

Profile information current as at 29/04/2024 06:47 pm

All details in this unit profile for BLAR11032 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 introduce you to basic systems and calculations in structural design and stability for residential and commercial buildings.

## **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

BLAR11049 Built Environment Communication and Skills Or COMM11003 Professional and Technical Communication (before 2012 term 1)

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 <u>Assessment Policy and Procedure (Higher Education Coursework)</u>.

# Offerings For Term 1 - 2022

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: 5%

2. Written Assessment

Weighting: 20%

3. Written Assessment

Weighting: 5%

4. Written Assessment

Weighting: 30%

5. Written Assessment

Weighting: 5%

6. Written Assessment

Weighting: 35%

# 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 <u>University's Grades and Results Policy</u> 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 <u>CQUniversity Policy site</u>.

# 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 Moodle Unit Evaluation

#### **Feedback**

The unit content was to the point and understood. The Zoom sessions were very helpful in its entirety.

#### Recommendation

Good to know that the content and resources were useful towards learning progress and knowledge development.

## Feedback from Moodle Unit Evaluation

#### Feedback

Lecturer provided additional explanation of subject matter as required to assist understanding.

#### Recommendation

Thanks for the feedback. Nice to see Lecturer helped the student/s to his/her level best.

# **Unit Learning Outcomes**

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

- 1. Explain the concept of equilibrium, determine loading and load paths in building structures and calculate supporting reactions
- 2. Calculate the properties of sections including first and second moment of area, structural determinacy and indeterminacy, bending and shear forces, bending moments, shear and bending stresses, deflections in beams, axial forces in trusses and column stresses, capacity and buckling
- 3. Apply the principles of structural analysis to determinate and indeterminate structures including the design of beams and columns and the bracing of rigid and pin jointed frames
- 4. Use basic computational methods to solve structural problems associated with residential and commercial buildings.

# Alignment of Learning Outcomes, Assessment and Graduate Attributes

|   |              |   |                       |   |                       |   | 1                 |    |                       |   |                   |
|---|--------------|---|-----------------------|---|-----------------------|---|-------------------|----|-----------------------|---|-------------------|
| _ | N/A<br>Level | • | Introductory<br>Level | • | Intermediate<br>Level | • | Graduate<br>Level |    | Professional<br>Level | 0 | Advanced<br>Level |
|   |              |   |                       |   |                       |   |                   | Ξ. | •                     |   |                   |

# Alignment of Assessment Tasks to Learning Outcomes

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

| ssessment Tasks Learn                                    |   |     |     |                   | ng Outcomes |   |   |   |   |    |  |  |
|--|---|-----|-----|-------------------|-------------|---|---|---|---|----|--|--|
|  |   | 1   | _   |                   | 2           |   | 3 |   |   | 4  |  |  |
| 6 - Written Assessment - 35%                             |   | •   | •   |                   | •           |   | • |   |   | •  |  |  |
| Alignment of Craduate Attributes to Lear                 | aina Out  | con | 205 |                   |             |   |   |   |   |    |  |  |
| Graduate Attributes  Graduate Attributes                 | nment of Graduate Attributes to Learning Outcom |     |     | Learning Outcomes |             |   |   |   |   |    |  |  |
|  |   |     | _   | 1                 | 9           | 2 |   | 3 |   | 4  |  |  |
| 1 - Communication  |   |     |     | •                 |             | • |   | • |   | •  |  |  |
| 2 - Problem Solving                                      |   |     |     | •                 |             |   |   |   |   | •  |  |  |
| 3 - Critical Thinking                                    |   |     |     | •                 |             |   |   |   |   | •  |  |  |
| 4 - Information Literacy                                 |   |     |     | •                 |             |   |   |   |   |    |  |  |
| 5 - Team Work  |   |     |     |                   |             |   |   |   |   |    |  |  |
| 6 - Information Technology Competence                    |   |     |     | •                 |             | • |   |   |   | •  |  |  |
| 7 - Cross Cultural Competence                            |   |     |     |                   |             |   |   |   |   |    |  |  |
| 8 - Ethical practice                                     |   |     |     |                   |             | • |   |   |   | •  |  |  |
| 9 - Social Innovation                                    |   |     |     |                   |             |   |   |   |   |    |  |  |
| 10 - Aboriginal and Torres Strait Islander Cultures      |   |     |     |                   |             |   |   |   |   |    |  |  |
| Alignment of Associanent Tasks to Cradu                  | ata Attri                                       | ht. | 0.0 |                   |             |   |   |   |   |    |  |  |
| Alignment of Assessment Tasks to Gradu  Assessment Tasks |   |     |     | ribut             | es          |   |   |   |   |    |  |  |
|  | 1   | 2   | 3   | 4                 | 5           | 6 | 7 | 8 | 9 | 10 |  |  |
| 1 - Written Assessment - 5%                              |   | •   | •   | •                 |             | • |   | • |   |    |  |  |
| 2 - Written Assessment - 20%                             | •   | •   | •   | •                 |             | • |   | • | • |    |  |  |
| 3 - Written Assessment - 5%                              |   | •   | •   | •                 |             | • |   | • |   |    |  |  |
| 4 - Written Assessment - 30%                             | •   | •   | •   | •                 |             | • |   | • | • |    |  |  |
| 5 - Written Assessment - 5%                              | •   | •   | •   | •                 |             | • |   | • |   |    |  |  |
| 6 - Written Assessment - 35%                             | •   | •   | •   | •                 |             | • |   | • | • |    |  |  |

