School of Mechanical, Materials, Mechatronics & Biomedical Engineering

STUDENTS & SUPERVISORS
GUIDELINE 2019

Please read this guideline in conjunction with the Subject Outline for this subject

PREPARATION & SUBMISSION OF
POSTGRADUATE COURSEWORK
ADVANCED PROJECT

MMMB940 - Dissertation
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1 Subject Overview

MMMB940 advanced project provides students with the opportunity to undertake a high level project under the close supervision of a member of academic staff. Students complete a project in their area of interest. The dissertation develops skills in information retrieval, project planning and organisation, analysis, problem solving and effective communication of results. Involves the undertaking of an individual supervised project focused on solving a problem relevant to the discipline area of the degree. The student would normally be required to do a literature survey, analysis, and develop suitable solutions to the selected problem.

This will allow the students to apply the knowledge and skills acquired in the structured coursework and thus gain valuable confidence in their ability to practice engineering at a high professional standard.

Throughout this subject, students will be provided with support through lectures, writing and research workshops and direct contact with their supervisors.

Students will be contacted throughout the Session via UOW SOLS Mail and Moodle announcements with important information relating to this subject.

2 Dissertation Topic Allocation

Once enrolled, students will be allocated a topic by the subject coordinator for their School. Topics will be allocated on the basis of supervisor availability and the students’ major. Changing topics or supervisors from those allocated is not normally allowed, but may be possible by agreement from the supervisor and subject coordinator.

Students may be allocated an individual topic, or a topic that is shared with other students under the same supervisor. In each case, individual work and assignment submissions are expected.

3 Dissertation Workshops

In addition to the workshops, the Engineering and Information Sciences Faculty Librarian will be pleased to hold individual sessions with dissertation students. To arrange an appointment contact the librarian directly (Refer Part B of the subject outline) or see the Faculty Dissertation Coordinator. This is an essential step towards a successful dissertation and so highly recommended.

4 Guidance from the Academic Supervisor

The academic supervisor will support and mentor the student in developing an understanding of the theoretical background information and application of theory to aid the student's completion of the project. Specifically, the academic supervisor will:

- Ensure that the overall work requirements are commensurate with an MMMB940 12 credit point subject.
- Maintain regular contact with students in order to monitor their progress. It is recommended that the supervisor meet with the student at least once every two weeks.
- Provide timely and helpful written feedback to students on any submissions and support them to develop solutions as problems are identified.
- Advise students of inadequate progress or work below the standard generally required and suggest appropriate action.
- Submit marks from all assessment tasks to the Dissertation Coordinator within 14 calendar days of the assessment submission date.
- Inform students and the Dissertation Coordinator about any planned absences during the candidature and arrangements for supervision during those absences. This is particularly important in the final weeks of either session when assessment marks and student feedback are due. Refer to the subject outline.

All dissertation costs incurred, associated with the submission of the stated minimal requirements, must be borne by the student.

5 Thesis Support

Students have Inter-Library Loan privileges in the Library and should make use of these privileges to gather information for their literature search (a maximum of five interlibrary loans may be requested). Dissertation students will be granted access to workshop and laboratory facilities as required for the project topic. Please note that not all topics will involve utilisation of workshop or laboratory facilities.
Any access to these facilities will be contingent on availability of supervisory staff, space, and compliance with health and safety regulations.

Dissertation students are welcome to borrow past thesis and dissertations from EIS Central. Students may borrow one dissertation for two weeks on presentation of their Student ID. An existing dissertation should never be used as a template for your dissertation.

Students needing assistance with English grammar and written communication should consult with the Learning Development Centre (Building 11, Level 3, take lift opposite the Unishop) as soon as possible for assistance. Problems with grammar and spelling often delay progress in the dissertation and will not be acceptable reasons for late submission. Your supervisor might be able to put you in touch with a professional proof reader but costs must be borne by the student.

Resources are available from the UOW Library home page: www.library.uow.edu.au

To access databases you require your student card and your email username and password.

View Engineering subject specific resources from http://uow.libguides.com/engineering

This page has been designed for student, staff and research groups. Please read the Services that are available to you and use the Online Tutorial to assist you with using Library resources.

