



Faculty of Engineering

School of Minerals and Energy Resources Engineering

Postgraduate Course Outline

MINE8690

Mining Geotechnical Project

Dr Joung Oh

CONTENTS

1. INFORMATION ABOUT THE COURSE.....	3
2. AIMS, LEARNING OUTCOMES AND GRADUATE ATTRIBUTES	5
3. REFERENCE RESOURCES	5
4. COURSE CONTENT AND LEARNING ACTIVITIES.....	7
5. COURSE ASSESSMENT	8
6. ASSESSMENT CRITERIA.....	9
7. STUDYING A UG COURSE IN UNSW MINERALS AND ENERGY RESOURCES ENGINEERING.....	10

Document Management:

Filename: CourseOutline_MINE8690_T2 2020 (v1)

Date last update: 28 May 2021

Changes made by: Joung Oh

Revision number: 1

1. INFORMATION ABOUT THE COURSE

Course Code:	MINE8690	Term:	T2, 2021	Level:	PG	Units/Credits	6 UOC
Course Name:	Mining Geotechnical Project						

Course Convenor:	Dr Joung Oh						
Contact Details	School of Minerals and Energy Resources Engineering K15 (OMB 159k)	EMAIL:	Joung.oh@unsw.edu.au				
		Phone:	+61 2 9385 5002				
Contact times	Please contact Coordinators by email to arrange any contact						

1.1. Course Description

(This course is an elective within a number of available coursework Programs within the School of Minerals & Energy Resources Engineering. Students must have satisfied any program-specific rules, prior to enrolling in this course).

The course will consist of a research investigation thesis project (no course content teaching). Students will be expected to develop a project topic, investigation objectives and project plan and submit it for approval before proceeding. The project must be focused on a topic which is predominantly of a **geotechnical nature within a mining context. It must include a significant component of research investigation and analysis.**

Students are expected to include a relevant literature review; research plan; and report on findings, conclusions and recommendations. The project must be written in the form of a professional thesis report, in line with the School's published report writing guidelines. Students must also prepare a presentation on their project. Assessment will include both the written report and the presentation which may be required to be presented in a face to face or distance mode.

Completion of this course is expected to require approximately 150 hrs of total student effort. The course is to be **conducted entirely by distance delivery/private study.**

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.

Expectations and Milestones

The course must be undertaken entirely on an individual basis, unless prior approval is granted for an element of group investigation. All written elements of the project submissions must be prepared in accordance with the MEA Report Writing Guide.

The following milestones are expected to be achieved within the course, and where appropriate, are linked to assessment tasks and deadlines:

1. Nomination of proposed research project topic, draft objectives and project outline.
 - to be submitted to course authority (via Moodle) **no later than 11.06.2021** (after completing any required review/approval by employer). Note: Earlier topic submission is encouraged.
2. Course Convenor to confirm research topics by **18.06.2021** and allocate Project Supervisor(s).
3. Students to develop full project plan (by assessment date (**02.07.2021**)), incorporating the following elements:
 - Project title
 - Over-arching “research question”
 - Specific Project objective(s)
 - Brief background statement
 - Research methodology
 - Anticipated outcomes/deliverables
 - Project schedule (including Gantt chart of all major research stages and milestones)
 - Project risk assessment (relative to the conduct and successful project completion)
 - Draft Table of Contents for final project report
4. Completion of preliminary literature review, relative to project topic (by assessment date (**16.07.2021**)) - Note: Literature review may be subsequently amended/updated prior to inclusion in final project report.
5. Optional submission of preliminary draft final report (not assessable) – for supervisor’s brief comments, by **26.07.2021**.
6. Submission of a summary project presentation (powerpoint), based on a maximum of 20 slides/15 minute presentation (by assessment date (**02.08.2021**)).
 - Presentation should be uploaded to Moodle by due date, but a live/on-line presentation may also be scheduled at a later date, by prior arrangement.
 - Questions on presentations will be delivered via the live/on-line media, or via Moodle.
7. Submission of final project report (by assessment date (**06.08.2021**))
Note: The final report should be a minimum of 40 pages in length, and a maximum of 60 pages (excluding any Appendices). The report should be written in 1.5 line spacing. Students should include a self-assessment of their project report using the following marking rubric (see section 6.1). This should be included as an Appendix within the report.

