SAFE29001 *Hazard Management and Risk Control*
Term 2 - 2024

Profile information current as at 01/07/2025 09:37 am

All details in this unit profile for SAFE29001 have been officially approved by CQUniversity and represent a learning partnership between the University and you (our student).The information will not be changed unless absolutely necessary and any change will be clearly indicated by an approved correction included in the profile.

General Information

Overview
This unit makes the connection between science and safety to promote evidence-based hazard management and risk control. You will consider major workplace, work-related and occupational hazards and use science theories, such as energy conversion, to explain how hazards occur, behave and lead to harm. Situational complexity, hazard management and health and safety risk control are discussed from both systems thinking and evidence-informed perspectives. Case studies will assist you in developing an appreciation of how fundamental theories of physics, chemistry, physiology, and social sciences can inform the management and control of harm from hazards.

Details
Career Level: *Postgraduate*
Unit Level: *Level 9*
Credit Points: *6*
Student Contribution Band: *8*
Fraction of Full-Time Student Load: *0.125*

Pre-requisites or Co-requisites
There are no requisites for this unit.
Important note: Students enrolled in a subsequent unit who failed their pre-requisite unit, should drop the subsequent unit before the census date or within 10 working days of Fail grade notification. Students who do not drop the unit in this timeframe cannot later drop the unit without academic and financial liability. See details in the Assessment Policy and Procedure (Higher Education Coursework).

Offerings For Term 2 - 2024

- Online

Attendance Requirements
All on-campus students are expected to attend scheduled classes – in some units, these classes are identified as a mandatory (pass/fail) component and attendance is compulsory. International students, on a student visa, must maintain a full time study load and meet both attendance and academic progress requirements in each study period (satisfactory attendance for International students is defined as maintaining at least an 80% attendance record).

Website
This unit has a website, within the Moodle system, which is available two weeks before the start of term. It is important that you visit your Moodle site throughout the term. Please visit Moodle for more information.

Class and Assessment Overview

Recommended Student Time Commitment

Each 6-credit Postgraduate unit at CQUniversity requires an overall time commitment of an average of 12.5 hours of study per week, making a total of 150 hours for the unit.

Class Timetable

Regional Campuses
Bundaberg, Cairns, Emerald, Gladstone, Mackay, Rockhampton, Townsville

Metropolitan Campuses
Adelaide, Brisbane, Melbourne, Perth, Sydney

Assessment Overview

1. **Case Study**
Weighting: 30%
2. **Written Assessment**
Weighting: 30%
3. **Written Assessment**
Weighting: 40%

Assessment Grading

This is a graded unit: your overall grade will be calculated from the marks or grades for each assessment task, based on the relative weightings shown in the table above. You must obtain an overall mark for the unit of at least 50%, or an overall grade of 'pass' in order to pass the unit. If any 'pass/fail' tasks are shown in the table above they must also be completed successfully ('pass' grade). You must also meet any minimum mark requirements specified for a particular assessment task, as detailed in the 'assessment task' section (note that in some instances, the minimum mark for a task may be greater than 50%). Consult the University's Grades and Results Policy for more details of interim results and final grades.

CQUniversity Policies

All University policies are available on the CQUniversity Policy site.
You may wish to view these policies:

- Grades and Results Policy
- Assessment Policy and Procedure (Higher Education Coursework)
- Review of Grade Procedure
- Student Academic Integrity Policy and Procedure
- Monitoring Academic Progress (MAP) Policy and Procedure – Domestic Students
- Monitoring Academic Progress (MAP) Policy and Procedure – International Students
- Student Refund and Credit Balance Policy and Procedure
- Student Feedback – Compliments and Complaints Policy and Procedure
- Information and Communications Technology Acceptable Use Policy and Procedure

This list is not an exhaustive list of all University policies. The full list of University policies are available on the CQUniversity Policy site.