Other sites that will be of assistance to you are:

- Referencing and Style Guides – examples of how to reference your material http://www.libguides.com/refcite
- UniLearning Online – a tutorial to assist with academic writing http://unilearning.uow.edu.au.

6 Main Body of Dissertation

The main body of the dissertation must be divided into a number of chapters. Each chapter should contain a number of sections and each section may contain a number of sub-sections. The use of sub-sub-sections should be avoided. The numbering system used herein may be adopted for ease of cross-references.

For further details on the title page, acknowledgements, abstract, table of contents and notations, refer to Appendix A.

6.1 General Dissertation Structure

The structure of your dissertation should be the subject of discussion with your individual supervisor and will depend on the project you are undertaking for your dissertation.

The following is provided as a typical example of a structure for a dissertation. It must not be taken as a requirement or accepted as the structure for your dissertation specifically.

Note that the headings here must be made specific to the problem. Note also that each section leads on from the last. Each section should begin with a statement of where the process of solving the problem (or completing the research) is up to and what this section will do towards solving the problem. Each section should close with a statement about what was achieved by this section and what the next step in the solution of the problem now is. In this way, both you and the reader are informed of why that section exists and what has been achieved so far.

6.2 Typical or recommended dissertation structure:

6.2.1 Abstract

A typical dissertation starts with an Abstract (Abstract starts on Page i. Therefore use Roman numerals up until the Introduction). A one page Abstract that must not refer to the dissertation itself and should be able to be read as a standalone document, informing the reader of what was set to achieve, what was done to try to achieve it, and what the results were.

Acknowledgements
Table of Contents
List of Figures
List of Tables
Nomenclature
6.2.2 Chapter 1. Introduction

The Introduction is the first section of the main body of the report (note Introduction starts on Page 1). This section identifies the problem that is the subject of your dissertation, the reasons why it is important to solve this problem, and the methodology that you are going to use to solve it. i.e. the steps in the analysis from this point to a conclusion. You would normally also include some background information.

There must be a purpose for the dissertation and this should be specified at early as possible to inform the reader in particular, if not you about what this work is focused on. Your project proposal would normally be of major use in developing the introduction.

6.2.3 Chapter 2. Research into existing knowledge

This may have any number of titles and is sometimes called the literature review but literature may not be the only source of information. This chapter is a result of an active search for existing knowledge that can be used in better defining or in solving the problem established in the Introduction (Chapter 1.0). It provides a basis for the next step in the project and should be completed with a statement as to what needs to be done in the dissertation given the knowledge that already exists and its applicability to the problem you are addressing. Note that the only value you add is the critical review of this existing knowledge in the context of the problem you have to solve. Quoting, paraphrasing or otherwise describing the views of others is of little or no value towards the dissertation and will only detract from the dissertation. Your job is not to educate the reader. It is assumed that, if interested, the reader can get the details of this information directly.

6.2.4 Chapter 3. Design of the experiment or test

Given what has been learnt in Chapter 2, what is the detail of how you are going to undertake the study or analysis. Generally you will need to develop some hypothesis about what you might expect to find and then a testing method that you would use to determine if there is evidence that this hypothesis is true or applies in this case. A specific example of this might be that you have to test whether quality standards are of benefit to organisations. In that case, under 2.0 you will have determined what others have claimed and have identified what you believe would be the benefits (your hypothesis). The next step is to work out how you would measure these benefits if they existed (your experiment or test).

6.2.5 Chapter 4. Undertaking of experiment or test

In the dissertation, this is a report of the actual undertaking of the experiment or test. It may start with a description of the subject. This would be the organisation reviewed, for example.

6.2.6 Chapter 5: Evaluation of the results (discussion)

This is then a reflection on the hypothesis, the test procedure and the results reported in 4.0 (not sure what this refers to?).

6.2.7 Chapter 6: Conclusion

Identifies the outcomes of the project. This simply reports on findings already described earlier. It should reflect what has been stated in the introduction about what is attempting to be achieved in the dissertation. Note that you may or may not have achieved these things. The reasons for achievement or not can also be stated.

