



ENEE13019 Control Systems Analysis and Design

Term 2 - 2021

Profile information current as at 14/12/2025 06:55 am

All details in this unit profile for ENEE13019 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

You will be able to work in teams to model, analyse, and investigate design options for analogue and digital control systems. On satisfactory completion, you will be able to articulate typical control systems building blocks and select appropriate components and interfaces for specific applications. In addition, you will be able to develop mathematical models to analyse the behaviour of selected dynamic systems and to design controllers for these systems. In this unit, you must complete compulsory practical activities. Refer to the Engineering Undergraduate Course Moodle site for proposed dates.

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

Prerequisites: (ENEE13020 Digital Electronics or ENEX12002 Introductory Electronics) and ENEE12016 Signals and Systems.

Important note: Students enrolled in a subsequent unit who failed their pre-requisite unit, should drop the subsequent unit before the census date or within 10 working days of Fail grade notification. Students who do not drop the unit in this timeframe cannot later drop the unit without academic and financial liability. See details in the [Assessment Policy and Procedure \(Higher Education Coursework\)](#).

Offerings For Term 2 - 2021

- Bundaberg
- Cairns
- Gladstone
- Mackay
- Mixed Mode
- 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. **Written Assessment**

Weighting: 20%

2. **Laboratory/Practical**

Weighting: 10%

3. **Laboratory/Practical**

Weighting: 10%

4. **Written Assessment**

Weighting: 20%

5. **Take Home Exam**

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 Unit survey

Feedback

Students appreciated the timely responses and the help from the lecturer.

Recommendation

This good practice will be continued.

Feedback from Unit survey

Feedback

Students appreciated the experiments that helped understanding the theoretical content of the unit.

Recommendation

This good practice will be continued.

Feedback from Unit survey

Feedback

Students identified the need to do better planning of the residential school.

Recommendation

This will be done better compared to this offering in which some of the new lab experiments were introduced for the first time.

Feedback from Unit survey

Feedback

Students expect better organization in the unit content across the 12-week term together with more convenient scheduling of the consultation session to accommodate Mix-mode students.

Recommendation

These concerns will be accommodated in the next offering.

Unit Learning Outcomes

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

1. Explain the principles of automatic control systems (analogue and/or digital) and typical associated control system building blocks
2. Articulate the principles and applications of sensors and amplifiers; final control elements in an automatic control system (analogue and/or digital)
3. Evaluate the role of the analogue and/or digital controller in a control system
4. Model and analyse the behaviour of dynamic systems and the controller in combination using appropriate mathematical, graphical and computer-aided tools
5. Investigate and report the process of analogue and/or digital controller design for a dynamic system; solved collaboratively or autonomously
6. Communicate and document analogue and/or digital control system solutions, calculations and approaches, using correct terminology, symbols and diagrams.

The Learning Outcomes for this unit are linked with the Engineers Australia Stage 1 Competency Standards for Professional Engineers in the areas of 1. Knowledge and Skill Base, 2. Engineering Application Ability and 3. Professional and Personal Attributes at the following levels:

Intermediate 1.5 Knowledge of engineering design practice and contextual factors impacting the engineering discipline. (LO: 1I 2I 3I) 1.6 Understanding of the scope, principles, norms, accountabilities and bounds of sustainable engineering practice in the specific discipline. (LO: 1I 2I 3I) 3.2 Effective oral and written communication in professional and lay domains. (LO: 5I 6I) 3.6 Effective team membership and team leadership. (LO: 5I)

Advanced 1.1 Comprehensive, theory-based understanding of the underpinning natural and physical sciences and the engineering fundamentals applicable to the engineering discipline. (LO: 1A 2A 3A) 1.2 Conceptual understanding of the mathematics, numerical analysis, statistics, and computer and information sciences which underpin the engineering discipline. (LO: 1A 2A 3A) 1.3 In-depth understanding of specialist bodies of knowledge within the engineering discipline. (LO: 1A 2A 3A) 1.4 Discernment of knowledge development and research directions within the engineering discipline. (LO: 1I 2A 3A) 2.1 Application of established engineering methods to complex engineering problem solving. (LO: 1A 2A 3A)

Note: LO refers to the Learning Outcome number(s) which link to the competency and the levels: N - Introductory, I - Intermediate and A - Advanced.

