



UNSW Course Outline

MINE8440 Mining Industry Research Project 1 - 2024

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General Course Information

Course Code : MINE8440

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

The MINE8440 course is a core requirement for postgraduate Masters level students to demonstrate a substantial research project or scholarship. The research course is also available for Graduate Diploma level students, and is essential for these students who are intending to

articulate to the Masters level.

This course is intended to develop the capability and requisite skills of an engineer to build a foundation of knowledge related to a particular problem in mining engineering. The research should link closely with industry partners or applied research that will be of benefit to industry. This research foundation provides a basis on which to design a solution that is robust and safe, cost effective and appropriate to the end-user.

It is essential that this foundation reflects not only established thinking and practices but equally important, it should account for divergent and newly developing views as well as any limitations or weaknesses that underpin current understanding. The quality of the engineering solution is therefore a function of the quality and timing to complete this investigation; an investigation that forms part of a process known as research.

The research scope of MINE8440 is to significantly extend any previous industry research that has been undertaken by the student and/or others including one or more of the following categories: site or laboratory testing; related numerical modelling; comprehensive cost-benefit or geostatistical analysis; extension of constitutive theory.

On completion of this course, a student should be capable of preparing:

- a research proposal that accounts for the current understanding of issues pertinent to a defined topic; objectives of the proposal research project and the tasks, activities and resources necessary to achieve that objective
- a critical review of literature encompassing a critique of the current state of knowledge as well as information on other related issues; and
- a research thesis including new, original data and analysis and detailed interpretation and recommendations for implementation and further research to address any limitations and uncertainty that is identified

With permission from the School, and consistent with Program rules, this course can be extended as MINE8445 and/or MINE8690 with significantly more comprehensive research and thesis.

Note: Permission to enrol in this course requires written evidence of industry support and/or agreement of an academic supervisor in the School. Industry support is essential for research projects that are to be extended for Masters programs that require MINE8455 and/or MINE8690, and is highly recommended for Graduate Diploma programs. Industry support is to include in-

kind contributions from industry staff, access to relevant site data and/or samples and/or resources to support applied research. Industry agreement to publish results of the research is required, or an agreement to publish aggregated results that do not identify specific mine sites or confidential information. Alternatively, academic supervisors offer research projects as part of applied research programs.

Course Aims

The course aims to develop the capability and requisite skills of an engineer to build a foundation of knowledge related to a particular industry-related problem. This foundation provides a basis on which to design a solution that is robust and safe, cost effective and research outcomes that are appropriate to the end-user.

Course Learning Outcomes

Course Learning Outcomes
CLO1 : Define the major issues and benefits associated with a research topic.
CLO2 : Evaluate library search relevant to the research topic and obtain reference sources from various relevant sources.
CLO3 : Construct a literature review encompassing a critique of the current state of knowledge related to the topic and other related information.
CLO4 : Develop a project management plan that outlines objectives, definition of tasks, activities and resources needed to achieve that objective, a schedule of activities and significant milestones, and a risk assessment with appropriate management and control measures.
CLO5 : Formulate a technical report that is consistent with the requirements and standards of the School of Mining Engineering and relevant professional societies.

Course Learning Outcomes	Assessment Item
CLO1 : Define the major issues and benefits associated with a research topic.	<ul style="list-style-type: none">• Project proposal
CLO2 : Evaluate library search relevant to the research topic and obtain reference sources from various relevant sources.	<ul style="list-style-type: none">• Minor Thesis
CLO3 : Construct a literature review encompassing a critique of the current state of knowledge related to the topic and other related information.	<ul style="list-style-type: none">• Minor Thesis
CLO4 : Develop a project management plan that outlines objectives, definition of tasks, activities and resources needed to achieve that objective, a schedule of activities and significant milestones, and a risk assessment with appropriate management and control measures.	<ul style="list-style-type: none">• Overall research progress• Minor Thesis
CLO5 : Formulate a technical report that is consistent with the requirements and standards of the School of Mining Engineering and relevant professional societies.	<ul style="list-style-type: none">• Revised Thesis• Minor Thesis

Learning and Teaching Technologies

Moodle - Learning Management System

Other Professional Outcomes

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. awareness of opportunities to add value through engineering and

the need for continuous improvement. being able to work and communicate effectively across discipline boundaries.

Additional Course Information

Assumed Knowledge

This course assumes that a student has fundamental knowledge in mining engineering and technical disciplines related to the industry research project.

Total student effort hours: Approx. 150

Note: The above indication of "student effort hours" is indicative only – It reflects the anticipated level of total student involvement with the course – either through accessing or participating in online materials and activities; private research; preparation of assignments. Individual students may find their level of involvement differs from this schedule.

