



ENAR12013 Mine Planning and Design

Term 2 - 2023

Profile information current as at 20/04/2024 01:46 pm

All details in this unit profile for ENAR12013 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

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. In this unit, you must complete compulsory practical activities. Refer to the Engineering Undergraduate Course Moodle site for proposed dates.

Details

Career Level: *Undergraduate*

Unit Level: *Level 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 - 2023

- Mixed Mode

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).

Residential Schools

This unit has a Compulsory Residential School for distance mode students and the details are:

Click here to see your [Residential School Timetable](#).

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. **Portfolio**

Weighting: Pass/Fail

3. **Practical and Written Assessment**

Weighting: Pass/Fail

4. **Written Assessment**

Weighting: 35%

5. **Written Assessment**

Weighting: 45%

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 UC reflection.

Feedback

Provide exposure to current mine planning packages.

Recommendation

Include current mine planning software in the course content.

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.

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

Introductory 3.3 Creative, innovative and pro-active demeanour. (LO: 1N 4N 6N) 3.6 Effective team membership and team leadership. (LO: 6N)

Intermediate 1.1 Comprehensive, theory-based understanding of the underpinning natural and physical sciences and the engineering fundamentals applicable to the engineering discipline. (LO: 3I) 1.2 Conceptual understanding of the mathematics, numerical analysis, statistics, and computer and information sciences which underpin the engineering discipline. (LO: 3I 4I 5I) 1.3 In-depth understanding of specialist bodies of knowledge within the engineering discipline. (LO: 1N 2I 3I 4I 5N) 1.5 Knowledge of engineering design practice and contextual factors impacting the engineering discipline. (LO: 1N 2N 3N 4I) 2.1 Application of established engineering methods to complex engineering problem solving. (LO: 1I 3I 4N 5N) 2.3 Application of systematic engineering synthesis and design processes. (LO: 1N 2N 3I) 2.4 Application of systematic approaches to the conduct and management of engineering projects. (LO: 1I 2N 5N) 3.1 Ethical conduct and professional accountability. (LO: 1N 2I 3I 4I) 3.4 Professional use and management of information. (LO: 1N 2N 3I 4N 5N 6I) 3.5 Orderly management of self, and professional conduct. (LO: 1I 2I 6N)

Advanced 1.4 Discernment of knowledge development and research directions within the engineering discipline. (LO: 1I 2I 3I 4A) 1.6 Understanding of the scope, principles, norms, accountabilities and bounds of sustainable engineering practice in the specific discipline. (LO: 1N 2N 3A 4I) 2.2 Fluent application of engineering techniques, tools and resources. (LO: 2N 3I 4N 5A) 3.2 Effective oral and written communication in professional and lay domains. (LO: 1I 2N 3N 4I 5N 6A)

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

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

Alignment of Learning Outcomes, Assessment and Graduate Attributes



Alignment of Assessment Tasks to Learning Outcomes

Assessment Tasks	Graduate Attributes									
	1	2	3	4	5	6	7	8	9	10
5 - Portfolio - 0%	•	•	•	•	•	•	•	•		

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)
- Spreadsheet Software
- Zoom capacity (web cam and microphone)

Referencing Style

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

Teaching Contacts

Andrew Hammond Unit Coordinator
a.hammond@cqu.edu.au

Schedule

Week 1 - 10 Jul 2023

Module/Topic	Chapter	Events and Submissions/Topic
1. Prospecting, exploration and mine development	Reading list available in Moodle Unit Notes (Available in Moodle)	Tutorial: Introduction to Moodle unit page.

Week 2 - 17 Jul 2023

Module/Topic	Chapter	Events and Submissions/Topic
2. Mine feasibility, and land acquisition	Reading list available in Moodle Unit Notes (Available in Moodle) Coal Mining Act Mining and Quarrying Safety and Health Act Environmental Protection Act	Tutorial: How to access Queensland mining legislation.

