



Faculty of Engineering

**School of Minerals and Energy Resources Engineering**

Postgraduate Course Outline

MINE8820

Mineral Processing

A/Prof Seher Ata

## CONTENTS

1. INFORMATION ABOUT THE COURSE .....	3
2. AIMS, LEARNING OUTCOMES AND GRADUATE ATTRIBUTES.....	4
3. REFERENCE RESOURCES .....	4
4. COURSE CONTENT AND LEARNING ACTIVITIES.....	7
5. COURSE ASSESSMENT .....	8
6. ASSESSMENT CRITERIA .....	11
7. STUDYING A PG COURSE IN UNSW MINERALS AND ENERGY RESOURCES ENGINEERING .....	16

## 1. INFORMATION ABOUT THE COURSE

Course Code:	MINE8820	Term:	T2, 2021	Level:	PG	Units/Credits	6 UOC
Course Name:	<b>Mineral Processing</b>						

Course Convenor:	<b>A/Prof Seher Ata</b>						
Contact Details	School of Minerals and Energy Resources Engineering Room 159C, Old Main Building	EMAIL:	s.ata@unsw.edu.au				
		Phone:	+61 2 9385 7659				
Contact times	By appointment						

### 1.1 Course Description

This course provides the basic knowledge in mineral processing and extractive metallurgy and is delivered to students who have no training in this area. After completion students are expected to be equipped with basic concepts and knowledge to work effectively with metallurgists/ mineral processing engineers in the field.

The course begins with an overview of mineral processing and its associated disciplines such as mineralogy, extractive metallurgy (hydro-/electrometallurgy and pyrometallurgy), which are required for the production of metals and other products from mineral ores and wastes. Topics covered include comminution, physical separation, flotation, leaching, solvent extraction and electrowinning/refining.

Key sustainability issues are also examined briefly, including the drive to reduce energy use in crushing and grinding, reduce water usage across all areas of processing, and minimise environmental damage.

Videos and 'You Tube' sites relevant to the field are collated for the course and students are advised to go through them to see how mineral processing is performed in mining operations.

### 1.2 Course Completion

Course completion requires submission of all assessment items; failure to submit all assessment items can result in the award of an Unsatisfactory Failure (UF) grade for the Course.

### 1.3 Assumed Knowledge

This course assumes a student has knowledge of:

- basic knowledge of mineral processing terms and descriptions;
- some basic understanding of mining operations to follow the course effectively.

## 2 AIMS, LEARNING OUTCOMES AND GRADUATE ATTRIBUTES

### 2.1 Course Aims

This course aims to equip the student with knowledge of mineral processing unit operations normally associated with the production of metal ores and coal preparation. Knowledge of hydrometallurgy unit operations normally associated with the production of major metals (i.e copper and gold) is also provided.

### 2.2 Learning Outcomes

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

1. Describe the work that metallurgists and mineral process engineers do.
2. Describe the major issues in mineral and metallurgical processing
3. Explain the implications of mineralogical characteristics for mineral processing requirements.
4. Define common mineral processing and metallurgical terms.
5. Interpret technical reports.
6. Conduct basic mass balance calculations involved in several unit operations from mineral processing to hydrometallurgy.
7. Describe commonly used mineral and metallurgical processes used in Australia in the following industries:
  - o Base metals processing (copper)
  - o Precious metals processing (CIP process for gold recovery)
  - o Coal processing

### 2.3 Graduate Attributes

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

1. appropriate technical knowledge.
2. having advanced problem solving, analysis and synthesis skills with the ability to tolerate ambiguity.
3. awareness of opportunities to add value through engineering and the need for continuous improvement.
4. being able to work and communicate effectively across discipline boundaries.

## 3 REFERENCE RESOURCES

### 3.1 Reference Materials

1. Wills BA and Napier-Munn TJ, 2006. Mineral Processing Technology, Butterworth-Heinemann, Oxford.
2. Morrell S, Morrison RD & Kojovic T, 1996. Mineral Comminution Circuits: Their Operation and Optimisation. (Series: JKMRC Monograph Series in Mining and Mineral Processing No. 2). Series Editor, T J Napier-Munn, published by Julius Kruttschnitt Mineral Research Centre, University of Queensland.
3. Hayes PC, Process Principles In Minerals & Materials Production, Hayes Publishing Co, 2003.
4. Noakes M and Lanz T. (Ed) Cost estimation handbook for the Australian mining industry Published Parkville, Vic.: Australasian Institute of Mining and Metallurgy, 1993 Monograph 20.
5. Bartlett RW, Solution Mining: Leaching and Recovery of Materials, 1998.

