



# AINV11002 *Socio-technical Systems*

## Term 2 - 2018

Profile information current as at 09/05/2024 03:51 pm

All details in this unit profile for AINV11002 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 assist you to recognise and optimise the elements that influence the interaction of humans with other elements of a socio-technical system. You will be presented with learning opportunities to understand how systems, work and people interact successfully and in failure mode. You will be introduced to the notion of systems failure and its prevention, for example, design redundancy and resilience, and the concept of the system life cycle.

#### Details

Career Level: *Undergraduate*

Unit Level: *Level 1*

Credit Points: 6

Student Contribution Band: 8

Fraction of Full-Time Student Load: 0.125

#### Pre-requisites or Co-requisites

Pre-requisite: AINV11001 Real World Investigation

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 - 2018

- Adelaide
- Brisbane
- Bundaberg
- Distance
- Gladstone
- Mackay
- Melbourne
- Perth
- Rockhampton
- Sydney

#### 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: 20%

#### 2. **Written Assessment**

Weighting: 20%

#### 3. **Written Assessment**

Weighting: 30%

#### 4. **Written Assessment**

Weighting: 30%

### 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 Formal and informal student feedback.

**Feedback**

Students reported that they really enjoyed the assessment regime in this unit and found it very beneficial to have each assessment item build into subsequent ones.

**Recommendation**

Continue with this assessment and marking regime.

#### Feedback from Formal and informal student feedback.

**Feedback**

Students really enjoyed the community of practice and sharing their work with other students.

**Recommendation**

Continue with the community of practice for this unit.

#### Feedback from Formal feedback

**Feedback**

A small number of online students reported that they experienced some loss of sound quality in the lecture recordings.

**Recommendation**

Continue to work with Teaching Technology to ensure that each student has a high quality learning experience.

#### Feedback from Formal and informal student feedback.

**Feedback**

Students reported that they loved the high level of interaction with the teaching staff and their peers in this unit.

**Recommendation**

Continue to resource this unit at current levels to enable that interaction.

## Unit Learning Outcomes

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

1. Identify the relationships between people, machines and systems in society.
2. Define the nature of organisations and work.
3. Recognise systems failure, and failure prevention measures.
4. Examine the nature of systems failure and prevention.
5. Illustrate the system life cycle and explain its effect on failure.
6. Employ effective communication strategies appropriate to sociotechnical systems.
7. Demonstrate reflective skills appropriate to the development of the beginning practitioner.

## Alignment of Learning Outcomes, Assessment and Graduate Attributes



### Alignment of Assessment Tasks to Learning Outcomes

| Assessment Tasks             | Learning Outcomes |   |   |   |   |   |   |
|------------------------------|-------------------|---|---|---|---|---|---|
|                              | 1                 | 2 | 3 | 4 | 5 | 6 | 7 |
| 1 - Group Discussion - 20%   |                   |   | • | • |   | • | • |
| 2 - Written Assessment - 20% |                   |   | • | • |   | • | • |
| 3 - Written Assessment - 30% | •                 | • |   |   | • | • | • |
| 4 - Written Assessment - 30% | •                 |   | • | • | • | • |   |

### Alignment of Graduate Attributes to Learning Outcomes

| Graduate Attributes                                 | Learning Outcomes |   |   |   |   |   |   |
|---|-------------------|---|---|---|---|---|---|
|   | 1                 | 2 | 3 | 4 | 5 | 6 | 7 |
| 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 - 20%   | •                   | • | • | • |   | • | • | • |   |    |
| 2 - Written Assessment - 20% | •                   |   | • | • |   | • | • | • |   |    |
| 3 - Written Assessment - 30% | •                   | • |   | • |   | • | • |   |   |    |
| 4 - Written Assessment - 30% | •                   | • | • | • |   | • | • | • |   |    |

## 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

**Prue Howard** Unit Coordinator  
[p.howard@cqu.edu.au](mailto:p.howard@cqu.edu.au)

## Schedule

### Week 1 - 09 Jul 2018

| Module/Topic  | Chapter | Events and Submissions/Topic |
|---|---------|------------------------------|
| Introduction: Getting to know you, Moodle and this unit |         |                              |

