



Faculty of Engineering

School of Minerals and Energy Resources Engineering

Undergraduate Course Outline

MINE4710

Mine Management

Dr Carlito Tabelin

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INFORMATION ABOUT THE COURSE

Course Code:	MINE4710	Term:	T2, 2020	Level:	UG	Units/Credits	6 UOC
Course Name:	Mine Management						

Course Convenor:	Dr Carlito Tabelin		
Contact Details	School of Minerals and Energy Resources Engineering OMB, 159C	EMAIL:	c.tabelin@unsw.edu.au
		Phone:	+61 2 9385 7946
Contact times	Lecture time schedule Tuesdays, 14:00-16:00, Online Fridays, 11:00-13:00, Online		

1. Course Description

The course provides an understanding of management principles and perspectives vital to a mine manager's successful running of a mining enterprise. The course consists of four modules: (1) mining law, safety and risk management; (2) minerals economics and mine cost structure; (3) management fundamentals; and (4) mine operations management.

Course completion requires:

- submission of **all assessment items**; failure to submit all assessment items will result in the award of an Unsatisfactory Failure (UF) grade for the Course.

2. Assumed Knowledge

This course assumes that students: have a good understanding of mining terms, descriptions and systems; have been exposed to various mining methods; and are familiar with mining development, operations, production and materials handling.

3. Attendance

To pass this course it is expected that you will attend at least 80% of tutorials and lectures. *If your attendance is below 80% you will not be admitted to the final exam.* Attendance will be recorded when applicable. Normally, there is no make-up work for poor attendance. If you have misadventure or ill-health, please contact your course coordinator soon as possible. The attendance requirement is not meant to be punitive. It is included because participation is an important part of achieving the course outcomes.

• AIMS, LEARNING OUTCOMES AND GRADUATE ATTRIBUTES

1. Course Aims

This course aims to equip the student with an appreciation of management principles and practices vital to a mine manager's successful running of a mining enterprise. In addition, there will be a number of topics of special focus relating to risk and safety, economic development, optimum resource utilisation, environment and community.

2. Learning Outcomes

At the conclusion of this course, students should be able to:

1. Recognise that mine management is a holistic process
2. Identify the key stakeholders in a mining project and their respective needs
3. Demonstrate an awareness of management theory and processes
4. Recognise the factors that motivate people's behaviour in the mine working environment (role play/debate)
5. Apply the principal performance measures used in mine management
6. Demonstrate an awareness of mining law (safety, mining leases etc.)
7. Recognise and appraise the factors contributing to safety and risk management issues in specific mining-related processes
8. Investigate the causes and consequences of mining-related serious incidents and propose risk management strategies
9. Demonstrate an awareness of contractor management (v. owner-operated) issues
10. Demonstrate team skills
11. Demonstrate advanced written and oral communication skills.

3. Graduate Attributes

This course will contribute to the development of the following Graduate Attributes:

- Appropriate technical knowledge
- Having advanced problem solving, analysis and synthesis skills with the ability to tolerate ambiguity
- Ability for engineering design and creativity
- Awareness of opportunities to add value through engineering and the need for continuous improvement
- Being able to work and communicate effectively across discipline boundaries
- Having HSEC consciousness
- Being active life-long learners.

3. REFERENCE RESOURCES

3.1 Reference Materials

- AusIMM 2012 Mine Managers' Handbook, Monograph 26.
- AusIMM 2009 Australasian Coal Mining Practice, Monograph 12, 3rd ed., Chapters 40-42.
- Maxwell, P. and Guj, P. (eds) 2006 Australian Mineral Economics: A Survey of Important Issues, AusIMM
- MEA Report Writing Guide for Mining Engineers. P Hagan and P Mort (Mining Education Australia (MEA)). (Latest edition available for download from the School website or a hardcopy version is available from the UNSW Bookshop)