6.2.8 References

Refer to University guidelines and your supervisor for the required format. Make sure that these are also cited where they are used in the body of the dissertation. All material used in the dissertation MUST be referenced properly. There is guide to referencing on the Library website that might be useful.

6.2.9 Bibliography

List of readings of relevance to the topic but not specifically used in the dissertation itself. Bibliography is of very limited usefulness and will not suffice as a substitute for proper referencing (Do not call a Bibliography list References!)

6.2.10 Appendices
Material, which, if included in the main text, would disrupt the flow of presentation, should be included in the appendices. These include mathematical and numerical details, maps, charts, computer programme listings, work plan and risk assessment. However, significant numerical material (e.g. data files, computer output, and the like) should only be presented on the CDs.

Drawings, tables and photographs shall be inserted wherever necessary to enhance the readability of the dissertation and should be included in the text as close as possible to the first citation. Each drawing, table and photograph must be provided with a caption or title. Should a table or figure be arranged in landscape mode the page should read away from the dissertation spine.
7 Referencing information sources

All information from sources other than your own work must be referenced using a brief, in-text citation and a full reference list. One of two methods of in-text citation must be used to reference other people's work. The two acceptable methods are:

- Author date – By naming the author followed by year of publication (author, date). The reference list should be organised alphabetically by Author;
- Numbered – By including a number in brackets corresponding to the full author details in reference list.

For dissertations that use many references, the first method is usually most convenient. Otherwise, the second method is quite acceptable. For the first method, the listing of references should be in alphabetical order of the names of the authors; for each author the listing should be in order of publication dates. For the second method, the references should be numbered in the order in which they are first referred to in the text.

Examples of the methods of referencing and the corresponding styles of listing may be seen in Appendix B.

8 Grammar and English Usage

Particular attention should be paid to spelling, usage of English, and proof reading of the typed manuscript. The body of the manuscript must be written in third person past tense and formal style. Test procedure description/s may be written in alternate person and tense. Students experiencing difficulty should consult with the Learning Development Centre for assistance, or seek assistance during academic writing workshops. If you are experiencing any difficulty with this you must seek advice.

Extensive spelling and English corrections will not normally be undertaken by the supervisor/s. Students will be required to add the Disclaimer Statement if the supervisor gives assistance.

"The majority of work in this dissertation is original. However, some assistance with spelling and English has been provided by my supervisor/s."

If deemed necessary by the dissertation supervisor and dissertation coordinator, this Disclaimer must appear towards the bottom on the dissertation Abstract page.

9 Word Processing

The draft dissertation shall be presented in a permanent and legible form. Accordingly, only the original or good quality photocopy is acceptable. Only bond paper shall be used in all copies.

The specifications given below shall be followed:

- the text of the dissertation shall be in Times Roman 12 font;
- line spacing set at 1.5 lines;
- the size of the paper shall approximate ISO paper size A4 (297mm x 210mm), except for illustrative materials such as drawings, maps and printouts, on which no restriction is placed;
- the margins on each sheet shall be not less than 25 mm on the bound side and 20 mm on the opposite side, 20 mm at the top and 20 mm at the bottom;
- there shall be a title page showing dissertation title, author’s name, degree and date of submission (see Appendix C). No other decoration should be included on this page.
- all pages (including diagrams, tables and appendices) shall be numbered consecutively.
- headers and footers should contain the page number only and be void of borders. References should not be placed as footnotes.
- diagrams and tables etc. with proper captions, shall appear on pages close to where reference is first made to them. Photographs should be included as ’jpg’ or ’gif’ objects in the word document. Figure and photograph titles should be placed following the Figure whereas Table titles should be placed at the top of the table.

10 Appeals

Students who consider they have received adverse assessment may initiate an appeal. At the initial level this should be discussed with your supervisor(s). Subsequent action, supported by written documentation, may be taken up with the Dissertation Coordinator. Any appeal initiated after marks
have been declared must be formal and lodged in accord with the University Rules and Regulations. Please view grievance process on Faculty of Engineering and Information Sciences website and observe correct procedures.

11 Rate of Progress

If for some reason a student makes insufficient progress in the course of the dissertation it is important for he or she to be aware of the effect on their overall degree. Since the dissertation subject is an annual subject it is possible for a student to withdraw up until the date set in second session for withdrawal without penalty (currently Week 8).