### Week 2 - 16 Jul 2018

| Module/Topic                           | Chapter | Events and Submissions/Topic                           |
|--|---------|--|
| Module 1: People, machines and systems |         | <i>Introduce yourself to your classmates on Moodle</i> |

### Week 3 - 23 Jul 2018

| Module/Topic                           | Chapter | Events and Submissions/Topic   |
|--|---------|--|
| Module 1: People, machines and systems |         | <b>Due Friday</b> Task 1: 'Define Human-Machine Relationships' (AB1) |

### Week 4 - 30 Jul 2018

| Module/Topic                           | Chapter | Events and Submissions/Topic                 |
|--|---------|--|
| Module 1: People, machines and systems |         | <b>Due Friday</b> Task 2: System Map (TA1-A) |

### Week 5 - 06 Aug 2018

| Module/Topic                            | Chapter | Events and Submissions/Topic                      |
|---|---------|---|
| Module 2: System life-cycle and failure |         | <b>Due Friday</b> Task 3: Tripod analysis (TA1-B) |

### Vacation Week - 13 Aug 2018

| Module/Topic | Chapter | Events and Submissions/Topic |
|--------------|---------|------------------------------|
|--------------|---------|------------------------------|

### Week 6 - 20 Aug 2018

| Module/Topic                              | Chapter | Events and Submissions/Topic  |
|---|---------|---|
| Module 3: System failure and prevention   |         | <b>Due Friday</b> Task 4: System life cycle (TA2)<br><i>Begin forming your team</i>   |
| <b>Week 7 - 27 Aug 2018</b>               |         |   |
| Module/Topic                              | Chapter | Events and Submissions/Topic  |
| Module 3: System failure and prevention   |         | <b>Due Friday</b> Task 5: 'Failures related to the design process' (AB2)<br><i>Finalise team - or unit coordinator will allocate members to a team.</i> |
| <b>Week 8 - 03 Sep 2018</b>               |         |   |
| Module/Topic                              | Chapter | Events and Submissions/Topic  |
| Module 3: System failure and prevention   |         | <b>Due Friday</b> Task 6: WorkSafeBC Model (TA3)<br><i>Develop team contract</i>  |
| <b>Week 9 - 10 Sep 2018</b>               |         |   |
| Module/Topic                              | Chapter | Events and Submissions/Topic  |
| Module 3: System failure and prevention   |         | <b>Due Friday</b> Task 7: 'Investigating System Failure' (AB3)  |
| <b>Week 10 - 17 Sep 2018</b>              |         |   |
| Module/Topic                              | Chapter | Events and Submissions/Topic  |
| Module 3: System failure and prevention   |         | <b>Annotated mindmap</b> Due: Week 10 Friday (21 Sept 2018) 11:45 pm AEST   |
| <b>Week 11 - 24 Sep 2018</b>              |         |   |
| Module/Topic                              | Chapter | Events and Submissions/Topic  |
| Module 4: Complexity and systems thinking |         | <b>Due Friday</b> Task 8: 'Prevention of system failure' (AB4)  |
| <b>Week 12 - 01 Oct 2018</b>              |         |   |
| Module/Topic                              | Chapter | Events and Submissions/Topic  |
| Module 4: Complexity and systems thinking |         |   |
| <b>Review/Exam Week - 08 Oct 2018</b>     |         |   |
| Module/Topic                              | Chapter | Events and Submissions/Topic  |
|   |         | <b>Team report</b> Due: Review/Exam Week Friday (12 Oct 2018) 11:45 pm AEST   |
| <b>Exam Week - 15 Oct 2018</b>            |         |   |
| Module/Topic                              | Chapter | Events and Submissions/Topic  |
|   |         | <b>Due Friday</b> Task 9: 'Systems thinking' reflection (TA4)   |

## Assessment Tasks

### 1 Tutorial activities

#### Assessment Type

Group Discussion

#### Task Description

These assessment items have been designed to stretch thinking about the unit work or apply new process skills from each module.