- Guide to Authors. (Australasian Institute of Mining and Metallurgy: Melbourne) (Available for download from the AusIMM website)
- The Complete Idiot's Guide to Project Management. G Campbell and S Baker (Alpha: New York) or its equivalent.
- Style Manual for Authors, Editors and Printers, 2002. 6th edition (John Wiley & Sons)
- The Research Project – How to Write It, 2000. R Berry, 4th edition (Routledge: London) • How to Write a Better Thesis, 2002. D Evans and P Gruba (Melbourne University Press: Melbourne)

3.2 Other Resources (if applicable)

- Learning Guide: Mining Research Project
- Student Resource Book: Mining Research Project
- EndNote, software package available to UNSW students
- ELISE, the on-line study skills tutorial and ELISE Plus. Both tutorials will be useful to students when preparing the Annotated Bibliography and Project Progress Report assignment submissions. The latter in particular includes a tutorial on EndNote and RefWorks. The tutorials can be accessed at < <http://info.library.unsw.edu.au/skills/tutorials.html> >.
- The Learning Centre. Several resources are available at the UNSW Learning Centre website to assist students in preparing the various assessment tasks including:
- Guide for Writing Thesis Proposals, available at <https://student.unsw.edu.au/thesis-proposals>
- Honours Thesis Writing for Engineering and Science Students, available at <https://student.unsw.edu.au/honours-thesis-writing-engineering-and-science-students>

3.3 Online Resources

- www.austlii.edu.au – for Acts and Regulations for all states and territories
- All other online reading resources will be available on Moodle

Videos are often provided to students as a web stream within the Moodle learning management system. Videos are not available for download by students, unless approved by the Course Convenor and either the Undergraduate or Postgraduate Coursework Director. Special consideration can be provided for students to access videos off-line (eg. working remotely). Please contact the Course Convenor for more information. Note that UNSW reserves the right to deliver videos as a web stream rather than offline and cannot provide videos that are copyright from other providers.

4. COURSE CONTENT AND LEARNING ACTIVITIES

4.1 Learning Activities Summary

Week	Class date	Activity/Topic
1a	2 Jun	Introduction to the Course Mine Management (Dr Carlito Tabelin)
1b	5 Jun	NSW Mine Safety Law (Dr Carlito Tabelin)
2a†	9 Jun	Fundamentals of Mineral Economics/ Strategic Mineral Management 1 (Steve Gemell)
2b	12 Jun	Practical Risk Management in Mining (Prof Ismet Canbulat)
3a†	16 Jun	Fundamentals of Mineral Economics/ Strategic Mineral Management 2 (Steve Gemell)
3b	19 Jun	Management Mine Accidents and Disasters - A Reflection on Management Issues (Prof Bruce Hebblewhite)
4a	23 Jun	Resource Management: Technospheric Mining (Dr Richard Alorro)
4b	26 Jun	Project Management (Dr Carlito Tabelin)
5a	30 Jun	Disaster Case Study ASSESSMENT
5b	3 Jul	Quiz 1
6a	7 Jul	Flexibility week
6b	10 Jul	
7a	14 Jul	Perspectives on Leadership – Contract Management (Joe Clayton)
7b	17 Jul	Mining Turnaround Case Study – Lihir Gold Mine (Joe Clayton)
8a	21 Jul	Operations Management-Systems Engineering (Prof Peter Knights)
8b	24 Jul	Systems Engineering (Dr Chengguo Zhang)
9a*	28 Jul	No lecture
9b*	31 Jul (4-h)	Contract, mining operation and asset management (Ben Hosseini)
10a	4 Aug	Operations Management-Fleet Maintenance Systems (Prof Peter Knights)
10b	7 Aug	Management Fundamentals (Role Play) Role Play of an Industrial Dispute

*: Special schedule

†: Could be rescheduled depending on the speaker's availability

UNSW Key dates: <https://student.unsw.edu.au/new-calendar-dates>

5. COURSE ASSESSMENT

5.1 Assessment Summary

Assessment task	Release date	Due date	Weight (%)	Assessment
A1.0	11 Jun	8 Jul	20	Disaster Case Study
A2.0	8 Jul	12 Aug	20	Industrial Relations Roleplay
A3.0	Every week	-	20	Online Discussion Board
A4.0	8 Jul	-	20	Quiz 1
A5.0	14 Aug	-	20	Quiz 2

Assignments related details/submission-box will be available online through Moodle. Access to the Moodle site is via the Moodle icon on the MyUNSW homepage.

