



# AINV20010 Crash Lab Project

## Term 2 - 2021

Profile information current as at 19/04/2024 12:21 pm

All details in this unit profile for AINV20010 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

On completion of this unit students will demonstrate advanced knowledge and skills in planning, conducting, managing and leading multidisciplinary accident investigations which utilise advanced accident analysis methods and models, contemporary simulation and reconstruction programs and methods while delivering investigation reports appropriate for submission as expert witness reports for a court or government. All students are required to attend a residential school at the CQUniversity Forensic Accident Investigation Laboratory at the Bundaberg campus.

#### Details

Career Level: *Postgraduate*

Unit Level: *Level 8*

Credit Points: *12*

Student Contribution Band: *8*

Fraction of Full-Time Student Load: *0.25*

#### 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 - 2021

- Mixed Mode

#### 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).

#### Residential Schools

This unit has a Compulsory Residential School for distance mode students and the details are:  
Click here to see your [Residential School Timetable](#).

#### 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 12-credit Postgraduate unit at CQUniversity requires an overall time commitment of an average of 25 hours of study per week, making a total of 300 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: 20%

#### 2. **Portfolio**

Weighting: 30%

#### 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 Have Your Say

##### Feedback

The evidence and scenarios used at the residential school need to be updated.

##### Recommendation

Continue to update the scenarios to a point on the understanding that there is only to be one more offering of this unit

## Unit Learning Outcomes

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

1. Plan, execute and evaluate a detailed accident investigation involving appropriate accident analysis simulation and/or reconstruction methods.
2. Analyse accident investigation reporting paradigms associated with the various investigation domains.
3. Prepare an accident investigation report appropriate for submission as an expert witness report for a court or government.
4. Demonstrate individual initiative and effective teamwork and collaboration skills in multidisciplinary investigation teams.
5. Lead and manage investigation teams.

## Alignment of Learning Outcomes, Assessment and Graduate Attributes



### Alignment of Assessment Tasks to Learning Outcomes

Assessment Tasks	Learning Outcomes				
	1	2	3	4	5
1 - Group Discussion - 20%	•			•	•
2 - Portfolio - 30%	•	•			
3 - Written Assessment - 50%	•		•		•

### Alignment of Graduate Attributes to Learning Outcomes

Graduate Attributes	Learning Outcomes				
	1	2	3	4	5
1 - Knowledge	○	○	○	○	
2 - Communication	○		○	○	○

Graduate Attributes	Learning Outcomes				
	1	2	3	4	5
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					

## Alignment of Assessment Tasks to Graduate Attributes

Assessment Tasks	Graduate Attributes							
	1	2	3	4	5	6	7	8
1 - Group Discussion - 20%	○	○	○	○	○	○	○	
2 - Portfolio - 30%	○	○	○	○	○	○		
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

**Kevin Perry** Unit Coordinator  
[k.perry@cqu.edu.au](mailto:k.perry@cqu.edu.au)

## Schedule

### Week 1 - 12 Jul 2021

Module/Topic	Chapter	Events and Submissions/Topic
Lecture/Tutorial: Introduction and Unit Overview <ul style="list-style-type: none"> <li>Unit content, expectations and requirements</li> <li>Preparing for residential school</li> </ul>		

### Week 2 - 19 Jul 2021

Module/Topic	Chapter	Events and Submissions/Topic
Lecture/Tutorial: Extension of Investigation Principles <ul style="list-style-type: none"> <li>Scene Management</li> <li>Evidence collection and witness interviewing</li> </ul>	Dell, W. 2016, Accident Forensics Evidence Study Guide Study Guide - Witness Interviewing Bennett & Hess 1991, Cognitive Interviewing, United States Federal Bureau of Investigation, Virginia, USA Dell, WR 2006, "The Limitations of Traditional Interview Methods", <i>Safety in Action 2006</i> , Safety Institute of Australia, Melbourne	

### Week 3 - 26 Jul 2021

Module/Topic	Chapter	Events and Submissions/Topic
Residential School - Bundaberg		Risk Assessment for residential school - Due Monday (26 July 2021) 0900 AEST Portfolio Parts A, B, C and D due and assessed during Residential school

### Week 4 - 02 Aug 2021

Module/Topic	Chapter	Events and Submissions/Topic
Lecture/Tutorial: Analysis and Reporting <ul style="list-style-type: none"> <li>Collating the data from various sources</li> </ul>		Submission of residential school presentation slides in Moodle Due Monday (2 August 2021) 09:00 AM AEST