The activities may be responded to as a word document / ppt / jpg / pdf or as a blog entry.

The activities for this term include:

1. System map (TA1-A)
2. Tripod analysis (TA1-B)
3. System life cycle (TA2)
4. WorksafeBC model (TA3)
5. 'Systems thinking' reflection (TA4)

For each item you **must submit** your response in the "assessment submission" area (see 'Assessment' block in top left side of moodle). The submissions should be clearly named with your surname and activity number.

Each of the assessment submission areas have been set up to receive multiple files.

### **Assessment Due Date**

As per study schedule

### **Return Date to Students**

Three weeks maximum post submission date

### **Weighting**

20%

### **Assessment Criteria**

As each Tutorial Activity has its own question, the specific marking criteria for each activity will be provided provided through moodle. Each question will be worth 4 marks.

The marking criteria will include the quality of your response to the activity, as well as organisation of your submission, and accuracy of grammar and spelling.

### **Referencing Style**

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

### **Submission**

Online

### **Learning Outcomes Assessed**

- Recognise systems failure, and failure prevention measures.
- Examine the nature of systems failure and prevention.
- Employ effective communication strategies appropriate to sociotechnical systems.
- Demonstrate reflective skills appropriate to the development of the beginning practitioner.

### **Graduate Attributes**

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

## **2 Annotated bibliographies**

### **Assessment Type**

Written Assessment

### **Task Description**

This assessment item has been designed to stretch thinking about the unit work and help you (and your colleagues) prepare for your annotated mind map.

The submission will be via a Q & A type discussion forum. I will start the particular topic then you are required to respond with your annotated bibliography entry before you will be able to see the entries submitted by other students.

An annotated bibliography is an organized list of sources, each of which is followed by a brief note or "annotation."

### **There will be four topics:**

1. 'Define Human-Machine Relationships' (AB1)
2. 'Failures related to the design process' (AB2)
3. 'Investigating System Failure' (AB3)
4. 'Prevention of system failure' (AB4)

**For each topic**, you are required to complete:

1. A review of a useful website that furthers understanding the topic (not Wikipedia!); AND
2. A review of a journal article, book or conference paper that furthers understanding the topic; AND
3. A reference list for the articles cited.

**Each of the two annotations for each topic** must include:

- a description of the content and focus of the book, article or website
- suggestions regarding the source's usefulness to your research
- an evaluation of its method, conclusions, or reliability
- a record of your reactions to the source

Your initial posting is the one that will be graded so please make sure that you include both bibliographies in your first post.

You may use the collective annotated bibliographies when creating your annotated mind map.

**We will be discussing these assessment items during the term but if you have any doubt as to what is required, please don't hesitate seek clarification in moodle or in class.**

### **Assessment Due Date**

As per study schedule

### **Return Date to Students**

Three weeks maximum post submission date

### **Weighting**

20%

### **Assessment Criteria**

As each Annotated Bibliographies has a different focus, the criteria for each will be given specifically in Moodle. Each response will be worth 5 marks.

As a general guide, the annotated bibliographies will be assessed as shown below:

- Quality of the response to the exercise
- Includes a description the content and focus of the book, article or website \* Suggestions regarding the source's usefulness to your research \* An evaluation of its method, conclusions, or reliability \* A record of reaction to the article (connections made etc.)
- Organisation
- Consistently accurate grammar & spelling
- Referencing
- Overall points for organisation, grammar & spelling and referencing

### **Referencing Style**

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

### **Submission**

Online

### **Submission Instructions**

In dedicated Q & A forum on Moodle

### **Learning Outcomes Assessed**

- Recognise systems failure, and failure prevention measures.
- Examine the nature of systems failure and prevention.
- Employ effective communication strategies appropriate to sociotechnical systems.
- Demonstrate reflective skills appropriate to the development of the beginning practitioner.

