



# AINV11002 Socio-technical Systems

## Term 2 - 2020

Profile information current as at 05/05/2024 03:33 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 - 2020

- Adelaide
- Brisbane
- Bundaberg
- Gladstone
- Mackay
- Melbourne
- Online
- 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 Have Your Say

##### Feedback

Now that the teams are created earlier in the term, clarify the timing of the teamwork elements.

##### Recommendation

Provide a timeline of assessment items separate to the schedule in the unit outline.

#### Feedback from Have Your Say

##### Feedback

Students liked the use of videos sprinkled through the lectures.

##### Recommendation

Continue use of videos in lectures.

## 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

No referencing style set.

## Teaching Contacts

**Sarah Munn** Unit Coordinator

[s.munn@cqu.edu.au](mailto:s.munn@cqu.edu.au)

## Schedule

### Week 1 - 13 Jul 2020

Module/Topic	Chapter	Events and Submissions/Topic
Pre-recorded Lecture: Introduction to the unit	Check the Moodle page regularly for deposited readings	

### Week 2 - 20 Jul 2020

Module/Topic	Chapter	Events and Submissions/Topic
Pre-recorded Lecture: People, machines and systems	Check the Moodle page regularly for deposited readings	Zoom Tutorial: Date and Time TBA

### Week 3 - 27 Jul 2020

Module/Topic	Chapter	Events and Submissions/Topic
Pre-recorded Lecture: People, machines and systems	Check the Moodle page regularly for deposited readings	Zoom Tutorial: Date and Time TBA

### Week 4 - 03 Aug 2020

Module/Topic	Chapter	Events and Submissions/Topic
Pre-recorded Lecture: People, machines and systems	Check the Moodle page regularly for deposited readings	Zoom Tutorial: Date and Time TBA <b>System Analysis</b> Due: Week 4 Friday (7 Aug 2020) 10:00 am AEST

### Week 5 - 10 Aug 2020

Module/Topic	Chapter	Events and Submissions/Topic
Pre-recorded Lecture: System life cycle and failure	Check the Moodle page regularly for deposited readings	Zoom Tutorial: Date and Time TBA

### Vacation Week - 17 Aug 2020

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

### Week 6 - 24 Aug 2020

Module/Topic	Chapter	Events and Submissions/Topic
Pre-recorded Lecture: System failure and prevention	Check the Moodle page regularly for deposited readings	Zoom Tutorial: Date and Time TBA <b>Annotated Bibliography</b> Due: Week 6 Wednesday (26 Aug 2020) 10:00 am AEST

### Week 7 - 31 Aug 2020

Module/Topic	Chapter	Events and Submissions/Topic
Pre-recorded Lecture: System failure and prevention	Check the Moodle page regularly for deposited readings	Zoom Tutorial: Date and Time TBA

### Week 8 - 07 Sep 2020

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

Zoom Tutorial: Date and Time TBA

Pre-recorded Lecture: System failure and prevention

Check the Moodle page regularly for deposited readings

**Annotated mindmap and tripod analysis** Due: Week 8 Friday (11 Sept 2020) 10:00 am AEST

#### Week 9 - 14 Sep 2020

Module/Topic	Chapter	Events and Submissions/Topic
Pre-recorded Lecture: System failure and prevention	Check the Moodle page regularly for deposited readings	Zoom Tutorial: Date and Time TBA

#### Week 10 - 21 Sep 2020

Module/Topic	Chapter	Events and Submissions/Topic
Pre-recorded Lecture: Complexity and systems thinking	Check the Moodle page regularly for deposited readings	Zoom Tutorial: Date and Time TBA

#### Week 11 - 28 Sep 2020

Module/Topic	Chapter	Events and Submissions/Topic
Pre-recorded Lecture: Complexity and systems thinking	Check the Moodle page regularly for deposited readings	Zoom Tutorial: Date and Time TBA

#### Week 12 - 05 Oct 2020

Module/Topic	Chapter	Events and Submissions/Topic
Independent Study		<b>Formal Report</b> Due: Week 12 Friday (9 Oct 2020) 10:00 am AEST

#### Review/Exam Week - 12 Oct 2020

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

#### Exam Week - 19 Oct 2020

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

## Assessment Tasks

### 1 System Analysis

#### Assessment Type

Group Discussion

#### Task Description

This assessment item has been designed to start you thinking about what systems are, and in particular the system life cycle.

You will prepare two mindmaps from the topics below.

1. System map
2. System life cycle

You will find detailed instructions for each mindmap in the assessment submission area on Moodle.