1.3. Assumed Knowledge

This course assumes that a student:

- is currently enrolled in a Minerals & Energy Resources Engineering postgraduate coursework program in the geotechnical stream (at UNSW M&ER Eng); and
- has satisfactorily completed all prior course requirements; and
- has a sound knowledge of mining and geotechnical terms and systems and has had previous exposure to geotechnical activities at mining operations through industry employment and/or field trips.

2. AIMS, LEARNING OUTCOMES AND GRADUATE ATTRIBUTES

2.1. Course Aims

This course aims to develop students' research management, planning, investigation and communication abilities in the field of mining geotechnical engineering; and to demonstrate these abilities through the successful implementation and completion of a research project investigation and subsequent reporting.

2.2. Learning Outcomes

On successful completion of the course, it is expected that students will be able to:

1. Demonstrate initiative in identifying research needs and appropriate methodologies of investigation.
2. Successfully design, plan, implement and report on such investigations in a timely, structured, professional and logical manner.
3. Undertake research investigations in the field of mine geotechnical engineering.
4. Be capable of responding to technical/professional questioning with respect to the project content, in a level appropriate to the skills expected of a mine site geotechnical engineer.

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. ability for engineering design and creativity
4. awareness of opportunities to add value through engineering and the need for continuous improvement
5. being able to work and communicate effectively across discipline boundaries
6. having HSEC consciousness
7. being active life-long learners.

3. REFERENCE RESOURCES

3.1. Possible Reference Materials

- *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)
- *Guide to Authors*. (Australasian Institute of Mining and Metallurgy: Melbourne) (Available for download from the AusIMM website)
- *Rock Mechanics and the Design of Structures in Rock*. L Obert & WI Duvall, John Wiley & Sons (1967)
- *Rock Mechanics for Underground Mining*. BHG Brady & ET Brown, (3rd ed. 2004) published by Kluwer.
- *Coal Mine Ground Control*. SS Peng, John Wiley & Sons (1986).
- *Rockbursts in Coal Mines and their Prevention*. G Brauner, AA Balkema (1994).

- *Australian Coal Mining Practice – Monograph 12*. AJ Hargraves, CH Martin (eds.), AusIMM, 3rd edition, 2009.
- *Cablebolting in Underground Mines*. D Hutchinson & M Diederichs, BiTech Publishers (1996).
- *Ground Engineering. Principles & Practices for Underground Coal Mining*. JM Galvin. Springer, 2016.
- MassMin Conf. Proceedings (multiple)
- ISRM Congress Proceedings (multiple)
- Australasian Ground Control in Mining Conf. Proceedings, UNSW/AusIMM (multiple)
- International Ground Control in Mining Conf. Proceedings, Morgantown, USA, WVU, (multiple).

4. COURSE CONTENT AND LEARNING ACTIVITIES

4.1. Learning Activities Summary

UNSW Week	Week Starting	Topic	Content/Activities
1	31 May		Develop research topic ideas & gain any external approvals Nomination of proposed topic
2	7 June	Milestone 1	Develop research topic ideas & gain any external approvals Nomination of proposed topic
3	14 June	Milestone 2	Topics approved; Commence full project plan
4	21 June		Develop full project plan; Commence literature review
5	28 June	Milestone 3	Submit project plan; Continue research review/Commence research investigation
6	5 July		Continue literature review; Continue research investigation
7	12 July	Milestone 4	Submit literature review; Continue research investigation
8	19 July		Continue research investigation
9	26 July	Milestone 5 (optional)	Continue research investigation; Submit draft report for brief comments
10	2 Aug	Milestone 6 Milestone 7	Continue research investigation; Submit project presentation Submission of final project report

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.)

Other UNSW Key dates: <https://student.unsw.edu.au/new-calendar-dates>

5. COURSE ASSESSMENT

Assessment of this course is based on the submissions made at various project milestones over the course of the semester. Specific details of the requirements of the project milestones related to each item of assessment are identified in Section 1.2 of Course Outline (see above).

All assessments are due by 10am Sydney time on the date indicated in the table below. All submissions should be made through the online Moodle site.