Unit Learning Outcomes

On successful completion of this unit, you will be able to:

1. Explain the principles of energy conversion as it applies to health and safety risk
2. Evaluate major hazards encountered in occupational environments and assess how these hazards lead to adverse effects
3. Apply risk analysis to determine risks posed by hazards and their potential magnitude
4. Critique basic interventions and strategies to control the risks associated with specific hazards using OHS information, data and communication skills with reference to OHS legislation, standards and literature

Alignment of Learning Outcomes, Assessment and Graduate Attributes

— N/A Level | ∘ Introductory Level | • Intermediate Level | • Graduate Level | ∘ Professional Level | ∘ Advanced Level

Alignment of Assessment Tasks to Learning Outcomes

Assessment Tasks	Learning Outcomes			
	1	2	3	4
1 - Case Study - 30%	•	•		
2 - Written Assessment - 30%		•	•	•
3 - Written Assessment - 40%	•		•	•

Alignment of Graduate Attributes to Learning Outcomes

Graduate Attributes	Learning Outcomes			
	1	2	3	4
1 - Knowledge	∘	∘	∘	∘
2 - Communication	∘	∘	∘	∘
3 - Cognitive, technical and creative skills	∘	∘	∘	∘
4 - Research	∘	∘	∘	∘
5 - Self-management	∘	∘	∘	∘
6 - Ethical and Professional Responsibility	∘	∘	∘	∘
7 - Leadership	∘	∘	∘	∘
8 - Aboriginal and Torres Strait Islander Cultures	∘	∘	∘	∘

Textbooks and Resources

Textbooks

There are no required textbooks.

IT Resources

You will need access to the following IT resources:

- CQUniversity Student Email
- Internet
- Unit Website (Moodle)

Referencing Style

All submissions for this unit must use the referencing style: Harvard (author-date)
For further information, see the Assessment Tasks.

Teaching Contacts

Kevin Perry Unit Coordinator
k.perry@cqu.edu.au

Schedule

Week 1 - 08 Jul 2024

Module/Topic	Chapter	Events and Submissions/Topic
Introduction Hazard concepts (especially energy damage)	OHS BoK Chapter 15 Hazard as a concept Viner, D., 2015 Occupational Risk Control: Predicting and Preventing the Unwanted, Routledge, Chapter 1 Standards Australia 2018, Risk management – Guidelines (AS ISO 31000: 2018), Standards Australia, Sydney, Terms and definitions	

Week 2 - 15 Jul 2024

Module/Topic	Chapter	Events and Submissions/Topic
Mechanical hazards, thermal environment	OHS BoK Chapter 28 Mechanical plant OHS BoK Chapter 29 Mobile plant OHS BoK Chapter 30 Vehicles and occupational road use	

Week 3 - 22 Jul 2024

Module/Topic	Chapter	Events and Submissions/Topic
Biomechanical hazards – MSDs, noise, vibration	WHSQ: Hazardous manual tasks code of practice WHSQ: Manual tasks involving the handling of people code of practice 2021 OHS BoK Chapter 22.1 Occupational Noise OHS BoK Chapter 22.2 Vibration	

Week 4 - 29 Jul 2024

Module/Topic	Chapter	Events and Submissions/Topic
Gravitational hazards – working at heights, slips, trips & falls	OHS BoK Chapter 27 Gravitational hazards WHSQ: Managing the risk of falls at workplace code of practice 2021	

Week 5 - 05 Aug 2024

Module/Topic	Chapter	Events and Submissions/Topic
Electrical hazards, radiation	OHS BoK Chapter 23.1 Electricity OHS BoK Chapter 23.2 Electricity Appendix – Arc Flash OHS BoK Chapter 24 Ionising Radiation OHS BoK Chapter 25 Non-Ionising Radiation - Electromagnetic	

Vacation Week - 12 Aug 2024

Module/Topic	Chapter	Events and Submissions/Topic
		Case Study Analysis Due: Vacation Week Monday (12 Aug 2024) 9:00 am AEST

Week 6 - 19 Aug 2024

Module/Topic	Chapter	Events and Submissions/Topic
Biological hazards (including dust, fibres and gases), Psychosocial hazards	Reed, S, Pisaniello, D & Benke, G (Eds) 2019, *Principles of Occupational Health & Hygiene: An introduction (3rd edn),* Australian Institute of Occupational Hygienists, Allen & Unwin, Sydney. OHS BoK Chapter 19 Psychosocial hazards.	