### Week 5 - 09 Aug 2021

Module/Topic	Chapter	Events and Submissions/Topic
Lecture/tutorial: Analysis and Reporting <ul style="list-style-type: none"> <li>Writing reports and reflections</li> </ul>	Salguero-Caparros, Suarez-Cebador & Rubio-Romero 2015, Analysis of investigation reports on occupational accidents	

### Vacation Week - 16 Aug 2021

Module/Topic	Chapter	Events and Submissions/Topic

### Week 6 - 23 Aug 2021

Module/Topic	Chapter	Events and Submissions/Topic
Lecture/tutorial: Analysis and Reporting <ul style="list-style-type: none"> <li>Refining your analysis</li> </ul>		

### Week 7 - 30 Aug 2021

Module/Topic	Chapter	Events and Submissions/Topic
Pre-recorded Lecture: Domains <ul style="list-style-type: none"> <li>Introduction to domains</li> <li>Aviation Domain</li> </ul>		

Week 8 - 06 Sep 2021		
Module/Topic	Chapter	Events and Submissions/Topic
Pre-recorded Lecture: Domains • Road Domain		Draft reports for review due Monday (6 September 2021) 09:00 AM AEST
Week 9 - 13 Sep 2021		
Module/Topic	Chapter	Events and Submissions/Topic
Pre-recorded Lecture: Domains • Rail Domain		Peer Review of colleague's reports due Friday (17 September 2021) 09:00 AM AEST
Week 10 - 20 Sep 2021		
Module/Topic	Chapter	Events and Submissions/Topic
Pre-recorded Lecture: Domains • Industrial Domain		
Week 11 - 27 Sep 2021		
Module/Topic	Chapter	Events and Submissions/Topic
Pre-recorded Lecture • Court procedures • Bringing it all together		Domain Group Discussion Due Monday (27 September 2021) 09:00 AM AEST
Week 12 - 04 Oct 2021		
Module/Topic	Chapter	Events and Submissions/Topic
		Accident Analysis Report Due Monday (4 October 2021) 09:00 AM AEST
Review/Exam Week - 11 Oct 2021		
Module/Topic	Chapter	Events and Submissions/Topic
Exam Week - 18 Oct 2021		
Module/Topic	Chapter	Events and Submissions/Topic

## Assessment Tasks

### 1 Peer review & discussion

#### Assessment Type

Group Discussion

#### Task Description

##### Discussion: 10%

You will be required to post a discussion about the presentations of the various domains.

You need to:

- Watch all of the lectures on the domains and participate in tutorial discussions
- Explore the web sites of the various regulatory and investigation agencies
- Access accident reports from the specific domain
- Access any public accident databases relative to the domains

Then write a post about the domain you would be interested in pursuing both in further academic studies or in a work area, and why you have chosen it, with consideration of the following:

- What are the unique characteristics of this domain in relation to laws, technologies, operation and hazards?
- What agencies are responsible for regulation and investigation in the domain?
- What accident investigation/forensic methods are used that are unique to this domain?
- Are there any other differences or reasons that influenced your choice?

Posting is to be no more than 1500 words and appropriately referenced using the current CQUni Harvard style.

You are also required to respond constructively to two of your colleagues, each response consisting of approximately

500 words.

When you respond to another student's post in each of the discussion threads, engage constructively and respectfully with what they have said. For example, you could say whether you agree or disagree with them and explain why briefly, or you could take what they have said and extend it with another example.

#### **Peer review: 10%**

You will be required to post your draft accident report in Moodle for comment from one your colleagues. You are required to review and provide **thorough** constructive feedback to one of your colleagues on their report. Post your feedback in the designated area on Moodle.

The report you are to provide feedback to will be allocated by your lecturer.

It is recommended that you provide your report in MSWord and your feedback be provided in track changes and comments.

#### **Assessment Due Date**

As per study schedule

#### **Return Date to Students**

Within two weeks

#### **Weighting**

20%

#### **Assessment Criteria**

##### **Discussion 10%**

You will be assessed against the following criteria:

1. The depth of your discussion of the various domains presented (2.5%)
2. Identification of the domain which you would like to pursue in both academic studies and vocation, and why you have selected this domain (2.5%).
3. Constructive feedback to **two** of your colleagues' discussions (2 x 2.5%).

