



AINV13001 Accident Analysis

Term 1 - 2017

Profile information current as at 26/04/2024 01:32 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.

Corrections

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 - 2017

- Adelaide
- Brisbane
- Bundaberg
- Distance
- Gladstone
- Melbourne
- Rockhampton

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: 10%

2. **Written Assessment**

Weighting: 50%

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](#).

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 and eMails.

Feedback

Positive feedback on course structure and content.

Recommendation

The focus on understanding and constructing an event tree is seen as a valuable skill for professional practice.

Action

There was a deal of emphasis given to this aspect of the unit

Feedback from Student feedback and eMails; staff discussion.

Feedback

Use of accident reconstruction and visualisation software.

Recommendation

Present arrangements allow software to be used in computer laboratory in Bundaberg only.

Action

The cost of ARAS software is prohibitive under the present arrangements. In this term, the students were asked to critically evaluate two commercially available packages. Most did that well but some did not address the issue at all. Consideration by the whole team is needed to consider putting the survey, simulation, and physics components together.

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	•	•	•	
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

AINV13001

Prescribed

Modern Accident Investigation and Analysis

Edition: 2nd (1988)

Authors: Ferry, Ted S.

John Wiley & Sons

United States of America

Binding: Hardcover

AINV13001

Prescribed

Occupational Risk Control : Predicting and Preventing the Unwanted

Edition: eBook (2015)

Authors: Viner, Derek

Farnham

Surrey, , UK

ISBN: 9781315598703

Binding: Hardcover

Additional Textbook Information

Both are available as an e-book via the CQU Library

[View textbooks at the CQUniversity Bookshop](#)

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

David Skegg Unit Coordinator

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Allison Hutton Unit Coordinator

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Schedule

Week 1 - 06 Mar 2017

Module/Topic	Chapter	Events and Submissions/Topic
Introduction, course overview and expectations		
Review logic, timelines, accident phenomenology and significance to where you are going in this course!		

Week 2 - 13 Mar 2017

Module/Topic	Chapter	Events and Submissions/Topic
Apply and evaluate an accident analysis case study using selected tools #1 (Event Tree). Discuss on course forum		

Week 3 - 20 Mar 2017

Module/Topic	Chapter	Events and Submissions/Topic
Apply and evaluate an accident analysis case study using selected tools #2 (ICAM). Discuss on course forum		

Week 4 - 27 Mar 2017

Module/Topic	Chapter	Events and Submissions/Topic
Apply and evaluate an accident analysis case study using selected tools #3 (GTSM) Choose an accident scenario for analysis and eventual report, using one of the models studied Discuss on course forum		Book a half hour meeting (phone, skype or face to face) with your lecturer to discuss your accident scenario and explain your preliminary understanding of its causation and outcomes

Week 5 - 03 Apr 2017

Module/Topic	Chapter	Events and Submissions/Topic
Apply and evaluate an accident analysis case study using selected tools #4 (MORT). Discuss on course forum		Review of Case Study Discussion Due: Week 5 Monday (3 Apr 2017) 9:00 am AEST

Vacation Week - 10 Apr 2017

Module/Topic	Chapter	Events and Submissions/Topic

Week 6 - 17 Apr 2017

Module/Topic	Chapter	Events and Submissions/Topic
Apply and evaluate an accident analysis case study using selected tools #5 (eg Taproot, Bowtie, Fishbones). Discuss on course forum		

Week 7 - 24 Apr 2017

Module/Topic	Chapter	Events and Submissions/Topic
Module 2: Construct logic diagram for accident scenario. Use mind mapping techniques as necessary		

Week 8 - 01 May 2017

Module/Topic	Chapter	Events and Submissions/Topic
Effective reporting of accident analysis outcomes		

Week 9 - 08 May 2017

Module/Topic	Chapter	Events and Submissions/Topic
Module 3 Accident Reconstruction and simulation- introduction		

Week 10 - 15 May 2017

Module/Topic	Chapter	Events and Submissions/Topic

Module 3 Accident Reconstruction and simulation -comparative analysis of two or more simulation applications

Accident Analysis Report Due: Week 10 Friday (19 May 2017) 11:45 pm AEST

Week 11 - 22 May 2017

Module/Topic	Chapter	Events and Submissions/Topic
Module 3 Accident Reconstruction and simulation - report final draft		

Week 12 - 29 May 2017

Module/Topic	Chapter	Events and Submissions/Topic
Review		Accident Reconstruction/Simulation Report Due: Week 12 Friday (2 June 2017) 11:45 pm AEST