All students find dissertation a difficult challenge and very stressful. The vast majority of students complete their dissertation without unsurmountable difficulty. However, if you are having difficulties at any point in your dissertation for whatever reason, do not hesitate to contact the Dissertation Coordinator. If you need to know how to manage work related stress, see Appendix G.

12 Safety in Laboratories and Field Work

Where laboratory or filed work is required, it is imperative that students’ work safely in the laboratories/field at all times. In particular, substantial footwear must be worn. e.g. thongs and sandals are not acceptable. All correct safety wear must be used at all times and students must be authorised in writing to use any equipment.

A “Risk Assessment Form” relating to your dissertation project is to be completed and submitted before any work commences. This is to identify safety issues relating to your proposed work programme and come to an agreed means of addressing these issues (in discussion with the technical staff responsible for the relevant laboratory area and your supervisor). Your supervisor is to initial this sheet to ensure that he/she is aware of the major safety considerations and the agreed actions to be taken. If there are significant departures from the original programme of work this sheet may need to be updated and a new form submitted.

At the commencement of their dissertation, students should introduce themselves to the technical or professional officer responsible for any laboratory in which they will be working. You must make sure they are aware of your presence and what you are doing at all times.

If students wish to work in the laboratories outside the hours when technical staff are available, then the following Faculty WORKPLACE SAFETY REGULATIONS must be followed at all times.

- Staff and students must not work alone in:
  - Laboratories where chemical substances are handled or housed or where there is a risk of injury from the work being carried out.
  - In areas where power tools or hand tools that could cause injury are used.
  - Areas where moving machinery are used.

- In all areas other than those detailed above where staff or students work alone, arrangements should be made for other staff to regularly check the welfare of persons working alone. Alternatively, a means of communication to gain assistance must be available.

The above regulations were resolved by the University of Wollongong Occupational Health and Safety Committee.

You must obtain written permission from your supervisor and the relevant lab manager before undertaking any work in any laboratory. All safety rules must be observed at all times.

Letters giving permission to work in laboratories after hours or at weekends may be arranged through your Supervisor (you must be accompanied by another adult at all times). Keys are not issued and students must arrange with your Supervisor or Supervisors delegates to be available to provide access out of hours.
13 APPENDIX A

TYPICAL DISSERTATION CONTENT

Examples of:

A.1 Title Page
A.2 Abstract Page
A.3 Table of Contents
A.4 Notation
A.5 Presentation of Chapters

Are shown on the following five pages.
13.1 Title Page

DISSERTATION TITLE

By

STUDENT NAME

A dissertation submitted in partial fulfilment of the requirements for the award of the degree of

MASTER OF ENGINEERING PRACTICE
(Discipline)

Or

MASTER OF ENGINEERING

SUPERVISOR NAME

from

UNIVERSITY OF WOLLONGONG

FACULTY OF ENGINEERING AND INFORMATION SCIENCES

Month (June or November) 20XX
ABSTRACT

(250 words maximum)

(One page only)
## Table of Contents

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13.4 Notation

a  length of strip or beam, mm

[A]  transformation matrix for skew strips (Eqn. 5.28)

A,B,C  undetermined coefficients (see Eqn. 2.12)

B  used as suffix for bending analysis

[Bb]  matrix of coefficients relating curvatures to displacement amplitudes

[Bp]  matrix of coefficients relating strains to displacement amplitudes

[C]  coefficient matrix for the displacement function

[D]  plate rigidity matrix

E  modulus of elasticity, MPa

f  individual coefficient of flexibility matrix

[f]  flexibility matrix

[F]  modified flexibility matrix

H,V,T  horizontal, vertical and rotational restraints (redundant reactions)

k  individual coefficient of a stiffness matrix

[K]  stiffness matrix

m  the general harmonic term

M  bending moment, kNm

Mx  transverse bending moment (relative to transverse x-axis), kNm

My  longitudinal bending moment (relative to longitudinal y-axis), kNm

Mxy  twisting moment, kNm

p  used as suffix for in-plane analysis

p  load, kN

Note  Units must be presented for all variables
CHAPTER 1

DEVELOPMENT OF ROCK DISPLACEMENT INSTRUMENTATION
SYSTEM 1 MAGNETIC ROD EXTENSOMETER

1.1 INTRODUCTION

An attempt has been made to develop a new type of rock displacement extensometer. Particular interest has been paid to rock displacement along the axis of a horizontal borehole drilled into the sides of mine roadways. Such an instrument, however, may be used for measurement of the displacement of a borehole along its axis in any direction.