Week 7 - 26 Aug 2024

Module/Topic	Chapter	Events and Submissions/Topic
Working in a confined space	WHSQ: Confined spaces code of practice 2021	

Week 8 - 02 Sep 2024

Module/Topic	Chapter	Events and Submissions/Topic
Managing hazard related risks - the Risk Management Process	OHS BoK Chapter 31.1 Risk OHS BoK Chapter 31.2 OHS risk and Decision Making	

Week 9 - 09 Sep 2024

Module/Topic	Chapter	Events and Submissions/Topic
Hazard Identification and Risk Assessment	Standards Australia 2018, Risk management – Guidelines (AS ISO 31000: 2018), Standards Australia, Sydney,	**Confined Space Procedure and flowchart** Due: Week 9 Monday (9 Sept 2024) 9:00 am AEST

Week 10 - 16 Sep 2024

Module/Topic	Chapter	Events and Submissions/Topic
Risk Analysis and Control	OHS BoK Chapter 31.2 Risk and Decision Making OHS BoK Chapter 34 Control: Prevention and Intervention	

Week 11 - 23 Sep 2024

Module/Topic	Chapter	Events and Submissions/Topic
Risk Management Tools 1: • Informal risk assessment (eg. SLAM, Take 5) • Hazard reporting • Tabular risk assessment • Job Task Analysis • Plant Risk Assessment • Hazardous Chemicals Risk Assessment • Bowtie Analysis • Ishikawa Analysis (Fishbone diagram)	AS/NZS IEC 2020, Risk Management – *Risk Assessment Techniques* (AS/NZS IEC 31010:2020), Standards Australia, Sydney. Popov, G, Lyon B, Hollcroft B (Eds) 2016, *Risk Assessment: A Practical Guide to Assessing Operational Risks,* Wiley, New Jersey. Chapter 5 – Fundamental Techniques	

Week 12 - 30 Sep 2024

Module/Topic	Chapter	Events and Submissions/Topic

Risk Management Tools 2: • Fault Tree Analysis • Process Mapping • Hazard Analysis at Critical Control Points (HACCP) • Failure Modes & Effects Analysis (FMEA) • Hazard & Operability Study (HAZOP)	AS/NZS IEC 2020, Risk Management – *Risk Assessment Techniques* (AS/NZS IEC 31010:2020), Standards Australia, Sydney.	

Review/Exam Week - 07 Oct 2024

Module/Topic	Chapter	Events and Submissions/Topic
		Risk Management Due: Review/Exam Week Monday (7 Oct 2024) 9:00 am AEST

Exam Week - 14 Oct 2024

Module/Topic	Chapter	Events and Submissions/Topic

Assessment Tasks

1 Case Study Analysis

Assessment Type
Case Study

Task Description
The purpose of this assignment is to demonstrate that you can apply scientific principles to explain the process that resulted in damage or harm. You will select and analyse 3 case studies from the list below that involve various forms of energy. Your three selected case studies must each feature a different predominant energy form.
Using the energy-damage model, each analysis must:

- Identify the selected case study
- Identify the form of energy immediately before control was lost
- Identify preconditions that make the event possible
- Describe the hazard control failure mechanism
- Describe the point in time that relates to the damage event
- Identify the space transfer mechanism
- Describe the energy transference that led to damage
- Identify the assets damaged (recipients)
- Identify the damage threshold of the recipients

