

Undergraduate Diploma in Occupational Health and Safety Intake October 2025

Assessment Task: One written assignment based on chosen questions	
Qualification: <i>Health and Safety Essentials</i>	Tuition Centre: 21 Academy Licence Number: 2018-017
Level: MQF Level 5	Student Name:
Date:	ID Number:
Assignment Deadline: 30 April 2026 Presentation Delivery: 16 March 2026	
<p>Task</p> <p>This assignment is designed to evaluate your understanding of the fundamental principles of health and safety. The questions focus on identifying workplace hazards, assessing risks, and proposing practical measures to ensure a safe and compliant working environment.</p> <p>Presentation:</p> <p>You also must prepare and deliver a 5-minute presentation on your assignment. The presentation will be delivered on the date indicated above.</p> <p><i>You should plan to spend approximately 30 hours researching the assignment question, preparing for, and writing the assignment for assessment. The nominal word count for the assignment is 1,700 words.</i></p> <p><i>Please ensure that you refer to 21 Academy's Assignment Guidelines for comprehensive information regarding the submission of your assignment. Additionally, the assignment submission form must be included with your completed work, clearly indicating which question you have chosen to answer by ticking the box next to the question number.</i></p>	
<p>Answer 1 (one) question from the following:</p> <p>☐ Question 1: Industrial Robots, Safety Systems, and Human Responsibility Scenario</p> <p>In June 2015, a technician at a Volkswagen factory in Baunatal, Germany, was killed while setting up a stationary industrial robot. The machine grabbed the worker and crushed him against a metal plate. Although the robot itself was functioning as designed, the incident raised questions about the adequacy of safety systems, risk assessment processes, and supervision during maintenance or setup tasks. Experts reacting to the case clarified that robots do not act autonomously; rather, the root causes of such accidents are almost always human design decisions, inadequate safeguarding, or failures in organisational procedures. The incident involved a traditional industrial robot, not an AI-driven system, and was not operating in a collaborative (human-shared) zone. However, the fatality underscores the persistent risk in high-power, repetitive automation systems and the importance of strict control, interlocks, and safe working protocols during non-routine operations.</p> <p>Source: Science Media Centre (UK). https://www.sciencemediacentre.org/expert-reaction-to-news-that-factory-worker-in-germany-died-after-being-crushed-by-robotic-machinery</p>	
<p>In a report of approximately 1,700 words:</p> <p>1. Reflection and Analysis (40%)</p> <p>Reflect on the key human, organisational, and technical factors that contributed to this incident. In your answer, incorporate:</p> <ul style="list-style-type: none"> • Human-machine interface and design limitations • Behavioural and procedural gaps in how safety systems were applied or bypassed 	

- Issues of supervision, planning, and communication during robot set-up and maintenance
- Failures in safeguarding (e.g. interlocks, zoning), emergency preparedness, and lock-out/tag-out (LOTO)

2. Critical Discussion and Proposal (60%)

- Critically discuss the wider implications of industrial automation for workplace health and safety. Propose a range of robust safety strategies to prevent similar incidents in modern manufacturing or logistics environments.
- Your discussion should include:
 - Benefits of automation in reducing manual handling and repetitive strain
 - New and emerging risks associated with robots and automated systems
 - The importance of safety-integrated design (e.g. ISO 10218, ISO 12100), interlocks, sensors, and clear zoning
 - Organisational responsibility: planning, competence, supervision, and behaviour
 - Emergency procedures, maintenance protocols, and lessons from relevant international cases
- You may refer to additional examples such as:
 - Amazon warehouse automation near misses
 - The South Korea 2023 agricultural robot fatality
 - Other automation-related incidents in high-risk industries



Question 2:

Major Accident Case Study: Process Safety, SMS, and Organisational Culture

On 11 December 2005, a massive vapour-cloud explosion and fire destroyed much of the Buncefield Oil Depot in Hemel Hempstead, UK. Failures in level-control systems, alarm management, organisational oversight, and shift-handovers were identified as contributing factors.

In a report of approximately 1,700 words:

1. Analyse the technical, human, and organisational failings that contributed to the Buncefield disaster (40%).

Consider:

- Failures in monitoring, alarms, instrumentation
- Process safety culture and leadership issues
- Inadequate auditing, inspections, and change management
- Human factors and communication gaps

2. Critically evaluate how a modern Safety Management System (SMS) — aligned with ISO 45001 principles could prevent such incidents today (60%).

Cover:

- Risk-assessment methodologies for high-hazard sites
- Organisational governance, competence, consultation
- Emergency preparedness and drills
- Monitoring, auditing, and continuous improvement

Encourage comparison with other major incidents (Texas City, Deepwater Horizon).

Reference:

UK HSE Buncefield Investigation, Major Incident Report.

<https://www.hse.gov.uk/comah/incidents/buncefield.htm>

<https://www.icheme.org/media/10706/buncefield-report.pdf>



Question 3:

Incident Review and Management

Decision-Making in Retail

Scenario

You have recently been appointed as the Health and Safety Officer for a national retail chain in Malta. One of the company's larger stores has reported a minor accident and several related concerns.

Incident summary:

- A retail employee slipped near a refrigerated display unit during normal trading hours and sustained a minor back injury.
- The employee returned to work after two days of absence.
- CCTV footage shows a small water leak from the unit, with no warning sign in place at the time.
- Cleaning staff confirm the leak had been reported earlier in the shift but was “being monitored”.
- A pallet delivery had taken place shortly beforehand, increasing congestion in the same area.

Existing arrangements:

- A generic retail risk assessment is in place.
- Cleaning schedules and inspection checklists exist.
- Manual handling training was delivered during induction two years ago.
- Supervisors carry out visual checks but do not formally record corrective actions.

Senior management believe the incident was “unfortunate but minor” and are reluctant to make operational changes that could affect productivity.

You are asked to review the incident and advise management.

In a report of approximately 1,700 words:

1. Incident Review and Immediate Findings (35%)

Using the information provided:

Identify the key immediate and underlying factors that contributed to the incident

Distinguish clearly between:

- unsafe conditions
unsafe acts
- management or system weaknesses

Explain why the incident should be treated as a learning opportunity, not simply an isolated event

2. Management Advice and Proportionate Controls (45%)

Prepare advice to senior management explaining:

- What reasonable and proportionate control measures should have been in place
- Which existing arrangements were inadequate or poorly applied
- What limited but effective changes could realistically reduce recurrence without major cost or disruption

Your answer should focus on:

- spill response and decision-making
- supervision and accountability
- timing and location of deliveries and cleaning
- refresher training and competence assurance

Avoid long lists, but focus on quality of reasoning.

3. Professional Judgement and Communication (20%)

Reflect briefly on:

- How a health and safety professional should challenge the view that a “minor” incident does not require action
- The importance of professional judgement when balancing safety, productivity, and business pressures
- How advice should be communicated to gain management buy-in rather than resistance

Pass Mark of total weighted score, including Presentation and Self-Assessment - 50%	Assignment weighted score 60%
By submitting I confirm that this assessment is my own work	
Mark:	Signature: <main assessor>
Date	Signature: <quality assurance>