Week 3 - 24 Jul 2023

Module/Topic	Chapter	Events and Submissions/Topic
3. Orebody Description	Reading list available in Moodle Unit Notes (Available in Moodle)	Tutorial: Mine planning and design

Week 4 - 31 Jul 2023

Module/Topic	Chapter	Events and Submissions/Topic
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4. Open pit planning and design	Reading list available in Moodle Unit Notes (Available in Moodle)	Tutorial: Mine planning and design. Written Assessment Due: Week 4 Monday (31 July 2023) 11:00 pm AEST
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Week 5 - 07 Aug 2023

Module/Topic	Chapter	Events and Submissions/Topic
5. Production planning and scheduling	Reading list available in Moodle Unit Notes (Available in Moodle)	Tutorial: Assignment 1 Feedback.

Vacation Week - 14 Aug 2023

Module/Topic	Chapter	Events and Submissions/Topic
		The Residential School may be held during vacation week if a mine site visit can be arranged for this time. Otherwise, it will be dependent on site availability.

Week 6 - 21 Aug 2023

Module/Topic	Chapter	Events and Submissions/Topic
6. Equipment and systems selection	Reading list available in Moodle Unit notes (Available in Moodle)	

Week 7 - 28 Aug 2023

Module/Topic	Chapter	Events and Submissions/Topic
7. Strip mine design and rehabilitation	Reading list available in Moodle Unit notes (Available in Moodle)	

Week 8 - 04 Sep 2023

Module/Topic	Chapter	Events and Submissions/Topic
8. Underground mine access	Reading list available in Moodle	Written Assessment Due: Week 8 Wednesday (6 Sept 2023) 11:00 pm AEST

Week 9 - 11 Sep 2023

Module/Topic	Chapter	Events and Submissions/Topic
9. Underground mining methods	Reading list available in Moodle Unit Notes (Available in Moodle)	

Week 10 - 18 Sep 2023

Module/Topic	Chapter	Events and Submissions/Topic
10. Underground mining services and ventilation	Reading list available in Moodle Unit Notes (Available in Moodle)	

Week 11 - 25 Sep 2023

Module/Topic	Chapter	Events and Submissions/Topic
11. Quality control, safety and legislation	Unit Notes (Available in Moodle)	

Week 12 - 02 Oct 2023

Module/Topic	Chapter	Events and Submissions/Topic
12. Developments in mine planning and design	Reading list available in Moodle Unit Notes (Available in Moodle)	

Review/Exam Week - 09 Oct 2023

Module/Topic	Chapter	Events and Submissions/Topic
		Written Assessment Due: Review/Exam Week Wednesday (11 Oct 2023) 11:00 pm AEST

Exam Week - 16 Oct 2023

Assessment Tasks

1 Written Assessment

Assessment Type

Written Assessment

Task Description

This assessment will strengthen your understanding of mining phases and legislation. You will need to review the course material provided in Moodle and answer the questions in the assignment. This assessment will cover the unit's material detailed in weeks 1 to 3.

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 understand mining phases and legislation better.
- Research the primary literature to locate relevant current primary sources (scientific journal articles written in the last ten 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 click the "Save changes" button after uploading the file(s) to ensure they are added to your draft submission. Once uploaded and saved, files are sent to Turnitin.com for originality checking. After uploading your draft submission, check the Turnitin similarity report for your uploaded file(s). You can then submit them for marking or delete the file(s) and revise them for resubmission.

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. Submit written answers using Word or pdf files for written responses. Spreadsheet solutions that can be viewed in Excel will be accepted. Other file types will not be accepted.

3. Only individual submissions (not group submissions) are allowed.

4. Late submissions will be accepted after the due date and hour if the unit coordinator grants a student an extension. Students must use the link provided on Moodle to apply for an extension before the submission date.

Assessment Due Date

Week 4 Monday (31 July 2023) 11:00 pm AEST

Return Date to Students

Within two weeks of submission.

Weighting

20%

Minimum mark or grade

45%

Assessment Criteria

Your assignment will include a cover page showing the unit code and name, student name and number, date, assignment number, lecturer, and university. The cover page should also include an interesting picture related to the assignment. Cite and reference the source of the image. Include a correctly formatted contents page. State the assignment question at the beginning of each answer to give context to your response. Include page headers and footers on each page and a reference list at the end of the assignment.

