UNSW Course Outline

MINE1010 Mineral Resources Engineering - 2024

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General Course Information

Course Code : MINE1010
Year : 2024
Term : Term 3
Teaching Period : T3
Is a multi-term course? : No
Faculty : Faculty of Engineering
Academic Unit : School of Minerals & Energy Resources Engineering
Delivery Mode : Online
Delivery Format : Standard
Delivery Location : Kensington
Campus : Sydney
Study Level : Undergraduate
Units of Credit : 6

Useful Links

Handbook Class Timetable

Course Details & Outcomes

Course Description

You woke up this morning and most likely looked at your mobile phone. Did you know that this device alone contains about 50 different elements? It must be charged like all of your electronic devices. But how is the electricity produced? Whether it is from renewable energy sources or not,

they all rely on metals and minerals to operate or to be built. Wherever you look you see metals and minerals and as remote as it may seem, all these goods started in a pit. In this course you will develop an awareness for the importance of the mining industry in our lives. Together, we will explore how commodities are extracted from the ground and who are involved at various stages of the mining operation. The topics covered in this course are geology, mining, mineral processing, safety, the impact of mining on the environment, and economics. We will also discuss employability in the mining industry, which employs people of various backgrounds (e.g. geologists, mining engineers, civil engineers, mechanical engineers, environmental engineers, process & chemical engineers, lawyers, finance, etc.) and offers competitive salaries. Why not come and learn about one of the pillars of the Australian economy and a potential employer?

Course Aims

This course aims to provide a basic introduction to mining and the Australian minerals industry. Students will get an overview of the mining industry and how different enabling sub-disciplines are interconnected. Thus, it is of relevance for students from a wide range of disciplines with an interest in the minerals industry, which employs skilled workers with different technical backgrounds.

Students will learn the fundamentals of mining and are invited to think about the challenges and opportunities facing the mining industry. The course also lays a foundation for further studies in the field of mining engineering.

Course Learning Outcomes

Course Learning Outcomes
CLO1 : Select a mining method and a separation process matching the geological characteristics of a mineral deposit
CLO2 : Evaluate safety related hazards, their consequences, and appropriate control options
CLO3 : Identify opportunities for new technologies in the mining sector
CLO4 : Analyse sustainability practices and economic drivers for the mining industry

Course Learning Outcomes	Assessment Item
CLO1 : Select a mining method and a separation process matching the geological characteristics of a mineral deposit	• Application Exercises • Readiness Assurance Test / Quiz
CLO2 : Evaluate safety related hazards, their consequences, and appropriate control options	• Application Exercises • Readiness Assurance Test / Quiz
CLO3 : Identify opportunities for new technologies in the mining sector	• Application Exercises • Readiness Assurance Test / Quiz
CLO4 : Analyse sustainability practices and economic drivers for the mining industry	• Project • Application Exercises • Readiness Assurance Test / Quiz

Learning and Teaching Technologies

Moodle - Learning Management System | Blackboard Collaborate

Learning and Teaching in this course

Further information about resources will be provided on Moodle.

Assessments

Assessment Structure

Assessment Item	Weight	Relevant Dates
Application Exercises Assessment Format: Individual	50%	Start Date: Not Applicable Due Date: Not Applicable
Project Assessment Format: Individual Short Extension: Yes (2 days)	22%	Start Date: 09/09/2024 12:00 AM Due Date: 16/11/2024 12:00 AM
Readiness Assurance Test / Quiz Assessment Format: Individual	28%	Start Date: Not Applicable Due Date: Not Applicable

Assessment Details

Application Exercises

Assessment Overview

Assessment criteria for each in-class activities is explained at the start of the activity and is described in a brief. Generally students will need to explore and analyse given topics and, in a team, provide a written response to the given query at the end of the activity for evaluation. Details of the assessment criteria are available in the description of the task.

The work is assessed by the instructor who will provide a team mark. Students perform a peer-assessment of their contribution and that of their teammates, which is used to provide and individual mark to each student by adjusting the team mark. Feedback is provided through the LTMS.

No mark is given for a team member not participating in the activity (absent).

Indicative time: Teams will be given a few hours to a week to complete these activity depending on the problem.

Course Learning Outcomes

- CLO1 : Select a mining method and a separation process matching the geological characteristics of a mineral deposit
- CLO2 : Evaluate safety related hazards, their consequences, and appropriate control options
- CLO3 : Identify opportunities for new technologies in the mining sector
- CLO4 : Analyse sustainability practices and economic drivers for the mining industry

Assignment submission Turnitin type

Not Applicable

Generative AI Permission Level

Simple Editing Assistance

In completing this assessment, you are permitted to use standard editing and referencing functions in the software you use to complete your assessment. These functions are described below. You must not use any functions that generate or paraphrase passages of text or other media, whether based on your own work or not.
If your Convenor has concerns that your submission contains passages of AI-generated text or media, you may be asked to account for your work. If you are unable to satisfactorily demonstrate your understanding of your submission you may be referred to UNSW Conduct &

Integrity Office for investigation for academic misconduct and possible penalties.
For more information on Generative AI and permitted use please see here.