The principle of the technique consists of installing magnetic reference points made of small rectangular or circular magnets at predetermined intervals along the axis of a borehole. The reference points are then located by a magnetically-susceptible medium, mounted on a length of straight non-magnetic rod.

The procedure consists of inserting the magnetically-susceptible rod in the borehole containing the magnetic reference points. Upon short direct exposure of the sensing medium to the magnetic field of the magnets, regional magnetisation will be introduced on those portions of the sensing medium directly facing the reference magnets. The rods are then removed to the laboratory where the magnetisation zones are traced out by suitable detectors, and the relative distances between the reference points may be measured.

1.2 BACKGROUND

This problem has existed for a long time..............
14 APPENDIX B
METHOD OF REFERENCING AND REFERENCE LISTING

B.1 Reference by Naming Authors

The following is an extract from a published work, which may serve as an example when the author's name is placed in the sentence:

"The flexibility approach adopted by Mortarjemi and Van Horn (1969) is useful only in determining the load-distribution characteristics for some specific form of box-bridge construction. Other methods of analysis due to Wright et al. (1968, 1968a), Richmond (1969, 1969a, 1971) and Kristek (1970) are approximate in assumptions and in applications and are generally suitable for single-cell boxes only.

Space-frame programs have also been used, e.g. by Smyth and Srinivasan (1973), in the analysis of a box-girder bridge deck. However, the simulation of boxes by space frames is not capable of predicting local effects and the method has proved expensive in use".

If the sentence does not use the author's name but the content requires referencing the following method should be used:

At Idaho Falls, a 1.6m thick soil layer was capable of storing and removing 370 mm of precipitation which corresponds to the maximum annual precipitation over a 40 yr. period (Anderson et al. 1993).

The corresponding reference listing should follow the styles below:

(a) Articles
Author's name (surname first followed by initials (title case)); year of publication in brackets; full stop; title of article; full stop; title of journal (abbreviated in conventional manner as desired); comma; volume; comma; part of number; comma; month of publication (if applicable); comma; numbers of first and last pages; full stop.

b) Books and Reports
Authors' names in title case (surname first followed by initials); year of publication in brackets; full stop; title of book; full stop; series number (if applicable); comma; publisher/s; comma; place of publication (if necessary); full stop.

Examples of the two styles of listing may be found in D.2 and D.3 respectively.

B.2 Portion of Typical Reference List


B.3 Reference by Numbers

This method of referencing is widely used in writing journal articles. The following is an example:

"Cable structures are becoming increasingly popular because of their economical constructional advantage and high strength capacity. However, the cable material typically used in modern construction exhibits linear stress-strain characteristics over only a portion of its useable strength. For ultimate load analysis, the resulting
formulations should consider material nonlinearity. Some attention has been given to nonlinear material effects in static cases (1-3, 5-7, 13), but little attention has been devoted to dynamic cases (8, 9, 11, 12)."

It should be noted that the authors may also be names in this system as can be seen in the following paragraph.

"With the advances being made in digital computer capabilities, simulations of discrete digital time sequences have become an important engineering tool for both design and analysis. Digital time sequence simulations of random waves for ocean engineering applications have been developed by Smith (1) and applied by the Jones (5) for random wave force predictions. Alternative techniques for simulating a discrete random time sequence have been developed by Shvetsov and Shorin (10) and by Shinozuka (8) with an application to coastal sediment transport problems under random waves by Wang and Liang (13). In addition, dynamic testing systems, which are utilized to compute complex-valued transfer functions by the Frequency-sweep method, may be driven by a digital simulation of a discrete random time sequence that has been synthesized from a Fast Fourier transform (FFT) algorithm and is capable of providing excitations of the more desirable periodic random type (see for comparison, Ref. 6)."