#### Assessment Due Date

Week 4 Friday (7 Aug 2020) 10:00 am AEST

#### Return Date to Students

Within two weeks of submission

#### Weighting

20%

#### Minimum mark or grade

Students must achieve a passing grade of 50%

**Assessment Criteria**

Each mindmap will be worth 10%

Detailed assessment criteria will be provided with the assessment instructions in Moodle and will include consideration of the quality of your response to the activity, as well as organisation of your submission and accuracy of grammar and spelling.

**Submission**

Online

**Submission Instructions**

Submissions must be in a Word or pdf format

**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 Bibliography

**Assessment Type**

Written Assessment

**Task Description**

This assessment item has been designed to help you prepare for your annotated mind map and final report.

You will prepare an annotated bibliography from one of the two topics listed below. An annotated bibliography is an organized list of sources, each of which is followed by a brief note or "annotation."

The topics you can choose from are:

1. Define human-machine relationships
2. Failures related to the design process

For your chosen topic you are required to complete:

1. A review of five peer reviewed journal articles, books or conference papers that furthers understanding of the topic; AND
2. A review of a useful website that furthers understanding of the topic (not Wikipedia!); AND
3. A reference list for the sources cited.

Your annotations for your chosen 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
- each annotation should be between 200 and 300 words

You may use your annotated bibliography when creating your mind map for assessment three.

**Assessment Due Date**

Week 6 Wednesday (26 Aug 2020) 10:00 am AEST

**Return Date to Students**

Within two weeks of submission

**Weighting**

20%

**Minimum mark or grade**

Students must achieve a minimum grade of 50%

**Assessment Criteria**

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

- Includes a description of the content and focus of the book, article or website (4 marks)
- Suggestions regarding the source's usefulness to your research (4 marks)
- An evaluation of its method, conclusions, or reliability (4 marks)
- A record of reaction to the article (connections made etc.) (4 marks)
- Organisation, accurate grammar & spelling and referencing (4 marks)

**Submission**

Online

**Submission Instructions**

Submissions should be in a format compatible with Microsoft Word.

**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 and tripod analysis

**Assessment Type**

Written Assessment

**Task Description**

This assessment item is a complex output that will draw from your learning throughout the term.

This assessment consists of two parts.

**Part A (15%)**

You will prepare an annotated mind map of an accident case study of your choice.

You may use your annotated bibliographies to assist you. You are encouraged to use mind mapping software e.g.

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

In order to complete the Tripod analysis for Part B of this assessment, your mind map should include consideration of the following:

- What happened
- Why it happened
- Nature of system and system parts
- Design failures and system life cycle
- Issues related to people, workplaces & management and anything else you consider pertinent to the case study

**Part B (15%)**

Using the information contained in your mindmap, you are required to construct a Tripod to analyse the accident in your case study.

Your Tripod should include:

- The accident analysis or causation factors
- Recommendations for improvement with respect to active failures, preconditions and latent failures



**Assessment Due Date**

Week 8 Friday (11 Sept 2020) 10:00 am AEST

**Return Date to Students**

Within two weeks of submission date.

**Weighting**

30%

**Minimum mark or grade**

Students must achieve a minimum grade of 50%

**Assessment Criteria**

Your mindmap and tripod analysis will be assessed based on the quality and depth of the following points:

- 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
- Organisation, spelling and grammar
- Selects appropriate bibliographic entries and references them correctly

**Submission**

Online

**Submission Instructions**

Submissions shall be in MSWord and / or pdf format

**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 Formal Report

**Assessment Type**

Written Assessment

**Task Description**

This assessment builds on the work carried out by you in assessment one, two and three.

You will choose a complex socio-technical systems failure from a list provided in Moodle. This list will be provided at the beginning of week nine. You will not be allowed to use the case study you chose for assessment three.

Your report will include:

- Title page
- Contents page
- What happened - description of circumstances
- Why it happened - discussion of findings with emphasis on the socio-technical failures
- Conclusions regarding major learnings from the accident
- Consideration of prevention strategies
- Formal referencing and reference list
- Appendix (as required)

Further detail will be provided in moodle during the term.

**Assessment Due Date**

Week 12 Friday (9 Oct 2020) 10:00 am AEST

**Return Date to Students**

Within two weeks of submission.

**Weighting**

30%

**Minimum mark or grade**

Students must achieve a minimum of 50%.

**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, spelling and grammar and written expression
- Selects appropriate bibliographic entries and references them correctly

**Submission**

Online

**Submission Instructions**

Submissions should be in a format compatible with Microsoft Word.

**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