6. ASSESSMENT CRITERIA

The assessment criteria provide a framework for you to assess your own work before formally submitting major assignments to your course convenor. Your course convenor will be using this framework to assess your work and as a way to assess whether you have met the listed learning outcomes and the graduate attributes for your program. We ask that you do not use the assessment criteria guidelines as a checklist, but as a tool to assess the quality of your work. Your course convenor will also be looking at the quality, creativity and the presentation of your written assignment as they review the framework. Rubrics, wherever applicable, will be provided at the time of the assignment release.

7. STUDYING A UG COURSE IN UNSW MINERALS AND ENERGY RESOURCES ENGINEERING

7.1 How We Contact You

At times, the School or your course convenors may need to contact you about your course or your enrolment. Your course convenors will use the email function within Moodle or we will contact you on your @student.unsw.edu.au email address.

We understand that you may have an existing email account and would prefer for your UNSW emails to be redirected to your preferred account. Please see these instructions on how to redirect your UNSW emails: <https://www.it.unsw.edu.au/students/email/index.html>

7.2 How You Can Contact Us

We are always ready to assist you with your inquiries. To ensure your question is directed to the correct person, please use the email address below for:

Enrolment or other admin questions regarding your program:
<https://unswinsight.microsoftcrmpartals.com/web-forms/>

Course inquiries: these should be directed to the Course Convenor.

7.3 Computing Resources and Internet Access Requirements

UNSW Minerals and Energy Resources Engineering provides blended learning using the on-line Moodle LMS (Learning Management System).

It is essential that you have access to a PC or notebook computer. Mobile devices such as smart phones and tablets may compliment learning, but access to a PC or notebook computer is also required. Note that some specialist engineering software is not available for Mac computers.

Mining Engineering Students: OMB G48/49
Petroleum Engineering Students: TETB

It is recommended that you have regular internet access to participate in forum discussion and group work. To run Moodle most effectively, you should have:

- broadband connection (256 Kbit/sec or faster)
- ability to view streaming video (high or low definition UNSW TV options)

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

7.4 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

7.5 Assignment Submissions

The School has developed a guideline to help you when submitting a course assignment.

We encourage you to retain a copy of every assignment submitted for assessment for your own record either in hardcopy or electronic form.

All assessments must have a assessment cover sheet attached.

7.6 Late Submission of an Assignment

Full marks for an assignment are only possible when an assignment is received by the due date.

We understand that at times you may not be able to submit an assignment on time, and the School will accommodate any fair and reasonable extension. We would recommend you review the UNSW Special Consideration guidelines – see following section.

Full marks for an assignment are only possible when an assignment is received by the due date. In fairness to those students who do meet the assignment due date and time, deductions will apply to submissions made after this time. Penalty marks will be applied at the following rate if submitted after the due date: five (5) percentile points of the maximum possible mark for each day or part thereof that the assessment is overdue.

For example, if a student submitted the Project Progress Report five days after the due date and the unadjusted mark was 68% then the final adjustment mark for the assignment would be 43%; that is the raw mark of 68% less 25 percentile points (5 days @ 5 percentile points per day).

7.7 Special Consideration

You can apply for special consideration through [UNSW Student Central](#) when illness or other circumstances interfere with your assessment performance. Sickness, misadventure or other circumstances beyond your control may:

- Prevent you from completing a course requirement,
- Keep you from attending an assessable activity,
- Stop you submitting assessable work for a course,
- Significantly affect your performance in assessable work, be it a formal end-of-semester examination, a class test, a laboratory test, a seminar presentation or any other form of assessment.

We ask that you please contact the Course Convenor immediately once you have completed the special consideration application, no later than one week from submission.