##### **Peer review 10%**

You will be assessed against the following criteria:

1. Draft report showing substantial progress against Assessment 3 Part A criteria (5%).
2. Constructive feedback to **one** of your colleagues' reports as allocated by your lecturer(5%).

#### **Referencing Style**

- [Harvard \(author-date\)](#)

#### **Submission**

Online

#### **Submission Instructions**

Submit via the appropriate forum in the Assessment Block in the Moodle site.

#### **Learning Outcomes Assessed**

- Plan, execute and evaluate a detailed accident investigation involving appropriate accident analysis simulation and/or reconstruction methods.
- Demonstrate individual initiative and effective teamwork and collaboration skills in multidisciplinary investigation teams.
- Lead and manage investigation teams.

#### **Graduate Attributes**

- Knowledge
- Communication
- Cognitive, technical and creative skills
- Research
- Self-management
- Ethical and Professional Responsibility
- Leadership

## 2 Residential School Portfolio

#### **Assessment Type**

Portfolio

## Task Description

During the Crash Lab Project residential school, you will work in an investigation team to investigate a series of accidents. Each student will lead one team and work as a team member on a number of teams led by other students. You will be accountable for the integrity of the investigation in which you are the leader. This includes responsibility for:

- Managing your investigation team
- Safety at the accident scene
- Preservation of the the accident scene
- Gathering and continuity of evidence
- Identifying and interviewing witnesses
- Obtaining witness statements
- Identifying and collecting documentary and other evidence
- Creating and maintaining appropriate logs
- Initial analysis of the accident
- Initial preparation of the applicable logic diagrams

Your practical application of the relevant theory will be assessed during the residential school against each of these subject areas. You and your team will collect evidence throughout the residential school. Your understanding of your collected Evidence Portfolio will be assessed at the end of the residential school.

In addition, you will be required to prepare and deliver a presentation, supported by Powerpoint and other relevant artifacts, that describes your investigation, your preliminary analysis, including your preliminary logic diagrams.

There will be four parts to this assessment:

### **Part A : Preparedness (5%)**

- Risk Assessment

### **Part B : Advanced Scene Management and Evidence Collection (15%)**

- Accident Scenario - Team Leader Assessment
- Collected Evidence Portfolio

### **Part C : Initial Analysis (10%)**

- Verbal Presentation supported by visual materials

### **Part D : Professionalism (Pass/Fail)**

- Throughout the residential school, you will be assessed on their ability to apply professional approaches to all activitie.

The majority of the assessment will be completed during the residential school. Your completed Powerpoint presentation should also be uploaded into the applicable assessment lodgement area in Moodle by 0900 hours on the Monday following the residential school.

NOTE: In order for all students to satisfactorily complete this assessment, it will be necessary for students in the investigation teams to share their collected evidence, artefacts, photos, maps, documents, records and logs etc with their team leader/s in a timely fashion. To facilitate this, you should each bring an appropriate USB stick to the residential school to facilitate the transfer of files.

Failure to share your evidence, artefacts, photos, maps, documents, records and logs etc collected during the investigation activities at the residential school with your team leader in a timely fashion, will result in your failure of this assessment task.

## **Assessment Due Date**

Risk assessment due Monday 26 July 2021 via Moodle. Presentation slides are due via Moodle on 2 August 2021 9am AEST. Assessment of the remainder of this assessment task will take place during the residential school.

## **Return Date to Students**

Within three weeks of submission date

## **Weighting**

30%

## **Assessment Criteria**

The detailed assessment criteria for each part will be provided and explained during the term. In summary, students will be assessed on their demonstration of:



**PART A - Pre-planning (5%)** You are required to have completed an effective risk assessment (submitted prior to the residential school) and understand the necessity of a complete crash kit as detailed during the lectures. You are **not** required to attend the residential school with the crash kit items discussed in the lectures. However, students are required to bring personal PPE such as gloves, hats etc. Further detail during lectures.

**PART B - Scene Management & Evidence Collection (15%)**

Accident Scenario - Team Leader Assessment

Your physical collected evidence will be assessed to ensure that you have collected, engaged with and can verbally explain:

- photographs
- sketch map and the process to create a scale map from this
- log sheets completed by their team.

This assessment will also include ensuring that you have

- witness statements, including
  - identified the appropriate witness
  - planned questions
  - collected a statement using appropriate techniques
  - prepared a written witness statement.
- sufficient materials and understanding to be able to prepare a report.
- recognised weaknesses in collected materials and has a plan to address any shortcomings identified.

