MINE4910

Mining in a Global Environment

Term 3, 2021

Course Overview

Staff Contact Details

Convenors

Name	Email	Availability	Location	Phone
Carlito Tabelin	c.tabelin@unsw.edu.au	Thursdays (15:00–17:00)	Old Main Building, Level 1, Room 159C	+61 2 9385 7946

School Contact Information

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Engineering Student Services
E: mere.teaching@unsw.edu.au
W: www.engineering.unsw.edu.au/minerals-energy-resources

Course Details

Units of Credit 6

Summary of the Course

This course provides students with the tools necessary to meet the challenges of working for mining companies as mining engineers and managers in an international (and/or remote Australian) setting. The focus will be on developing countries and an aim will be to draw comparisons between the Australian and international contexts. The course will draw extensively on case studies. It will provide an international perspective of mining; governance and regulatory frameworks; financing; mining companies as agents of change; cross-cultural management; gender; small-scale mining; indigenous communities; health and safety issues; and the influence of China and India.

Course Aims

This course aims to provide students with the tools necessary to meet the challenges of working for mining companies as mining engineers and managers in an international setting.

Course Learning Outcomes

After successfully completing this course, you should be able to:

Learning Outcome	EA Stage 1 Competencies
1. Demonstrate an understanding of legal, political and cultural context of mining in international locations	PE1.1, PE3.1
2. Demonstrate an understanding of the application of sustainable mining practices to mining globally	PE1.3, PE2.1, PE3.3, PE3.4
3. Demonstrate an understanding of the global impacts of mining coal, uranium, gold, copper, nickel and other significant commodities	PE1.1, PE1.6
4. Demonstrate an understanding of cross cultural issues	PE1.1, PE3.1, PE3.3
5. Demonstrate an understanding of topical issues affecting Australians working in mining overseas	PE1.2, PE1.6, PE3.3, PE3.6

Teaching Strategies

The learning outcomes will be assessed by the assignments (individual and group), quizzes and presentation.
Teaching & Learning Methods

1. Activity-based learning: This course utilises activity-based learning methods. Activity-based learning is different from the traditional face-to-face lecture format of a lecturer in the front of the class doing most of the talking. The interactive sessions could include a traditional lecture using a PowerPoint presentation or a tutorial session or a group activity to reinforce the learning.

2. Lectures and tutorials: Project work will be supported with weekly consultative and information-sharing session. The content of these are aligned with the projects to help students. Although this is an activity-based course, it is a requirement that all work is conducted within the School. The course has been set up to allow the student to work at their own pace through the presentation material on Moodle. There will be no planned face to face lectures however guest lecturers will be invited from time to time.
3. Group work: Each project will have a number of focus areas. Members of a group may elect to work on a topic of the project they feel more comfortable with, but should integrate their work into the whole project. This should be reported back at their team meetings. A peer review will have to be submitted by each team indicating the proportion of each individual group member's contribution to the project. Some marks will be taken from the underperforming students and allocated to the other group members. If a student makes no contribution to the project, he/she will receive zero for that project. Ideally groups of 4 will be selected by the course coordinator.
4. Effective Communication: One of the most effective means of learning is to effectively communicate what has been learned. Part of the assessment in this course will be determined by how effectively the results are communicated. There are a number of opportunities for this in the form of presentations and final reports. The process of writing reports, brainstorming within a design team, peer assessment, preparation and presentation of report both in front of an audience and in report form, requires clarity of thinking, defending and revising a design and analysing the risks inherent in a project.
5. Peer Assessment:.Group performance is a key component of the assessment for this course. The sole measure of performance of team work is by peer review. Teams which are having problems with unproductive or non-cooperative members are encouraged to seek the intervention of the course coordinator as early as possible. Do not leave these problems to the last minute. SPARK will be used as peer assessment tool. The PEER REVIEW is required for all group assessments. SPARK is an online tool that will be used to collect Self and Peer Assessment data. These data will be used to provide feedback to, and receive feedback from, your group members regarding contributions to the project.

Additional Course Information

Assumed Knowledge

This course assumes that students have attained a certain level of maturity to enable them to understand the issues involved. It will be thus suitable for final year mining engineering students. Students should have completed MINE3910 Socio-Environmental Aspects of Mining.

