



Faculty of Engineering

School of Minerals and Energy Resources Engineering

Postgraduate Course Outline

MINE8860
Drilling, Blasting & Machine Mining

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Term 3, 2021

CONTENTS

1.	INFORMATION ABOUT THE COURSE.....	3
1.1	Course Description	3
1.2	Course Completion	3
1.3	Assumed Knowledge	3
1.4	Attendance.....	3
2.	AIMS, LEARNING OUTCOMES AND GRADUATE ATTRIBUTES	4
2.1	Course Aims	4
2.2	Learning Outcomes	4
3.	REFERENCE RESOURCES.....	5
3.1	Reference Materials	5
3.2	Other Resources	5
3.3	Online Resources	5
3.4	Report Writing Guide for Engineers.....	5
4.	COURSE CONTENT AND LEARNING ACTIVITIES	6
4.1	Learning Activities Summary	6
5.	COURSE ASSESSMENT	7
5.1	Assessment Summary	7
5.2	Assessment Requirements	7
5.3	Penalties for Non-Compliant Submission	8
5.4	ASSESSMENT CRITERIA.....	9
6.	STUDYING A PG COURSE IN MINING ENGINEERING AT UNSW	10
6.1	How We Contact You.....	10
6.2	How You Can Contact Us	10
6.3	Computing Resources and Internet Access Requirements	10
6.4	Accessing Course Materials Through Moodle	10
6.5	Assessment Criteria for Postgraduate programs	10
6.6	Assignment Submissions	11
6.7	Late Submission of an Assignment	11
6.8	Special Consideration	11
6.9	Course Results.....	11
6.10	Students Needing Additional Support.....	12
6.11	Academic Honesty and Plagiarism.....	12
6.12	Continual Course Improvement.....	12

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1. INFORMATION ABOUT THE COURSE

Course Code: MINE8860

Term: T3, 2021

Level:

2. AIMS, LEARNING OUTCOMES AND GRADUATE ATTRIBUTES

2.1 Course Aims

This course aims to equip the student with knowledge and skills to design and select appropriate rock breakage techniques for different mining applications.

2.2 Learning Outcomes

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

1. explain the contribution and influence of rock breakage to the stream of mining processes and in particular the mine-to-mill concept
2. describe the various methods of rock breakage
3. select appropriate methods of rock breakage for given in-situ rock conditions
4. apply fundamental principles to the design and selection of safe and efficient blasting and machine mining to:
 - o design blasts to achieve particular outcomes
 - o manage and control blast damage and environmental impacts
 - o optimise design of cutterheads
 - o evaluate productivity and economics
5. identify relevant requirements for the security, storage and handling of explosives

3. REFERENCE RESOURCES

3.1 Reference Materials

- x William Hustrulid. Blasting principles for open pit mining and theoretical foundations, Rotterdam : A.A. Balkema, 1999.
- x Practical Blasting Fundamentals, International Society of Explosives Engineers
- x Carlos Lopez Jimeno, Emilio Lopez Jimeno, Francisco Javier Ayala Carcedo. Drilling and blasting of rocks, Rotterdam, Ne.: A.A. Balkema, c1995.
- x Open Pit Blast Design – analysis and optimisation, JKMRC Monograph 1, University of Queensland (e197ind6 (a,)]TJ 0 Tc 05.6521.38 0 Td ()Tj -0.002 Rc 0.002 Tw83.337 0 T.9 6(aph)101995.)]T

4. COURSE CONTENT AND LEARNING ACTIVITIES

4.1 Learning Activities Summary

The schedule of learning activities and outcomes for the course are listed in Table 1.

Table 1. Schedule of topics and activities in the course.

Day	Theme	Content/Activities
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5. COURSE ASSESSMENT

5.1 Assessment Summary

Table 2. Course Assessment and Due Dates.

5.2 Assessment Requirements

Who

- x The Major Assignment must be submitted to the Course Convenor.

When

- x The Major Assignment must be submitted before close of normal business hours (i.e. 5:00pm) on the date specified at the table above.
- x Early submission is required in cases where the student will otherwise be absent on the due

from the UNSW Bookshop or a softcopy downloaded from the School webpage.

- x Each submission must have appended:
 - o to the front, a signed copy of the Student Declaration Form and Coversheet; and
 - o to the end, a copy of the Assessment Criteria.

Copies of both documents are available for download from Moodle.

- x It is strongly recommended when preparing the major assignment; students use the Report Template available from Moodle. Note: as this template already incorporates the required the Student Declaration Form, a student does not need to separately append a signed copy of coversheet to their assignment.

How

- x The name of the document must be consistent with the standard file naming convention as stated in the Assignment Submission, these being:
FamilyNameInitials_CourseCode_AssignmentNumber.pdf

- x An example of a typical filename that follows this file naming convention would be:
SmithPD_MINE4951_A01.pdf

which elements correspond to:

- o Family name of student: Smith
- o First and second initial(s) of student: PD
- o Course Code: MINE4951
- o Relevant assignment number as defined in Table 2: A01 for the assessment task Project Proposal
- o File format: PDF document

5.3 Penalties for Non -Compliant Submission

A submission that is non-compliant with the School Policy on Assignment Submission and/or requirements as contained in this Course Outline may not be marked and/or penalty marks subtracted from the assignment mark for non-compliance.

Some examples of a non-compliant assignment include that the assignment submission:

- x is not a single PDF document. Penalty for non-compliance: assignment not marked.
- x does not contain a signed copy of the Student Declaration Statement. Penalty for non-compliance: assignment not marked.
- x is not fully consistent with the designated file naming convention as listed above and defined as Item #6 in the School Policy on electronic submission. For example, a file name such as < ProjectProposal.pdf > is NOT compliant. Penalty for non-compliance: 10 marks.
- x does not have appended at the end of the assignment a copy of the official Assessment Criteria template. Penalty for non-compliance: 5 marks.

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.

5.4 ASSESSMENT CRITERIA

Each assignment submitted for assessment must be attached with:

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

6.6 Assignment Submissions

The School has developed a guideline to help you when submitting a course assignment. Please take a closer look at all these details on our website: www.engineering.unsw.edu.au/mining-engineering/assignment-submission-policy

We encourage you to retain a copy of every assignment submitted for assessment for your own record either in hardcopy or electronic form. On a rare occasion, assignments may be mislaid and we may contact you to re-submit your assignment.

All your assignments will need to have a completed PG coversheet. Attached to this course outline.

6.7 Late Submission of an Assignment

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. Details on deductions that are automatically applied to late submissions are available on our webpage: <http://www.engineering.unsw.edu.au/mining-engineering/late-submissions>

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 as soon as possible: <https://student.unsw.edu.au/special-consideration>

6.8 Special Consideration

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

x

6.10 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/

6.11 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

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.