# Textbooks and Resources

# **Textbooks**

BLAR11032

#### **Prescribed**

## **Principles Of Structure**

Edition: 5th (2013)

Authors: Wyatt, KJ & Hough, R

Newsouth Books Sydney , NSW , Australia ISBN: 1742232930 Binding: Hardcover

## **Additional Textbook Information**

Copies can be purchased at the CQUni Bookshop. Search on the unit code here: http://bookshop.cgu.edu.au

## View textbooks at the CQUniversity Bookshop

# **IT Resources**

## You will need access to the following IT resources:

- CQUniversity Student Email
- Internet
- Unit Website (Moodle)
- Computer headset (microphone speaker combo)
- Microsoft Office or equivalent software
- Web camera (webcam)

# Referencing Style

All submissions for this unit must use the referencing style: <u>Harvard (author-date)</u> For further information, see the Assessment Tasks.

# **Teaching Contacts**

## Peter F Lawrence (Engineering) Unit Coordinator

p.lawrence1@cqu.edu.au

# Schedule

| Week 1 - 07 Mar 2022                         |                                   |  |  |  |  |  |
|--|-----------------------------------|--|--|--|--|--|
| Module/Topic                                 | Chapter                           | <b>Events and Submissions/Topic</b>  |  |  |  |  |
| 1:Equilibrium and building structures        | Wyatt & Hough (2013) chapter 1, 4 |  |  |  |  |  |
| Week 2 - 14 Mar 2022                         |                                   |  |  |  |  |  |
| Module/Topic                                 | Chapter                           | <b>Events and Submissions/Topic</b>  |  |  |  |  |
| 2:Load and load paths, support conditions    | Wyatt & Hough (2013) chapter 1, 3 | Assessment 1 - Short Written<br>Response Due: Week 2 Friday (18<br>Mar 2022) 11:45 pm AEST |  |  |  |  |
| Week 3 - 21 Mar 2022                         |                                   |  |  |  |  |  |
| Module/Topic                                 | Chapter                           | <b>Events and Submissions/Topic</b>  |  |  |  |  |
| 3:Determinacy, indeterminacy and instability | Wyatt & Hough (2013) chapter 1    |  |  |  |  |  |

