# ENAR12013 *Mine Planning and Design*
## Term 2 - 2017

Profile information current as at 14/12/2025 03:36 pm



## General Information

### Overview
In this unit knowledge and skills will be developed to determine optimum pit limits, bench geometry, haul road design, slope stability and equipment selection for surface mining operations. While for underground mining students will learn to determine suitable access to orebodies, mining methods, level spacings, material handling systems, ground support methods, and ventilation systems. Australian mining laws are reviewed to assess their impact on the mine planning and design processes for coal and metalliferous mining in surface and underground mining operations. Students will also determine the constraints between different mining activities that will impact on mine scheduling. They will use forums, reflective journals and workbooks to demonstrate an effective and professional level of teamwork, communication and support for collaborative peer group learning.

### Details
Career Level: *Undergraduate*
Unit Level: *Level 2*
Credit Points: *6*
Student Contribution Band: *8*
Fraction of Full-Time Student Load: *0.125*

### Pre-requisites or Co-requisites
There are no requisites for this unit.
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 - 2017

- Distance

### 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. **Written Assessment**
Weighting: 35%
3. **Written Assessment**
Weighting: 45%
4. **Practical and Written Assessment**
Weighting: Pass/Fail
5. **Portfolio**
Weighting: Pass/Fail

### 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 Analysis of student feedback.

**Feedback**
Timely supply of feedback.

**Recommendation**
Prioritise the marking and feedback of submitted assignments.

#### Feedback from Analysis of student feedback.

**Feedback**
Feedback assists learning.

**Recommendation**
Review feedback for assignment to ensure they refer to the unit learning outcomes.

## Unit Learning Outcomes

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

1. Analyse mining phases from exploration to mine closure to determine the impact of mine planning and design on the safety, productivity and success of a mining operation.
2. Outline the acts and regulations associated with Australian Law that impact on mine planning and design for surface, underground, coal and metalliferous mining.
3. Determine the optimum pit limits, bench geometry, haul road design, slope stability and equipment selection for a coal or metalliferous deposit requiring surface mining operations.
4. Determine suitable orebody access, mining method, level spacing, material handling, ground support, and ventilation for a coal or metalliferous deposit requiring underground mining.
5. Deduce the constraints associated with scheduling the development and production of an underground mining operation.
6. Demonstrate an effective and professional level of teamwork, communication and support for collaborative peer group learning through the use of forums, reflective journals and workbooks.

## Alignment of Learning Outcomes, Assessment and Graduate Attributes

— N/A Level  ◦ Introductory Level  • Intermediate Level  • Graduate Level  ◦ Professional Level  ◦ Advanced Level

### Alignment of Assessment Tasks to Learning Outcomes

| Assessment Tasks | Learning Outcomes | | | | | |
|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 |
| 1 - Written Assessment - 20% | • | • | • | | | |
| 2 - Written Assessment - 35% | | • | • | • | | |
| 3 - Written Assessment - 45% | | • | | • | • | |
| 4 - Practical and Written Assessment - 0% | | | • | • | • | • |

| Assessment Tasks | Learning Outcomes | | | | | |
|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 |
| 5 - Portfolio - 0% | • | • | • | • | • | • |

## 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 - Written Assessment - 35% | • | • | • | • | | • | | • | | |
| 3 - Written Assessment - 45% | • | • | • | • | | • | | | | |
| 4 - Practical and Written Assessment - 0% | • | • | • | • | • | • | • | • | | |
| 5 - Portfolio - 0% | • | • | • | • | • | • | • | • | | |

## Textbooks and Resources

### Textbooks

ENAR12013

**Prescribed**

**Introductory Mining Engineering**
Edition: 2nd edn (2002)
Authors: Hartman, HL & Mutmansky, JM
John Wiley and Sons
Hoboken , NJ , USA
ISBN: 9780471348511
Binding: Hardcover
ENAR12013