6. Sutherland KL and Wark IW. 1955. Principles of Flotation, Australasian Institute of Mining and Metallurgy, 489 pages.
7. Publications from Suppliers and Original Equipment Manufacturers.
8. Gupta A and Yan DS, 2006. Mineral Processing Design and Operations, An Introduction, Amsterdam: Elsevier.
9. Rhodes M, 1998. Introduction to Particle Technology, Wiley, West Sussex.
10. Ritcey GM, 2006. Solvent Extraction – Principles and Applications to Process Metallurgy, (2nd ed.). Ottawa, Canada: Gordon M. Habashi, F., Handbook of Extractive Metallurgy, Vol 1-4, Wiley-VCH, Germany.
11. Weiss NL, 1985. SME Mineral Processing Handbook, SME American Institute of Mining, metallurgy, and Petroleum Engineers, New York.

### 3.2 Other Resources (if applicable)

- 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>
- Report Writing Guide for Mining Engineers, 2011. P Hagan & P Mort (Mining Education Australia (MEA) ISBN 978 0 7334 3032 9.
- Guide to Authors, 2008. (Australasian Institute of Mining and Metallurgy; Melbourne).
- Style Manual for authors, editors and printers. 6th edition, (John Wiley & Sons).
- 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.

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

- 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>)

### 3.3 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/>

### **3.4 Report Writing Guide**

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

## 4 COURSE CONTENT AND LEARNING ACTIVITIES

### 4.1 Learning Activities Summary

UNSW Week	Date	Hrs	Topic	Content/Activities
2	7 June	8.0	Introduction Liberation & comminution	1.1 Course Introduction – Structure, Assessment, Lab Experiments, Moodle, etc.
				1.2 Mineral liberation
				1.3 Energy and size reduction theories
				1.4 Size reduction equipment & comminution circuits
2	8 June	8.0	Classification & Physical separation Dewatering	2.1 Classification & equipment; representing sizing data
				2.2 Physical separation (gravity, magnetic, electrostatic separation)
				2.3 Physical separation equipment
				2.4 Dewatering methods, equipment and flocculation
2	9 June	8.0	Flotation Coal preparation Mass balance	3.1 Froth flotation: introduction
				3.2 Froth flotation: fundamentals; equipment; circuits; reagents; flotation kinetics
				3.3 Coal formation and ranking Coal preparation: Crushing; screening; dense media separation; flotation; washability curves
				3.4 Metallurgical mass balances, grade & recovery calculation
2	10 June	8.0	Laboratory sessions AVIE Chemical processing	4.1 Flotation and grinding / sieving lab Individual lab report
				4.2 Virtual tour of a copper processing plant
				4.3 Hydrometallurgy- Leaching in heaps & tanks; SXEW circuits, CIP circuits
2	11 June	8.0	Oral Presentation Sustainability	5.1 Group presentation for a particular commodity
				5.2 Sustainability issues: Energy; mine-to-mill; water; environment

## 5 COURSE ASSESSMENT

### 5.1 Assessment Summary

The assessment will be based on the three components as outlined in the below table.

All assessments are due 12 noon Sydney time on Monday of the week, unless otherwise indicated in the table below

Assessment task	Due date	Release date	Weight (%)	Assessment	Learning outcomes assessed
A1.0	11 June	7 June	15	Group Presentation (20-25 min) Processing requirement for a particular commodity	1,3,7
A2.0	25 June	10 June	40 (20 each)	Lab Report 1: Grinding and Sieving Lab Report 2: Flotation  A write-up of laboratory based activities addressing key issues and data analysis  Individual report	5,6,3
A3.0	9 July	7 June	45	Major assignment (max. 3000 words) Flowsheet design and development for a selection of commodity.  Individual report	3,6,7

All the course materials and assignments will be available online through Moodle. Access to the Moodle site is via the Moodle icon on the MyUNSW homepage, or at <https://moodle.telt.unsw.edu.au>

Please bring smartphone, tablet or notebook computer with Wi-Fi connection to all classes for random on-line quizzes.

