



ENER20002 Mining Engineering Systems and Legislation

Term 1 - 2019

Profile information current as at 20/04/2024 07:58 am

All details in this unit profile for ENER20002 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 the systems and processes crucial to efficient mine design and operation. You will articulate a comprehensive understanding of current Australian coal and metalliferous mining operations and relevant mining Acts and Regulations. You will generate and evaluate fleet equipment selection processes and their likely ability to meet the requirements of scheduled mine production. This unit is delivered using a problem based learning model where you will be expected to work collaboratively in small teams and individually to produce high quality outputs. You will complete formative assessment throughout the unit, which will provide you with timely feedback. You will be graded on the evidence you submit in your portfolio to address the performance standards of the given learning outcomes.

Details

Career Level: *Postgraduate*

Unit Level: *Level 8*

Credit Points: 12

Student Contribution Band: 8

Fraction of Full-Time Student Load: 0.25

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 1 - 2019

- Melbourne
- Mixed Mode
- Perth
- Rockhampton

Attendance Requirements

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

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 12-credit Postgraduate unit at CQUniversity requires an overall time commitment of an average of 25 hours of study per week, making a total of 300 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. **Portfolio**

Weighting: 100%

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 Moodle website

Feedback

Students found the lecturers and coordinator for this unit very supportive.

Recommendation

This will be continued in the upcoming semesters.

Feedback from Moodle website

Feedback

Students found the field trip to be particularly engaging and useful.

Recommendation

The field trips will be arranged before the semester to make sure that there will be at least one field trip.

Feedback from Moodle website

Feedback

Students were happy with the unit structure.

Recommendation

The structure of the unit will be even improved in the upcoming semester.

Feedback from Moodle website

Feedback

Students would appreciate more timely feedback.

Recommendation

Given a large number of students in this course, it will be rest assured to provide timely feedback on each assignment.

Unit Learning Outcomes

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

1. Assess the processes and procedures that would demonstrate compliance with relevant Australian Mining Acts and Regulations in a variety of mining contexts
2. Identify and evaluate risks associated with different mining methods and operations
3. Evaluate prospecting and exploration in the Australian mining context
4. Present and defend a complex design and decision-making process
5. Work collaboratively in a team to produce high-quality outputs.

The learning outcomes are linked to Engineers Australia Stage 1 Competencies.

Textbooks and Resources

Textbooks

ENER20002

Prescribed

Introductory Mining Engineering

Edition: second (2002)

Authors: Howard L Hartman and Jan M Mutmansky

John Wiley and Sons

Hoboken , New Jersey , United States of America

ISBN: 978-0-471-34851-1

Binding: Hardcover

Additional Textbook Information

Paper copies can be purchased at the CQUni Bookshop here: <http://bookshop.cqu.edu.au> (search on the Unit code)

Additional reading material will be provided in Moodle by lecturers

[View textbooks at the CQUniversity Bookshop](#)

IT Resources

You will need access to the following IT resources:

- CQUniversity Student Email
- Internet
- Unit Website (Moodle)
- Zoom (for online tutorials)

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 - 11 Mar 2019

Module/Topic	Chapter	Events and Submissions/Topic
Lecture 1a: Introduction to the unit Lecture 1b: Overview of Australian Resources & Mining Geography	Chapter 1, (Hartman & Mutmansky) Readings provided on Moodle site	Tutorials

Week 2 - 18 Mar 2019

Module/Topic	Chapter	Events and Submissions/Topic
Lecture 2a: Introduction to Resource Geology & Mining Cycle Lecture 2b: Mineral Deposits and Ore Reserves	Chapter 3, (Hartman & Mutmansky) Readings provided on Moodle site	Tutorials

Week 3 - 25 Mar 2019

Module/Topic	Chapter	Events and Submissions/Topic
Lecture 3a: Resource Geology - Prospecting & Exploration Lecture 3b: Resource Geology - Prospecting & Exploration	Chapter 3, (Hartman & Mutmansky) Readings provided on Moodle site	Tutorials
Week 4 - 01 Apr 2019		
Module/Topic	Chapter	Events and Submissions/Topic
Lecture 4a: Australian Mining Legislation Lecture 4b: The JORC Code	Readings provided on Moodle site.	Tutorials
Week 5 - 08 Apr 2019		
Module/Topic	Chapter	Events and Submissions/Topic
Lecture 5a: Resource Geology Case Study - Metalliferous Ores (Gold) Lecture 5b: Resource Geology Case Study - Non Metalliferous Ores (Coal)	Readings provided on Moodle site.	Tutorials Assignment 1 is due Friday 12th April at 6.00 PM AEST.
Vacation Week - 15 Apr 2019		
Module/Topic	Chapter	Events and Submissions/Topic
Week 6 - 22 Apr 2019		
Module/Topic	Chapter	Events and Submissions/Topic
Lecture 6a: Mining Engineering - Development Lecture 6b: Mining Engineering - Exploitation	Chapter 4, (Hartman & Mutmansky) Excluding sections 4.3, 4.4, 4.5 & 4.6	Tutorials
Week 7 - 29 Apr 2019		
Module/Topic	Chapter	Events and Submissions/Topic
Lecture 7a: Unit Operations of Mining, Drilling and Fragmentation Lecture 7b: Loading, Excavation, Haulage and Hoisting	Chapter 5, (Hartman & Mutmansky)	Tutorials
Week 8 - 06 May 2019		
Module/Topic	Chapter	Events and Submissions/Topic
Lecture 8a: Surface Mine Development Lecture 8b: Open Cast Strip Mining	Chapter 6, (Hartman & Mutmansky) Chapter 7, (Hartman & Mutmansky)	Tutorials
Week 9 - 13 May 2019		
Module/Topic	Chapter	Events and Submissions/Topic
Field Excursions for Melbourne Campus Students Non Lecture week.		
Week 10 - 20 May 2019		
Module/Topic	Chapter	Events and Submissions/Topic
Lecture 10a: Underground Mine Development Lecture 10b: Underground Mining	Chapter 9, (Hartman & Mutmansky) Chapter 10, (Hartman & Mutmansky)	Tutorials Field Excursion for Perth Campus Students. Assignment 2 is due Friday 24th May at 6.00 PM AEST.