**Prescribed**

**Open Pit Mine Planning and Design**
3rd Edition (2013)
Authors: William A. Hustrulid, Mark Kuchta, Randall K. Martin
CRC Press
Boca Ratan , Florida , United States
ISBN: 9781466575127
Binding: Hardcover

**Additional Textbook Information**
Texts contain imperial and metric units.

**View textbooks at the CQUniversity Bookshop**

### IT Resources

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

- CQUniversity Student Email
- Internet
- Unit Website (Moodle)
- Spreadsheet Software

## Referencing Style

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

## Teaching Contacts

**Brendan Donnelly** Unit Coordinator
b.donnelly@cqu.edu.au

## Schedule

**Week 1 - 10 Jul 2017**

| Module/Topic | Chapter | Events and Submissions/Topic |
|---|---|---|
| 1. Prospecting, exploration and mine development | Introductory Mining Engineering, Chapter 1, Section 1.4, Chapter 3<br>Open Pit Mine Planning and Design, Chapter 1, Sections 1.1 to 1.3<br>Unit Notes (Available in Moodle) | |

**Week 2 - 17 Jul 2017**

| Module/Topic | Chapter | Events and Submissions/Topic |
|---|---|---|
| 2. Mine feasibility, and land acquisition | Introductory Mining Engineering, Chapter 4<br>Open Pit Mine Planning and Design, Chapter 1, Sections 1.4 to 1.11, Chapter 8<br>Unit Notes (Available in Moodle)<br>Coal Mining Act<br>Mining and Quarrying Safety and Health Act<br>Environmental Protection Act | |

**Week 3 - 24 Jul 2017**

| Module/Topic | Chapter | Events and Submissions/Topic |
|---|---|---|
| 3. Orebody Description | Open Pit Mine Planning and Design, Chapter 3 & 7<br>Unit Notes (Available in Moodle) | |

**Week 4 - 31 Jul 2017**

| Module/Topic | Chapter | Events and Submissions/Topic |
|---|---|---|
| 4. Open pit planning and design | Open Pit Mine Planning and Design, Chapter 4 & 5<br>Unit Notes (Available in Moodle) | **Written Assessment** Due: Week 4 Monday (31 July 2017) 10:00 am AEST |

**Week 5 - 07 Aug 2017**

| Module/Topic | Chapter | Events and Submissions/Topic |
|---|---|---|
| 5. Production planning and scheduling | Open Pit Mine Planning and Design, Chapter 6<br>Unit Notes (Available in Moodle) | |

**Vacation Week - 14 Aug 2017**

| Module/Topic | Chapter | Events and Submissions/Topic |
|---|---|---|
| | | Residential School timing and location will be dependent on mine site availability and enrolments.Duration 2.5 days..<br><br>**Practical and Written Assessment** Due: Vacation Week Friday (18 Aug 2017) 5:00 pm AEST |

**Week 6 - 21 Aug 2017**

| Module/Topic | Chapter | Events and Submissions/Topic |
|---|---|---|
| 6. Equipment and systems selection | Open Pit Mine Planning and Design, Chapter 11, 12 & 13<br>Unit notes (Available in Moodle) | |

**Week 7 - 28 Aug 2017**

| Module/Topic | Chapter | Events and Submissions/Topic |
|---|---|---|
| 7. Strip mine design and rehabilitation | Introductory Mining Engineering, Chapter 7<br>Unit notes (Available in Moodle) | |

**Week 8 - 04 Sep 2017**

| Module/Topic | Chapter | Events and Submissions/Topic |
|---|---|---|
| 8. Underground mine access | Introductory Mining Engineering, Chapter 9 | **Written Assessment** Due: Week 8 Monday (4 Sept 2017) 10:00 am AEST |

**Week 9 - 11 Sep 2017**

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

| | | |
|---|---|---|
| 9. Underground mining methods | Introductory Mining Engineering, Chapter 10 & 11<br>Unit Notes (Available in Moodle) | |