### 5.2 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 9:00am on Monday in the nominated week.** If the 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](http://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 the Turnitin (plagiarism detection software) before 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 the Student Declaration Form, a student does not need to separately append a signed copy of coversheet to their assignment.

### **How**

- The submitted document must be consistent with the following file naming convention: < FamilyNameInitials\_CourseCode\_AssignmentNumber.pdf >.
- A typical complaint filename would take the following form < SmithPD\_MINE8820\_A01.pdf > which elements correspond to:
  - Family name of student: Smith
  - Initial(s) of student: PD
  - Course Code: MINE8820
  - Assignment number: A01...as defined in the Course Outline for the assessment task
  - File format: PDF document

## **5.3 Assignment Attachments**

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 5% of the total marks will be forfeited for that assignment.

## 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 don't 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.

### 6.1 Group Presentation

The assessment criteria that will be used in assessing Group Presentation is summarised in the following table.

**Assessment Criteria – Group Presentation**

<b>Criteria</b>	<b>Excellent</b>	<b>Good</b>	<b>Satisfactory</b>	<b>Unsatisfactory</b>	<b>Poor</b>	<b>nil</b>					
<b>Ore mineralogy and Processing flowsheet</b>	<input type="checkbox"/> Provided comprehensive information required for development of a flowsheet for the given commodity  <input type="checkbox"/> The processing method (s) is sound and fully justified.  <input type="checkbox"/> The input and output streams, particle size, reagent type and (if applicable), solid concentration, mineralogy, grade etc are all considered	<input type="checkbox"/> Most information required for development of a flowsheet for the given commodity is provided  <input type="checkbox"/> The processing method (s) is sound and justified.  <input type="checkbox"/> The input and output streams, particle size, reagent type and (if applicable), solid concentration, mineralogy, grade etc are considered	<input type="checkbox"/> Adequate information required for development of a flowsheet for the given commodity is provided  <input type="checkbox"/> The processing method (s) is partially justified.  <input type="checkbox"/> The input and output streams, particle size, reagent type and (if applicable), solid concentration, mineralogy, grade etc are partly considered	<input type="checkbox"/> Minimal information required for development of a flowsheet for the given commodity is provided  <input type="checkbox"/> The processing method (s) is poorly justified.  <input type="checkbox"/> The input and output streams, particle size, reagent type and (if applicable), solid concentration, mineralogy, grade etc are partly considered	<input type="checkbox"/> Limited information required for development of a flowsheet for the given commodity is provided  <input type="checkbox"/> The processing method (s) is poorly justified.  <input type="checkbox"/> The input and output streams, particle size, reagent type and (if applicable), solid concentration, mineralogy, grade etc are hardly considered	<input type="checkbox"/> Hardly any information required for development of a flowsheet for the given commodity is provided  <input type="checkbox"/> The processing method (s) is not justified.  <input type="checkbox"/> The input and output streams, particle size, reagent type and (if applicable), solid concentration, mineralogy, grade etc are not considered					
	40	34	33	27	26	20	20	10	9	1	0
<b>Equipment used in processing</b>	<input type="checkbox"/> provided comprehensive information on the operation and type/size of the equipment used in the processing flow sheet. Equipment selection is well-justified	<input type="checkbox"/> provided good information on the operation and type/size of the equipment used in the processing flow sheet. Equipment selection is justified	<input type="checkbox"/> provided reasonable information on the operation and type/size of the equipment used in the processing flow sheet. Equipment selection is not fully justified	<input type="checkbox"/> provided only limited information on the operation and type/size of the equipment used in the processing flow sheet. Equipment selection is partially justified.	<input type="checkbox"/> provided limited and confusing information on the operation and type/size of the equipment used in the processing flow sheet. Equipment selection is hardly justified	<input type="checkbox"/> provided no information on the equipment selection and operation					