Refer to the Engineering Undergraduate Course Moodle site for further information on the Engineers Australia's Stage 1 Competency Standard for Professional Engineers and course level mapping information <https://moodle.cqu.edu.au/course/view.php?id=1511>

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 |
| 1 - Written Assessment - 20% | • | • | | | | |
| 2 - Laboratory/Practical - 10% | | | | | • | • |

| Assessment Tasks | Learning Outcomes | | | | | |
|--------------------------------|-------------------|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 |
| 3 - Laboratory/Practical - 10% | | | | | • | • |
| 4 - Written Assessment - 20% | | | • | • | | |
| 5 - Take Home Exam - 40% | • | • | • | • | | |

Alignment of Graduate Attributes to Learning Outcomes

| Graduate Attributes | Learning Outcomes | | | | | |
|---|-------------------|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 |
| 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 - Written Assessment - 20% | • | • | • | • | | • | | | | |
| 2 - Laboratory/Practical - 10% | • | • | • | • | • | • | | | | |
| 3 - Laboratory/Practical - 10% | • | • | • | • | • | • | | | | |
| 4 - Written Assessment - 20% | • | • | • | • | | • | | | | |
| 5 - Take Home Exam - 40% | • | • | • | | | | | | | |

Textbooks and Resources

Textbooks

ENEE13019

Prescribed

Control Systems Engineering

Edition: 8th edn or later (2013 or later)

Authors: Nise, N.S.

John Wiley & Sons

Hoboken, NJ, USA

ISBN: 978-1-118-17051-9

Binding: Paperback

Additional Textbook Information

Both paper and eBook versions can be purchased at the CQUni Bookshop here: <http://bookshop.cqu.edu.au> (search on the Unit code).

[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

Sanath Alahakoon Unit Coordinator

s.alahakoon@cqu.edu.au

Kianoush Emami Unit Coordinator

k.emami@cqu.edu.au

Schedule

Week 1 - 12 Jul 2021

| Module/Topic | Chapter | Events and Submissions/Topic |
|---------------------------------|---|------------------------------|
| Introduction to Control Systems | Chapter 1: Introduction Week 1 Study Guide | |

Week 2 - 19 Jul 2021

| Module/Topic | Chapter | Events and Submissions/Topic |
|-----------------------------------|---|------------------------------|
| Representation of control systems | Chapter 2: Modeling in the Frequency Domain Chapter 5: Reduction of Multiple Subsystems Week 2, 3 Study Guide | |

Week 3 - 26 Jul 2021

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

Representation of control systems

Chapter 2: Modeling in the Frequency Domain
Chapter 5: Reduction of Multiple Subsystems
Week 2, 3 Study Guide

Week 4 - 02 Aug 2021

| Module/Topic | Chapter | Events and Submissions/Topic |
|--------------------------------------|---|------------------------------|
| Poles, zeros and the system response | Chapter 4: Time Response Chapter 7: Steady-State Errors Week 4, 5 Study Guide | |

Week 5 - 09 Aug 2021

| Module/Topic | Chapter | Events and Submissions/Topic |
|--------------------------------------|---|--|
| Poles, zeros and the system response | Chapter 4: Time Response Chapter 7: Steady-State Errors Week 4, 5 Study Guide | Assignment 1 Due: Week 5 Friday (13 Aug 2021) 11:59 pm AEST |

Vacation Week - 16 Aug 2021

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

Week 6 - 23 Aug 2021

| Module/Topic | Chapter | Events and Submissions/Topic |
|--------------|----------------------|------------------------------|
| Stability | Chapter 6: Stability | |

Week 7 - 30 Aug 2021

| Module/Topic | Chapter | Events and Submissions/Topic |
|-----------------------------|---|--|
| Overview of Digital Control | Chapter 13: Digital Control Systems Week 7 Study Guide | Residential school option 1: Labs in this unit will be held in Gladstone and Mackay campuses from 30th August till 1st September 2021. Online/Mixed Mode students may opt to attend in any campus depending on convenience. |

