



BLSV14016 Fire Engineering and Performance

Term 2 - 2023

Profile information current as at 01/05/2024 08:41 am

All details in this unit profile for BLSV14016 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 covers the use of alternative and performance-based solutions for building and fire engineering under the Building Code of Australia (BCA) and the formulation of risk management strategies to address the occurrence of fires within buildings. Students will develop knowledge in problem-solving, personal and interpersonal skills using different communication modes.

Details

Career Level: *Undergraduate*

Unit Level: *Level 4*

Credit Points: 6

Student Contribution Band: 8

Fraction of Full-Time Student Load: 0.125

Pre-requisites or Co-requisites

Prerequisites: BLAR11051- Construction Legislation 1 (or BLAR12034- Building Legislation 1) AND BLSV12023- Fire Safety Design

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 - 2023

- Online

Attendance Requirements

All on-campus students are expected to attend scheduled classes - in some units, these classes are identified as a mandatory (pass/fail) component and attendance is compulsory. International students, on a student visa, must maintain a full time study load and meet both attendance and academic progress requirements in each study period (satisfactory attendance for International students is defined as maintaining at least an 80% attendance record).

Website

[This unit has a website, within the Moodle system, which is available two weeks before the start of term. It is important that you visit your Moodle site throughout the term. Please visit Moodle for more information.](#)

Class and Assessment Overview

Recommended Student Time Commitment

Each 6-credit Undergraduate unit at CQUniversity requires an overall time commitment of an average of 12.5 hours of study per week, making a total of 150 hours for the unit.

Class Timetable

[Regional Campuses](#)

Bundaberg, Cairns, Emerald, Gladstone, Mackay, Rockhampton, Townsville

[Metropolitan Campuses](#)

Adelaide, Brisbane, Melbourne, Perth, Sydney

Assessment Overview

1. **Written Assessment**

Weighting: 30%

2. **Written Assessment**

Weighting: 30%

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 Unit evaluation

Feedback

The assignments were invaluable in understanding the AFEG and the application of fire safety engineering.

Recommendation

The unit will continue to use practical cases for assignments.

Feedback from Unit evaluation

Feedback

The contents could be updated with more recent knowledge/research.

Recommendation

Update the unit's contents with more recent knowledge. A Unit Update Proposal will be undertaken following the Post Five Year Course Review.

Unit Learning Outcomes

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

1. Discuss the use of alternative solutions for complying with the Building Code of Australia (BCA)
2. Propose performance-based solutions for fire engineering requirements for buildings
3. Formulate risk management options to reduce the occurrence of a fire in a building
4. Engage in the solution of routine and unfamiliar problems using information, technology and logic
5. Practice personal and interpersonal skills
6. Use effectively a range of appropriate communication modes.

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 - 30%	•	•	•	•	•	•
2 - Written Assessment - 30%	•	•	•	•	•	•
3 - Written Assessment - 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 - 30%	•	•	•	•		•		•		
2 - Written Assessment - 30%	•	•	•	•		•		•		
3 - Written Assessment - 40%	•	•	•	•				•		

Textbooks and Resources

Textbooks

There are no required textbooks.

IT Resources

You will need access to the following IT resources:

- CQUniversity Student Email
- Internet
- Unit Website (Moodle)
- Microphone and headset
- MS Office or equivalent software
- Webcam

Referencing Style

All submissions for this unit must use the referencing style: [Harvard \(author-date\)](#)
For further information, see the Assessment Tasks.

Teaching Contacts

Peter F Lawrence (Engineering) Unit Coordinator
p.lawrence1@cqu.edu.au

Schedule

Week 1 - 10 Jul 2023

Module/Topic	Chapter	Events and Submissions/Topic
Topic 1: Performance based solutions and the BCA which is now the National Construction Code (NCC)	Please refer to the unit Moodle site for specific learning resources and study materials relevant to this topic.	

Week 2 - 17 Jul 2023

Module/Topic	Chapter	Events and Submissions/Topic
Topic 2: Fire Safety Engineering and the International Fire Engineering Guidelines	Please refer to the unit Moodle site for specific learning resources and study materials relevant to this topic.	

Week 3 - 24 Jul 2023

Module/Topic	Chapter	Events and Submissions/Topic
Topic 3: Implementation, Certification and Maintenance of Fire Engineered Solutions	Please refer to the unit Moodle site for specific learning resources and study materials relevant to this topic.	