Assessments

Assessment Structure

Assessment Item	Weight	Relevant Dates
Overall research progress Assessment Format: Individual	10%	
Project proposal Assessment Format: Individual	15%	Start Date: 12/02/2024 Due Date: 26/02/2024
Minor Thesis Assessment Format: Individual	60%	Start Date: 12/02/2024 Due Date: 3/05/2024
Revised Thesis Assessment Format: Individual	15%	Start Date: 20/05/2024 Due Date: 27/05/2024

Assessment Details

Overall research progress

Assessment Overview

The overall assessment is based on the student's Project Supervisor interactions with the student at their regular meetings and other modes of oral and written communication.

By the end of the research project the student should be able to demonstrate:

- Understanding of the project and supporting literature.
- Ability to perform research-oriented tasks including conducting experiments, analysing

results, and synthesizing research findings.

- Ability to undertake research independently.
- Research findings in written and verbal forms.
- Project management skills.

Course Learning Outcomes

- CLO4 : Develop a project management plan that outlines objectives, definition of tasks, activities and resources needed to achieve that objective, a schedule of activities and significant milestones, and a risk assessment with appropriate management and control measures.

Assessment Length

approx 1500 words

Assignment submission Turnitin type

Not Applicable

Project proposal

Assessment Overview

The report constitutes a concise overview outlining the proposed research topic and the associated work plan. The proposal should encompass comprehensive details, encompassing the rationale, objectives, methodology, anticipated outcomes, and potential significance of the study. Feedback will be provided in response to students' requests or during supervisor meetings.

Course Learning Outcomes

- CLO1 : Define the major issues and benefits associated with a research topic.

Assessment Length

1500 words

Assignment submission Turnitin type

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

Minor Thesis

Assessment Overview

The thesis is expected to be well-organised, presenting a critical and reasoned exploration of the knowledge acquired through the student's endeavours. It should also demonstrate an awareness of existing literature.

The thesis introduction should provide context and introduce the topic, while also outlining existing knowledge from the literature. A clear explanation of the methodology employed is necessary, followed by the presentation and discussion of the results. The conclusions drawn should also be identified. A comprehensive reference list must be included at the end of your report.

Feedback will be provided in response to students' requests or during supervisor meetings.

Course Learning Outcomes

- CLO2 : Evaluate library search relevant to the research topic and obtain reference sources from various relevant sources.
- CLO3 : Construct a literature review encompassing a critique of the current state of knowledge related to the topic and other related information.
- CLO4 : Develop a project management plan that outlines objectives, definition of tasks, activities and resources needed to achieve that objective, a schedule of activities and significant milestones, and a risk assessment with appropriate management and control measures.
- CLO5 : Formulate a technical report that is consistent with the requirements and standards of the School of Mining Engineering and relevant professional societies.

Assessment Length

max 10000 words

Revised Thesis

Assessment Overview

Upon receiving their thesis students engage in a constructive process of refinement. This entails carefully reviewing their thesis content and incorporating revisions in response to the comments and feedback provided by the reviewers.

Course Learning Outcomes

- CLO5 : Formulate a technical report that is consistent with the requirements and standards of the School of Mining Engineering and relevant professional societies.

General Assessment Information

Assignment Requirements

Who

- All assessment items must be submitted to the Course Convenor. It must not be submitted directly to the student's individual Project Supervisor.

When

- If not otherwise stated, the default deadline for submission of an assignment is 9:00 am on Monday in the nominated week. If Monday coincides with a Public Holiday, then the due date is the next business day in the nominated week.
- Prior to submission, students should read the School Policy on Assignment Submissions which can be viewed at: < www.mining.unsw.edu.au/information-about/our-school/policies-procedures-guidelines >.
- In particular, the student should make sure they have read and understood the:
 - Declaration of Academic Integrity;
 - Assignment Submission requirements detailed in the University Policies section of the Course Outline; and
 - School Policy on Assignment Submission available on the School's website (the web address is given in the Course Outline). In particular, note the requirement that only PDF documents should be uploaded and the required file naming convention.

Where

- Submissions must be made electronically through Turnitin in the LTMS unless otherwise stated. Students are strongly encouraged to submit their report through Turnitin (plagiarism detection software) before the due date to see how their assignment is composed with regards to cited works and original content. This will allow students to self-assess and ensure their assignment meets the School standards before final submission. An originality report with a score higher than 20% may be cause for concern about the originality of content and will be reviewed by the Student's Project Supervisor for potential plagiarism. For further details see the section on University Policies for details on assignment submissions, late submissions, and special consideration.