	15	14	13	11	10	8	7	4	3	1	0
<b>Location (water, transportation, energy)</b>	<input type="checkbox"/> excellent justification of the selected location. Water, energy and transportation requirement are all considered		<input type="checkbox"/> justification of the selected location is sound. Water, energy and transportation requirement are considered		<input type="checkbox"/> justification of the selected location is reasonable. Water, energy and transportation requirement are partly considered		<input type="checkbox"/> limited justification of the selected location. Water, energy and transportation requirement are not fully considered		<input type="checkbox"/> poor justification of the selected location. Water, energy and transportation requirement are poorly considered		<input type="checkbox"/> no justification of the selected location. Water, energy and transportation requirement are not considered
		10	9	8	7	6	5	4	3	2	1
<b>Marketing &amp; commodity uses</b>	<input type="checkbox"/> provided an excellent and comprehensive overview of the commodity uses <input type="checkbox"/> marketing of the commodity is fully considered		<input type="checkbox"/> provided a good overview of the commodity uses <input type="checkbox"/> marketing of the commodity is considered		<input type="checkbox"/> provided a reasonable overview of the commodity uses <input type="checkbox"/> marketing of the commodity is partially considered		<input type="checkbox"/> provided a limited overview of the commodity uses <input type="checkbox"/> marketing of the commodity is poorly considered		<input type="checkbox"/> provided limited or confusing overview of the commodity uses <input type="checkbox"/> marketing of the commodity is considered		<input type="checkbox"/> provided no information on commodity use and marketing
		15	14	13	11	10	8	7	4	3	1
<b>Response to questions</b>	<input type="checkbox"/> excellent and valid responses to questions <input type="checkbox"/> allowed for min of 3 minutes for question time		<input type="checkbox"/> appropriate and valid responses to questions		<input type="checkbox"/> adequate responses to questions		<input type="checkbox"/> barely appropriate and/or valid responses to questions		<input type="checkbox"/> inappropriate and invalid responses to questions		<input type="checkbox"/> unable to reasonably respond to questions <input type="checkbox"/> no time for questions
		10	9	8	7	6	5	4	3	2	1
<b>Quality of presentation and delivery</b>	<input type="checkbox"/> excellent balance in content and information that supplemented rather than over-powered the message of the presenter <input type="checkbox"/> appropriate number of slides/visual aids <input type="checkbox"/> slides designed well so required little effort and easy to read/digest with appropriate sized graphs, wording etc <input type="checkbox"/> no errors on slides		<input type="checkbox"/> good balance in content <input type="checkbox"/> slides easy to read with appropriate sized graphs, wording etc <input type="checkbox"/> few minor errors		<input type="checkbox"/> adequate balance of information in slides <input type="checkbox"/> reasonably legible and mostly well designed <input type="checkbox"/> some slides contained several minor errors in formatting, wording, sizing etc		<input type="checkbox"/> some slides difficult to read and/or too much content <input type="checkbox"/> slides dominated the communication process <input type="checkbox"/> several major errors/mistakes		<input type="checkbox"/> most slides were poorly designed <input type="checkbox"/> message was often confusing <input type="checkbox"/> many major errors/mistakes		<input type="checkbox"/> slides mostly illegible, confusing and/or containing many errors that distracted the audience from the main messages <input type="checkbox"/> an inappropriate number of slides/visual aids
		10	9	8	7	6	5	4	3	2	1

## 6.2 Lab Practical Sessions

The laboratory schedule is deliberately designed to provide practical, hands-on exposure to the concepts conveyed in lectures after they are covered in class. You are required to maintain two lab sessions: Grinding & Sieving and Flotation. For both experiments, students will be required to work in group but submit the lab report individually. All students are expected to familiarise themselves with the practical session activities before they come to the lab. Laboratory manual and a booklet containing assessment criteria and Laboratory Practice and are available on the course Moodle.

## 6.3 Final Group Project

The assessment criteria and relative weighting that will be used in assessing the Final Project is summarised in the following table.

