



# AINV13001 Accident Analysis

## Term 1 - 2021

Profile information current as at 03/05/2024 04:45 pm

All details in this unit profile for AINV13001 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 should be able to explain the characteristics, strengths and weaknesses of key theoretical accident analysis, simulation and reconstruction models. These students should also be able to apply the models to complex accident scenarios.

#### 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

AINV12002 Accident Phenomenology and 48 units of credit

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 1 - 2021

- 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. **Written Assessment**

Weighting: 40%

#### 2. **Group Discussion**

Weighting: 10%

#### 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 Self reflection

##### Feedback

Students appreciated the extensive assessment feedback.

##### Recommendation

Continue to provide extensive assessment feedback.

## Unit Learning Outcomes

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

1. Evaluate the benefits, features and application of accident analysis models.
2. Reconstruct accident causation sequences using contemporary methods of reconstruction and simulation.
3. Employ effective communication strategies appropriate to accident analysis.
4. Demonstrate reflective skills appropriate to the development at an advanced level.

## Alignment of Learning Outcomes, Assessment and Graduate Attributes



### Alignment of Assessment Tasks to Learning Outcomes

Assessment Tasks	Learning Outcomes			
	1	2	3	4
1 - Group Discussion - 10%			•	•
2 - Written Assessment - 50%	•		•	•
3 - Written Assessment - 40%		•	•	•

### Alignment of Graduate Attributes to Learning Outcomes

Graduate Attributes	Learning Outcomes			
	1	2	3	4
1 - Communication			•	
2 - Problem Solving	•	•		
3 - Critical Thinking	•	•	•	•
4 - Information Literacy	•	•	•	

Graduate Attributes	Learning Outcomes			
	1	2	3	4
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 - 10%	•		•	•		•	•	•		
2 - Written Assessment - 50%	•	•	•	•		•	•	•		
3 - Written Assessment - 40%	•	•	•	•		•	•	•		

## 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

**Sarah Munn** Unit Coordinator  
[s.munn@cqu.edu.au](mailto:s.munn@cqu.edu.au)

## Schedule

### Week 1 - 08 Mar 2021

Module/Topic	Chapter	Events and Submissions/Topic
Lecture: Introduction and unit overview	Any applicable readings will be available in Moodle	No tutorial

### Week 2 - 15 Mar 2021

Module/Topic	Chapter	Events and Submissions/Topic
Lecture: Models and tools	Any applicable readings will be available in Moodle	No tutorial

### Week 3 - 22 Mar 2021

Module/Topic	Chapter	Events and Submissions/Topic
Lecture: Understanding the importance of timelines and introduction to event trees	Any applicable readings will be available in Moodle	Tutorial: Developing a timeline

### Week 4 - 29 Mar 2021

Module/Topic	Chapter	Events and Submissions/Topic
Lecture: Event tree layout	Any applicable readings will be available in Moodle	Tutorial: Practicing event tree layouts

### Week 5 - 05 Apr 2021

Module/Topic	Chapter	Events and Submissions/Topic
Lecture: Further developing an event tree	Any applicable readings will be available in Moodle	Tutorial: On demand  <b>Investigating the link between theoretical models and accident analysis tools</b> Due: Week 5 Wednesday (7 Apr 2021) 11:45 pm AEST

### Vacation Week - 12 Apr 2021

Module/Topic	Chapter	Events and Submissions/Topic
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### Week 6 - 19 Apr 2021

Module/Topic	Chapter	Events and Submissions/Topic
Lecture: Reviewing accident simulation tools	Any applicable readings will be available in Moodle	Tutorial: On demand

### Week 7 - 26 Apr 2021

Module/Topic	Chapter	Events and Submissions/Topic
Lecture: Testing event tree logic	Any applicable readings will be available in Moodle	Tutorial: On demand

### Week 8 - 03 May 2021

Module/Topic	Chapter	Events and Submissions/Topic
Lecture: Informing an event tree using analysis - using accident analysis tools	Any applicable readings will be available in Moodle	Tutorial: On demand  <b>Group discussion - the value of accident simulations</b> Due: Week 8 Wednesday (5 May 2021) 11:45 pm AEST

### Week 9 - 10 May 2021

Module/Topic	Chapter	Events and Submissions/Topic
Lecture: Creating a narrative of the event tree using supporting analysis	Any applicable readings will be available in Moodle	Tutorial: On demand

**Week 10 - 17 May 2021**

Module/Topic	Chapter	Events and Submissions/Topic
Lecture: Other analysis tools - MORT and Fault Tree Analysis (FTA)	Any applicable readings will be available in Moodle	Tutorial: On demand

**Week 11 - 24 May 2021**

Module/Topic	Chapter	Events and Submissions/Topic
Independent study		No tutorial

**Week 12 - 31 May 2021**

Module/Topic	Chapter	Events and Submissions/Topic
Independent study		No tutorial

**Review/Exam Week - 07 Jun 2021**

Module/Topic	Chapter	Events and Submissions/Topic
		<b>Accident Analysis Report</b> Due: Review/Exam Week Wednesday (9 June 2021) 11:45 pm AEST

**Exam Week - 14 Jun 2021**

Module/Topic	Chapter	Events and Submissions/Topic
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## Assessment Tasks

### 1 Investigating the link between theoretical models and accident analysis tools

**Assessment Type**

Written Assessment

**Task Description**

This assignment draws on your learnings from AINV12002 Accident Phenomenology. Each accident analysis tool is derived from one of the theoretical perspectives (models) of how accidents occur. This assignment explores the link between the theoretical models and accident analysis tools to help us understand how any limitation of the lens of the theoretical model might also translate as a limitation to the usefulness of the accident analysis tool.