Referencing is not required for this assessment, but if you choose to utilise additional resources, they should be referenced in accordance with CQUni Harvard Referencing Style as located in the Unit Profile.
As a guide, each case study analysis should be no more than 1000 words each (3 x 1000 words each = 3000 words total)
NOTE: For ALL assignments - no large language models with generative artificial intelligence capability are to be used (e.g. ChatGPT, BERT, T5, etc.). To avoid academic misconduct, this work must be your own original work.
Case Studies
Bread Factory UK, 2021
https://www.dailymail.co.uk/news/article-60734/Workers-baked-alive-bread-factory-horror.html
Bus-Truck Collision, India, 2021
https://www.ndtv.com/india-news/10-killed-several-injured-in-bus-truck-collision-on-moradabad-agra-highway-in-up-2360385
Indonesian Village, 2021
https://www.abc.net.au/news/2021-02-16/rain-triggers-landslide-in-indonesia-10-dead-9-missing/13157524
Beirut explosion, 2020
https://www.bbc.com/news/world-middle-east-53668493
Chopper Pilot, WA, 2020
WA pilot who died in Broome chopper crash identified as local Troy Thomas (news.com.au)
Bendel Farm, QLD, 2019
https://www.news.com.au/national/queensland/news/mother-and-daughter-electrocuted-on-queensland-property/news-st

ory/e6ba75e95033495d00044bb84da813ba
Faiveley Transport, UK, 2019
https://www.shponline.co.uk/in-court/firm-exposed-workers-to-uncontrolled-havs-for-10-years/
ANSTO, NSW, 2019
https://www.abc.net.au/news/2019-03-01/three-treated-after-safety-breach-at-sydney-nuclear-facility/10860708
Oil Rig Explosion, Gulf of Mexico 2015
https://abcnews.go.com/International/oil-rig-explosion-kills-gulf-mexico-spill-reported/story?id=30052063
Rana Plaza, Bangladesh, 2013
https://www.theguardian.com/world/2016/jul/18/rana-plaza-collapse-murder-charges-garment-factory

Assessment Due Date
Vacation Week Monday (12 Aug 2024) 9:00 am AEST

Return Date to Students

Within 2 weeks of due date

Weighting
30%

Assessment Criteria
Preliminary identification 5%

- Identify the selected case study
- Identify the form of energy immediately before control was lost
- Identify preconditions that make the event possible

Descriptions 15%

- Describe the hazard control failure mechanism
- Describe the point in time that relates to the damage event
- Describe the energy transference that led to damage

Post identifications 5%

- Identify the space transfer mechanism
- Identify the assets damaged (recipients)
- Identify the damage threshold of the recipients

Presentation, grammar and spelling 5%

Referencing Style

- Harvard (author-date)

Submission
No submission method provided.

Learning Outcomes Assessed

- Explain the principles of energy conversion as it applies to health and safety risk
- Evaluate major hazards encountered in occupational environments and assess how these hazards lead to adverse effects

2 Confined Space Procedure and flowchart

Assessment Type
Written Assessment

Task Description
Part A (20%)
Prepare a draft procedure for working safely in a confined space. The procedure needs to be for a clearly identified organisation, actual or ficticious. Base the procedure on 3 different types of confined spaces that are identified in the procedure (i.e, one that could lead to entrapment, another where there might not be enough oxygen and a third where there might be a fire or explosion).
The draft procedure must include:

i. Purpose
ii. Scope
iii. Responsibilities for work in a Confined Space

iv. Definition for a Confined Space
v. Methods to identify and allocate/label Confined Spaces
vi. Confined Space Process: Work Flow' – See Part B of this assessment
vii. Confined Space Risk Assessment
viii. Confined Space Isolation
ix. Confined Space Testing
x. Confined Space Emergency Management
xi. Confined Space work and equipment used
xii. Confined Space Permits and control of Confined Space Work
xiii. Confined Space training, competency and authorisations
xiv. Confined space records
xv. Identification of relevant COPs, standards and legislation

For this part your submission should be approximately 1500 words. (Appendices not included in word count)

Part B (10%)
Create a 'Confined Space Entry: Work Flow' chart that identifies the key steps to follow for one type of confined space work (i.e. entry into a large grain storage tank to perform cleaning operations) and the associated requirements and checkpoints, presented as a workflow, to conduct the work.
NOTE: For ALL assignments - no large language models with generative artificial intelligence capability are to be used (e.g. ChatGPT, BERT, T5, etc.). To avoid academic misconduct, this work must be your own original work.

