process.
4. Implement risk management plans to enhance safety and environmental protection in engineering operations	4.1 Develop a comprehensive risk management plan for a defined engineering project. 4.2 Establish roles, responsibilities, and communication protocols within the plan. 4.3 Implement monitoring and review mechanisms to ensure ongoing risk control. 4.4 Conduct training and awareness sessions to support plan execution. 4.5 Measure the effectiveness of the implemented plan using leading and lagging indicators. 4.6 Adapt the plan to account for changes in operations, environment, or legislation

HSE0003-03- Occupational Health and Safety Management

This unit focuses on the strategic and operational management of occupational health and safety within diverse industries. Learners will evaluate the development and implementation of occupational health and safety policies, systems, and procedures. Topics include hazard control, incident investigation, occupational disease prevention, legal compliance, and employee engagement. The unit also explores workplace health promotion, contractor safety, and safety performance measurement using key performance indicators and audit data.

Learning Outcome:	Assessment Criteria:
1. Understand legislative requirements and standards related to occupational health and safety.	1.1 Identify key national and international OHS legislation applicable to engineering and industrial sectors. 1.2 Explain the roles and responsibilities of employers, employees, and enforcement bodies under OHS law. 1.3 Interpret the legal duties of duty holders under regulatory frameworks such as OSHA, ILO conventions, or national equivalents. 1.4 Compare the structure and application of relevant OHS standards (e.g., ISO 45001). 1.5 Assess the impact of legal non-compliance on workers, organisations, and stakeholders. 1.6 Explain the process of regulatory inspections, investigations, and enforcement actions.
2. Implement effective safety management systems in the workplace.	2.1 Describe the key components of a workplace safety management system. 2.2 Develop procedures for policy creation, risk assessment, control implementation, and review. 2.3 Integrate safety objectives into broader organisational goals. 2.4 Monitor performance through safety audits, inspections, and key performance indicators. 2.5 Identify gaps in current safety management systems and recommend improvements. 2.6 Evaluate the effectiveness of incident investigation and reporting systems. 2.7 Develop emergency planning procedures within the context of a safety management system.
3. Conduct hazard assessments and develop control measures to prevent occupational injuries and illnesses.	3.1 Identify workplace hazards using observation, checklists, and incident records. 3.2 Conduct task-based risk assessments for both routine and non-routine operations. 3.3 Determine the severity and likelihood of identified risks. 3.4 Select appropriate engineering, administrative, and PPE-based controls using the hierarchy of control.

	3.5 Justify the control measures chosen for specific occupational risks. 3.6 Document hazard assessments and ensure accessibility and regular review.
4. Promote a safety culture and foster employee participation in health and safety initiatives.	4.1 Define the characteristics of a positive safety culture. 4.2 Identify strategies to improve communication and trust in OHS matters. 4.3 Develop mechanisms to encourage employee feedback, suggestions, and involvement. 4.4 Organise safety training, briefings, and toolbox talks to reinforce positive behaviour. 4.5 Measure employee perceptions of safety culture using surveys or other feedback tools. 4.6 Evaluate leadership commitment and supervisory engagement in safety culture promotion.

HSE0003-04- Environmental Management Systems

This unit provides learners with a comprehensive understanding of Environmental Management Systems (EMS), with a focus on ISO 14001 and related standards. Learners will examine the structure, implementation, and continuous improvement of EMS in industrial settings. Topics include environmental aspect and impact assessment, regulatory compliance, pollution prevention, documentation control, and performance monitoring. The unit emphasises aligning environmental goals with business strategy and stakeholder expectations.

Learning Outcome:	Assessment Criteria:
1. Gain knowledge of environmental regulations and standards applicable to engineering activities.	1.1 Identify key national and international environmental legislation relevant to engineering operations. 1.2 Explain the structure and principles of ISO 14001 and other EMS-related standards. 1.3 Evaluate how regulatory compliance influences engineering design and operations. 1.4 Interpret permit and reporting requirements for emissions, waste, and water use. 1.5 Discuss penalties and consequences of non-compliance with environmental law. 1.6 Assess the role of government agencies and environmental regulators in monitoring compliance.
2. Design, implement, and maintain environmental management systems (EMS) to achieve compliance and continuous improvement.	2.1 Develop an EMS framework based on ISO 14001 principles. 2.2 Define roles, responsibilities, and documentation structures within the EMS. 2.3 Establish environmental objectives and targets in line with organisational goals. 2.4 Integrate EMS processes into daily operational activities. 2.5 Implement mechanisms for stakeholder communication and legal updates. 2.6 Maintain system performance through corrective and preventive action plans. 2.7 Evaluate the effectiveness of EMS implementation using management reviews.
3. Monitor environmental performance and conduct audits to identify areas for enhancement.	3.1 Develop indicators to measure environmental performance (e.g., emissions, energy use, waste). 3.2 Plan and execute internal EMS audits in line with audit protocols. 3.3 Collect and analyse data to identify non-conformities and trends. 3.4 Prepare audit findings and present evidence-based recommendations. 3.5 Ensure audit follow-up actions are implemented and

monitored.