**Week 10 - 18 Sep 2017**

| Module/Topic | Chapter | Events and Submissions/Topic |
|---|---|---|
| 10. Underground mining services and ventilation | Introductory Mining Engineering, Chapter 12<br>Unit Notes (Available in Moodle) | |

**Week 11 - 25 Sep 2017**

| Module/Topic | Chapter | Events and Submissions/Topic |
|---|---|---|
| 11. Quality control, safety and legislation | Unit Notes (Available in Moodle)<br>Coal Mining Act<br>Mining and Quarrying Safety and Health Act<br>Environmental Protection Act | |

**Week 12 - 02 Oct 2017**

| Module/Topic | Chapter | Events and Submissions/Topic |
|---|---|---|
| 12. Developments in mine planning and design | Introductory Mining Engineering, Chapter 13<br>Unit Notes (Available in Moodle) | |

**Review/Exam Week - 09 Oct 2017**

| Module/Topic | Chapter | Events and Submissions/Topic |
|---|---|---|
| | | **Written Assessment** Due: Review/Exam Week Monday (9 Oct 2017) 10:00 am AEST |

**Exam Week - 16 Oct 2017**

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

## Assessment Tasks

### 1 Written Assessment

**Assessment Type**
Written Assessment

**Task Description**
This assessment is designed to strengthen your understanding of mining phases and mining legislation. You will need to carefully review the material provided in the textbook and to answer the questions in the assignment.This assessment will cover material detailed in weeks 1 to 3 of the unit.
To successfully complete this assignment you will need to:

- review the detailed assignment questions found in Moodle
- attend online tutorials
- review relevant literature (textbooks, websites, etc) to gain a broad understanding of mining phases and mining legislation.
- research the primary literature to locate relevant current primary sources (scientific journal articles written in the last 3 years)
- complete the assignment questions in your own words making effective use of the sources of information

Students are expected to reference all sources of information included in their answers using the Harvard referencing style guide.

**Assessment Submission**
Note that submission is a three-stage process of (i) uploading the file(s) (ii) saving the file(s) and then (iii) submitting the saved file(s) for marking. Please use the 'Upload files' button to select and upload your file(s) for this assessment. You must then click the 'Save changes' button after you've uploaded the file(s) to ensure they are added to your draft submission.

Note that, once uploaded and saved, all compatible files will be sent to Turnitin.com for originality checking. If you wait for half an hour or so after uploading your draft submission, you can return and check the Turnitin similarity report for your uploaded file(s) to see whether you want to submit them for marking, or whether you want to delete the file(s), revise and resubmit.
Please note, when viewing any feedback files for your submission, it is strongly recommended you use appropriate/compatible software applications which correctly open the type of file provided. This will ensure feedback content is displayed as intended.

**General rules:**

1. Students need to follow the file naming protocol:

- Student Number_Student Name (first name, then surname)_Year_Assessment Item_Unit Code_Campus
- Example: S124455333_JohnCitizen_2013_Ass1_MUS11185_DIST
- Your file will need to be resubmitted if it is not correctly named.

2. Students need to submit a single pdf file.

- Non-PDF formatted files will not be accepted.

3. Only individual submissions (not group submissions) are allowed.
4. Access to the uploading link closes at the scheduled submission time.

- No submissions will be accepted after the due date and hour unless a student is granted an extension from the unit co-ordinator prior to the date of the submission.

**Assessment Due Date**
Week 4 Monday (31 July 2017) 10:00 am AEST

**Return Date to Students**
Monday (21 Aug 2017)

Within two weeks of submission.