For this method the styles of listing are very similar to those given in D.1 except that:

(i) the authors' names only need to be in upper and lower case;
(ii) for articles, year of publication should be inserted just after the month of publication;
(iii) for books and reports, the year of publication should appear last;
(iv) title of article (in upper and lower case) should be in double quotations and starts and ends with a comma;
(v) title of journal or book should be underlined.

The following are two examples:


B.4 Electronic Material

Students are advised to refer to the requirements of referencing electronic sourced material. Useful information on Citing Electronic Resources is available at the University of Wollongong Library Web Site http://www.library.uow.edu.au/resourcesbytopic/UOW026621.html.

This information is available in the Referencing: Getting started guide under each referencing style.

Additional material is available from the Learning Development Centre (19:G102).
15 APPENDIX C

STRESS

As you no doubt realise, the dissertation is a major task to undertake - by far the biggest single piece of assessable work you will tackle in the course of your degree. It is also quite different in kind from the work involved in the other subjects.

In the other subjects, with the setting of tutorials, continuous assessment tasks and so on, students are led step by step through the required material. In contrast, when it comes to the dissertation, the student is primarily responsible for the progress of the project - setting of goals, timetables and monitoring rate of achievement of these tasks. A very significant part of the dissertation is the effective "project management" aspects associated with meeting the various deadlines set out in the previous section. A particular challenge in this subject is to maintain progress whilst still meeting the assessment requirements of the remaining subjects.

Consequently in grappling with this project it is not surprising that most, if not all, students will feel some degree of stress at some stage during the project. This is true to some extent with any assessable task, but given the magnitude of this task may reach higher levels - and in some cases may impede the successful completion of the dissertation.

There are several points that may assist with regard to the handling, and hopefully relieving of this stress:

- Stress, to some degree, is a common part of the effort involved in tackling a major and significant task of this sort. You will not be the odd one out if you are experiencing this.
- If you are a "bright" student with a good academic record you are not immune – you are likely to have set your personal standard for the dissertation at a challenging level - and you need to be careful that it is not too challenging (regular interaction with your supervisor should help).
- Stress free dissertation completion is invariably associated with good project management and disciplined time management - including the ability to prevent dissertation work being swamped by the requirements of your other subjects.
- The student is basically the "project manager" for the dissertation - not the supervisor - and is responsible for seeing that the dissertation gets done. However you should draw on your supervisor's experience and guidance regularly throughout the dissertation. Regular meetings with your supervisor (weekly or fortnightly) are perhaps the best way to ensure this. The best way of relieving stress in the dissertation is to catch the causes early and solve them. A problem shared is a problem halved - therefore make it part of your project management plan to organise regular meetings with your supervisor.
- If there are problems that you do not appear to be able to resolve in conjunction with your supervisor, you should discuss them with the coordinator of the dissertation subject.
- The University has a counselling service, located in the UniCentre building, to assist students. A significant part of their work involves assisting students in coping with the stress associated with tackling this type of major project. Be aware of and make use of this resource sooner rather than later if you feel stress levels building. There are techniques and strategies you can use to help you not only in this task but also in your future career.
## APPENDIX D.1 Project Proposal Marking Criteria

<table>
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<tr>
<th>Assessment Component</th>
<th>High Distinction (85-100)</th>
<th>Distinction (75-84)</th>
<th>Credit (65-74)</th>
<th>Pass (50-64)</th>
<th>Fail (0-49)</th>
<th>Mark for Item</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Aims, objectives, and scope</td>
<td>• Aims, objectives, and scope indicate an excellent comprehension of the research topic</td>
<td>• Aims, objectives, and scope indicate a good comprehension of the research topic</td>
<td>• Aims, objectives, and scope indicate a developing comprehension of the research topic</td>
<td>• Aims are generally ok, but require refinement and rewording</td>
<td>• Aims indicate little comprehension of the research topic. May suggest little or no preliminary reading around the topic</td>
<td>Mark for A</td>
</tr>
<tr>
<td></td>
<td>• Clear, concise and consistent set of aims</td>
<td>• Clear and concise set of aims</td>
<td>• Aims are generally ok, but require refinement and rewording</td>
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<tr>
<td></td>
<td>• Clear and concise objectives</td>
<td>• Objectives are clear, but may be inconsistent with aims</td>
<td>• Objectives require some reworking to align with aims</td>
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<tr>
<td></td>
<td>• Intended scope of work is realistic and achievable within the timeframe</td>
<td>• Intended scope of work requires refinement</td>
<td>• Intended scope of work is unrealistic</td>
<td></td>
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</tbody>
</table>