Review/Exam Week - 05 Jun 2017

Module/Topic	Chapter	Events and Submissions/Topic
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Exam Week - 12 Jun 2017

Module/Topic	Chapter	Events and Submissions/Topic
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Term Specific Information

Course Co-ordinator: David Skegg
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NOTE: BOTH TEXT BOOKS - FERRY 1988 AND VINER 2015 - ARE AVAILABLE THROUGH THE CQU LIBRARY FOR FREE AS E-BOOKS

Assessment Tasks

1 Review of Case Study Discussion

Assessment Type

Group Discussion

Task Description

In this assessment task you must research the accident analysis literature and review the learnings from your studies in AINV12002 Accident Phenomenology. Then select and review an accident case study from a list provided by your lecturer in Moodle to determine what analysis methods, models or tools described in the literature may have been appropriate for analysing the accident and why.

Then you must:

1. Create a new discussion thread in the Moodle Discussion Forum, describe the enquiries you've undertaken and explain your findings, and
2. Respond to the discussion threads of three of your fellow students regarding their own accident analysis and case study reviews

The grade for this Assessment task accounts for 10% of the total assessment for this course.

Your discussion forum posts and responses to your fellow students' discussions will be graded online. There is no need to upload any additional responses or materials in the usual assessment item upload area of Moodle

Assessment Due Date

Week 5 Monday (3 Apr 2017) 9:00 am AEST

Return Date to Students

Week 7 Friday (28 Apr 2017)

Weighting

10%

Assessment Criteria

As a general rule assessment criteria for all assessment items include:

1. (90%) Content—includes the accuracy, relevance and application of key concepts, analysis, argument, language and grammar used in answering a question or report (see marking criteria for individual requirements).
2. (10%) References—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

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

2 Accident Analysis Report

Assessment Type

Written Assessment

Task Description

The aim of this assessment task is for students to develop a comprehensive set of logic diagrams describing the sequence of events, causation sequences and outcomes of an accident. The resultant set of logic diagrams are then to be incorporated in a report which describes the event, the analysis undertaken, the sequence of events, causation sequences and outcomes of the accident.

Assessment Task

In this assessment task you must analyse an accident that you, a family member or friend/colleague has experienced, or another accident with which you are familiar, and prepare:

- A Timeline to explain the sequence of events that led to the accident, and
- A set of Event Tree or Bowtie diagrams, to explain all the causal factors sequences and outcomes of the accident
- A report, incorporating your completed diagrams, describing your analysis and findings.

Before commencing your analysis and before the end of week 4, you must:

- Book a half hour meeting (phone, skype or face to face) with your lecturer to discuss your accident scenario and explain your preliminary understanding of its causation and outcomes
- Gain approval of your lecturer to proceed with your analysis

During this meeting students may argue the case for applying alternative logic diagrams to their chosen accident scenario to describe the sequences of events and to explain the causation sequences and outcomes.

Your comprehensive analysis should involve at least six (6) lines of enquiry (eg failures in equipment design, physical systems, organisation and culture, operating environment, documentation and the human errors, omissions and/or violations involved).

Assessment Due Date

Week 10 Friday (19 May 2017) 11:45 pm AEST

Return Date to Students

Exam Week Friday (16 June 2017)

Weighting

50%

Assessment Criteria

As a general rule assessment criteria for all assessment items include:

1. (90%) Content—includes the accuracy, relevance and application of key concepts, analysis, argument, language and

grammar used in answering a question or report (see marking criteria for individual requirements).

2. (10%) References—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

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

3 Accident Reconstruction/Simulation Report

Assessment Type

Written Assessment

Task Description

In this assessment task you will:

- Review the literature relating to accident reconstruction and simulation
- Critically appraise an accident reconstruction/simulation provided by the lecturer in Moodle

You will then prepare a report which explains the:

- Published applications and functions of at least two commercially available accident reconstruction or simulation programs or tools
- Benefits and limitations of accident reconstruction and simulation in describing accident sequences and causation
- Outcomes from your critical appraisal of the accident reconstruction/simulation provided

NOTE: It is not necessary in this assessment task for you to carry out an original accident reconstruction or simulation, as this practical activity will be a part of the AINV13003 Crash Lab Project residential school.

Assessment Due Date

Week 12 Friday (2 June 2017) 11:45 pm AEST

Return Date to Students

Exam Week Friday (16 June 2017)

Weighting

40%

Assessment Criteria

As a general rule assessment criteria for all assessment items include:

1. (90%) Content—includes the accuracy, relevance and application of key concepts, analysis, argument, language and grammar used in answering a question or report (see marking criteria for individual requirements).

2. (10%) References—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

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

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