| Week 4 - 28 Mar 2022                                       |  |   |
|--|--|---|
| Module/Topic   | Chapter  | <b>Events and Submissions/Topic</b>   |
| 4:Section properties                                       | Wyatt & Hough (2013) chapter 1, 2, 8                             | Assessment 2 - Written Assessment Due: Week 4 Friday (1 Apr 2022) 11:45 pm AEST             |
| Week 5 - 04 Apr 2022                                       |  |   |
| Module/Topic   | Chapter  | Events and Submissions/Topic  |
| 5:Analysis of statically determinate trusses               | Wyatt & Hough (2013) chapter 2, 5                                |   |
| Vacation Week - 11 Apr 2022                                |  |   |
| Module/Topic   | Chapter  | Events and Submissions/Topic  |
| No scheduled class   | Consider using this week to catch-up or work on an assessment.   |   |
| Week 6 - 18 Apr 2022                                       |  |   |
| Module/Topic   | Chapter  | <b>Events and Submissions/Topic</b>   |
| 6:Beams shear force and bending moment                     | Wyatt & Hough (2013) chapter 7                                   | Assessment 3 - Short Written<br>Response Due: Week 6 Friday (22 Apr<br>2022) 11:45 pm AEST  |
| Week 7 - 25 Apr 2022                                       |  |   |
| Module/Topic   | Chapter  | <b>Events and Submissions/Topic</b>   |
| 7.Bending and shear stresses                               | Wyatt & Hough (2013) chapter 9, 10                               |   |
| Week 8 - 02 May 2022                                       |  |   |
| Module/Topic   | Chapter  | <b>Events and Submissions/Topic</b>   |
| 8:Compression and tension stresses                         | Wyatt & Hough (2013) chapter 2                                   | Assessment 4 - Written<br>Assessment Due: Week 8 Friday (6<br>May 2022) 11:45 pm AEST       |
| Week 9 - 09 May 2022                                       |  |   |
| Module/Topic   | Chapter  | <b>Events and Submissions/Topic</b>   |
| 9:Deflections  | Wyatt & Hough (2013) chapter 11                                  |   |
| Week 10 - 16 May 2022                                      |  |   |
| Module/Topic   | Chapter  | <b>Events and Submissions/Topic</b>   |
| 10:Design of beams   | Wyatt & Hough (2013) chapter 12                                  | Assessment 5 - Short Written<br>Response Due: Week 10 Friday (20<br>May 2022) 11:45 pm AEST |
| Week 11 - 23 May 2022                                      |  |   |
| Module/Topic   | Chapter  | Events and Submissions/Topic  |
| 11:Bracing of buildings                                    | Wyatt & Hough (2013) chapter 6                                   |   |
| Week 12 - 30 May 2022                                      |  |   |
| Module/Topic   | Chapter  | Events and Submissions/Topic  |
| 12:Computer applications in structural analysis and design | Please refer to the Moodle unit site for additional information. |   |
| Review/Exam Week - 06 Jun 2022                             |  |   |
| Module/Topic   | Chapter  | <b>Events and Submissions/Topic</b>   |
| Review   |  | Assessment 6 - Written Assessment Due: Review/Exam Week Friday (10 June 2022) 11:45 pm AEST |
| Exam Week - 13 Jun 2022                                    |  |   |
| Module/Topic   | Chapter  | Events and Submissions/Topic  |
| There is no exam for this unit.                            |  |   |

# **Assessment Tasks**

# 1 Assessment 1 - Short Written Response

### **Assessment Type**

Written Assessment

#### **Task Description**

This assessment relates to learning outcomes 1 and 2. Assessment 1 will require you to research and answer a question that explores common structural engineering concepts.

#### **Assessment Due Date**

Week 2 Friday (18 Mar 2022) 11:45 pm AEST

#### **Return Date to Students**

Week 4 Thursday (31 Mar 2022)

### Weighting

5%

## Minimum mark or grade

Aggregate mark for A1+A3+A5 to be 7.5/15 or higher

#### **Assessment Criteria**

This assessment relates to learning outcomes 1 and 2. Assessment 1 will require you to research and answer a question that explores common structural engineering concepts.

As with all assessments, formatting and presentation is really important, technical accuracy and referencing where required is paramount with an overarching requirement for demonstrating your answer / submission / design with clarity. Your assessment should be produced in electronic format either as

- a single word-processed document, or
- a single pdf format document.