Assessment Due Date
Week 9 Monday (9 Sept 2024) 9:00 am AEST

Return Date to Students

Within 2 weeks of due date

Weighting
30%

Assessment Criteria
Part A: Confined Space Draft Entry Procedure 20%
Introduction fields 4%

- Purpose
- Scope
- Responsibilities for work in a Confined Space
- Definition for a Confined Space

Methods 8%

- Methods to identify and allocate/label Confined Spaces
- Confined Space Risk Assessment
- Confined Space Isolation
- Confined Space Testing
- Confined Space Emergency Management
- Confined Space work and equipment used

Documentation/training 5%

- Confined Space Permits and control of Confined Space Work
- Confined Space training, competency and authorisations
- Confined space records

Presentation 3%

- Presentation
- Grammar
- Spelling
- Referencing

Part B: Confined Space Entry: Work Flow chart (10%)

- Content 7%
- Presentation, ease of reading/flow, spelling 3%

Referencing Style

- Harvard (author-date)

Submission
No submission method provided.

Learning Outcomes Assessed

- Evaluate major hazards encountered in occupational environments and assess how these hazards lead to adverse effects
- Apply risk analysis to determine risks posed by hazards and their potential magnitude
- Critique basic interventions and strategies to control the risks associated with specific hazards using OHS information, data and communication skills with reference to OHS legislation, standards and literature

3 Risk Management

Assessment Type
Written Assessment

Task Description
This assessment is in three parts.
Part A: Adopt a risk management tool (15%)
Choose a risk management tool - see resources in Moodle for a sample of tools.

i. Research and provide substantiation regarding the tool's authenticity and validity, including its origins, development within relevant standards and literature, and its use within various industry domains. Provide links between the tool and applicable WHS legislation relating to its use (e.g: The PerForm Manual Tasks Assessment tool is used to help manage health and safety risks arising from manual tasks, as prescribed in Hazardous Manual Tasks in 'Part 4.2 Hazardous manual tasks' from the Work Health and Safety Regulation 2011). (10%)
ii. Provide an explanation of how the tool could be used to address specific physical or psychosocial risks (i.e., how, when and why the tool is to be used). (5%)

Part A Wordcount 1000 words

Part B: Training in the use of the tool (5%)
Certain persons in the workplace would be required to use this tool but would firstly require instruction as to its use.

i. State how training and instruction for individuals and parties who will use the risk management tool can occur. (2%)
ii. Provide two samples (i.e., PPT slides, Training register, Training plans, etc). (3%)

Part B, wordcount 300 words (PPT slides, Training register, Training plans, etc not included in word count)

Part C: Conduct a risk assessment using the tool selected in Part A (20%)
Conduct a detailed risk assessment using the risk management tool selected in Part A.
The topic and tool for the risk assessment will need to be specific (specific title and defined problem). As an example, a topic name such as 'noise' or 'heat stress' will not be sufficient but 'Noise Survey in Sheet Metal Workshop' or 'Heat Stress Risks for Maintenance Work on Roofs' would be more suited as a title.
Topics may be drawn from any of the following classes/hazard groups:

- Chemical
- Noise
- Light
- Radiation
- Dusts and fibres
- Gases
- Gravity
- Mechanical
- Thermal environment
- Psychosocial hazards
- Work organisation
- Ergonomic
- Psychosocial
- Radiological
- Biological
- Plant

- Electrical.

The following criteria must be addressed within the tool.