You are required to:

1. Choose three accident analysis tools highlighted on the list provided in Moodle.
2. For each tool, explain what theoretical model/s might underpin it and why you think this is the case.
3. For each tool, explain the strengths and weaknesses that you are able to anticipate using the structure of the model as the basis of your discussion.
4. Reflect on your learning about the link between the theoretical models and accident analysis tools and how that learning will inform your use of accident analysis tools.

Your assessment should be around 3000 words, comprising approximately 750 - 1000 words per tool and 300-350 for reflection, and be supported by relevant citations (minimum of 12) from the literature.

**Your paper MUST be written in the third person.**

**Assessment Due Date**

Week 5 Wednesday (7 Apr 2021) 11:45 pm AEST

**Return Date to Students**

Two weeks following submission

**Weighting**

40%

**Minimum mark or grade**

Students must achieve a minimum grade of 50%

**Assessment Criteria**

The following assessment criteria will apply:

1. For each tool, there is an explanation of what theoretical model/s might underpin it and why this is the case.
2. For each tool, the strengths and weaknesses able to be anticipated using the structure of the tool, are explained.
3. Reflection on the learnings about the link between the theoretical models and accident analysis tools and how that learning informs the use of accident analysis tools, has been explained.
4. Paragraph and sentence construction, spelling, language and grammar use in the assignment
5. Referencing - includes the provision of a referencing list and the application of the Harvard style for referencing information, data, tables or images sourced for the assignment

### Referencing Style

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

### Submission

Online

### Submission Instructions

Submissions will not be marked unless they are in a format compatible with Microsoft Word

### Learning Outcomes Assessed

- Reconstruct accident causation sequences using contemporary methods of reconstruction and simulation.
- Employ effective communication strategies appropriate to accident analysis.
- Demonstrate reflective skills appropriate to the development at an advanced level.

### Graduate Attributes

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

## 2 Group discussion - the value of accident simulations

### Assessment Type

Group Discussion

### Task Description

This assessment task has two parts.

#### **Part A**

Utilising a web-based search, you are required to find two accident simulation or reconstruction videos. You will then prepare a mindmap of the the two simulations you have chosen, commenting on the tools used to create the simulation, the strengths and weaknesses of the simulation, and the overall usefulness of the simulation with respect to the credibility and knowledge base of the author of the simulation.

Your choice of reconstructions must use different simulation software. For example, you cannot choose two reconstructions that both use PC Crash.

Your post must include the video links of the simulations or reconstructions that you have chosen.

To post your response simply respond to the "Post your response here" located in Group Discussion under the Assessment Block.

You will be able to see what your peers have posted only after you have posted your own submission.

#### **Part B**

Comment on the mindmaps of two of your peers with constructive suggestions on how their mindmaps might be improved. Your comments should be limited to no more than 500 words.

Your mindmap and comments to peers response will be graded online and rated out of five in accordance with the assessment criteria.

### Assessment Due Date

Week 8 Wednesday (5 May 2021) 11:45 pm AEST

### Return Date to Students

Two weeks following closing of the forum

### Weighting

10%

**Minimum mark or grade**

Students must attempt the group discussion and obtain an aggregate score of 50% for the unit overall.

**Assessment Criteria**

The following assessment criteria will apply:

1. Tools used to create the simulations have been identified
2. Strengths and weaknesses have been identified
3. Usefulness of the simulation based on author credibility and knowledge base has been included
4. Video links included
5. Constructive comments to peers have been posted

**Referencing Style**

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

**Submission**

Online

**Submission Instructions**

Post in the relevant area of Moodle

**Learning Outcomes Assessed**

- Employ effective communication strategies appropriate to accident analysis.
- Demonstrate reflective skills appropriate to the development at an advanced level.

**Graduate Attributes**

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

### 3 Accident Analysis Report

**Assessment Type**

Written Assessment

**Task Description**

The aim of this assessment task is for students to develop an evidence-informed timeline and an event tree that informs understanding of the sequence of events, causation sequences and outcomes of an accident. The timeline and the event tree are then to be incorporated in a written report which describes the event, the context of the event, and a causation narrative of the analysis.

**Assessment Task**

In this assessment task you must analyse an accident from a list of case studies provided in Moodle, or other case study that has been approved by the unit coordinator, and prepare:

An evidence-informed Timeline to explain the sequence of events that led to the accident

An Event Tree to explain all the causal factor sequences and outcomes of the accident

A report, incorporating your completed timeline and event tree, describing your analysis and findings.

Your event tree should involve at least six (6) lines of enquiry (People, Environment, Equipment, Procedures, Organisation, and one other line of enquiry).

There is no minimum or maximum word limit given the inclusion of a timeline and event tree, however narratives should be concise. You must include relevant citations from the literature as appropriate.

**Your report MUST be written in the third person.**

**Assessment Due Date**

Review/Exam Week Wednesday (9 June 2021) 11:45 pm AEST

**Return Date to Students**

Two weeks following submission



**Weighting**

50%

**Minimum mark or grade**

Students must achieve a minimum grade of 50%.

**Assessment Criteria**

1. Completed timeline based on the events of the accident is included in the report
2. Completed event tree that details the causation sequences is included in the report
3. A detailed report that provides a narrative of the accident using the timeline and event tree
4. Paragraph and sentence construction, spelling, language and grammar used in the report
5. Referencing—includes the provision of a reference list and the application of the Harvard style for referencing information, data, tables or images sourced for the assignment or report

**Referencing Style**

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

**Submission**

Online

**Submission Instructions**

Submissions will not be marked unless they are in a format compatible with Microsoft Word

**Learning Outcomes Assessed**

- Evaluate the benefits, features and application of accident analysis models.
- Employ effective communication strategies appropriate to accident analysis.
- Demonstrate reflective skills appropriate to the development at an advanced level.

**Graduate Attributes**

- 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