Week 11 - 27 May 2019

Module/Topic	Chapter	Events and Submissions/Topic
Lectures 11a & b: Mine Closure & Rehabilitation	Readings provided on Moodle site	Tutorials

Week 12 - 03 Jun 2019

Module/Topic	Chapter	Events and Submissions/Topic
Lectures 12a & b: Unit Overview and Review	Readings provided on Moodle site	Tutorials Assignment 3 is due Friday 31st May at 6.00PM AEST.

Review/Exam Week - 10 Jun 2019

Module/Topic	Chapter	Events and Submissions/Topic
		Portfolio is due Friday 14th June at 6.00PM AEST. Portfolio Due: Review/Exam Week Friday (14 June 2019) 6:00 pm AEST

Exam Week - 17 Jun 2019

Module/Topic	Chapter	Events and Submissions/Topic

Assessment Tasks

1 Portfolio

Assessment Type

Portfolio

Task Description

The Portfolio assessment items have been designed to strengthen your understanding of Australian mining engineering systems and legislation. You will need to carefully review the material provided in the textbooks and on the unit's Moodle website to complete the pieces of formative assessment. In order to achieve this you will need to:

- Review the detailed formative assessment projects found on the unit's Moodle website;
- Review the relevant literature (textbooks, journal articles, websites, etc) to gain a broad understanding of mining engineering systems and legislation;
- Research the primary literature to locate relevant current primary sources (peer-reviewed scientific journal articles, including those written in the last 3 years); and
- Complete the submissions in your own words making effective use of and recording the sources of all primary information gained.

Assessment Due Date

Review/Exam Week Friday (14 June 2019) 6:00 pm AEST

Return Date to Students

Exam Week Friday (21 June 2019)

Weighting

100%

Minimum mark or grade

50% of the whole mark

Assessment Criteria

The Overall Assessment Item for this unit will be in form of a Portfolio. The Portfolio is made up of three (3) in-term assignments and weekly Tutorial tasks submitted as a workbook. Each assignment is to be submitted during the term on the specified date and time in the Unit's Schedule. Weekly Tutorial workbook tasks are to be submitted at the time of Portfolio submission during the Review/Exam week.

- The Portfolio will comprise a collection of ALL assignments and ALL Tutorial workbooks completed throughout the term.
- The first assignment (30% of marks) will test your knowledge and skills on Australian Resources, Resource Geology and Australian Mining Legislative requirements, the second assignment (30% of marks) your knowledge

and skills in mining engineering operations, processing, the mining cycle and legislation and the third assignment (30% of marks) will test your knowledge and skills gained after a field excursion to a local mining area/site and/or mining operations centre.

- The weekly Tutorial Workbook (10% of marks) captures your personal notes and data. Workbook entries will demonstrate evidence of an individual's contribution to weekly Tutorial tasks related to discussions. This includes a brief overview or synopsis of talks and subsequent discussions from invited industry professionals. Tutorial Workbook entries must demonstrate that a graduate-level standard of knowledge and skills has been achieved.
- Your Portfolio must also demonstrate that you have attained the unit's learning outcomes.
- It is highly recommended you check the written English language of all your in-term assessable items, and that of your Portfolio, prior to submission. Poorly written English language communication and expression will result in the loss of marks.
- Your Portfolio should be submitted in an electronic format using either MS Word or Adobe PDF file format. All files are to be fully named i.e. Student Names_Assignment Number_Unit Code. Failure to undertake this naming protocol will result in work needing to be resubmitted.

All submissions are processed through the similarity detection software (called Turnitin) in Moodle. Ensure that all of your submissions for assessment are your own work and is original, in line with the University's rules and requirements. Your Portfolio should clearly demonstrate that by participating in all team and individual activities you have attained a sound level of individual achievement for all of the unit's learning outcomes.

Referencing Style

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

Submission

Online

Submission Instructions

Ensure that you record both your full name, assignment name and the unit code as part of the naming of all document or file names you submit for assessment.

Learning Outcomes Assessed

- Assess the processes and procedures that would demonstrate compliance with relevant Australian Mining Acts and Regulations in a variety of mining contexts
- Identify and evaluate risks associated with different mining methods and operations
- Generate and evaluate multiple mine design options
- Present and defend a complex design and decision making process
- Work collaboratively in a team to produce high quality outputs

Graduate Attributes

- Knowledge
- Communication
- Cognitive, technical and creative skills
- Research
- Self-management
- Ethical and Professional Responsibility
- Leadership

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