UNSW Course Outline

MINE8101 Fundamentals of Mining Engineering - 2024

Published on the 02 Feb 2024

General Course Information

Course Code : MINE8101
Year : 2024
Term : Term 1
Teaching Period : T1
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 : Postgraduate
Units of Credit : 6

Useful Links

Handbook Class Timetable

Course Details & Outcomes

Course Description

Embark on a captivating educational journey with the Fundamentals of Mining Engineering course! This course serves as a gateway to the dynamic field of mining engineering, equipping students with a foundation in this critical industry. Through topics such as geology, mine

management, and mineral processing, you will gain valuable insights into the multifaceted world of mining engineering.

Our approach to teaching emphasises active learning and provides opportunities for students to assess their understanding while viewing the lectures. In this course, you will uncover the driving forces behind the extraction of essential resources. Additionally, you will cultivate a deep appreciation for sustainable mining practices, from the initial stages of exploration to the responsible closure of mining operations.

This course places a strong emphasis on developing a practical understanding of the major mining methods employed both within Australia and on an international scale. By delving into these methodologies, you will gain the knowledge and skills needed to excel in the mining engineering field.

Join this immersive learning experience and take the first step toward a promising career in the dynamic world of mining engineering. Discover the critical role you can play in ensuring responsible resource extraction and shaping the future of the mining industry.

Course Aims

This course provides an introduction to the discipline of mining engineering and relevant enabling sub-disciplines. The aims of the course are:

- To provide a comprehensive overview of the principles and practices of mining engineering.
- To enable students to understand the fundamentals of mining, including geology, ore extraction, mineral processing, and mine management.
- To provide students with an understanding of the role of mining in society and its impact on the environment.
- To encourage students to actively participate in their learning, engaging with the course content and collaborating with their peers in online discussion forums.

Course Learning Outcomes

Course Learning Outcomes
CLO1 : Explain the role of the mining engineer within the mining industry
CLO2 : Explain key elements of key sub-disciplines that support mining engineering
CLO3 : Appraise sustainable mining practices from exploration to mine closure
CLO4 : Describe principle mining methods
CLO5 : Evaluate key domestic and international drivers in the exploitation of mineral resources

Course Learning Outcomes	Assessment Item
CLO1 : Explain the role of the mining engineer within the mining industry	• Industry Insight Exchange
CLO2 : Explain key elements of key sub-disciplines that support mining engineering	• Quizzes (x3) • Major Project
CLO3 : Appraise sustainable mining practices from exploration to mine closure	• Quizzes (x3) • Major Project
CLO4 : Describe principle mining methods	• Quizzes (x3) • Major Project
CLO5 : Evaluate key domestic and international drivers in the exploitation of mineral resources	• Major Project

Learning and Teaching Technologies

Moodle - Learning Management System | Blackboard Collaborate

Assessments

Assessment Structure

Assessment Item	Weight	Relevant Dates
Industry Insight Exchange Assessment Format: Individual	15%	Start Date: Not Applicable Due Date: In 2 phases as per Moodle
Quizzes (x3) Assessment Format: Individual	45%	Start Date: Not Applicable Due Date: Weeks 4, 6, and 8
Major Project Assessment Format: Individual	40%	Start Date: Not Applicable Due Date: 21/04/2024 11:59 PM

Assessment Details

Industry Insight Exchange

Assessment Overview

This assessment task requires students to engage with a practising mining engineer, either in person or remotely, and ask questions related to their experience and insights. This task provides students with practical insights into the field of mining engineering, allowing them to gain an understanding of mining engineering. Students already working in mines in a mining sub-discipline may opt to share their experience by presenting their work. The task also provides an opportunity for students to build professional networks in the industry.

The output of this task will be either a report or a presentation. Marking will be against specific criteria in a marking guide by the course instructor(s) and students (i.e., peer marking). Feedback will be provided online.

Course Learning Outcomes

- CLO1 : Explain the role of the mining engineer within the mining industry

Detailed Assessment Description

Detais of the task can be found in the brief published on Moodle.

Assignment submission Turnitin type

This is not a Turnitin assignment

Quizzes (x3)

Assessment Overview

Quizzes will include three sets of topical quizzes that cover a range of topics introduced in the course. The quizzes will be administered online and will mainly consist of multiple-choice questions.

The topical quizzes will be used to evaluate students' knowledge and understanding of specific topics covered in the course. They will be timed to encourage students to work efficiently and accurately, and the results will be recorded for evaluation.

Course Learning Outcomes

- CLO2 : Explain key elements of key sub-disciplines that support mining engineering
- CLO3 : Appraise sustainable mining practices from exploration to mine closure
- CLO4 : Describe principle mining methods

Assessment Length

3 x 30 minutes

Assignment submission Turnitin type

This is not a Turnitin assignment

Major Project

Assessment Overview

This is the major assessment task for the course, a project report that requires students to review and analyse a range of components involved in mining engineering and draw conclusions. The project involves developing a descriptive report demonstrating critical analysis, effective communication, and applying ethical principles. This assessment task provides an opportunity for students to apply their learning in a practical context, developing their research, analysis, and communication skills while encouraging creativity and independent thinking. This is the major assessment and its mark will be released alongside the final grade, and students can request feedback upon their request.

Course Learning Outcomes

- CLO2 : Explain key elements of key sub-disciplines that support mining engineering
- CLO3 : Appraise sustainable mining practices from exploration to mine closure
- CLO4 : Describe principle mining methods
- CLO5 : Evaluate key domestic and international drivers in the exploitation of mineral resources

Detailed Assessment Description

Details provided in the brief published on Moodle.

Assignment submission Turnitin type

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

General Assessment Information

Grading Basis

Standard

Course Schedule

Attendance Requirements

Not Applicable - as no class attendance is required

General Schedule Information

There is no formal class time. The course is run asynchronously such that students can view the material when suitable.

Course Resources

Prescribed Resources

Resources will be available on Moodle.

Recommended Resources

There is no formal textbook for this course. However, if there is one textbook I would recommend it is:

- Dunbar, W.S., 2016. How mining works, Society for Minng, Metallurgy & Exploration (SME), 215 p.

It is available online through the library website. Textbooks relevant to the topic being reviewed are also suggested in the course Moodle site and made available online or as a hardcopy through the library.

Course Evaluation and Development

At the end of each course, all students will have the opportunity to complete a course evaluation form. These anonymous surveys help us understand your views of the course, your lecturers and the course materials. We are continuously improving our courses based on student feedback, and your perspective is valuable.

Feedback is given via https://student.unsw.edu.au/myexperience and you will be notified when this is available for you to complete.

We also encourage all students to share any feedback they have any time during the course – if you have a concern, please contact us immediately.

Staff Details

Position	Name	Email	Location	Phone	Availability	Equitable Learning Services Contact	Primary Contact
Convenor	Hamed Lamei Ramandi		School of Minerals and Energy Resources Engineering Old Main Building, Rm 156	+61 (2) 9065 7310	Moodle	Yes	No
Lecturer	Ghislain Bournival		School of Minerals and Energy Resources Engineering Old Main Building, Rm 156	+61 (2) 9065 2036	Moodle	Yes	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.

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: www.covid19studyonline.unsw.edu.au

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