Select mark for A: 17-20

<table>
<thead>
<tr>
<th>B. Proposed work plan and methodology</th>
<th></th>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Clear initial plan of work for completing the project.</td>
<td>• Clear initial plan of work for completing the project.</td>
<td>• Initial plan of work for completing the project shows good progress.</td>
<td>• Initial plan of work for completing the project shows significant revision</td>
<td>• Initial plan of work for completing the project shows limited comprehension of what is required</td>
<td>Mark for B</td>
</tr>
<tr>
<td></td>
<td>• Detailed gantt chart or similar project management documentation</td>
<td>• Detailed gantt chart or similar project management documentation</td>
<td>• Draft gantt chart or similar project management documentation</td>
<td>• Substantial supervisor guidance required to help student develop their research direction</td>
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<tr>
<td></td>
<td>• Evidence of extensive reading around similar research</td>
<td>• Evidence of reading around similar research</td>
<td>• Evidence of reading around similar research</td>
<td></td>
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<tr>
<td></td>
<td>• Sound understanding of one or more appropriate methodologies</td>
<td>• Good understanding of one or more appropriate methodologies</td>
<td>• Developing understanding of an appropriate methodology</td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

Select mark for B: 51-60

<table>
<thead>
<tr>
<th>C. Additional Materials and preparation work</th>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td></td>
<td>• All expected materials and prep work completed as required by the supervisor (safety inductions, training bookings, information requests, draft HREC applications, draft risk assessments, etc)</td>
<td>• Most expected materials completed as required by the supervisor (safety inductions, training bookings, information requests, draft HREC applications, draft risk assessments, etc)</td>
<td>• Most expected materials required by the supervisor are in progress (safety inductions, training bookings, information requests, draft HREC applications, draft risk assessments, etc)</td>
<td>• Most expected materials required by the supervisor are acknowledged in the work plan but some are yet to be commenced (safety inductions, training bookings, information requests, draft HREC applications, draft risk assessments, etc)</td>
<td>• Some expected materials and prep work may be noted in the document, but no progress has been made.</td>
<td>Mark for C</td>
</tr>
</tbody>
</table>

Select mark for C: 17-20

<table>
<thead>
<tr>
<th>TOTAL /100</th>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td></td>
<td>17-20</td>
<td>15-16</td>
<td>13-14</td>
<td>10-12</td>
<td>0-9</td>
<td></td>
</tr>
<tr>
<td>Assessment Component</td>
<td>High Distinction (85-100)</td>
<td>Distinction (75-84)</td>
<td>Credit (65-74)</td>
<td>Pass (50-64)</td>
<td>Fail (0-49)</td>
<td>Mark for Item</td>
</tr>
<tr>
<td>----------------------</td>
<td>---------------------------</td>
<td>---------------------</td>
<td>----------------</td>
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</tr>
<tr>
<td>A. Scope of project and Approach</td>
<td>Excellent, clear definition of a substantial and significant research topic, problem and/or hypothesis (including statement of purpose and relevance) and scope (including context, boundaries and assumptions). The abstract accurately yet concisely captures the research topic, methods and outcomes to date. A clear set out plan with goals and methods systematically and logically follows from the background research. The approach demonstrates a high level of creativity and innovation and includes an evaluation of alternative approaches.</td>
<td>Very good definition of substantial research topic, problem and/or hypothesis (including statement of purpose and relevance) and scope (including context, boundaries and assumptions). The abstract accurately captures the research topic, methods and outcomes to date. A clearly set out plan with goals and methods systematically follows from the background research. The approach shows creativity and innovation and includes an evaluation of alternative approaches.</td>
<td>Good definition of an adequate research topic, problem and/or hypothesis (including statement of purpose) and scope (including assumptions). The abstract accurately captures the research topic and outcomes to date. The approach is systematic and includes consideration of alternative approaches.</td>
<td>Satisfactory definition of sufficient research topic, problem and/or hypothesis and scope. The abstract satisfactorily captures the research topic and outcomes to date. A satisfactory plan of work is offered. The approach is systematic, but shows limited consideration of alternative approaches.</td>
<td>Poor or incomplete definition of research topic and scope. The abstract is not clear about the research topic and its outcomes to date. The plan of work offered is incomplete or unclear. The approach is not well considered, and does not logically flow from the background research presented.</td>
<td></td>
</tr>
</tbody>
</table>