All the course information 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>

5.1. Assessment Summary

Assessment task	Due date	Release date	Weight	Assessment	Learning outcomes assessed
A1	02.07.21	Start of T2	5%	Detailed project plan	1, 2
A2	16.07.21	Start of T2	15%	Literature review - Max. 15pages (no Min.)	1, 2, 3
A3	02.08.21	Start of T2	10%	Provision/delivery of presentation; plus, response to any questions - Max. 20 Slides / 15 minutes delivery time	2, 4
A4	06.08.21	Start of T2	70%	Final report - 40 – 60-page limit, plus signed cover sheet and Appendices	1, 2, 3, 4

6. ASSESSMENT CRITERIA

In this course, each student must have a *Project Supervisor* who is a member of academic staff in the School. In some instances, the Project Supervisor may deem it appropriate to appoint a Project Co-Supervisor who is either an academic from the School or some other School/Faculty/University or, a person from industry. The Project Supervisor is responsible in conjunction with the Course Convenor for assessment of the student's performance in the research project.

In general, it is strongly recommended that a student should arrange to consult with their Project Supervisor on a regular basis to discuss project progress, options and future direction and, issues that may potentially impact performance and/or project completion. The onus is on the student not the Project Supervisor to initiate and hold regular meetings. With frequent communication there is less likelihood that "surprises" will arise which could adversely impact on the successful and timely completion of the project and ensure the various milestones in the project are attained.

The following assessment criteria provide a framework for students when preparing the final report for the course as well as a guideline for assessors when marking an assignment. The student is advised to review the relevant framework before undertaking their assignment.

The criteria listed for each item of assessment and the descriptions contained therein are not intended to be prescriptive nor is it an exhaustive list. Rather it should be viewed as a framework to guide the student as to the type of information and depth of coverage that is expected to be evident in a submission for assessment; the framework illustrates for example what would distinguish an excellent achievement from a poor achievement.

The student should be cognisant that a range of factors is often being assessed in any one assignment; not just whether the final results are numerically correct. Consideration is given to other relevant elements that contribute to the *Learning Outcomes* of the course as well as the *Graduate Attributes* of the overall degree program.

The student is cautioned against merely using the assessment criteria as a checklist. When assessing an assignment, elements in the framework will be examined in terms of quality and creativity. Hence ensuring all the listed elements are merely covered in an assignment is often not sufficient in itself and will not automatically lead to full marks being awarded. Other factors such as how the student went about presenting information, how an argument was structured and/or the elements supporting a particular recommendation or outcome are also important.

Finally, the framework can also be used to provide feedback to a student on their performance in an assignment. Periodically the criteria are reviewed and updated; consequently, changes may be made from time to time to the framework to improve its effectiveness in achieving both these objectives.

Note: Reference to *RWG* in the assessment criteria refers to the *MEA Report Writing Guide*, and *GTA* to the *AusIMM Guide to Authors*.

6.1. Project Final Report

The rubric attached to the end of this Course Outline will be used for assessment of the final project report, to derive a % score for the final report. (*Rubric source: Prof. Paul Hagan, School of Minerals & Energy Resources Engineering, UNSW*):

7. STUDYING A UG 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

2.1. 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

2.2. 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 a assessment cover sheet attached.

2.3. 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>

In the case of the four assessment tasks, penalty marks will be applied at the following rate if submitted after the due date: five (5) percentile points of the maximum possible mark for each day or part thereof that the assessment is overdue.

For example if a student submitted the assignment five days after the due date and the unadjusted mark was 68% then the final adjustment mark for the assignment would be 43%-that is 68% (raw mark) less 25% (5 days @ 5% per day).

2.4. 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

2.5. 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:

- 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.

2.6. 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/

2.7. 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.

2.8. 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.

Assessment Criteria

Student Name: _____

Assessed by: _____

Marking of this project work was based on the following assessment criteria and weighting.