Week 8 - 06 Sep 2021

| Module/Topic | Chapter | Events and Submissions/Topic |
|---|--------------------|---|
| PID Control and State Space Design Techniques | Week 8 Study Guide | Residential school option 2: Labs in this unit will be held in Bundaberg, Rockhampton and Cairns campuses from 06th till 08th September 2021. Online/Mixed Mode students may opt to attend in any campus depending on convenience. |

Week 9 - 13 Sep 2021

| Module/Topic | Chapter | Events and Submissions/Topic |
|------------------------------------|--|------------------------------|
| Root Locus Based Controller Design | Chapter 8: Root Locus Techniques Chapter 9: Design Via Root Locus Week 9, 10 Study Guide | |

Week 10 - 20 Sep 2021

| Module/Topic | Chapter | Events and Submissions/Topic |
|------------------------------------|--|---|
| Root Locus Based Controller Design | Chapter 8: Root Locus Techniques Chapter 9: Design Via Root Locus Week 9, 10 Study Guide | Laboratory Report 1 Due: Week 10 Friday (24 Sept 2021) 11:59 pm AEST |

Week 11 - 27 Sep 2021

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

| | | |
|---|---|---|
| Frequency Response Based Controller Design | Chapter 10: Frequency Response Techniques Chapter 11: Design Via Frequency Response Week 11 Study Guide | Assignment 2 Due: Week 11 Friday (1 Oct 2021) 11:59 pm AEST |
| Week 12 - 04 Oct 2021 | | |
| Module/Topic | Chapter | Events and Submissions/Topic |
| Industrial Control Systems - PLCs and SCADA and Unit Review | Week 12 Study Guide | Laboratory Report 2 Due: Week 12 Friday (8 Oct 2021) 11:59 pm AEST |
| Review/Exam Week - 11 Oct 2021 | | |
| Module/Topic | Chapter | Events and Submissions/Topic |
| Topic Review: Students (No timetabled session) | | |
| Exam Week - 18 Oct 2021 | | |
| Module/Topic | Chapter | Events and Submissions/Topic |

Term Specific Information

Students may require Matlab/SIMULINK in order to complete Assignment 1. Matlab/SIMULINK can be installed free of charge by logging into Mathworks website through an account created using the CQUni email ID.

Assessment Tasks

1 Assignment 1

Assessment Type

Written Assessment

Task Description

Refer to the Moodle site for complete details of the assessment item. This is only a basic outline of the features relating to the assessment task. This assessment task will comprise questions, which require you to provide descriptive answers and detailed mathematical solutions in order to demonstrate your knowledge and understanding of the concepts and processes; including you providing your opinions, analysis and interpretation. Failure to adopt this approach will result in you obtaining a lower grade for your submission as you will not be appropriately demonstrating your knowledge and understanding. This assignment is from the content covered in weeks 1 to 2.

Assessment Due Date

Week 5 Friday (13 Aug 2021) 11:59 pm AEST

Scan and upload to the link provided in unit Moodle site.

Return Date to Students

Week 7 Monday (30 Aug 2021)

Marked Assignment will be returned for student's feedback within two weeks of the due date.

Weighting

20%

Minimum mark or grade

Students must score at least 50% of the allocated marks for this assignment.

Assessment Criteria

Refer to the Moodle site for complete details of the Assignment Assessment Criteria sheet. This is only a basic outline of the features relating to the assessment task. Each submission will be assessed for presentation and layout, correct procedure, analysis and accuracy and appropriate referencing. The major assessment criteria relate to Analysis & Interpretation, Communication and Information Literacy. Ensure you access and read the details outlined in the Assignment Assessment Criteria sheet before commencing the assessment item. As you undertake the assessment item ensure you address all assessment criteria outlined. Also, at the completion of the assessment item, prior to submission,

undertake an audit to ensure you have appropriately addressed all assessment criteria.

Referencing Style

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

Submission

Online

Submission Instructions

Scan and upload to the link provided in unit Moodle site.