**Assessment Criteria – Final Project**

<b>Criteria</b>	<b>Excellent</b>	<b>Good</b>	<b>Satisfactory</b>	<b>Unsatisfactory</b>	<b>Poor</b>	<b>nil</b>				
<b>Ore mineralogy and Processing flowsheet</b>	<input type="checkbox"/> Provided comprehensive information required for development of a flowsheet for the given commodity  <input type="checkbox"/> The processing method (s) is sound and fully justified.  <input type="checkbox"/> The input and output streams, particle size, reagent type and (if applicable), solid concentration, mineralogy, grade etc are all considered	<input type="checkbox"/> Most information required for development of a flowsheet for the given commodity is provided  <input type="checkbox"/> The processing method (s) is sound and justified.  <input type="checkbox"/> The input and output streams, particle size, reagent type and (if applicable), solid concentration, mineralogy, grade etc are considered	<input type="checkbox"/> Adequate information required for development of a flowsheet for the given commodity is provided  <input type="checkbox"/> The processing method (s) is partially justified.  <input type="checkbox"/> The input and output streams, particle size, reagent type and (if applicable), solid concentration, mineralogy, grade etc are partly considered	<input type="checkbox"/> Minimal information required for development of a flowsheet for the given commodity is provided  <input type="checkbox"/> The processing method (s) is poorly justified.  <input type="checkbox"/> The input and output streams, particle size, reagent type and (if applicable), solid concentration, mineralogy, grade etc are partly considered	<input type="checkbox"/> Limited information required for development of a flowsheet for the given commodity is provided  <input type="checkbox"/> The processing method (s) is poorly justified.  <input type="checkbox"/> The input and output streams, particle size, reagent type and (if applicable), solid concentration, mineralogy, grade etc are hardly considered	<input type="checkbox"/> Hardly any information required for development of a flowsheet for the given commodity is provided  <input type="checkbox"/> The processing method (s) is not justified.  <input type="checkbox"/> The input and output streams, particle size, reagent type and (if applicable), solid concentration, mineralogy, grade etc are not considered				
	40	34	33	27	26	20	20	10	9	1
<b>Equipment used in processing</b>	<input type="checkbox"/> provided comprehensive information on the operation and type/size of the equipment used in the processing flow sheet. Equipment selection is well-justified	<input type="checkbox"/> provided good information on the operation and type/size of the equipment used in the processing flow sheet. Equipment selection is justified	<input type="checkbox"/> provided reasonable information on the operation and type/size of the equipment used in the processing flow sheet. Equipment selection is not fully justified	<input type="checkbox"/> provided only limited information on the operation and type/size of the equipment used in the processing flow sheet. Equipment selection is partially justified.	<input type="checkbox"/> provided limited and confusing information on the operation and type/size of the equipment used in the processing flow sheet. Equipment selection is hardly justified	<input type="checkbox"/> provided no information on the equipment selection and operation				
	15	14	13	11	10	8	7	4	3	1

<b>Location (water, transportation, energy)</b>	<input type="checkbox"/> excellent justification of the selected location. Water, energy and transportation requirement are all considered	<input type="checkbox"/> justification of the selected location is sound . Water, energy and transportation requirement are considered	<input type="checkbox"/> justification of the selected location is reasonable . Water, energy and transportation requirement are partly considered	<input type="checkbox"/> limited justification of the selected location. Water, energy and transportation requirement are not fully considered	<input type="checkbox"/> poor justification of the selected location. Water, energy and transportation requirement are poorly considered	<input type="checkbox"/> no justification of the selected location. Water, energy and transportation requirement are not considered				
	10	9	8	7	6	5	4	3	2	1
<b>Marketing &amp; commodity uses</b>	<input type="checkbox"/> provided an excellent and comprehensive overview of the commodity uses <input type="checkbox"/> marketing of the commodity is fully considered	<input type="checkbox"/> provided a good overview of the commodity uses <input type="checkbox"/> marketing of the commodity is considered	<input type="checkbox"/> provided a reasonable overview of the commodity uses <input type="checkbox"/> marketing of the commodity is partially considered	<input type="checkbox"/> provided a limited overview of the commodity uses <input type="checkbox"/> marketing of the commodity is poorly considered	<input type="checkbox"/> provided limited or confusing overview of the commodity uses <input type="checkbox"/> marketing of the commodity is considered	<input type="checkbox"/> provided no information on commodity use and marketing				
	15	14	13	11	10	8	7	4	3	1
<b>Conclusion</b>	<b>• clear, concise and comprehensive statement of project objectives</b> that reflects state of understanding of topic all project management issues relevant have been identified	<b>• good</b> statement of project objectives that reflect current state of understanding of topic most of the major project management issues have been considered	<b>• reasonable</b> statement of project objectives that reflect to some degree current state of understanding of topic many of project management issues have been considered with some minor omissions	<b>• poorly revised</b> project objectives that does not account for current state of understanding of topic inadequate outline of the project management issues	<b>• project objective is ambiguous and/or does not account for current state of understanding of topic</b> poorly outlined project management issues	no concluding remarks about the project objectives and project plan were provided				
	10	9	8	7	6	5	4	3	2	1