3.6 Evaluate audit outcomes to support continual improvement.

4. **Develop strategies to minimize environmental impacts and promote sustainability.**

4.1 Identify and assess environmental aspects and impacts of engineering processes.

4.2 Apply lifecycle thinking to reduce resource consumption and emissions.

4.3 Propose waste reduction, recycling, and energy conservation strategies.

4.4 Recommend process modifications to improve sustainability performance.

4.5 Engage stakeholders in the development of sustainability initiatives.

HSE0003-05-Emergency Preparedness and Response

This unit prepares learners to design and manage emergency response and preparedness systems in high-risk environments. It covers emergency planning, risk communication, response coordination, and post-incident recovery. Learners will examine legal and operational frameworks governing emergency response, including regulatory compliance, multi-agency coordination, crisis leadership, and scenario-based drills. The unit also explores psychological resilience, public information strategies, and lessons learned from real-world disasters.

Learning Outcome:	Assessment Criteria:
1. **Develop plans and procedures for responding to emergencies such as natural disasters, accidents, and hazardous material spills.**	1.1 Identify types of emergencies likely to affect engineering operations. 1.2 Conduct risk assessments to determine emergency preparedness needs. 1.3 Develop emergency response plans tailored to specific scenarios (e.g., fire, explosion, chemical spill). 1.4 Define roles, responsibilities, and command structures during emergency situations. 1.5 Create checklists and flowcharts to guide response actions. 1.6 Ensure emergency procedures comply with legal and regulatory requirements. 1.7 Integrate communication systems and alarms into emergency planning.
2. **Coordinate with relevant stakeholders to ensure effective emergency response and recovery efforts.**	2.1 Identify internal and external stakeholders involved in emergency response (e.g., fire services, regulatory bodies, public authorities). 2.2 Establish lines of communication and reporting procedures during emergencies. 2.3 Facilitate inter-agency collaboration through planning meetings and joint exercises. 2.4 Develop mutual aid agreements and resource-sharing protocols. 2.5 Coordinate post-emergency recovery tasks such as site decontamination and restoration. 2.6 Evaluate stakeholder feedback to improve coordination and planning.
3. **Train personnel in emergency response protocols and conduct drills to evaluate preparedness.**	3.1 Identify training needs for different employee roles in emergency response. 3.2 Develop training materials and scenarios based on emergency types and risk level. 3.3 Conduct emergency drills, including tabletop, functional, and full-scale exercises. 3.4 Record participation, outcomes, and deviations during drills.

	3.5 Assess participant performance and readiness during simulations. 3.6 Update training plans based on observed gaps or feedback. 3.7 Promote a culture of awareness and preparedness through ongoing training initiatives.
4. Evaluate the effectiveness of emergency response plans through post-incident analysis and feedback mechanisms.	4.1 Conduct debriefings and structured reviews following emergency events or drills. 4.2 Analyse root causes of delays or failures in response execution. 4.3 Compare actual outcomes with planned procedures and response times. 4.4 Collect feedback from responders, stakeholders, and observers. 4.5 Identify improvements in communication, resource deployment, or personnel coordination. 4.6 Update emergency plans based on lessons learned and best practices.

HSE0003-06-Sustainability and Corporate Social Responsibility

This unit explores how sustainability and corporate social responsibility (CSR) are integrated into HSE engineering practices. Learners will examine frameworks such as the UN Sustainable Development Goals (SDGs), ESG (Environmental, Social, Governance) metrics, and corporate sustainability reporting standards. The unit emphasises ethical leadership, stakeholder engagement, lifecycle thinking, and sustainable innovation in engineering projects. Learners will critically assess how HSE initiatives can support long-term environmental, social, and economic value creation.

