AINV13002 *Human Factors Investigation*
Term 2 - 2019

Profile information current as at 12/10/2024 01:19 pm

All details in this unit profile for AINV13002 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 will provide students with the opportunity to build upon their learning in Human Factors (HF) through the application of contemporary HF investigation tools and techniques to an accident case study. Students will also have the opportunity to develop their ability to interpret organisational factors and examine the nature of safety culture factors evident in the causation of major disasters.

Details
Career Level: *Undergraduate*
Unit Level: *Level 3*
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 - 2019

- 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 Undergraduate 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. **Group Discussion**
Weighting: Pass/Fail
2. **Written Assessment**
Weighting: 50%
3. **Written Assessment**
Weighting: 50%

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.

Previous Student Feedback

Feedback, Recommendations and Responses

Every unit is reviewed for enhancement each year. At the most recent review, the following staff and student feedback items were identified and recommendations were made.

Feedback from Student feedback

Feedback

Consolidated assessment guidance would make the requirements easier to understand.

Recommendation

Grading rubrics and Assessment guidance will be co-located on the Assessment Moodle page. A submission check-list will be prepared.

Unit Learning Outcomes

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

1. Analyse accident case study through the application of contemporary human factors investigation tools and techniques.
2. Derive and interpret organisational factors evident in the causation of major disasters by employing organisational factor analysis.
3. Examine the nature and contribution of safety culture to accident causation.
4. Employ effective communication strategies appropriate to human factors investigations.
5. Demonstrate reflective skills appropriate to the development of the graduating practitioner.

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	5
1 - Group Discussion - 0%				•	•
2 - Written Assessment - 50%	•			•	•
3 - Written Assessment - 50%		•	•	•	•

Alignment of Graduate Attributes to Learning Outcomes

Graduate Attributes	Learning Outcomes				
	1	2	3	4	5
1 - Communication	•	•	•	•	
2 - Problem Solving	•	•	•		

Graduate Attributes	Learning Outcomes				
	1	2	3	4	5
3 - Critical Thinking	•	•	•	•	•
4 - Information Literacy	•	•	•	•	
5 - Team Work					
6 - Information Technology Competence	•			•	
7 - Cross Cultural Competence	•	•	•		
8 - Ethical practice	•	•	•		•
9 - Social Innovation					
10 - Aboriginal and Torres Strait Islander Cultures					

Alignment of Assessment Tasks to Graduate Attributes

Assessment Tasks	Graduate Attributes									
	1	2	3	4	5	6	7	8	9	10
1 - Group Discussion - 0%	•		•	•		•		•		
2 - Written Assessment - 50%	•	•	•	•		•	•	•		
3 - Written Assessment - 50%	•	•	•	•		•	•	•		

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

Peter Marshall Unit Coordinator
p.marshall@cqu.edu.au

Schedule

Week 1 - 15 Jul 2019

Module/Topic	Chapter	Events and Submissions/Topic
Online Zoom: Introduction to HFI, Moodle, and Assessments: • We begin our journey into the critical analysis of accidents to determine the human factors lines of inquiry that are often overlooked.		

Week 2 - 22 Jul 2019

Module/Topic	Chapter	Events and Submissions/Topic
Online Zoom: Module 1: Human Factors and Accident Causation • Keys to successful design • Introduction to the WorkSafeBC model of HFI		

Week 3 - 29 Jul 2019

Module/Topic	Chapter	Events and Submissions/Topic
Online Zoom: Module 1: Human Factors and Accident Causation • Applying the WorkSafeBC model in a critical analysis of the Teneriffe accident.		Advise the unit coordinator of your Assessment 2 case study choice by Friday 5pm AEST

Week 4 - 05 Aug 2019

Module/Topic	Chapter	Events and Submissions/Topic
Online Zoom: Module 1: Human Factors and Accident Causation: • Applying the WorkSafeBC model in a critical analysis of the Chernobyl accident.		

Week 5 - 12 Aug 2019

Module/Topic	Chapter	Events and Submissions/Topic
Online Zoom: Module 1: Human Factors and Accident Causation: bring your own accident for class discussion • Free help from the class with your Assessment! • Applying the WorkSafeBC model in a critical analysis of one or two accidents found by students • Identifying HF lines of inquiry		

Vacation Week - 19 Aug 2019

Module/Topic	Chapter	Events and Submissions/Topic
Vacation. Continue reading into Assessment 2.		