**PART C - Preliminary Analysis (10%)**

The presentation of your preliminary analysis will be assessed for

- Content & preliminary event tree logic diagram
- Professional presentation style
- Professional formatting

**PART D - Professionalism (Pass/Fail)**

Throughout the residential school, you are expected to apply professional approaches to all activities, including:

- attendance
- teamwork
- personal leadership
- professional and ethical practice

---

**Referencing Style**

- [Harvard \(author-date\)](#)

**Submission**

Offline Online

**Submission Instructions**

Submission will be both during residential school and via Moodle. Detailed submission instructions will be provided on Moodle and during the residential school.

**Learning Outcomes Assessed**

- Plan, execute and evaluate a detailed accident investigation involving appropriate accident analysis simulation and/or reconstruction methods.
- Analyse accident investigation reporting paradigms associated with the various investigation domains.

**Graduate Attributes**

- Knowledge
- Communication
- Cognitive, technical and creative skills
- Research
- Self-management

- Ethical and Professional Responsibility

## 3 Investigation report

### Assessment Type

Written Assessment

### Task Description

#### Accident Analysis Report (50%)

During the Crash Lab Project residential school each student will have led an investigation team. For this assessment task, you must:

- Obtain copies of all the relevant physical and documentary evidence, photographs, logs, interview statements etc collected by the members of your investigation team as part of the investigation in which you were leader
- Assemble a timeline to display the critical sequence of events
- Explain the accident using an event tree
- Complete your analysis of the accident and PEEPO, Timeline and Event Tree diagrams which were commenced during the residential school
- Prepare a comprehensive report describing the accident, your investigation, your analysis of the evidence including your PEEPO, Timeline and Event Tree logic diagrams. Your report should conclude with your findings regarding causation of the accident and recommendations for corrective action.

The report should include sections that reflect your learnings over the whole course. These sections should include, but not be limited to:

- Executive Summary
- Backgrounds including organisation, stakeholders, staff/workers/bystanders etc
- The incident (including pre incident and post incident activities)
- Analysis (PEEPO, timeline, event tree)
- Human factors Analysis
- Engineering Analysis
- Procedural deficiencies
- Organisational deficiencies
- Regulatory analysis
- Comparison to similar incidents
- Key findings (including causal factors)
- Conclusion (including recommendations)
- References(using current CQUni Harvard style)

### Assessment Due Date

As per schedule

### Return Date to Students

Within two weeks

### Weighting

50%

### Minimum mark or grade

Students must score 50% or more in this assessment to pass this unit.

### Assessment Criteria

#### Final report (50%)

The report will be assessed using the following points:

1. Introduction
2. Establishment of the facts and supports evidence from the scene in the form of relevant photographs, sketches and maps
3. Photographs accurately depict the scene management and evidence collection process. They are cross-referenced and recorded accurately.
4. The final scale map accurately depicts the accident scene, based on the information provided on the sketch map.

5. Witness statements are included in the evidence
6. Critical witness evidence is taken into consideration in the causation argument
7. PEEPO
8. Timeline
9. Event Tree showing a minimum of 30 lines of inquiry, all causation sequences back to the latent failures for each line of inquiry.
10. Causation narrative describing all of the causation sequences leading to the event
11. Analysis considers other accidents of same type
12. Logical conclusions are drawn from the evidence and analysis
13. Recommendations are made to address each causal factors
14. Report demonstrates application of knowledge from throughout the Graduate Diploma (HF Analysis, Engineering, Victim Pathology, Regulatory Analysis)
15. Formatting & presentation
16. Uses written expression appropriate to a report
17. Sources and referencing (eg. company documents, Australian Standards, Codes of Practice, legislation)

Criteria 1-6: Introduction and evidence - 15%

Criteria 7-11: Analysis of evidence - 15%

Criteria 12-14: Conclusions & recommendations - 15%

Criteria 15-17: Professional report formatting, written expression and referencing - 5%

### **Referencing Style**

- [Harvard \(author-date\)](#)

### **Submission**

Online

### **Submission Instructions**

Submission will be via Moodle

### **Learning Outcomes Assessed**

- Plan, execute and evaluate a detailed accident investigation involving appropriate accident analysis simulation and/or reconstruction methods.
- Prepare an accident investigation report appropriate for submission as an expert witness report for a court or government.
- Lead and manage investigation teams.

### **Graduate Attributes**

- Knowledge
- Communication
- Cognitive, technical and creative skills
- Research
- Self-management
- Ethical and Professional Responsibility

## 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