Assessment

Assessment task	Weight	Due Date	Course Learning Outcomes Assessed
1. Assignment 1 - Case Study	30%	Week 7	1, 2, 3, 4, 5
2. Assignment 2 - Mining in a Sensitive Environment	40%	Week 10	1, 2, 3, 4, 5
3. End of Course Quiz	30%	Exam Period	1, 2, 3, 4, 5

Assessment 1: Assignment 1 - Case Study

Start date: Week 1
Due date: Week 7

You are assigned a task to prepare a written report on the potential risks in investing in mining in a particular country. You will need to select a country of your choice based on availability and confirmation from the course convenor for this task. You will also need to present your findings to the class in a 15-minute presentation on Week 7. Rubrics for this assessment are found on Moodle.

Part 1 (20%): Country Risk Case Study (Report)
Individual written assignment of maximum 2250 words plus one-page executive summary.

Part 2 (10%): Country Risk Case Study (Presentation)
In-class presentations (15 minutes each)

This assignment is submitted through Turnitin and students do not see Turnitin similarity reports.

Assessment criteria

*Note: Rubrics for this assessment are found on Moodle.

Assessment 2: Assignment 2 - Mining in a Sensitive Environment

Start date: Week 1
Due date: Week 10

The Hunter Valley is situated approximately 120 km north of Sydney, a region famous for its wineries and coal mines. Supposed an iron oxide copper-gold (IOCG) deposit containing uranium identical to the ore mined in Olympic dam is discovered in this area, which is unique because of its close proximity to a bustling town, a river, a productive agricultural area and a relatively flat terrain.

Your assignment will take place in the simulated world (AVIE). The module has been loaded into the AVIE. In this exercise, you have the ability to design your mining, mineral processing and extractive metallurgical operations as well as ways to rehabilitate the site through 4 pushbacks. Your group will be allowed a total of 5 hours (two sessions) in AVIE.

Your group performance for this assessment task will be evaluated through a written report of not more

than 4000 words (excluding references) as well as a 25-minute group presentation in the AVIE. Individual marks will be allocated based on peer ratings through Moodle.

Rubrics for this assessment are also found on Moodle.

This assignment is submitted through Turnitin and students do not see Turnitin similarity reports.

Assessment criteria

*Note: Rubrics for this assessment are found on Moodle.

Assessment 3: End of Course Quiz

Start date: Exam Period
Due date: Exam Period

The final exam is composed of essay-type questions to test the understanding of all the materials.

This assignment is submitted through Turnitin and students do not see Turnitin similarity reports.

Assessment criteria

*Note: The final exam will be online via the Inspera Platform.

Attendance Requirements

To pass this course, it is expected that you will attend at least 80% of tutorials and lectures. Failure to meet the specified attendance requirements of the course may result in the award of an Unsatisfactory Failure (UF) grade for the Course.

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 as 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.

Course Schedule

View class timetable

Timetable

Date	Type	Content
Week 1: 13 September - 17 September	Lecture	• Course Introduction • Mining & Sustainable development
	Group Work	AVIE (remote access) Tutorial
Week 2: 20 September - 24 September	Group Work	AVIE Hunter Valley Module (remote access) (Group 1)
	Lecture	International perspectives on mining • *UN treaties and summits* • *International treaties and rule of law*
Week 3: 27 September - 1 October	Group Work	AVIE Hunter Valley Module (remote access) (Group 2)
	Lecture	Governance and International law • *Governance issues in developing countries* • *Comparison of mining laws internationally*
Week 4: 4 October - 8 October	Group Work	AVIE Hunter Valley Module (remote access) (Group 1)
	Lecture	The roles, responsibilities and influence of Mining companies • *Leading practices* • *Community engagement and roles of NGOs*