<b>Referencing</b>	<ul style="list-style-type: none"> <li>• <b>all in-text citations were correct</b> as per the RWG; and</li> <li>• <b>all sources</b> of information were <b>referenced</b>; and</li> <li>• <b>all listings in the References</b> section were <b>correct</b> and exactly in total accord with AusIMM referencing requirements as defined in the GTA and RWG; and there were <b>no references missing</b> from the References section</li> </ul>	<ul style="list-style-type: none"> <li>• majority of in-text citations were correct with only a few minor errors; and</li> <li>• majority of sources of information were referenced with only a few minor exceptions; and</li> <li>• most of listings in the References section were correct and in total accord with AusIMM referencing requirements as defined in the GTA and RWG; and there was only one reference missing from the References section</li> </ul>	<ul style="list-style-type: none"> <li>• most in-text citations were correct though there were several minor errors; and/or some information was not referenced; and</li> <li>• many listings in the References section were correct and in accord with AusIMM referencing requirements as defined in the GTA and RWG with only a few very minor exceptions; and there were only a few references missing from the References section</li> </ul>	<ul style="list-style-type: none"> <li>• many errors with in-text citations; and/or</li> <li>• limited/poor range of references and/or not relevant to research topic; and/or</li> <li>• too little use of in-text citations and/or</li> <li>• several instances of information not being properly referenced to identify source of information; and/or</li> <li>• many errors in the References section and/or references were not correct and were not in accord with AusIMM referencing requirements as defined in the GTA and RWG; and/or there were several references missing from the References section</li> </ul>	<ul style="list-style-type: none"> <li>• most in-text citations had errors; and/or</li> <li>• too few references and/or most references were not relevant to research topic; and/or</li> <li>• little use of made of in-text citations to identify source of information and/or only a few references cited in the text to identify source of information; and/or</li> <li>• many instances of information not being properly referenced to identify source of information; and/or</li> <li>• most of the listings in the References section were incorrect and/or were not in accord with AusIMM referencing requirements as defined in the GTA and RWG; and/or there were many references missing from the References section and/or it was largely incomplete.</li> </ul>	<ul style="list-style-type: none"> <li>• there was no References section and/or</li> <li>• no in-text citation in main body of report of information sources; and/or</li> <li>• incorrect system of citing references was used; and/or</li> <li>• incomplete bibliographic details provided for references; and/or</li> <li>• incorrect system of listing references in the References section; and/or</li> <li>• no details provided for References; and/or did not conform to AusIMM referencing requirements as defined in the GTA and RWG.</li> </ul>				
	10	9	8	7	6	5	4	3	2	1

## 7 STUDYING A PG 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.microsoftcrmportals.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](http://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](http://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 an 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. In fairness to those students who do meet the assignment due date and time, deductions will apply to submissions made after this time. Marks will be deducted by the Course Convenor at the following rates if not submitted by the due date:

- fifteen (15) percentile points of the maximum possible mark for the first week overdue or part thereof; and
- an additional five (5) percentile points for each week or part thereof thereafter.

For example, if a student submitted the Project Progress Report ten days after the due date and the unadjusted assignment mark was 68% then the final adjusted mark for the assignment would be 48% – that is 68% (raw mark) less 15% (1st week penalty less a further 5% (2nd week penalty).

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>

## 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](http://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](http://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-enroll 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/](http://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](http://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/](http://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.**