Submission file is lodged through the assessment link in Moodle, by following the on-screen instructions. Work will be processed through the similarity detection software, Turnitin.

You must ensure that all of the work is your own, in line with University requirements.

Note: you will find further support material for this assessment on the unit Moodle site.

The assessment will be assessed on the following basis:

Clarity of expression and comprehensive coverage of issues

Use of quality supporting documentation as appropriate

Use of original thought and content

Overall presentation and ability to communicate using correct spelling, grammar and punctuation and the use of appropriate diagrams and other visual communication.

Demonstration of core knowledge and demonstration of appropriate application of knowledge.

#### **Referencing Style**

• Harvard (author-date)

## **Submission**

Online

#### **Submission Instructions**

Submit as a single PDF or DOCX file into the Moodle Assessment portal.

## **Learning Outcomes Assessed**

- Explain the concept of equilibrium, determine loading and load paths in building structures and calculate supporting reactions
- Calculate the properties of sections including first and second moment of area, structural determinacy and indeterminacy, bending and shear forces, bending moments, shear and bending stresses, deflections in beams, axial forces in trusses and column stresses, capacity and buckling

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

Ethical practice

# 2 Assessment 2 - Written Assessment

## **Assessment Type**

Written Assessment

#### **Task Description**

This assessment relates to learning outcomes 1, 2 and 4. Assessment 2 will require you to research and answer a number of guestions that explore common structural engineering concepts.

#### **Assessment Due Date**

Week 4 Friday (1 Apr 2022) 11:45 pm AEST

#### **Return Date to Students**

Week 6 Thursday (21 Apr 2022)

#### Weighting

20%

#### **Assessment Criteria**

This assessment relates to learning outcomes 1 and 2. Assessment 2 will require you to research and answer a number of questions that explore common structural engineering concepts.

As with all assessments, formatting and presentation is really important, technical accuracy and referencing where required is paramount with an overarching requirement for demonstrating your answer / submission / design with clarity. Your assessment should be produced in electronic format either as

- a single word-processed document, or
- a single pdf format document.

Submission file is lodged through the assessment link in Moodle, by following the on-screen instructions. Work will be processed through the similarity detection software, Turnitin.

You must ensure that all of the work is your own, in line with University requirements.

Note: you will find further support material for this assessment on the unit Moodle site.

The assessment will be assessed on the following basis:

Clarity of expression and comprehensive coverage of issues

Use of quality supporting documentation as appropriate

Use of original thought and content

Overall presentation and ability to communicate using correct spelling, grammar and punctuation and the use of appropriate diagrams and other visual communication.

Demonstration of core knowledge and demonstration of appropriate application of knowledge.

#### **Referencing Style**

• Harvard (author-date)

### **Submission**

Online

#### **Submission Instructions**

Submit as a single PDF or DOCX file into the Moodle Assessment portal.

# **Learning Outcomes Assessed**

- Explain the concept of equilibrium, determine loading and load paths in building structures and calculate supporting reactions
- Calculate the properties of sections including first and second moment of area, structural determinacy and indeterminacy, bending and shear forces, bending moments, shear and bending stresses, deflections in beams, axial forces in trusses and column stresses, capacity and buckling
- Use basic computational methods to solve structural problems associated with residential and commercial buildings.

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

Social Innovation

# 3 Assessment 3 - Short Written Response

## **Assessment Type**

Written Assessment

### **Task Description**

This assessment relates to learning outcomes 1 and 3. Assessment 3 will require you to research and answer a question that explores common structural engineering concepts.

#### **Assessment Due Date**

Week 6 Friday (22 Apr 2022) 11:45 pm AEST

#### **Return Date to Students**

Week 8 Thursday (5 May 2022)

### Weighting

5%

#### Minimum mark or grade

Aggregate mark for A1+A3+A5 to be 7.5/15 or higher

#### **Assessment Criteria**

This assessment relates to learning outcomes 1 and 3. Assessment 3 will require you to research and answer a question that explores common structural engineering concepts.