Ensure the formula and work are shown in sufficient detail to explain how the answer was derived. Clearly state the

meaning of any symbols used in formulas. Include screenshots of the spreadsheet in your answers where necessary. Label the screenshots as figures within the text of your response. Ensure formulae are included in the spreadsheets so that you can enter different values to check the sensitivity of the solutions. Formulae included in the spreadsheet need to be accessible for marking. Answers should show correct units of measurement, e.g. (m, MN, m², tonnes, m³, °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
- shape and size of underground openings
- geometry of samples

For descriptive answers, ensure photographs, pictures, and diagrams are correctly labelled and introduced within the preceding text of the response. 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.

Marks will be assigned according to the relevance and correctness of answers. Marks will also be given for 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 Learning Portfolio

Assessment Type

Portfolio

Task Description

The learning portfolio will allow students to reflect on and discuss their learning. It also allows them to record work and reading 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, including reflections
- ii. evidence of learning outcomes

The submission link on Moodle will have a learning portfolio template. Students are not expected to cite or reference work in this piece of assessment, as it is a workbook-style assessment that students will update weekly.

Assessment Due Date

An updated version of the learning portfolio should be submitted with each of the three assignments.

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.

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, face to face meetings.

Collect and record evidence of how the learning outcomes for this unit have been met.

Submit updates to the learning portfolio with each assignment submission.

Students must record some evidence 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

3 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 primary learning objectives of the practical. If a site visit is possible, the practical will be based on mine planning issues identified by mine personnel. If a site visit is not possible, the practical will involve completing an introduction to Deswik mine planning and design software.

General rules:

1. Students need to submit a screenshot of their completed practical. Each team will need to nominate a student to submit the report.
2. Group submissions are allowed.
3. Access to the uploading link closes at the scheduled submission time.

Submissions will be completed at the end of the residential school.

Assessment Due Date

The practical submission is due at the end of the residential school. The date for the residential school may be dependent on mine availability.

Return Date to Students

Within two weeks of submission.

Weighting

Pass/Fail

Assessment Criteria

Your practical assessment may include evidence of completing the Deswik software introduction training and a ten-minute presentation of the core advantages of using mine planning and design software. Alternatively, attendance at the mine site visit, compliance with site instructions and induction, with a ten-minute presentation on the mining method and planning procedures will be used to assess the practical.

The presentation criteria will include,

- Statement of objectives
- Description of software
- Advantages of mine planning software
- Explanation of features
- Learning Outcomes

PowerPoint slides should have 3 - 5 words per bullet point and 3 to 5 lines per slide with a picture on each slide.

Presenters will be evaluated on,

- Energy
- Teamwork
- Slides
- Audience engagement
- Language and voice clarity
- Structure
- Timing

To achieve a Pass for this assessment, the student will attend at least 75% of the contact time available for the Practical and contribute to the team presentation.

Referencing Style

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

Submission

Offline Group

Submission Instructions

Student presentation and evidence of completing software training will be assessed at the residential school.

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

4 Written Assessment

Assessment Type

Written Assessment

Task Description

This assessment will strengthen your understanding of open-pit mine planning and design. You will need to review the course material provided in Moodle and answer the questions in the assignment. This assessment will cover the unit's material detailed in weeks 4 to 7.

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 understand open-pit mine planning and design.
- Research the primary literature to locate relevant current primary sources (scientific journal articles written in the last ten 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 click the "Save changes" button after uploading the file(s) to ensure they are added to your draft submission. Once uploaded and saved, files are sent to Turnitin.com for originality checking. After uploading your draft submission, check the Turnitin similarity report for your uploaded file(s). You can then submit them for marking or delete the file(s) and revise them for resubmission.

General rules:

1. Students need to follow the file naming protocol:

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- Your file will need to be resubmitted if it is not correctly named.