Week 4 - 31 Jul 2023

Module/Topic	Chapter	Events and Submissions/Topic
Topic 4: Human Behaviour, Movement and Other Characteristics	Please refer to the unit Moodle site for specific learning resources and study materials relevant to this topic.	

Week 5 - 07 Aug 2023

Module/Topic	Chapter	Events and Submissions/Topic
Topic 5: Fire Detection, Suppression and Extinguishment	Please refer to the unit Moodle site for specific learning resources and study materials relevant to this topic.	A1 Written Assessment Due: Week 5 Friday (11 Aug 2023) 11:45 pm AEST

Vacation Week - 14 Aug 2023

Module/Topic	Chapter	Events and Submissions/Topic
Vacation Week		

Week 6 - 21 Aug 2023

Module/Topic	Chapter	Events and Submissions/Topic
Topic 6: Fire Brigade and Emergency Services Intervention and Guidance	Please refer to the unit Moodle site for specific learning resources and study materials relevant to this topic.	

Week 7 - 28 Aug 2023

Module/Topic	Chapter	Events and Submissions/Topic
Topic 7: Fire Tests Used to Determine Building Material Combustibility and Early Fire Hazard Indices	Please refer to the unit Moodle site for specific learning resources and study materials relevant to this topic.	

Week 8 - 04 Sep 2023

Module/Topic	Chapter	Events and Submissions/Topic
Topic 8: Risk Management and Hazard Identification	Please refer to the unit Moodle site for specific learning resources and study materials relevant to this topic.	

Week 9 - 11 Sep 2023

Module/Topic	Chapter	Events and Submissions/Topic
Topic 9: Information, Technology and Logic	Please refer to the unit Moodle site for specific learning resources and study materials relevant to this topic.	

Week 10 - 18 Sep 2023

Module/Topic	Chapter	Events and Submissions/Topic
Topic 10: Building Characteristics, Design, Layout and Space Planning	Please refer to the unit Moodle site for specific learning resources and study materials relevant to this topic.	A2 Written Assessment Due: Week 10 Friday (22 Sept 2023) 11:45 pm AEST

Week 11 - 25 Sep 2023

Module/Topic	Chapter	Events and Submissions/Topic
Topic 11: Special Uses and Fire Engineering - Assembly Buildings	Please refer to the unit Moodle site for specific learning resources and study materials relevant to this topic.	

Week 12 - 02 Oct 2023

Module/Topic	Chapter	Events and Submissions/Topic
Topic 12: Special Uses and Fire Engineering - High Rises	Please refer to the unit Moodle site for specific learning resources and study materials relevant to this topic.	

Review/Exam Week - 09 Oct 2023

Module/Topic	Chapter	Events and Submissions/Topic
No class Unit review and exam period begins		WRITTEN ASSESSMENT Due: Review/Exam Week Wednesday (11 Oct 2023) 11:45 pm AEST

Exam Week - 16 Oct 2023

Module/Topic	Chapter	Events and Submissions/Topic
No class Exam period concludes.		

Assessment Tasks

1 A1 Written Assessment

Assessment Type

Written Assessment

Task Description

Question 1 will take you out of your comfort zone as a building surveyor where you normally address and control hazards and risks in buildings as per the prescriptive Deemed to Satisfy Provisions of the BCA. Think about each occupancy from a performance based point of view.

Question 2 will challenge you to think about egress for persons with disabilities. In discussions with industry professionals about this subject, you often find that people will either be for accessible egress or be against it or somewhere in the middle. Your task is to provide a detailed argument on accessible egress

Assessment Due Date

Week 5 Friday (11 Aug 2023) 11:45 pm AEST

It is recommended the Moodle submission remain in draft form until you have viewed the Turnitin report and made any necessary amendments before lodging by the due date and time.

Return Date to Students

Week 6 Friday (25 Aug 2023)

Students will be advised if a delay emerges.

Weighting

30%

Assessment Criteria

Question 1 (2 marks per use) = 16 Marks

Question 2 (5 Marks per each argument) = 10 Marks

Presentation, layout, spelling, grammar and references = 4 Marks

The assessment will be assessed on the following criteria:

- Clarity and succinctness of expression.
- Adequate coverage of topics discussed.
- Use of supporting information where appropriate and associated references.
- Original thought.
- Overall presentation and the ability to communicate using correct spelling, grammar and punctuation.
- Where appropriate the use of graphs, illustrations and other diagrams that visually support the context of your submission.
- Demonstration of the core knowledge associated with this unit and appropriate application of this knowledge.