**Weighting**
20%

**Minimum mark or grade**
45%

**Assessment Criteria**
Your assignment will include a Cover Page showing unit code and name, student name and number, date, assignment number, lecturer, and university. An interesting picture related to the assignment work would also be appreciated. State the assignment question at the beginning of each answer to give your answers context.
Ensure formulae and workings are shown in sufficient detail to clearly explain how the answer was derived. Ensure formulae are included in the spreadsheets so that different values can be entered to check the sensitivity of the answers. Formulae included in the spreadsheet need to be accessible for marking. Answers should show correct units of measure eg. (m, MN, $m^2$, tonnes, $m^3$, $^oC$, etc). Where appropriate, include a clearly labelled diagrams detailing such things as,

- the dimensions of equipment and excavations
- angles of slopes,
- coal thickness and overburden dimensions
- shapes of underground openings
- geometry of samples

For descriptive answers, ensure photographs, pictures and diagrams are correctly labelled and referred to within the text of the answer. Use mining terminology correctly. Research reliable sources of information such as journal papers and textbooks. Correctly cite and reference sources of information using the Harvard referencing style guide with

a list of references at the end of the assignment.
Relevance and correctness of answers using clear, coherent sentences and language.

**Referencing Style**

- Harvard (author-date)

**Submission**
Online

**Learning Outcomes Assessed**

- Analyse mining phases from exploration to mine closure to determine the impact of mine planning and design on the safety, productivity and success of a mining operation.
- Outline the acts and regulations associated with Australian Law that impact on mine planning and design for surface, underground, coal and metalliferous mining.
- Determine the optimum pit limits, bench geometry, haul road design, slope stability and equipment selection for a coal or metalliferous deposit requiring surface mining operations.

**Graduate Attributes**

- Communication
- Problem Solving
- Critical Thinking
- Cross Cultural Competence
- Ethical practice

## 2 Written Assessment

**Assessment Type**
Written Assessment

**Task Description**
This assessment is designed to strengthen your understanding of open pit mine planning and design. You will need to carefully review the material provided in the textbook and to answer the questions in the assignment.This assignment will cover material detailed in weeks 4 to 7 of the unit.
To successfully complete this assignment you will need to:

- review the detailed assignment questions found in Moodle
- attend on-line tutorials
- review relevant literature (textbooks, websites, etc) to gain a broad understanding of open pit mine planning and design.
- research the primary literature to locate relevant current primary sources (scientific journal articles written in the last 3 years)
- complete the assignment questions in your own words making effective use of the sources of information

Students are expected to reference all sources of information included in their answers.
**Assessment Submission**
Note that submission is a three-stage process of (i) uploading the file(s) (ii) saving the file(s) and then (iii) submitting the saved file(s) for marking. Please use the 'Upload files' button to select and upload your file(s) for this assessment. You must then click the 'Save changes' button after you've uploaded the file(s) to ensure they are added to your draft submission.
Note that, once uploaded and saved, all compatible files will be sent to Turnitin.com for originality checking. If you wait for half an hour or so after uploading your draft submission, you can return and check the Turnitin similarity report for your uploaded file(s) to see whether you want to submit them for marking, or whether you want to delete the file(s), revise and resubmit.
Please note, when viewing any feedback files for your submission, it is strongly recommended you use appropriate/compatible software applications which correctly open the type of file provided. This will ensure feedback content is displayed as intended.
**General rules:**
1. Students need to follow the file naming protocol:

- Student Number_Student Name (first name, then surname)_Year_Assessment Item_Unit Code_Campus
- Example: S124455333_JohnCitizen_2013_Ass1_MUS11185_DIST
- Your file will need to be resubmitted if it is not correctly named.

2. Students need to submit a single pdf file.

- Non-PDF formatted files will not be accepted.

3. Only individual submissions (not group submissions) are allowed.
4. Access to the uploading link closes at the scheduled submission time.

- No submissions will be accepted after the due date and hour unless a student is granted an extension from the unit co-ordinator prior to the date of the submission.

**Assessment Due Date**
Week 8 Monday (4 Sept 2017) 10:00 am AEST

**Return Date to Students**
Monday (18 Sept 2017)

Within two weeks of submission.