2. Submit written answers using Word or pdf files for written responses. Spreadsheet solutions that can be viewed in Excel will be accepted. Other file types will not be accepted.

3. Only individual submissions (not group submissions) are allowed.

4. Late submissions will be accepted after the due date and hour if the unit coordinator grants a student an extension. Students must use the link provided on Moodle to apply for an extension before the submission date.

Assessment Due Date

Week 8 Wednesday (6 Sept 2023) 11:00 pm AEST

Return Date to Students

Within two weeks of submission.

Weighting

35%

Minimum mark or grade

45%

Assessment Criteria

Your assignment will include a cover page showing the unit code and name, student name and number, date, assignment number, lecturer, and university. The cover page should also include an interesting picture related to the assignment. Cite and reference the source of the image. Include a correctly formatted contents page. State the assignment question at the beginning of each answer to give context to your response. Include page headers and footers on each page and a reference list at the end of the assignment.

Ensure the formula and working are shown in sufficient detail to explain how the answer was derived. Clearly state the meaning of any symbols used in formulas. Include screenshots of the spreadsheet in your answers where necessary.

Label the screenshots as figures within the text of your response. Ensure formulae are included in the spreadsheets so that you can enter different values to check the sensitivity of the solutions. Formulae included in the spreadsheet need to be accessible for marking. Answers should show correct units of measurement, e.g. (m, MN, m², tonnes, m³, °C, etc.). Where appropriate, include clearly labelled diagrams detailing such things as,

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- angles of slopes
- coal thickness and overburden dimensions
- shape and size of underground openings

- geometry of samples

For descriptive answers, ensure photographs, pictures, and diagrams are correctly labelled and introduced within the preceding text of the response. 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.

Marks will be assigned according to the relevance and correctness of answers. Marks will also be given for using 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

5 Written Assessment

Assessment Type

Written Assessment

Task Description

This assessment will strengthen your understanding of underground mine planning and design. You will need to review the course material provided in Moodle and answer the questions in the assignment. This assessment will cover the unit's material detailed in weeks 8 to 12.

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 underground mine planning and design.
- Research the primary literature to locate relevant current primary sources (scientific journal articles written in the last ten 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 click the "Save changes" button after uploading the file(s) to ensure they are added to your draft submission. Once uploaded and saved, files are sent to Turnitin.com for originality checking. After uploading your draft submission, check the Turnitin similarity report for your uploaded file(s). You can then submit them for marking or delete the file(s) and revise them for resubmission.

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3. Only individual submissions (not group submissions) are allowed.
4. Late submissions will be accepted after the due date and hour if the unit coordinator grants a student an extension. Students must use the link provided on Moodle to apply for an extension before the submission date.

Assessment Due Date

Review/Exam Week Wednesday (11 Oct 2023) 11:00 pm AEST

Return Date to Students

Within 2 weeks of receipt of assignment.

Weighting

45%

Minimum mark or grade

45%

Assessment Criteria

Your assignment will include a cover page showing the unit code and name, student name and number, date, assignment number, lecturer, and university. The cover page should also include an interesting picture related to the assignment. Cite and reference the source of the image. Include a correctly formatted contents page. State the assignment question at the beginning of each answer to give context to your response. Include page headers and footers on each page and a reference list at the end of the assignment.

Ensure the formula and working are shown in sufficient detail to explain how the answer was derived. Clearly state the meaning of any symbols used in formulas. Include screenshots of the spreadsheet in your answers where necessary. Label the screenshots as figures within the text of your response. Ensure formulae are included in the spreadsheets so that you can enter different values to check the sensitivity of the solutions. Formulae included in the spreadsheet need to be accessible for marking. Answers should show correct units of measurement, e.g. (m, MN, m², tonnes, m³, °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
- shape and size of underground openings
- geometry of samples

For descriptive answers, ensure photographs, pictures, and diagrams are correctly labelled and introduced within the preceding text of the response. Use mining terminology correctly.

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Marks will be assigned according to the relevance and correctness of answers. Marks will also be given for using 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

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