Criteria	Excellent	Good	Satisfactory	Unsatisfactory	Poor	nil
Abstract <i>Comments:</i> _____ _____ _____ _____	<ul style="list-style-type: none"> Abstract is well written and accurately yet concisely captures all the essential aspects of the project objective, methodology, outcomes and issues 	<ul style="list-style-type: none"> Abstract is reasonably well written and captures most of the essential elements of the project 	<ul style="list-style-type: none"> Abstract is adequately written and captures most elements though missing some information 	<ul style="list-style-type: none"> Abstract is poorly written and does not clearly convey information concerning project topic, method, issues and/or outcomes 	<ul style="list-style-type: none"> Abstract is badly written and/or does not summarise the project topic and its outcomes 	<ul style="list-style-type: none"> Abstract is missing and/or largely incomplete
	10 9	8 7	6 5	4 3	2 1	0
Introduction <i>Comments:</i> _____ _____ _____ _____	<ul style="list-style-type: none"> Introduction provides a clear definition of the aims and objectives and, scope of project clearly identifies the relevance and significance of the project to the industry 	<ul style="list-style-type: none"> Introduction provides a good definition of the aims and objectives and scope of project identifies the relevance and significance to industry 	<ul style="list-style-type: none"> Introduction satisfactorily outlines the aims and objectives and/or provides a reasonable discussion of relevance and significance to industry 	<ul style="list-style-type: none"> Incomplete and/or unclear definition of project scope 	<ul style="list-style-type: none"> Project topic and scope are very unclear and/or confused 	<ul style="list-style-type: none"> Introduction is missing and/or largely incomplete
	5	4	3	2	1	0

Criteria	Excellent	Good	Satisfactory	Unsatisfactory	Poor	nil
Background and methodology/ experimental procedures <i>Comments:</i>	<ul style="list-style-type: none"> extensive, relevant and logically organised review that critically analysed previous work on the topic and sets the scene for the research to be conducted presented an excellent description of the research methodology and/or experimental procedure that was used to obtain data 	<ul style="list-style-type: none"> relevant and logically organised review that critically analysed previous work on the topic and set the scene for the research to be conducted presented a good description of the research methodology and/or experimental procedure that was used to obtain data 	<ul style="list-style-type: none"> acceptable coverage of background material with some critical analysis applied that showed basic understanding of the topic presented an acceptable description of the research methodology and/or experimental procedure that was used to obtain data 	<ul style="list-style-type: none"> limited coverage of background material that lacked critical analysis. Some flaws in the basic understanding of this material was evident presented a limited description of the research methodology and/or experimental procedure that was used to obtain data 	<ul style="list-style-type: none"> extremely limited coverage of background material. A lack of understanding of the material in the topic area was evident poor description of the research methodology and/or experimental procedure that was used to obtain data 	<ul style="list-style-type: none"> critique of previous work is missing and/or largely incomplete methodology and/or experimental procedures missing
	10 9	8 7	6 5	4 3	2 1	0
Results and analysis <i>Comments:</i>	<ul style="list-style-type: none"> all relevant results are presented in a manner from which meaningful analyses and interpretations are drawn good and creative approach to analysis of results interpreted against the stated objectives of the research 	<ul style="list-style-type: none"> most results are presented in a manner from which meaningful analyses and interpretations are drawn results are interpreted based on established approach relevant to stated objectives of the research 	<ul style="list-style-type: none"> many results are presented in a manner from which meaningful analyses and interpretations are drawn results are not interpreted against the stated objectives of the research. 	<ul style="list-style-type: none"> some results are presented and some analysis and interpretations of these results are given not aligned to the stated objectives of the research. 	<ul style="list-style-type: none"> poorly presented some results and/or some results missing little or no analysis or interpretation of results 	<ul style="list-style-type: none"> no results presented and/or analysed
	25 21	20 16	15 11	10 6	5 1	0

Criteria	Excellent	Good	Satisfactory	Unsatisfactory	Poor	nil
Quality of research and innovation in research process <i>Comments:</i>	<ul style="list-style-type: none"> • approach highlights creativity and innovation, while working to an organised plan • actual execution of the work showed the application of knowledge gained from background research through relevant analysis of data to generate new knowledge. 	<ul style="list-style-type: none"> • approach is systematic and showed some innovation • actual execution of the work showed the application of knowledge gained from background research through analysis of data 	<ul style="list-style-type: none"> • approach is reasonably systematic. • actual execution of work showed some understanding via application of prior knowledge and some background research to produce limited analysis of data 	<ul style="list-style-type: none"> • approach is not well considered and does not flow logically from the background research presented • actual execution of work shows flawed understanding and little application of either background research or prior knowledge 	<ul style="list-style-type: none"> • approach is haphazard and has no logical basis • actual execution of the work shows very little understanding and little application of either background research or prior knowledge 	<ul style="list-style-type: none"> • little/no evidence of quality of research and innovation
	20 19	18 15	14 10	9 5	5 1	0
Conclusions and recommendations <i>Comments:</i>	<ul style="list-style-type: none"> • excellent, clear and concise summary of the outcomes of the research that demonstrates sound comprehension and insight into the significance of the results • excellent and appropriate recommendations for continuation and improvement of the research were discussed 	<ul style="list-style-type: none"> • good summary of the outcomes of the research that demonstrates comprehension and some insight into the significance of the results • some recommendations for continuation and improvement of the research were discussed 	<ul style="list-style-type: none"> • reasonable summary of the outcomes of the research that demonstrates some comprehension but limited insight into the significance of the results • limited recommendations for continuation and improvement of the research were discussed 	<ul style="list-style-type: none"> • summary of the outcomes of the research that demonstrates limited comprehension • few, inappropriate and/or irrelevant recommendations 	<ul style="list-style-type: none"> • fails to explain what was achieved with no real comprehension demonstrated 	<ul style="list-style-type: none"> • no conclusions and/or recommendations
	10 9	8 7	6 5	4 3	2 1	0