**Weighting**
35%

**Minimum mark or grade**
45%

**Assessment Criteria**
Your assignment will include a Cover Page showing unit code and name, student name and number, date, assignment number, lecturer, and university. An interesting picture related to the assignment work would also be appreciated. State the assignment question at the beginning of each answer to give your answers context.
Ensure formulae and workings are shown in sufficient detail to clearly explain how the answer was derived. Ensure formulae are included in the spreadsheets so that different values can be entered to check the sensitivity of the answers. Formulae included in the spreadsheet need to be accessible for marking. Answers should show correct units of measure eg. (m, MN, $m^2$, tonnes, $m^3$, $^{\circ}C$, etc). Where appropriate, include clearly labelled diagrams detailing such things as,

- the dimensions of equipment and excavations
- angles of slopes,
- coal thickness and overburden dimensions
- shapes of underground openings
- geometry of samples

For descriptive answers, ensure photographs, pictures and diagrams are correctly labelled and referred to within the text of the answer. Use mining terminology correctly.
Ensure research is from reliable sources of information such as journal papers and textbooks. Correctly cite and reference sources of information using the Harvard referencing style guide with a list of references at the end of the assignment. 15%
Ensure answers contain relevant and correct information and use clear, coherent sentences and language.

**Referencing Style**

- Harvard (author-date)

**Submission**
Online

**Learning Outcomes Assessed**

- Outline the acts and regulations associated with Australian Law that impact on mine planning and design for surface, underground, coal and metalliferous mining.
- Determine the optimum pit limits, bench geometry, haul road design, slope stability and equipment selection for a coal or metalliferous deposit requiring surface mining operations.
- Determine suitable orebody access, mining method, level spacing, material handling, ground support, and ventilation for a coal or metalliferous deposit requiring underground mining.

**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 is designed to strengthen your understanding of underground mine planning and design. You will need to carefully review the material provided in the textbook and to answer the questions in the assignment.This assessment will cover material detailed in weeks 8 to 12 of the unit.
To successfully complete this assignment you will need to:

- review the detailed assignment questions found in Moodle
- attend on-line tutorials
- review relevant literature (textbooks, websites, etc) to gain a broad understanding of underground mine planning and design.
- research the primary literature to locate relevant current primary sources (scientific journal articles written in the last 3 years)
- complete the assignment questions in your own words making effective use of the sources of information

Students are expected to reference all sources of information included in their answers.
**Assessment Submission**
Note that submission is a three-stage process of (i) uploading the file(s) (ii) saving the file(s) and then (iii) submitting the saved file(s) for marking. Please use the 'Upload files' button to select and upload your file(s) for this assessment. You must then click the 'Save changes' button after you've uploaded the file(s) to ensure they are added to your draft submission.
Note that, once uploaded and saved, all compatible files will be sent to Turnitin.com for originality checking. If you wait for half an hour or so after uploading your draft submission, you can return and check the Turnitin similarity report for your uploaded file(s) to see whether you want to submit them for marking, or whether you want to delete the file(s), revise and resubmit.
Please note, when viewing any feedback files for your submission, it is strongly recommended you use appropriate/compatible software applications which correctly open the type of file provided. This will ensure feedback content is displayed as intended.
**General rules:**
1. Students need to follow the file naming protocol:

- Student Number_Student Name (first name, then surname)_Year_Assessment Item_Unit Code_Campus
- Example: S124455333_JohnCitizen_2013_Ass1_MUS11185_DIST
- Your file will need to be resubmitted if it is not correctly named.

2. Students need to submit a single pdf file.

- Non-PDF formatted files will not be accepted.

3. Only individual submissions (not group submissions) are allowed.
4. Access to the uploading link closes at the scheduled submission time.

- No submissions will be accepted after the due date and hour unless a student is granted an extension from the course co-ordinator prior to the date of the submission

**Assessment Due Date**
Review/Exam Week Monday (9 Oct 2017) 10:00 am AEST

**Return Date to Students**
Exam Week Friday (20 Oct 2017)

Within 2 weeks of receipt of assignment.