Week 6 - 26 Aug 2019

Module/Topic	Chapter	Events and Submissions/Topic

Online Zoom: Module 2: Human Factors Investigation Methods: • Let's get started on some investigative tools that will inform part 2 of Assessment 2.	Moodle reading: A guide to task analysis (Kirwan & Ainsworth 1992)	Post your draft Assessment 2 mindmap and preamble to Moodle

Week 7 - 02 Sep 2019

Module/Topic	Chapter	Events and Submissions/Topic
Online Zoom: Module 2: Human Factors Investigation Methods: • More investigative tools that will answer part 2 of Assessment 2.	Online readings supplied through Moodle	Post your two Assessment 2 feedbacks to Moodle

Week 8 - 09 Sep 2019

Module/Topic	Chapter	Events and Submissions/Topic
Online Zoom: Module 2: Human Factors Investigation Methods: • Introduction to HFACS from a HFI viewpoint. • This week will inform your work in Assessment 3.	Online readings supplied through Moodle	

Week 9 - 16 Sep 2019

Module/Topic	Chapter	Events and Submissions/Topic
Online Zoom: Module 2: Human Factors Investigation Methods: • HFACS nanocodes from DoD and other sources. • This week will inform your work in Assessment 3.	Online readings	Post your draft Assessment 3 HFACS and preamble to Moodle **Annotated mindmap & bibliography** Due: Week 9 Monday (16 Sept 2019) 10:00 am AEST

Week 10 - 23 Sep 2019

Module/Topic	Chapter	Events and Submissions/Topic
Online Zoom: Module 2: Human Factors Investigation Methods: • HFACS nanocodes from DoD and other sources. • This week will inform your work in Assessment 3.	Online readings	Post your two Assessment 3 feedbacks to Moodle

Week 11 - 30 Sep 2019

Module/Topic	Chapter	Events and Submissions/Topic
Online Zoom: Module 3: Bringing it all together to successfully investigate human factors post accident • Organisational safety and culture of safety	Online readings	

Week 12 - 07 Oct 2019

Module/Topic	Chapter	Events and Submissions/Topic
Review and reflection		

Review/Exam Week - 14 Oct 2019

Module/Topic	Chapter	Events and Submissions/Topic

Exam Week - 21 Oct 2019

Module/Topic	Chapter	Events and Submissions/Topic

Assessment Tasks

1 Group Discussion

Assessment Type
Group Discussion

Task Description
Engagement as a responsible member of the learning community is important to your future careers as accident investigation professionals. This skill will assist in future teamwork and collaboration with other agencies.
You will need to complete a minimum of eight posts to the Moodle Sharing Drafts Forum as follows:

- Post your draft Assessment 2 to the Moodle Sharing Drafts forum so that you can receive peer feedback and to prompt class discussion
- Post your constructive responses to two other students' Assessment 2 drafts suggesting additions to the scenario preamble and/or the scenario lines of inquiry
- Post your draft Assessment 3 to the Moodle Sharing Drafts forum so that you can receive peer feedback and to prompt class discussion
- Post your constructive responses to two other students' Assessment 3 drafts, suggesting changes or additions to the lines of inquiry and/or life cycle analysis
- Submit two other reflective and relevant posts to the Moodle Sharing Drafts forum, evidencing your meaningful contribution to the HFI community of practice.

Any external sources must be referenced in CQUni Harvard style.

Assessment Due Date

Due progressively throughout the term as per the unit schedule. All posts must be completed by the end of week 12.

Return Date to Students

Feedback will be provided progressively through general class guidance. Feedback and grades will be posted to students at the end of Assessment 3.

Weighting
Pass/Fail

Minimum mark or grade
A pass grade is required for successful completion of AINV13002

Assessment Criteria
Engagement is a pass/fail criteria. To pass this assessment, you will need to complete and pass a minimum of eight posts to Moodle. The grading criteria for passing each of these posts are:
1. Well developed Assessment 2 and 3 drafts to the Moodle Sharing Drafts forum.
2. Meaningful and respectful feedback to the other students' drafts that will prompt both further improvement and generation of new ideas.
3. Meaningful contributions to the HFI community of practice by way of new research or application.