- Define the issue (why a risk assessment is necessary) (1%)
- Hazard identification sources (i.e. guidance material, databases, incident reports Safety Data Sheets) are provided (1%)
- Characteristics of the hazards and associated risks are organised in a format that suits the risk assessment (2%)
- Describe what consultation with relevant stakeholders is required (2%)
- The risk management process is followed, having regard for the following:

    i. Hazards are identified, discussed and recorded in terms of their characteristics and potential for harm (2%)
    ii. Risk factors associated with each hazard are provided (2%)
    iii. Current controls in place (if any) for each of the hazards are provided (2%)
    iv. Risks are analysed and evaluated (by description and, if desired by risk value using a matrix) (2%)
    v. Determination of whether further controls are required (1%)
    vi. The seeking of information on control options is evident (1%)
    vii. A risk control action plan includes actions, time frames, responsible persons and authorisations (2%)
    viii. Proposed review times/schedule for the implemented controls (1%)
    ix. Communication of the results and findings (i.e., reports, accompanying email messages) to managers or other stakeholders. (1%)

NOTE: For ALL assignments - no large language models with generative artificial intelligence capability are to be used (e.g. ChatGPT, BERT, T5, etc.). To avoid academic misconduct, this work must be your own original work.

Assessment Due Date
Review/Exam Week Monday (7 Oct 2024) 9:00 am AEST

Return Date to Students

Within 2 weeks of due date

Weighting
40%

Assessment Criteria
No Assessment Criteria

Referencing Style

- Harvard (author-date)

Submission
No submission method provided.

Learning Outcomes Assessed

- Explain the principles of energy conversion as it applies to health and safety risk
- Apply risk analysis to determine risks posed by hazards and their potential magnitude
- Critique basic interventions and strategies to control the risks associated with specific hazards using OHS information, data and communication skills with reference to OHS legislation, standards and literature

Academic Integrity Statement

As a CQUniversity student you are expected to act honestly in all aspects of your academic work.

Any assessable work undertaken or submitted for review or assessment must be your own work. Assessable work is any type of work you do to meet the assessment requirements in the unit, including draft work submitted for review and feedback and final work to be assessed.

When you use the ideas, words or data of others in your assessment, you must thoroughly and clearly acknowledge the source of this information by using the correct referencing style for your unit. Using others' work without proper acknowledgement may be considered a form of intellectual dishonesty.

Participating honestly, respectfully, responsibly, and fairly in your university study ensures the CQUniversity qualification you earn will be valued as a true indication of your individual academic achievement and will continue to receive the respect and recognition it deserves.

As a student, you are responsible for reading and following CQUniversity's policies, including the **Student Academic Integrity Policy and Procedure**. This policy sets out CQUniversity's expectations of you to act with integrity, examples of academic integrity breaches to avoid, the processes used to address alleged breaches of academic integrity, and potential penalties.

What is a breach of academic integrity?
A breach of academic integrity includes but is not limited to plagiarism, self-plagiarism, collusion, cheating, contract cheating, and academic misconduct. The Student Academic Integrity Policy and Procedure defines what these terms mean and gives examples.

Why is academic integrity important?
A breach of academic integrity may result in one or more penalties, including suspension or even expulsion from the University. It can also have negative implications for student visas and future enrolment at CQUniversity or elsewhere. Students who engage in contract cheating also risk being blackmailed by contract cheating services.

Where can I get assistance?
For academic advice and guidance, the Academic Learning Centre (ALC) can support you in becoming confident in completing assessments with integrity and of high standard.

What can you do to act with integrity?

Be Honest
If your assessment task is done by someone else, it would be dishonest of you to claim it as your own

Seek Help
If you are not sure about how to cite or reference in essays, reports etc, then seek help from your lecturer, the library or the Academic Learning Centre (ALC)

Produce Original Work
Originality comes from your ability to read widely, think critically, and apply your gained knowledge to address a question or problem