Project

Assessment Overview

Teams prepare a report based on a mining financial portfolio. Details of the assessment criteria are available in the description of the task.

The work is assessed by the instructor who will provide a team mark. Students perform a peer-assessment of their contribution and that of their teammates, which is used to provide and individual mark to each student by adjusting the team mark. Feedback is provided through the LTMS.

Indicative time: Will vary from team to team depending on organisation and proficiency level.

Course Learning Outcomes

- CLO4 : Analyse sustainability practices and economic drivers for the mining industry

Assignment submission Turnitin type

This assignment is submitted through Turnitin and students can see Turnitin similarity reports.

Generative AI Permission Level

Simple Editing Assistance

In completing this assessment, you are permitted to use standard editing and referencing functions in the software you use to complete your assessment. These functions are described below. You must not use any functions that generate or paraphrase passages of text or other media, whether based on your own work or not.
If your Convenor has concerns that your submission contains passages of AI-generated text or media, you may be asked to account for your work. If you are unable to satisfactorily demonstrate your understanding of your submission you may be referred to UNSW Conduct & Integrity Office for investigation for academic misconduct and possible penalties.
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Readiness Assurance Test / Quiz

Assessment Overview

In-person

Answer multiple choice questions on the week's topic first individually (an individual mark is given) and then in a team (a team mark is given). Feedback is provided in class.

No mark is given for a team member not participating in the activity (absent).

Online

Create questions. Then proceed to answer questions created by other students. Leave constructive feedback. An individual mark is given for this activity. Feedback via LTMS.

Indicative time: Each test/quiz may take between 10 and 30 minutes to complete.

Course Learning Outcomes

- CLO1 : Select a mining method and a separation process matching the geological characteristics of a mineral deposit
- CLO2 : Evaluate safety related hazards, their consequences, and appropriate control options
- CLO3 : Identify opportunities for new technologies in the mining sector
- CLO4 : Analyse sustainability practices and economic drivers for the mining industry

Assignment submission Turnitin type

Not Applicable

Generative AI Permission Level

No Assistance

This assessment is designed for you to complete without the use of any generative AI. You are not permitted to use any generative AI tools, software or service to search for or generate information or answers.
For more information on Generative AI and permitted use please see here.

General Assessment Information

Further assessment information and due date will be provided on Moodle.

Grading Basis

Standard

Course Schedule

Attendance Requirements

Students are strongly encouraged to attend all classes and review lecture recordings.

General Schedule Information

Further information about course schedule will be provided on Moodle.

Course Resources

Prescribed Resources

Dunbar, W.S., 2016. How mining works. Society for Mining, Metallurgy & Exploration (SME), Englewood, Colorado, 215 p.

Further information about resources will be provided on Moodle.

Recommended Resources

Further information about resources will be provided on Moodle.

Course Evaluation and Development

Further information about resources will be provided on Moodle.

Staff Details

Position	Name	Email	Location	Phone	Availability	Equitable Learning Services Contact	Primary Contact
	Alex (Abolfazl) Hashemi		Room 225, Tyree building	z3542653@ad.unsw.edu.au		No	Yes

Other Useful Information

Academic Information

I. Special consideration and supplementary assessment

If you have experienced an illness or misadventure beyond your control that will interfere with your assessment performance, you are eligible to apply for Special Consideration prior to, or within 3 working days of, submitting an assessment or sitting an exam.

Please note that UNSW has a Fit to Sit rule, which means that if you sit an exam, you are declaring yourself fit enough to do so and cannot later apply for Special Consideration.

For details of applying for Special Consideration and conditions for the award of supplementary

assessment, please see the information on UNSW's Special Consideration page.

II. Administrative matters and links

All students are expected to read and be familiar with UNSW guidelines and polices. In particular, students should be familiar with the following:

- Attendance
- UNSW Email Address
- Special Consideration
- Exams
- Approved Calculators
- Academic Honesty and Plagiarism
- Equitable Learning Services

III. Equity and diversity

Those students who have a disability that requires some adjustment in their teaching or learning environment are encouraged to discuss their study needs with the course convener prior to, or at the commencement of, their course, or with the Equity Officer (Disability) in the Equitable Learning Services. Issues to be discussed may include access to materials, signers or note-takers, the provision of services and additional exam and assessment arrangements. Early notification is essential to enable any necessary adjustments to be made.

IV. Professional Outcomes and Program Design

Students are able to review the relevant professional outcomes and program designs for their streams by going to the following link: https://www.unsw.edu.au/engineering/student-life/student-resources/program-design.

Note: This course outline sets out the description of classes at the date the Course Outline is published. The nature of classes may change during the Term after the Course Outline is published. Moodle or your primary learning management system (LMS) should be consulted for the up-to-date class descriptions. If there is any inconsistency in the description of activities between the University timetable and the Course Outline/Moodle/LMS, the description in the Course Outline/Moodle/LMS applies.