Week 5: 11 October - 15 October	Group Work	AVIE Hunter Valley Module (remote access) (Group 2)
	Lecture	Environmental Challenges of Global Mining • *Tailings and waste rock management* • *Acid Mine Drainage Prevention and Control*
Week 6: 18 October - 22 October	Reading	Flexibility Week
Week 7: 25 October - 29 October	Assessment	Presentations of individual case studies
	Lecture	(Note: may be re-arranged depending on the invited speaker's availability) Financing International Mining Projects ***(Special lecture)***
Week 8: 1 November - 5 November	Tutorial	AVIE Hunter Valley Module (remote access) (Group 1 & 2)
	Group Work	Global impacts of mining coal, gold, uranium, and lithium • Small-scale mining • Blood diamonds and blood gold
Week 9: 8 November - 12 November	Lecture	Environmental economics • *Environmental and economic considerations.* • *The resource curse*
	Lecture	Gender and Mining / Do No Harm Tool ***(Special lecture)*** (Note: may be re-arranged depending on the invited speaker's availability)
Week 10: 15 November - 19 November	Lecture	Cross cultural management – theory & practice ***(Special lecture)*** (Note: may be re-arranged depending on the invited speaker's availability)
	Assessment	Group presentations
Study Week: 20 November - 25 November	Assessment	Final Quiz via Inspera (Final Exam Week)

Resources

Prescribed Resources

Not available

Recommended Resources

Not available

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.

Submission of Assessment Tasks

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 an assessment cover sheet attached.

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. Please note, a competency hurdle of 50% is applied to the final assessment.

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 section below.

Late submission will not be accepted and will be considered as no submission.

Special Consideration

You can apply for special consideration through The Nucleus Student Hub 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

Student Support

The University and the Faculty provide a wide range of support services for students, including:

- Library training and support services - www.library.unsw.edu.au

- UNSW Learning Centre - www.lc.unsw.edu.au
- Counselling support - www.counselling.unsw.edu.au

Equitable Learning Services aims to provide all students with a free and confidential service that provides practical support to ensure that your health condition doesn't adversely affect your studies. https://student.unsw.edu.au/els

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.

Academic Information

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:

- LE – indicates you have not completed one or more items of assessment; or
- WD – indicates 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-enroll in the course.

Studying a course in the School of Minerals and Energy Resources Engineering at UNSW

Report writing guide

The School has a Report Writing Guide (RWG) available. A copy of this is available on the course Moodle site.

Computing Resources and Internet Access Requirements

UNSW Minerals and Energy Resources Engineering provides blended learning using the on-line Moodle LMS (Learning Management System). Also see - Transitioning to Online Learning: www.covid19studyonline.unsw.edu.au

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
- Petroleum Engineering Students: TETB LG34 & LG 35

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

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

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 instructions on how to redirect your UNSW emails: "How can I forward my emails to another account?"

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.microsoftcrmportals.com/web-forms/
- Course inquiries should be directed to the Course Convenor

Image Credit

Synergies in Sound 2016

CRICOS

CRICOS Provider Code: 00098G

Acknowledgement of Country

We acknowledge the Bedegal people who are the traditional custodians of the lands on which UNSW Kensington campus is located.

Appendix: Engineers Australia (EA) Professional Engineer Competency Standard

Program Intended Learning Outcomes	
Knowledge and skill base	
PE1.1 Comprehensive, theory based understanding of the underpinning natural and physical sciences and the engineering fundamentals applicable to the engineering discipline	✓
PE1.2 Conceptual understanding of the mathematics, numerical analysis, statistics, and computer and information sciences which underpin the engineering discipline	✓
PE1.3 In-depth understanding of specialist bodies of knowledge within the engineering discipline	✓
PE1.4 Discernment of knowledge development and research directions within the engineering discipline	
PE1.5 Knowledge of engineering design practice and contextual factors impacting the engineering discipline	
PE1.6 Understanding of the scope, principles, norms, accountabilities and bounds of sustainable engineering practice in the specific discipline	✓
Engineering application ability	
PE2.1 Application of established engineering methods to complex engineering problem solving	✓
PE2.2 Fluent application of engineering techniques, tools and resources	
PE2.3 Application of systematic engineering synthesis and design processes	
PE2.4 Application of systematic approaches to the conduct and management of engineering projects	
Professional and personal attributes	
PE3.1 Ethical conduct and professional accountability	✓
PE3.2 Effective oral and written communication in professional and lay domains	
PE3.3 Creative, innovative and pro-active demeanour	✓
PE3.4 Professional use and management of information	✓
PE3.5 Orderly management of self, and professional conduct	
PE3.6 Effective team membership and team leadership	✓