Referencing Style

- Harvard (author-date)

Submission
Online

Submission Instructions
Submit through the Moodle class discussion forum.

assessmentOutcome

- Employ effective communication strategies appropriate to human factors investigations.
- Demonstrate reflective skills appropriate to the development of the graduating practitioner.

assessmentGradAttribute

- Communication
- Critical Thinking
- Information Literacy
- Information Technology Competence
- Ethical practice

2 Annotated mindmap & bibliography

Assessment Type
Written Assessment

Task Description
For this task, you will be required to review the literature and complete a preamble (context), an annotated mindmap and bibliography based around a specific case study of your choice. Your choice of case-study will be subject to approval by your unit coordinator. The case studies provided in the unit are examples and will not be suitable for this Assessment. To do this assessment you must:

- choose a case study and advise the unit coordinator of your choice by the end of week 3
- read widely about the case study and human factors tools
- develop a draft mindmap
- write a preamble description
- finalise your preamble and mindmap based on ideas generated from the group discussion
- determine the appropriate HFI investigative tools that will progress those lines of inquiry
- complete a critical annotated bibliography that describes each of your identified investigative tools, and
- collate all of this into one submission.

Your collated submission should include the following:

1. A Preamble that includes a detailed:
    - description of what happened and the roles of the key actors
    - timeline of events (that includes latent issues that underpin the accident event)
    - explanation of why it happened, both in the physical domain and the human factors domain.
2. An Annotated Mindmap based on the WorkSafe BC model:
    - Design failures and system life cycle as related to human factors issues
    - Issues and findings related to physical, cognitive and organisational factors
    - Human factors investigation tools recommended (other than HFACS) to investigate the human factors issues/lines of inquiry
3. An Annotated Bibliography:
    - Critical annotations of the strengths and weaknesses of each recommended human factors investigative tool
4. A reflection as to how this assessment may inform your future professional investigative practice (especially Crash Lab Project 2)

The ‘whys’ above should draw on evidence in the report AND in the literature (i.e. bibliographies). It should include formal ‘in text’ referencing in the mind map and include a separate reference list. You are encouraged to use mind mapping software e.g.‘FreeMind’(http://freemind.sourceforge.net/wiki/index.php/Main_Page) or a similar tool but you shall upload your submission as a pdf.
As an investigation professional, you will become part of a wider community of practice, therefore your draft will be peer-reviewed and discussed in Assessment 1. Further details about this task will be provided through Moodle.

Assessment Due Date
Week 9 Monday (16 Sept 2019) 10:00 am AEST

Choice of case study by end of Week 3. Draft loaded to Moodle Week 6, Ass 1 feedback submitted Week 7. Final submission Monday Week 9

Return Date to Students

Weighting
50%

Assessment Criteria
To be successful in this Assessment, you will need to demonstrate your competence in the following aspects of HF investigation:

- Depth of analysis in each of the physical, cognitive and organisational domains
- Critical application of the systems design perspective
- Thorough mindmaps applying inductive and deductive reasoning to explore the underpinning role that human factors have in accident causation
- Comprehensive research of the evidence base for HF accident investigation practice
- Application of appropriate HF tools and methods for HF lines of inquiry.

The grading criteria are below:

- WorkSafeBC Mindmap (20%)
    - identified People, Workplace and Management Factors
    - understands the role of HF: apply inductive and deductive logic to determine HF lines of enquiry
- Mindmap Findings evidence base (20%)
    - Physical domain
    - Cognitive domain
    - Organisational domain
    - systems design perspective
- Identify specific HF tools for each of the lines of enquiry identified in your new mindmap (30%)
    - Guide for passing grade: A minimum of 6 different tools
- Annotated Bibliography (12%)
    - Summarise why you have chosen each HF investigative tool in a 150 word (or thereabouts) critical annotation for each (12)
- Writing & CQUni Harvard Style Referencing (10%)
- Reflection (8%)

Referencing Style

- Harvard (author-date)

Submission
Online

Submission Instructions
Submissions shall be in MSWord and / or pdf format

assessmentOutcome

- Analyse accident case study through the application of contemporary human factors investigation tools and techniques.
- Employ effective communication strategies appropriate to human factors investigations.
- Demonstrate reflective skills appropriate to the development of the graduating practitioner.

assessmentGradAttribute

- Communication
- Problem Solving
- Critical Thinking
- Information Literacy
- Information Technology Competence
- Cross Cultural Competence
- Ethical practice