Learning Outcomes Assessed

- Explain the principles of automatic control systems (analogue and/or digital) and typical associated control system building blocks
- Articulate the principles and applications of sensors and amplifiers; final control elements in an automatic control system (analogue and/or digital)

Graduate Attributes

- Communication
- Problem Solving
- Critical Thinking
- Information Literacy
- Information Technology Competence

2 Laboratory Report 1

Assessment Type

Laboratory/Practical

Task Description

Students will be formed into teams of generally 2-3 members for this assessment item. The laboratory experiments will be conducted in the following manner:

1. Both on-campus students and Online/Mixed mode students will have scheduled laboratory blocks in 5 CQUniversity campuses (Bundaberg, Gladstone, Rockhampton, Mackay and Cairns). Students can enroll to complete the laboratory experiments in any of those campuses.
2. Please check the class time table for the information about the scheduled sessions.
3. All students will submit team laboratory reports for this assessment. More information on the experiments and lab sheets will be made available on the unit Moodle site.

Assessment Due Date

Week 10 Friday (24 Sept 2021) 11:59 pm AEST

The assignment should be submitted electronically via the unit Moodle Site by the due date and time

Return Date to Students

Week 12 Friday (8 Oct 2021)

Marked Assignment will be returned for student's feedback within two weeks of the due date.

Weighting

10%

Minimum mark or grade

Students must score at least 50% of the allocated marks for this assignment.

Assessment Criteria

Refer to the Moodle site for complete details of the Laboratory Assessment Criteria sheet. This is only a basic outline of the features relating to the assessment task. Each submission will be assessed for presentation and layout, correct procedure, analysis and accuracy and appropriate referencing. The major assessment criteria relate to Data Collection & Analysis, Communication and Information Literacy. Ensure you access and read the details outlined in the Laboratory Assessment Criteria sheet before commencing the assessment item. As you undertake the assessment item ensure you address all assessment criteria outlined. Also, at the completion of the assessment item, prior to submission, undertake an audit to ensure you have appropriately addressed all assessment criteria.

Referencing Style

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

Submission

Online

Submission Instructions

The assignment should be submitted electronically via the unit Moodle Site by the due date and time

Learning Outcomes Assessed

- Investigate and report the process of analogue and/or digital controller design for a dynamic system; solved collaboratively or autonomously
- Communicate and document analogue and/or digital control system solutions, calculations and approaches, using correct terminology, symbols and diagrams.

Graduate Attributes

- Communication
- Problem Solving
- Critical Thinking
- Information Literacy
- Team Work
- Information Technology Competence

3 Laboratory Report 2

Assessment Type

Laboratory/Practical

Task Description

Students will be formed into teams of generally 2-3 members for this assessment item. The laboratory experiments will be conducted in the following manner:

1. Both on-campus students and Online/Mixed mode students will have scheduled laboratory blocks in 5 CQUniversity campuses (Bundaberg, Gladstone, Rockhampton, Mackay and Cairns). Students can enroll to complete the laboratory experiments in any of those campuses.
2. Please check the class time table for the information about the scheduled sessions.
3. All students will submit team laboratory reports for this assessment. More information on the experiments and lab sheets will be made available on the unit Moodle site.

Assessment Due Date

Week 12 Friday (8 Oct 2021) 11:59 pm AEST

The assignment should be submitted electronically via the unit Moodle Site by the due date and time

Return Date to Students

Exam Week Friday (22 Oct 2021)

Marked Assignment will be returned for student's feedback within two weeks of the due date.

Weighting

10%

Minimum mark or grade

Students must score at least 50% of the allocated marks for this assignment.

Assessment Criteria

Refer to the Moodle site for complete details of the Laboratory Assessment Criteria sheet. This is only a basic outline of the features relating to the assessment task. Each submission will be assessed for presentation and layout, correct procedure, analysis and accuracy and appropriate referencing. The major assessment criteria relate to Data Collection & Analysis, Communication and Information Literacy. Ensure you access and read the details outlined in the Laboratory Assessment Criteria sheet before commencing the assessment item. As you undertake the assessment item ensure you address all assessment criteria outlined. Also, at the completion of the assessment item, prior to submission, undertake an audit to ensure you have appropriately addressed all assessment criteria.