**Weighting**
45%

**Minimum mark or grade**
50%

**Assessment Criteria**
Your assignment will include a Cover Page showing unit code and name, student name and number, date, assignment number, lecturer, and university. An interesting picture related to the assignment work would also be appreciated. State the assignment question at the beginning of each answer to give your answers context.
Ensure formulae and workings are shown in sufficient detail to clearly explain how the answer was derived. Ensure

formulae are included in the spreadsheets so that different values can be entered to check the sensitivity of the answers. Formulae included in the spreadsheet need to be accessible for marking. Answers should show correct units of measure eg. (m, MN, $m^2$, tonnes, $m^3$, $^oC$, etc). Where appropriate, include clearly labelled diagrams detailing such things as,

- the dimensions of equipment and excavations
- angles of slopes,
- coal thickness and overburden dimensions
- shapes of underground openings
- geometry of samples

For descriptive answers, ensure photographs, pictures and diagrams are correctly labelled and referred to within the text of the answer. Use mining terminology correctly.
Ensure research is from reliable sources of information such as journal papers and textbooks. Correctly cite and reference sources of information using the Harvard referencing style guide with a list of references at the end of the assignment.
Ensure answers contain relevant and correct information and use clear, coherent sentences and language.

**Referencing Style**

- Harvard (author-date)

**Submission**
Online

**Learning Outcomes Assessed**

- Outline the acts and regulations associated with Australian Law that impact on mine planning and design for surface, underground, coal and metalliferous mining.
- Determine suitable orebody access, mining method, level spacing, material handling, ground support, and ventilation for a coal or metalliferous deposit requiring underground mining.
- Deduce the constraints associated with scheduling the development and production of an underground mining operation.

**Graduate Attributes**

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

## 4 Practical and Written Assessment

**Assessment Type**
Practical and Written Assessment

**Task Description**
During the residential school students will be required to work in teams to complete a report that captures the major learning objectives of the residential school. The residential school will be held on a mine site, depending on mine site availability. Otherwise, the residential school will be held on Campus.

**Assessment Submission**
Note that submission is a three-stage process of (i) uploading the file(s) (ii) saving the file(s) and then (iii) submitting the saved file(s) for marking. Please use the 'Upload files' button to select and upload your file(s) for this assessment. You must then click the 'Save changes' button after you've uploaded the file(s) to ensure they are added to your draft submission.
Note that, once uploaded and saved, all compatible files will be sent to Turnitin.com for originality checking. If you wait for half an hour or so after uploading your draft submission, you can return and check the Turnitin similarity report for your uploaded file(s) to see whether you want to submit them for marking, or whether you want to delete the file(s), revise and resubmit.
Please note, when viewing any feedback files for your submission, it is strongly recommended you use appropriate/compatible software applications which correctly open the type of file provided. This will ensure feedback content is displayed as intended.

**General rules:**
1. Students need to submit a single pdf file. Each team will need to nominate a student to submit the report.

- Non-PDF formatted files will not be accepted.

2. Group submissions are allowed.
3. Access to the uploading link closes at the scheduled submission time.
No submissions will be accepted after the due date and hour unless a student is granted an extension from the unit co-ordinator prior to the date of the submission.

**Assessment Due Date**
Vacation Week Friday (18 Aug 2017) 5:00 pm AEST

**Return Date to Students**
Week 7 Friday (1 Sept 2017)

Within two weeks of submission.