What

- The submission must be:
 - a single document in PDF format; and
 - prepared in the form of a formal report that includes a list of reference sources cited in the report, prepared in accordance with the report writing standards of the School as contained in the MEA Report Writing Guide for Mining Engineers. A copy can be obtained from the UNSW Bookshop or downloaded from the School webpage.
- Each submission must have appended:
 - to the front, a signed copy of the Student Declaration Form and Coversheet; and
 - to the end, a completed self-assessed copy of the Assessment Criteria.

Copies of both documents are available for download from LTMS.

- It is strongly recommended when preparing the major assignment; students use the Report Template available from LTMS. Note: as this template already incorporates the required

Student Declaration Form, a student does not need to separately append a signed copy of the coversheet to their assignment.

How

- The submitted document must be consistent with the following file naming convention:
< FamilyNameInitialsCourseCodeAssignmentNumber.pdf >.
- A typical complaint filename would take the following form < SmithPDMINE8440A01.pdf > which elements correspond to:
 - The family name of the student: Smith
 - Initial(s) of student: PD
 - Course Code: MINE8440
 - Assignment number: A01...as defined in the Course Outline for the assessment task
 - File format: PDF document

Assignment Process

It is the responsibility of the student to identify a suitable project to be undertaken as the core component of this course. Students should contact the Course Convenor in the first instance for advice, who will then direct the student to a potential supervisor within the School.

This course consists of four assessment items: research proposal, progress report, Minor Thesis, and overall research progress and meetings. Assessment items will be graded:

- Research proposal: Assessment will be completed by the student's Project Supervisor.
- Progress report: Assessment will be made by the student's Project Supervisor.
- Minor Thesis: Assessment will be carried out by two academics in the School. The student's Project Supervisor may be an examiner.
- Overall research progress and meetings. Assessment will be undertaken by the student's Project Supervisor

In general, it is strongly recommended that students should arrange to consult with their Project Supervisor on a regular basis to discuss project progress, options future direction and, issues that may potentially impact performance and/or project completion.

Assignment Attachment

Each assignment submitted for assessment must be attached with:

- an official School Coversheet at the front of the assignment; and
- the requisite Assessment Criteria form at the end of the assignment with the self-assessment completed by the student.

If either or both of these are not attached, then the assignment will be deemed non-compliant with the assessment requirements. A non-compliant submission may not be marked and zero marks may be awarded for that assessment item. In any case, a minimum of 5% of the total marks will be forfeited for that assignment.

Report Writing Guide

The School has a report writing guide (RWG) available. A copy of this is available on the course Moodle site.

Grading Basis

Standard

Course Schedule

Attendance Requirements

Not Applicable - as no class attendance is required

General Schedule Information

The course schedule is available on the course Moodle.

Course Resources

Prescribed Resources

1. 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).
2. Guide to Authors. (Australasian Institute of Mining and Metallurgy: Melbourne) (Available for download from the AusIMM website).
3. The Complete Idiot's Guide to Project Management. G Campbell and S Baker (Alpha: New York) or its equivalent.
4. Style Manual for Authors, Editors, and Printers, 2002. 6th edition (John Wiley & Sons)
5. The Research Project – How to Write It, 2000. R Berry, 4th edition (Routledge: London)
6. How to Write a Better Thesis, 2002. D Evans and P Gruba (Melbourne University Press: Melbourne).

Recommended Resources

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

Online Resources

Selected readings as well as other supporting material (e.g. course outline and lecture notes) will be made available on LMS.

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 off-line and cannot provide videos that are copyright from other providers.

Remember, UNSW librarians are usually happy to help you locate articles or make suggestions regarding possible material to help you in your academic work. You can also access basic online help at <http://www.library.unsw.edu.au/>

- UNSW Mining and Petroleum subject guide (including a link to ACARP and how to find the reports in the catalogue). <http://subjectguides.library.unsw.edu.au/content.php?pid=7632&sid=52212>
- UNSW Library services for Postgraduate students. <http://library.unsw.edu.au/servicesfor/PGandH.html>
- EndNote, software package available to UNSW students.
- New postgraduate course students are strongly advised to visit the above website, and complete the ELISE and ELISE Plus tutorials. These will help develop skills in finding, using and evaluating scholarly information.
 - UNSW Learning Centre (<http://www.lc.unsw.edu.au>)
 - Counselling support - <http://www.counselling.unsw.edu.au>
 - Library training and support services - <http://www.library.unsw.edu.au/>
 - OnePetro – (<http://www.onepetro.org>)

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	Seher Ata		Room 159C, Old Main Building	61478492034		No	No
	Seher Ata			+61478492034		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 Plagiarism

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](#)