More details on special consideration can be found at: www.student.unsw.edu.au/special-consideration

7.8 Course Results

For details on UNSW assessment policy, please visit: www.student.unsw.edu.au/assessment

In some instances your final course result may be withheld and not released on the UNSW planned date. This is indicated by a course grade result of either:

- WD – which usually indicates you have not completed one or more items of assessment or there is an issue with one or more assignment; or
- WC – which indicates you have applied for Special Consideration due to illness or misadventure and the course results have not been finalised.

In either event it would be your responsibility to contact the Course Convener as soon as practicable but no later than five (5) days after release of the course result. If you don't contact the convener on time, you may be required to re-submit an assignment or re-sit the final exam and may result in you failing the course. You would also have a NC (course not completed) mark on your transcript and would need to re-enrol in the course.

7.9 Students Needing Additional Support

The Student Equity and Disabilities Unit (SEADU) aims to provide all students with support and professional advice when circumstances may prevent students from achieving a successful university education. Take a look at their webpage: www.studentequity.unsw.edu.au/

7.10 Academic Honesty and Plagiarism

Your lecturer and the University will expect your submitted assignments are truly your own work. UNSW has very clear guidelines on what plagiarism is and how to avoid it. Plagiarism is using the words or ideas of others and presenting them 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. The University has adopted an educative approach to plagiarism and has developed a range of resources to support students. All the details on plagiarism, including some useful resources, can be found at www.student.unsw.edu.au/plagiarism.

All Mining Engineering students are required to complete a student declaration for academic integrity which is outlined in the assignment cover sheets. By signing this declaration, you agree that your work is your own original work.

If you need some additional support with your writing skills, please contact the Learning Centre or view some of the resources on their website: www.lc.unsw.edu.au/. The Learning Centre is designed to help you improve your academic writing and communication skills. Some students use the Centre services because they are finding their assignments a challenge, others because they want to improve an already successful academic performance.

7.11 Continual Course Improvement

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.



School of Minerals and Energy Resources Engineering

Assessment Cover Sheet

Course Convenor: _____
 Course Code: _____ Course Title: _____
 Assignment: _____
 Due Date: _____
 Student Name: _____ Student ID: _____

ACADEMIC REQUIREMENTS

Before submitting this assignment, the student is advised to review:

- the assessment requirements contained in the briefing document for the assignment;
- the various matters related to assessment in the relevant Course Outline; and
- the *Plagiarism and Academic Integrity* website at < <http://www.lc.unsw.edu.au/plagiarism/pintro.html> > to ensure they are familiar with the requirements to provide appropriate acknowledgement of source materials.

If after reviewing this material there is any doubt about assessment requirements, then in the first instance the student should consult with the Course Convenor and then if necessary with the Director – Undergraduate Studies.

While students are generally encouraged to work with other students to enhance learning, all assignments submitted for assessment must be their entire own work and duly acknowledge the use of other person's work or material. The student may be required to explain any or all parts of the assignment to the Course Convenor or other authorised persons. *Plagiarism* is using the work of others in whole or part without appropriate acknowledgement within the assignment in the required form. *Collusion* is where another person(s) assists in the preparation of a student's assignment without the consent or knowledge of the Course Convenor.

Plagiarism and *Collusion* are considered as Academic Misconduct and will be dealt with according to University Policy.

STUDENT DECLARATION OF ACADEMIC INTEGRITY

I declare that:

- This assessment item is entirely my own original work, except where I have acknowledged use of source material [such as books, journal articles, other published material, the Internet, and the work of other student/s or any other person/s].
- This assessment item has not been submitted for assessment for academic credit in this, or any other course, at UNSW or elsewhere.

I understand that:

- The assessor of this assessment item may, for the purpose of assessing this item, reproduce this assessment item and provide a copy to another member of the University.
- The assessor may communicate a copy of this assessment item to a plagiarism checking service (which may then retain a copy of the assessment item on its database for the purpose of future plagiarism checking).

Student Signature: _____

Date: _____

Students are advised to retain a copy of this assessment for their records and submission should be made in accordance to the assessment details available on the course Moodle site.

MINE4710 Mine Management, T2 2020