**Weighting**
Pass/Fail

**Assessment Criteria**
Your assignment will include a Cover Page showing unit code and name, student name and number, date, assignment number, lecturer, and university. An interesting picture related to the assignment work would also be appreciated. State the assignment question at the beginning of each answer to give your answers context.
Ensure formulae and workings are shown in sufficient detail to clearly explain how the answer was derived. Ensure formulae are included in the spreadsheets so that different values can be entered to check the sensitivity of the answers. Formulae included in the spreadsheet need to be accessible for marking. Answers should show correct units of measure eg. (m, MN, m2, tonnes, m3, oC, etc). Where appropriate, include clearly labelled diagrams detailing such things as,

- the dimensions of equipment and excavations
- angles of slopes,
- coal thickness and overburden dimensions
- shapes of underground openings
- geometry of samples

For descriptive answers, ensure photographs, pictures and diagrams are correctly labelled and referred to within the text of the answer. Use mining terminology correctly.
Ensure research is from reliable sources of information such as journal papers and textbooks. Correctly cite and reference sources of information using the Harvard referencing style guide with a list of references at the end of the assignment.
Ensure answers contain relevant and correct information and use clear, coherent sentences and language.
To achieve a Pass for this assessment the student will attend at least 75% of the contact time available for the Practical and make a contribution to the team report.

**Referencing Style**

- Harvard (author-date)

**Submission**
Online

**Learning Outcomes Assessed**

- Determine the optimum pit limits, bench geometry, haul road design, slope stability and equipment selection for a coal or metalliferous deposit requiring surface mining operations.
- Determine suitable orebody access, mining method, level spacing, material handling, ground support, and ventilation for a coal or metalliferous deposit requiring underground mining.
- Deduce the constraints associated with scheduling the development and production of an underground mining operation.
- Demonstrate an effective and professional level of teamwork, communication and support for collaborative peer group learning through the use of forums, reflective journals and workbooks.

**Graduate Attributes**

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

- Ethical practice

## 5 Learning Portfolio

**Assessment Type**
Portfolio

**Task Description**
The learning portfolio will provide students with an opportunity to reflect on and discuss what they are learning. It also allows them to record work and reading that is not presented or assessed as part of the submitted assignments. Crucially students are required to record and demonstrate evidence of all of the learning outcomes detailed for this unit, particularly teamwork, cultural sensitivity and ethical values. The learning portfolio will consist of two components,

i. a study diary,
ii. evidence of learning outcomes.

Forms will be provided on the moodle website for the components of the learning portfolio.

**Assessment Due Date**

An updated version of the learning portfolio should be submitted with each piece of assessment.

**Return Date to Students**

Portfolio feedback will be provided within two weeks of submission.

**Weighting**
Pass/Fail

**Assessment Criteria**
Make regular weekly entries in the study diary.
Write up reflections on what has been learnt from each question in each assignment.
Record interactions that seem relevant to this unit. Interactions may be with the lecturer, other students and work colleagues. Interactions may be telephone conversations, e-mails, postings on forums or, face to face meetings.
Collect and record evidence of how the learning outcomes for this unit have been met.
Submit updates of the learning portfolio with each assignment submission.
Some evidence must be recorded against each learning outcome to achieve a Pass for this assessment.

**Referencing Style**

- Harvard (author-date)

**Submission**
Online

**Submission Instructions**
Submit an updated version of the learning portfolio with each piece of assessment.

**Learning Outcomes Assessed**

- Analyse mining phases from exploration to mine closure to determine the impact of mine planning and design on the safety, productivity and success of a mining operation.
- Outline the acts and regulations associated with Australian Law that impact on mine planning and design for surface, underground, coal and metalliferous mining.
- Determine the optimum pit limits, bench geometry, haul road design, slope stability and equipment selection for a coal or metalliferous deposit requiring surface mining operations.
- Determine suitable orebody access, mining method, level spacing, material handling, ground support, and ventilation for a coal or metalliferous deposit requiring underground mining.
- Deduce the constraints associated with scheduling the development and production of an underground mining operation.
- Demonstrate an effective and professional level of teamwork, communication and support for collaborative peer group learning through the use of forums, reflective journals and workbooks.

**Graduate Attributes**

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

- 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