Academic Honesty and Plagarism

UNSW has an ongoing commitment to fostering a culture of learning informed by academic

integrity. All UNSW students have a responsibility to adhere to this principle of academic integrity. Plagiarism undermines academic integrity and is not tolerated at UNSW. *Plagiarism at UNSW is defined as using the words or ideas of others and passing them off as your own.*

Plagiarism is a type of intellectual theft. It can take many forms, from deliberate cheating to accidentally copying from a source without acknowledgement. UNSW has produced a website with a wealth of resources to support students to understand and avoid plagiarism, visit: student.unsw.edu.au/plagiarism. The Learning Centre assists students with understanding academic integrity and how not to plagiarise. They also hold workshops and can help students one-on-one.

You are also reminded that careful time management is an important part of study and one of the identified causes of plagiarism is poor time management. Students should allow sufficient time for research, drafting and the proper referencing of sources in preparing all assessment tasks.

Repeated plagiarism (even in first year), plagiarism after first year, or serious instances, may also be investigated under the Student Misconduct Procedures. The penalties under the procedures can include a reduction in marks, failing a course or for the most serious matters (like plagiarism in an honours thesis or contract cheating) even suspension from the university. The Student Misconduct Procedures are available here:

www.gs.unsw.edu.au/policy/documents/studentmisconductprocedures.pdf

Submission of Assessment Tasks

Work submitted late without an approved extension by the course coordinator or delegated authority is subject to a late penalty of five percent (5%) of the maximum mark possible for that assessment item, per calendar day.

The late penalty is applied per calendar day (including weekends and public holidays) that the assessment is overdue. There is no pro-rata of the late penalty for submissions made part way through a day. This is for all assessments where a penalty applies.

Work submitted after five days (120 hours) will not be accepted and a mark of zero will be awarded for that assessment item.

For some assessment items, a late penalty may not be appropriate. These will be clearly

indicated in the course outline, and such assessments will receive a mark of zero if not completed by the specified date. Examples include:

- Weekly online tests or laboratory work worth a small proportion of the subject mark;
- Exams, peer feedback and team evaluation surveys;
- Online quizzes where answers are released to students on completion;
- Professional assessment tasks, where the intention is to create an authentic assessment that has an absolute submission date; and,
- Pass/Fail assessment tasks.

Faculty-specific Information

Engineering Student Support Services – The Nucleus - enrolment, progression checks, clash requests, course issues or program-related queries

Engineering Industrial Training – Industrial training questions

UNSW Study Abroad – study abroad student enquiries (for inbound students)

UNSW Exchange – student exchange enquiries (for inbound students)

UNSW Future Students – potential student enquiries e.g. admissions, fees, programs, credit transfer

Phone

(+61 2) 9385 8500 – Nucleus Student Hub

(+61 2) 9385 7661 – Engineering Industrial Training

(+61 2) 9385 3179 – UNSW Study Abroad and UNSW Exchange (for inbound students)

School-specific Information

Course completion

Course completion requires submission of all assessment items. Failure to submit all assessment items may result in the award of an Unsatisfactory Failure (UF) grade for the course unless special consideration has been submitted and approved.

Submission of Assessment Tasks

We encourage you to retain a copy of every assignment submitted for your own record, either in hardcopy or electronic form. All assessments must have an assessment cover sheet attached (if required).

Student Resources

The School has student resources section, containing useful advice and information to ensure you're able to focus on your studies.

Computing Resources and Internet Access Requirements

UNSW Minerals and Energy Resources Engineering provides blended learning using the online Moodle LMS (Learning Management System). Also see - Transitioning to Online Learning: https://www.student.unsw.edu.au/transitioning-online-learning

Note that some specialist engineering software is not available for Mac computers.

- Mining Engineering Students: OMB G48
- Petroleum Engineering Students: TETB LG34 & LG35

For more information about system requirements is available at www.student.unsw.edu.au/moodle-system-requirements

Accessing Course Materials Through Moodle

Course outlines, support materials are uploaded to Moodle, the university standard Learning Management System (LMS). In addition, on-line assignment submissions are made using the assignment dropbox facility provided in Moodle. All enrolled students are automatically included in Moodle for each course. To access these documents and other course resources, please visit: www.moodle.telt.unsw.edu.au

School Contact Information

School of Minerals and Energy Resources
Old Main Building, Level 1, 159 (K15)
UNSW SYDNEY NSW 2052 AUSTRALIA

For current students, all enquiries and assistance relating to enrolment, class registration, progression checks and other administrative matters, please see The Nucleus: Student Hub.

Web & Important Links:

School of Minerals and Energy Resources

The Nucleus Student Hub

Moodle

UNSW Handbook

UNSW Timetable

Student Wellbeing

Urgent Mental Health & Support

Equitable Learning Services