3 HFI Problem Solving

Assessment Type
Written Assessment

Task Description
Task Description
This problem-solving activity will extend the work done in Assessment 2. While it is recommended that you continue the same case study, you may choose a different one with the agreement of your unit coordinator.
The submission will be a written formal style report. (Reports of 2,000 to 3,000 words are more likely to be successful).
Complete both Part A and Part B.
PART A (80%)
You are required to:
1. Fully describe the event (this can be taken from assessment 2)
2. Identify significant components of the system/s relevant to the event (this can be taken from assessment 2)
3. Analyse and research the potential human factors issues related to the event (this can be taken from assessment 2)
4. Using the HFACS nanocodes, create an HFI analysis for your event (your analysis must include a minimum of 30 nanocodes):
    a. Critique HFACS, in terms of its;

        - usability
        - value in investigating human factors issues
        - usefulness with regard to learning from the event to prevent any future event.

b. Discuss any recommendations you would make to the authors of HFACS to address any limitations with the current tool.

PART B (20%)
… and in the end … some of the most important reflections of all:
1. Compare and discuss the results achieved using HFACS with those of WorkSafeBC used in Assessment 2
2. Reflect on and describe the contribution that organisational factors and safety culture had on the causation of your case study accident
3. Reflect on and describe these HF issues and any shifts of understanding that you may have had through a. study of systems and b. HF design in this unit
4. Reflect on and describe your professional human factors investigative practice into the future (and any 'ah ha' moments in this unit) and share any planned changes to your professional practice resulting from the study of human factors investigation.

Assessment Due Date

Draft Week 9, Feedback Week 10, Due Tuesday Week12.

Return Date to Students

Within 3 weeks of submission

Weighting
50%

Assessment Criteria
To be successful in this Assessment, you will need to demonstrate your understanding through in-depth analysis of the following aspects of HF investigation and their effect on failure:

- evaluating context and its relationship to failure
- actors, their lens and how that might have influenced an event outcome
- relationship between people, machines and systems in society as a socio-technical system
- HF physical, cognitive and organisational design issues
- latent issues and preconditions
- the role of the system life cycle in the accident causation;
- loss of system control
- organisational factors and safety culture.

The grading criteria are below:

- Scenario Systems Issues: 35%: (these are issues to be developed through your application of HFACS or else identified in your HFACS critique). You will be assessed to the extent that you have demonstrated understanding of:
    - context and its relationship to failure
    - actors, their lens and how that might have influenced an event outcome
    - the relationships between people, machines and systems in society as a socio-technical system
    - the systems life cycles and their effect on failure
    - failures of latent issues and pre-conditions and the effect on failure
    - HF design issues & the influence this has on end-user actions and errors
    - HF cognitive design issues & the influence this has on end-user actions and errors
    - HF organisational design issues & the influence this has on end-user actions and errors
- HFACS Analysis (35%). You will be assessed on the extent to which you have:
    - applied an appropriate understanding of HFACS (10%)
    - demonstrate d an understanding of the loss of control of a system and its effect on failure (10%)
    - Critiqued the benefits and limitations of HFACS tool (8%)
    - Recognised the links between HFACS and the plethora of specialist HF tools introduced in the end of Module 1 and the comparative results achieved in Assessment 2 (7%)
- Critical Reflective Practice (20%) This will be assessed on the extent that you have recognised and described:
    - Organisational factors and safety culture (10%) (describe the contribution on the causation of your case study accident)
    - Your reflection and description of your understanding of HF issues (5%) (shifts of understanding from studying a. systems and b. HF design)
    - Your reflection upon your HFI future professional practice (5%) (any 'ah ha' moments in this unit and planned changes to your professional practice resulting from study of HFI).
- Formal Report (10%) Format, Organisation, written expression, evidence-based practice, CQUni Harvard Referencing.

Further details will be provided in the Rubric in Moodle during the term.

Referencing Style

- Harvard (author-date)

Submission
Online

assessmentOutcome

- Derive and interpret organisational factors evident in the causation of major disasters by employing organisational factor analysis.
- Examine the nature and contribution of safety culture to accident causation.
- Employ effective communication strategies appropriate to human factors investigations.
- Demonstrate reflective skills appropriate to the development of the graduating practitioner.

assessmentGradAttribute

- Communication
- Problem Solving
- Critical Thinking
- Information Literacy
- Information Technology Competence
- Cross Cultural Competence
- Ethical practice

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