As with all assessments, formatting and presentation is really important, technical accuracy and referencing where required is paramount with an overarching requirement for demonstrating your answer / submission / design with clarity. Your assessment should be produced in electronic format either as

- a single word-processed document, or
- a single pdf format document.

Submission file is lodged through the assessment link in Moodle, by following the on-screen instructions. Work will be processed through the similarity detection software, Turnitin.

You must ensure that all of the work is your own, in line with University requirements.

Note: you will find further support material for this assessment on the unit Moodle site.

The assessment will be assessed on the following basis:

Clarity of expression and comprehensive coverage of issues

Use of quality supporting documentation as appropriate

Use of original thought and content

Overall presentation and ability to communicate using correct spelling, grammar and punctuation and the use of appropriate diagrams and other visual communication.

Demonstration of core knowledge and demonstration of appropriate application of knowledge.

## **Referencing Style**

Harvard (author-date)

#### **Submission**

Online

## **Submission Instructions**

Submit as a single PDF or DOCX file into the Moodle Assessment portal.

### **Learning Outcomes Assessed**

- Explain the concept of equilibrium, determine loading and load paths in building structures and calculate supporting reactions
- Apply the principles of structural analysis to determinate and indeterminate structures including the design of beams and columns and the bracing of rigid and pin jointed frames

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

## 4 Assessment 4 - Written Assessment

#### **Assessment Type**

Written Assessment

#### **Task Description**

This assessment relates to learning outcomes 1 to 4. Assessment 4 will require you to research and answer a number of questions that explore common structural engineering concepts.

#### **Assessment Due Date**

Week 8 Friday (6 May 2022) 11:45 pm AEST

#### **Return Date to Students**

Week 10 Thursday (19 May 2022)

#### Weighting

30%

#### **Assessment Criteria**

This assessment relates to learning outcomes 1 to 4. Assessment 4 will require you to research and answer a number of questions that explore common structural engineering concepts.

As with all assessments, formatting and presentation is really important, technical accuracy and referencing where required is paramount with an overarching requirement for demonstrating your answer / submission / design with clarity. Your assessment should be produced in electronic format either as

- a single word-processed document, or
- a single pdf format document.

Submission file is lodged through the assessment link in Moodle, by following the on-screen instructions. Work will be processed through the similarity detection software, Turnitin.

You must ensure that all of the work is your own, in line with University requirements.

Note: you will find further support material for this assessment on the unit Moodle site.

The assessment will be assessed on the following basis:

Clarity of expression and comprehensive coverage of issues

Use of quality supporting documentation as appropriate

Use of original thought and content

Overall presentation and ability to communicate using correct spelling, grammar and punctuation and the use of appropriate diagrams and other visual communication.

Demonstration of core knowledge and demonstration of appropriate application of knowledge.

#### **Referencing Style**

• Harvard (author-date)

## **Submission**

Online

#### **Submission Instructions**

Submit as a single PDF or DOCX file into the Moodle Assessment portal.

## **Learning Outcomes Assessed**

- Explain the concept of equilibrium, determine loading and load paths in building structures and calculate supporting reactions
- Calculate the properties of sections including first and second moment of area, structural determinacy and indeterminacy, bending and shear forces, bending moments, shear and bending stresses, deflections in beams, axial forces in trusses and column stresses, capacity and buckling
- Apply the principles of structural analysis to determinate and indeterminate structures including the design of beams and columns and the bracing of rigid and pin jointed frames
- Use basic computational methods to solve structural problems associated with residential and commercial buildings.

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

- Ethical practice
- Social Innovation

# 5 Assessment 5 - Short Written Response

### **Assessment Type**

Written Assessment

#### **Task Description**

This assessment relates to learning outcomes 1 and 3. Assessment 5 will require you to research and answer a question that explores common structural engineering concepts.