Learning Outcome:	Assessment Criteria:
1. **Understand the concepts of sustainability and corporate social responsibility (CSR) in engineering practice.**	1.1 Define sustainability and CSR in the context of engineering and industrial operations. 1.2 Explain the relationship between ethical engineering and sustainable development. 1.3 Interpret relevant frameworks such as the UN Sustainable Development Goals (SDGs) and ESG principles. 1.4 Compare CSR and sustainability policies across engineering sectors. 1.5 Examine the legal, moral, and reputational drivers of CSR in global industries. 1.6 Describe how triple bottom line thinking influences project planning and execution.
2. **Identify opportunities to integrate sustainability principles into engineering projects and operations.**	2.1 Conduct sustainability assessments during the planning and design phases of projects. 2.2 Recommend energy-efficient or low-impact materials and processes. 2.3 Identify opportunities to reduce carbon footprint in operations. 2.4 Propose lifecycle-based solutions for waste reduction and resource recovery. 2.5 Incorporate renewable energy systems or circular economy practices in engineering designs. 2.6 Align operational changes with sustainability KPIs and reporting metrics.
3. **Assess the social, environmental, and economic impacts of engineering activities.**	3.1 Conduct an environmental and social impact assessment (ESIA) for a proposed engineering project. 3.2 Evaluate short- and long-term consequences of engineering decisions on local communities. 3.3 Quantify energy use, emissions, waste, and water consumption in project execution. 3.4 Analyse potential trade-offs between cost, sustainability, and performance. 3.5 Recommend strategies to maximise positive and minimise negative project impacts.

	3.6 Compare impact assessments across alternative engineering solutions.
4. Engage stakeholders and communicate transparently about sustainability initiatives and performance.	4.1 Identify internal and external stakeholders relevant to sustainability efforts. 4.2 Develop a communication plan for sustainability reporting and engagement. 4.3 Produce sustainability reports in accordance with recognised standards (e.g., GRI, SASB). 4.4 Facilitate stakeholder consultation to incorporate feedback into sustainability planning. 4.5 Use public platforms, media, and community forums to promote transparency. 4.6 Evaluate stakeholder satisfaction and credibility of disclosures. 4.7 Update stakeholders on progress, challenges, and future sustainability goals.

HSE0003-07-Applied Health, Safety, and Environmental Engineering

This unit is designed to integrate theoretical knowledge with practical application by enabling learners to engage with real-world health, safety, and environmental (HSE) challenges in complex engineering environments. As engineering projects increasingly face rigorous regulatory, ethical, and sustainability expectations, professionals must demonstrate the ability to not only complies with legal requirements but also to implement innovative and robust HSE solutions.

Learning Outcome:	Assessment Criteria:
1. **Apply theoretical knowledge and practical skills to address real-world health, safety, and environmental challenges in engineering projects.**	1.1 Identify practical HSE challenges in a live or simulated engineering environment. 1.2 Apply theoretical frameworks (e.g., hazard control hierarchy, safety lifecycle, environmental systems analysis) to real-world problems. 1.3 Analyse data and evidence to select appropriate safety and environmental interventions. 1.4 Develop feasible HSE solutions within budgetary, technical, and regulatory constraints. 1.5 Justify proposed interventions based on effectiveness, compliance, and stakeholder needs. 1.6 Demonstrate hands-on application of tools such as HAZOP, job safety analysis, and environmental checklists.
2. **Conduct comprehensive risk assessments and develop tailored solutions to mitigate hazards and minimize environmental impacts.**	2.1 Carry out detailed hazard identification for engineering activities using structured methods. 2.2 Quantify risks using appropriate qualitative and quantitative techniques. 2.3 Identify environmental aspects and evaluate their potential impacts. 2.4 Propose specific control measures to eliminate or reduce identified risks and impacts. 2.5 Develop implementation plans for selected control strategies. 2.6 Assess residual risk post-control application and suggest additional improvements. 2.7 Prepare risk assessment documentation aligned with industry and legal standards.
3. **Collaborate with multidisciplinary teams to implement effective health, safety, and environmental management strategies.**	3.1 Identify roles and responsibilities of various stakeholders in an HSE context. 3.2 Facilitate communication between technical, operational, and support teams. 3.3 Participate in team-based HSE planning sessions or toolbox meetings. 3.4 Resolve conflicts or discrepancies in HSE strategy formulation through collaborative approaches. 3.5 Integrate feedback from diverse professionals to

	enhance HSE implementation. 3.6 Contribute to joint monitoring and evaluation of HSE performance outcomes.
4. Continuously evaluate and adapt engineering practices to promote a culture of continuous improvement in health, safety, and environmental performance.	4.1 Establish key performance indicators (KPIs) for measuring HSE effectiveness. 4.2 Conduct trend analysis using audit findings, incident reports, and performance data. 4.3 Identify areas of weakness or non-conformance in current practices. 4.4 Recommend procedural or design changes to enhance HSE outcomes. 4.5 Promote innovation and sustainability in day-to-day engineering practices. 4.6 Develop feedback loops and review mechanisms for long-term HSE improvement. 4.7 Encourage leadership engagement and employee participation in the continuous improvement process.

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