Referencing Style

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

Submission

Online

Submission Instructions

The assignment should be submitted electronically via the unit Moodle Site by the due date and time

Learning Outcomes Assessed

- Investigate and report the process of analogue and/or digital controller design for a dynamic system; solved collaboratively or autonomously
- Communicate and document analogue and/or digital control system solutions, calculations and approaches, using correct terminology, symbols and diagrams.

Graduate Attributes

- Communication
- Problem Solving
- Critical Thinking
- Information Literacy
- Team Work
- Information Technology Competence

4 Assignment 2

Assessment Type

Written Assessment

Task Description

Refer to the Moodle site for complete details of the assessment task. This is only a basic outline of the features relating to the assessment task. This assessment task will comprise questions, which require you to provide descriptive answers and detailed mathematical solutions in order to demonstrate your knowledge and understanding of the concepts and processes; including you providing your opinions, analysis and interpretation. Failure to adopt this approach will result in you obtaining a lower grade for your submission as you will not be appropriately demonstrating your knowledge and understanding. This assignment is from the content covered in weeks 1 to 7.

Assessment Due Date

Week 11 Friday (1 Oct 2021) 11:59 pm AEST

Make your individual submission to the link provided in Moodle site as a PDF/WORD file.

Return Date to Students

Exam Week Friday (22 Oct 2021)

Feedback will be provided through unit Moodle site.

Weighting

20%

Minimum mark or grade

Students must score at least 50% of the allocated marks for this assignment.

Assessment Criteria

Refer to the Moodle site for complete details of the Assignment Assessment Criteria sheet. This is only a basic outline of the features relating to the assessment task. Each submission will be assessed for presentation and layout, correct procedure, analysis and accuracy and appropriate referencing. The major assessment criteria relate to Analysis & Interpretation, Communication and Information Literacy. Ensure you access and read the details outlined in the Assignment Assessment Criteria sheet before commencing the assessment item. As you undertake the assessment item ensure you address all assessment criteria outlined. Also, at the completion of the assessment item, prior to submission, undertake an audit to ensure you have appropriately addressed all assessment criteria.

Referencing Style

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

Submission

Online

Submission Instructions

Make your individual submission to the link provided in Moodle site as a PDF/WORD file.

Learning Outcomes Assessed

- Evaluate the role of the analogue and/or digital controller in a control system
- Model and analyse the behaviour of dynamic systems and the controller in combination using appropriate

mathematical, graphical and computer-aided tools

Graduate Attributes

- Communication
- Problem Solving
- Critical Thinking
- Information Literacy
- Information Technology Competence

5 Take home examination

Assessment Type

Take Home Exam

Task Description

This take home examination will be monitored through a ZOOM session and students will have to provide written answers to some questions.

1. Examination will be time scheduled and will take place for everyone at the same time.
2. Each student stays home with a device (preferably a laptop) essentially having a camera through which we can watch the student in a ZOOM session during the examination (please make sure you have a device with these requirements functioning).
3. That ZOOM link needs to be open throughout the exam.
4. The examination paper will be loaded to the Moodle so that students only can access it during examination period.
5. The student uses blank A4 papers (single side) to write answers.
6. At the end of the examination, he/she first takes photos of all written pages and email invigilator.
7. Later he/she scan the pages and upload to Moodle within a specified time at the end of examination.
8. Examination date and time will be within the standard examination period for Term 2-2020.

Assessment Due Date

This will be held during examination week. The date and time of the examination will be notified later.

Return Date to Students

Outcomes will be published with the grade certification.

Weighting

40%

Minimum mark or grade

Students must score at least 50% of the allocated marks for this assignment.

Assessment Criteria

No Assessment Criteria

Referencing Style

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

Submission

Online

Submission Instructions

Make your individual submission to the link provided in Moodle site as a PDF/WORD file

Learning Outcomes Assessed

- Explain the principles of automatic control systems (analogue and/or digital) and typical associated control system building blocks
- Articulate the principles and applications of sensors and amplifiers; final control elements in an automatic control system (analogue and/or digital)
- Evaluate the role of the analogue and/or digital controller in a control system
- Model and analyse the behaviour of dynamic systems and the controller in combination using appropriate mathematical, graphical and computer-aided tools

Graduate Attributes

- Communication
- Problem Solving
- Critical Thinking

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