School of Minerals & Energy Resources Engineering // UNSW Engineering

MINE3910

Socio-Environmental Aspects of Mining

Term Two // 2021

Course Overview

Staff Contact Details

Convenors

Name	Email	Availability	Location	Phone
Simit Raval	simit@unsw.edu.au	During the scheduled weekly contact hours	159J, Old Main Building (K17)	93855005

School Contact Information

School of Minerals and Energy Resources
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Engineering Student Services
E: mere.teaching@unsw.edu.au
W: www.engineering.unsw.edu.au/minerals-energy-resources

Course Details

Credit Points 6

Summary of the Course

This course provides a comprehensive and practical understanding of the impacts both positive and negative that mining may have on society and the environment. On completion of this course, students should be able to identify, analyse and apply state-of-the-art techniques in environmental management of mine sites as well as identify the major issues and management strategies associated with social/community impacts of mining in Australia and internationally.

On completion of the course, the student should be capable of demonstrating an understanding of:

- Legal & political context of mining in Australia.
- Principles of Sustainable Development.
- Company-based initiatives in environmental management.
- State of the art techniques in environmental management of mine sites.
- Major issues associated with social/community impacts of mining in Australia and internationally.

Course Aims

This course aims to provide a comprehensive and practical understanding of the impacts both positive and negative that mining may have on society and the environment.

Course Learning Outcomes

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

Learning Outcome	EA Stage 1 Competencies
1. Demonstrate a knowledge of the legal, political & ethical context of mining in Australia and overseas.	PE1.6, PE2.4, PE3.1, PE3.4
2. Describe and apply the principles of Sustainable Development.	PE1.6, PE2.4, PE3.1
3. Identify, analyse and apply state of the art techniques in environmental management of mine sites.	PE1.3, PE2.4, PE3.3
4. Identify the major issues and management strategies associated with social/community impacts of mining in Australia and internationally.	PE3.1, PE3.2, PE3.6

Teaching Strategies

Four contact hours will be utilised for lectures and in-class activities and assessments.

Learning & Teaching Management System (LTMS): The Learning & Teaching Management System (LTMS) used with this course is accessed at .
For up to date information on lectures and workshops, see the Calendar section in LTMS and the School Noticeboard.

Support material for this course including, copies of lecture notes, recommended readings, assignments and results for assignments etc whenever available can be found in LTMS.
All correspondence should be undertaken using the email facility within LTMS.
Changes in the lecture schedule, seminars, workshops and assignment dates will be posted on the Calendar in LTMS.

Assessment

Assessment Tasks

Assessment task	Weight	Due Date	Student Learning Outcomes Assessed
In-class activities	20%	Not Applicable	1, 2, 3, 4
In-class Quiz	30%	Quiz 1 (week 4) & Quiz 2 (week 10)	1, 2, 3, 4
Blog	20%	Blog 1-Week 5, Blog 2-Week 9	1, 2, 3, 4
Major Group Assignment	30%	Week 10	1, 2, 3, 4

Assessment Details

Assessment 1: In-class activities

Details:

Generally student would need to explore and analyse the given topics and individually provide a written response to the given query at the end of the activity for evaluation.

Assessment 2: In-class Quiz

Details:

In-class quizzes will test the understanding of the material presented till date. General format of the quizzes will be a combination of multiple choice questions and short response questions required to be submitted in a pre-defined duration.

Assessment 3: Blog

Details:

2 Blog entries (approximately 400 words each) on contemporary socio-environmental issues. Plus 2 Blog reflections (approximately ONE paragraph each). Further details will be available at the time of the assignment release.

Assessment 4: Major Group Assignment

Details:

Each group requires to prepare two pieces of assessment, a progress report in the form of a Seminar presentation weighing 10% and a final written report (5000 words) weighing 20%.

Attendance Requirements

Please note that lecture recordings are not available for this course. Students are strongly encouraged to attend all classes and contact the Course Authority to make alternative arrangements for classes missed.

Course Schedule

View class timetable

Timetable

Date	Type	Content
O Week: 25 May - 28 May		
Week 1: 31 May - 4 June	Lecture	31 May: • Course introduction and expectations • Sustainable development in the mining industry (overview)
	Lecture	03 June: Corporate initiatives in sustainability (ICMM, Enduring value and industry-based initiatives)
Week 2: 7 June - 11 June	Lecture	07 June: • **In-class Activity related to GRI and Sustainability reports (5%)** • Introduction to leading practice environmental management (LPEM)
	Lecture	10 June: • Mineral Exploration • Environmental Monitoring and sampling • Mine water (Online recorded lecture)
Week 3: 14 June - 18 June	Lecture	17 June **15:00 – 17:00** • **In-class Activity related to mine water (5%)** • Mine wastes - 1
Week 4: 21 June - 25 June	Lecture	21 June: • Mine wastes - 2 • Tailings disposal
	Lecture	24 June: • Uranium mining • Cyanide in Mining

Week 5: 28 June - 2 July	Assessment	28 June: In class Assessment: **Quiz 1 – 15%**
	Lecture	01 July: • Air quality • Noise & Vibration • Environmental Impact Assessment (EIA) & Environmental Risk Management (ERM)
Week 6: 5 July - 9 July		Course Review: Consultations
Week 7: 12 July - 16 July	Lecture	12 July: • Mine planning issues • Artisanal and small-scale mining • Quarry industries
	Lecture	15 July: • Mine rehabilitation • Mine Closure Biodiversity offsets
Week 8: 19 July - 23 July	Lecture	19 July: **In Class Activity related to mine rehabilitation/closure (5%)**
	Lecture	22 July: • Legal framework (online) • Communities and mining • Social impact
Week 9: 26 July - 30 July	Lecture	26 July: **In Class Activity related to social aspects of mining (5%)**
	Assessment	29 July: **Quiz 2 – 15%**
Week 10: 2 August - 6 August	Assessment	2 August & 5 August: **In-class Assessment: Seminars from the Group Project**

Resources

Recommended Resources

Course Evaluation and Development

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

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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	✓