### **Graduate Attributes**

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



- Ethical practice

### 3 Annotated mindmap

#### Assessment Type

Written Assessment

#### Task Description

This assessment item is a complex output that will draw from all of your learning in the term and put you in the front seat as a beginning practitioner.

This is an INDIVIDUAL assignment but you may use the collective annotated bibliographies.

You should choose your case study in Week 6. You should prepare and submit your mind map by the end of Week 10.

The mind map should be prepared to assist your team in the team assignment but must be done individually and must be done first!

It is worth 30% so don't underestimate this one!!!

Your annotated mind map should evidence:

- What happened (describe circumstances)
- Why it happened (discuss findings)
- Nature of system and system parts
- Design failures and system life cycle
- Issues and findings related to people, workplaces & management

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. 'Coggle.it', <https://coggle.it/> but you should upload your submission as a pdf.

#### Assessment Due Date

Week 10 Friday (21 Sept 2018) 11:45 pm AEST

#### Return Date to Students

Three weeks maximum post submission date

#### Weighting

30%

#### Assessment Criteria

The Annotated Mindmap will be assessed as shown below:

- Communicates all salient issues related to 'what happened'
- Identifies the relationships between people other system parts.
- Applies knowledge of system life cycle and explains its effect on failure.
- Recognises systems failure, and investigates the reported failures.
- Examines the nature of systems failure and demonstrates ability to appropriately categorise to people, workplaces and management issues.
- Selects and applies appropriate evidence sources to support analysis
- Organisation
- Written expression
- Selects appropriate bibliographic entries and references them correctly

#### Referencing Style

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

#### Submission

Online

#### Learning Outcomes Assessed

- Identify the relationships between people, machines and systems in society.
- Define the nature of organisations and work.
- Illustrate the system life cycle and explain its effect on failure.
- Employ effective communication strategies appropriate to sociotechnical systems.
- Demonstrate reflective skills appropriate to the development of the beginning practitioner.

## Graduate Attributes

- Communication
- Problem Solving
- Information Literacy
- Information Technology Competence
- Cross Cultural Competence

## 4 Team report

### Assessment Type

Written Assessment

### Task Description

This assessment item provides your team with an opportunity to analyse a .

This team work builds on the individual work carried out by you and your team members in Assessment 1, 2 & 3. In your team choose a complex socio-technical systems failure, and write a report on that failure. You are encouraged to use one of the failures that a member of your team has analysed using a mindmap.

This report will include:

- Title page - team name and members
- Contents page
- What happened - description of circumstances
- Why it happened - discussion of findings
- Conclusions re major learnings from the accident
- Consideration of prevention strategies
- Formal referencing and reference list
- Appendix (as required and including team contract)

Further detail will be provided in moodle during the term.

### Assessment Due Date

Review/Exam Week Friday (12 Oct 2018) 11:45 pm AEST

### Return Date to Students

Three weeks maximum post submission date

### Weighting

30%

### Assessment Criteria

The report will be assessed as shown below.

- Communicates all salient issues related to 'what happened'
- Identifies the relationships between people and other system parts.
- Applies knowledge of system life cycle and explains its effect on failure.
- Recognises systems failure, and investigates the reported failures.
- Examines the nature of systems failure and demonstrates ability to appropriately categorise to people, workplaces and management issues.
- Proposes appropriate prevention strategies based on taught principles e.g. safe design, resilience engineering & redundancy
- Demonstrates understanding of complexity and systems thinking
- Selects and applies appropriate evidence sources to support analysis
- Organisation
- Written expression
- Selects appropriate bibliographic entries and references them correctly

### Referencing Style

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

### Submission

Online Group

### Submission Instructions

One report only to be submitted per team.

### Learning Outcomes Assessed

- Identify the relationships between people, machines and systems in society.
- Recognise systems failure, and failure prevention measures.

- Examine the nature of systems failure and prevention.
- Illustrate the system life cycle and explain its effect on failure.
- Employ effective communication strategies appropriate to sociotechnical systems.

### **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