Criteria	Excellent	Good	Satisfactory	Unsatisfactory	Poor	nil
Referencing <i>Comments:</i>	<ul style="list-style-type: none"> all in-text citations are correct as per the <i>RWG</i> all sources of information are referenced all listings in the References section are exactly in accord with the AusIMM standards as contained in the <i>RWG</i> there are no missing References 	<ul style="list-style-type: none"> majority of in-text citations are correct with only a few minor errors majority of sources of information are referenced with few exceptions majority of listings in the References section are correct with only a few minor errors there are a few references missing from the References section 	<ul style="list-style-type: none"> most in-text citations are correct though there are several errors and/or some information is not referenced most listings in the References section are correct though there are several errors the References section is mostly complete 	<ul style="list-style-type: none"> limited/poor range of references and/or some are not appropriate to the topic many errors with in-text citations too little use of in-text citations and/or many instances of information not being properly referenced to identify source of information many errors with the listings in the References section the Reference section is incomplete/missing some references 	<ul style="list-style-type: none"> too few references and/or most are not appropriate to the topic most in-text citations have errors little use of made of in-text citations to identify source of information most of the listings in the References section are incorrect there are many references missing from the References section 	<ul style="list-style-type: none"> there is no References section no in-text citation in thesis or, incorrect system of referencing is used incorrect system of listing in the References section
	10 9	8 7	6 5	4 3	2 1	0

Criteria	Excellent	Good	Satisfactory	Unsatisfactory	Poor	nil
Standard of thesis presentation <i>Comments:</i>	<ul style="list-style-type: none"> • structure of thesis contains all required sections required and is in accord with <i>RWG</i> • structure follows a logical progression • format of thesis is completely in accord with the usual conventions of a thesis and the <i>RWG</i> • use of tables, figures and equations is correct with no errors • writing style is completely in accord with a thesis • thesis has no spelling and grammatical errors, etc. 	<ul style="list-style-type: none"> • structure of thesis is largely complete though it has a few minor errors • format is largely in accord with <i>RWG</i> with a few minor errors • use of tables, figures and equations is largely correct with only a few minor errors • style is largely appropriate for a thesis with a few minor exceptions • largely free of spelling and grammatical errors 	<ul style="list-style-type: none"> • report structure is mostly correct and/or has some minor errors • format is on the whole in accord with the <i>RWG</i> though it has several errors • use of tables, figures and equations is mostly correct and/or there are several minor errors • style is appropriate in most instances with some minor errors • several minor spelling and grammatical errors 	<ul style="list-style-type: none"> • several issues with thesis structure and/or many minor errors • many issues with format of thesis as it deviates from <i>RWG</i> • some issues with use of tables, figures and/or equations in thesis • writing style is inappropriate in many instances • many instances of spelling and/or grammatical errors 	<ul style="list-style-type: none"> • significant issues with thesis structure and/or many major errors • thesis incomplete in sections with missing/gaps in information • large number of significant major issues in format of thesis • use of tables, figures and/or equations is largely inconsistent with <i>RWG</i> • inappropriate writing style for a thesis • unacceptable number of spelling and/or grammatical errors 	<ul style="list-style-type: none"> • not presented as a thesis and/or not compliant with <i>RWG</i> • significant amount of information missing from thesis • most essential elements of thesis structure are missing and/or thesis has no logical structure • format not in accord with the <i>RWG</i> standards • use of tables, figures and/or equations is incorrect • major issue with spelling and/or grammar
	10 9	8 7	6 5	4 3	2 1	0