#### **Assessment Due Date**

Week 10 Friday (20 May 2022) 11:45 pm AEST

#### **Return Date to Students**

Week 12 Thursday (2 June 2022)

#### Weighting

5%

### Minimum mark or grade

Aggregate mark for A1+A3+A5 to be 7.5/15 or higher

#### **Assessment Criteria**

This assessment relates to learning outcomes 1 and 3. Assessment 5 will require you to research and answer a question that explores common structural engineering concepts.

As with all assessments, formatting and presentation is really important, technical accuracy and referencing where required is paramount with an overarching requirement for demonstrating your answer / submission / design with clarity. Your assessment should be produced in electronic format either as

- a single word-processed document, or
- a single pdf format document.

Submission file is lodged through the assessment link in Moodle, by following the on-screen instructions. Work will be processed through the similarity detection software, Turnitin.

You must ensure that all of the work is your own, in line with University requirements.

Note: you will find further support material for this assessment on the unit Moodle site.

The assessment will be assessed on the following basis:

Clarity of expression and comprehensive coverage of issues

Use of quality supporting documentation as appropriate

Use of original thought and content

Overall presentation and ability to communicate using correct spelling, grammar and punctuation and the use of appropriate diagrams and other visual communication.

Demonstration of core knowledge and demonstration of appropriate application of knowledge.

### **Referencing Style**

• Harvard (author-date)

## **Submission**

Online

#### **Submission Instructions**

Submit as a single PDF or DOCX file into the Moodle Assessment portal.

## **Learning Outcomes Assessed**

- Explain the concept of equilibrium, determine loading and load paths in building structures and calculate supporting reactions
- Apply the principles of structural analysis to determinate and indeterminate structures including the design of beams and columns and the bracing of rigid and pin jointed frames

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

Ethical practice

# 6 Assessment 6 - Written Assessment

## **Assessment Type**

Written Assessment

#### **Task Description**

This assessment relates to learning outcomes 1 to 4. Assessment 6 will require you to research and answer a number of questions that explore common structural engineering concepts.

#### **Assessment Due Date**

Review/Exam Week Friday (10 June 2022) 11:45 pm AEST

#### **Return Date to Students**

Thursday 30/06/22

### Weighting

35%

#### Minimum mark or grade

14/35

#### **Assessment Criteria**

This assessment relates to learning outcomes 1 to 4. Assessment 6 will require you to research and answer a number of questions that explore common structural engineering concepts.

As with all assessments, formatting and presentation is really important, technical accuracy and referencing where required is paramount with an overarching requirement for demonstrating your answer / submission / design with clarity. Your assessment should be produced in electronic format either as

- a single word-processed document, or
- a single pdf format document.

Submission file is lodged through the assessment link in Moodle, by following the on-screen instructions. Work will be processed through the similarity detection software, Turnitin.

You must ensure that all of the work is your own, in line with University requirements.

Note: you will find further support material for this assessment on the unit Moodle site.

The assessment will be assessed on the following basis:

Clarity of expression and comprehensive coverage of issues

Use of quality supporting documentation as appropriate

Use of original thought and content

Overall presentation and ability to communicate using correct spelling, grammar and punctuation and the use of appropriate diagrams and other visual communication.

Demonstration of core knowledge and demonstration of appropriate application of knowledge.

### **Referencing Style**

• Harvard (author-date)

#### Submission

Online

#### **Submission Instructions**

Submit as a single PDF or DOCX file into the Moodle Assessment portal.

## **Learning Outcomes Assessed**

- Explain the concept of equilibrium, determine loading and load paths in building structures and calculate supporting reactions
- Calculate the properties of sections including first and second moment of area, structural determinacy and indeterminacy, bending and shear forces, bending moments, shear and bending stresses, deflections in beams, axial forces in trusses and column stresses, capacity and buckling
- Apply the principles of structural analysis to determinate and indeterminate structures including the design of beams and columns and the bracing of rigid and pin jointed frames
- Use basic computational methods to solve structural problems associated with residential and commercial buildings.

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

# **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 <u>Academic Learning Centre (ALC)</u> 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