Referencing Style

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

Submission

Online

Submission Instructions

It is recommended the Moodle submission remain in draft form until you have viewed the Turnitin report and made any necessary amendments before lodging by the due date and time.

Learning Outcomes Assessed

- Discuss the use of alternative solutions for complying with the Building Code of Australia (BCA)
- Propose performance-based solutions for fire engineering requirements for buildings
- Formulate risk management options to reduce the occurrence of a fire in a building
- Engage in the solution of routine and unfamiliar problems using information, technology and logic
- Practice personal and interpersonal skills
- Use effectively a range of appropriate communication modes.

Graduate Attributes

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

2 A2 Written Assessment

Assessment Type

Written Assessment

Task Description

This assignment looks at real data and information. All the fire data that is provided with this assignment has permitted change in building regulation and offers you an opportunity to understand how this occurs. This assignment will require you to research a fatal fire event that was investigated by a coroner. As a building surveyor we strive to ensure buildings are safe to occupy and use, but we also need to learn about events where things go wrong. In addition, this assignment will look at emergency incidents in entertainment venues and the World Trade Centre terrorist attack of September 11 2001.

Assessment Due Date

Week 10 Friday (22 Sept 2023) 11:45 pm AEST

It is recommended that your submissions in Moodle remain in draft form until you have viewed the Turnitin report and made any necessary corrections to your referencing. After this process, make your final submission.

Return Date to Students

Week 12 Friday (6 Oct 2023)

Students will be advised if a delay emerges.

Weighting

30%

Assessment Criteria

Part 1 = 10 Marks (5 questions)

Part 2 = 10 marks (4 questions)

Part 3 = 6 marks (2 questions)

Layout, presentation, spelling, grammar and references=4 Marks

Total of all Parts= 30 Marks

The assessment will be assessed on the following criteria:

- Clarity and succinctness of expression.
- Adequate coverage of topics discussed.
- Use of supporting information where appropriate and associated references.
- Original thought.
- Overall presentation and the ability to communicate using correct spelling, grammar and punctuation.
- Where appropriate the use of graphs, illustrations and other diagrams that visually support the context of your submission.
- Demonstration of the core knowledge associated with this unit and appropriate application of this knowledge.

Referencing Style

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

Submission

Online

Submission Instructions

It is recommended the Moodle submission remain in draft form until you have viewed the Turnitin report and made any necessary amendments before lodging by the due date and time.

Learning Outcomes Assessed

- Discuss the use of alternative solutions for complying with the Building Code of Australia (BCA)
- Propose performance-based solutions for fire engineering requirements for buildings
- Formulate risk management options to reduce the occurrence of a fire in a building
- Engage in the solution of routine and unfamiliar problems using information, technology and logic
- Practice personal and interpersonal skills
- Use effectively a range of appropriate communication modes.

Graduate Attributes

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

3 WRITTEN ASSESSMENT

Assessment Type

Written Assessment

Task Description

This assessment will place you in the position of a building surveyor charged with the assessment of a proposed fire engineered performance solution for a commercial project facing time and financial constraints. Your report will include:

- Adequate reasons why the proposal is satisfactory/ unsatisfactory
- Reference to the provided Performance Requirements
- Reference to the International Fire Engineering Guidelines
- Reference to the National Construction Code
- In-depth discussion on each of the elements contained in the report
- Outlining next steps in the process from your position

Assessment Due Date

Review/Exam Week Wednesday (11 Oct 2023) 11:45 pm AEST

It is recommended the Moodle submission remain in draft form until you have viewed the Turnitin report and made any necessary amendments before lodging by the due date and time.

Return Date to Students

Saturday 28/10/23. Students will be advised if a delay emerges.

Weighting

40%

Minimum mark or grade

20/40 (50%)

Assessment Criteria

The assessment will be assessed on the following criteria:

- Clarity and succinctness of expression.
- Adequate coverage of topics discussed.
- Use of supporting information where appropriate and associated references.
- Original thought.
- Overall presentation and the ability to communicate using correct spelling, grammar and punctuation.
- Where appropriate the use of graphs, illustrations and other diagrams that visually support the context of your submission.
- Demonstration of the core knowledge associated with this unit and appropriate application of this knowledge.

Referencing Style

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

Submission

Online

Submission Instructions

Please refer to the Moodle site for specific assessment submission criteria.

Learning Outcomes Assessed

- Discuss the use of alternative solutions for complying with the Building Code of Australia (BCA)
- Propose performance-based solutions for fire engineering requirements for buildings
- Engage in the solution of routine and unfamiliar problems using information, technology and logic

Graduate Attributes

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