**Select mark for A →**

26-30

23-25

20-22

15-19

0-14

B. Literature review | Extensive, relevant and logically organized review, analysis, discussion of background material, both specific research and general theory, helps the reader understand the rest of the document, and demonstrates clear mastery of the material in the topic area and ability to synthesize and abstract knowledge. Demonstrates understanding of the impact of recent developments in the field. | Relevant and logically organized review, analysis, discussion of background material, both specific research and general theory, helps the reader understand the rest of the document, and demonstrates mastery of the material in the topic area and ability to synthesize and abstract knowledge. | Good review / discussion of background material, both specific research and general theory, and shows sound understanding of the material in the topic area and ability to synthesize and abstract knowledge. | Acceptable coverage of background material, with both specific research and general theory, and shows developing understanding of the material in the topic area. | A limited coverage of background material, which perhaps flaws in the basic understanding of the material in the topic are evident. | |

**Select mark for B →**

26-30

23-25

20-22

15-19

0-14

C. Results to date | Data collection is at an advanced stage. Preliminary analysis demonstrates excellent understanding of all elements of the research and a high level of independent thought. Limitations and possible sources of error in data collected have been considered. Critical analysis of results to date show deep insight knowledge on the topic. Challenges encountered have been overcome with creativity and a high degree of autonomy. | Data collection is underway. Analysis has commenced and demonstrates very good understanding of most elements of the research and independent thought. Information obtained is interpreted correctly, patterns and trends are emerging and sources of error or limitations of the data are being considered. | Data collection is underway. Analysis is in the early stages. Information obtained thus far is interpreted correctly, and strategies for identifying patterns and trends and sources of error are presented. | Data collection is nearing commencement. Strategies for analyzing data, identifying patterns and trends and sources of error are presented. | Progress is unsatisfactory. Strategies for analyzing data, identifying patterns and trends and sources of error are not presented. | |

**Select mark for C →**

17-20

15-16

13-14

9-12

0-9

D. Presentation of Dissertation | Excellent logical structure, physical layout and appropriate attention to detail. The work is presented in an accurate, concise and coherent fashion. Scientific and technical style. No spelling mistakes or grammatical errors. Appropriate referencing to a correctly formatted bibliography. Appropriately acknowledges the work of others. | Very good logical structure, physical layout and attention to detail. The work is presented in an accurate and coherent fashion. Scientific and technical style. No spelling mistakes or grammatical errors. Appropriate referencing to a correctly formatted bibliography. Appropriately acknowledges the work of others. | Good structure, physical layout. Some inaccuracies in presentation of work. Neat, occasional spelling mistakes or grammatical errors. Occasional errors in referencing. Appropriately acknowledges the work of others. | Acceptable structure and physical layout. Some inaccuracies or lack of detail in presentation of work. Neat, some spelling mistakes or grammatical errors. Some errors in referencing or bibliography formatting. Appropriately acknowledges the work of others. | Structure and physical layout detract. Many inaccuracies or considerable lack of detail in presentation of work. Numerous spelling mistakes or grammatical errors. Several errors in referencing or bibliography formatting. Fails to appropriately acknowledge the work of others. | |

**Select mark for D →**

17-20

15-16

13-14

10-12

0-9

**Total mark** | | | | | **/100** | |
## APPENDIX D.3 Project Progress Presentation Marking Criteria

<table>
<thead>
<tr>
<th>Assessment Component</th>
<th>Fail (0-49)</th>
<th>Pass (50-64)</th>
<th>Credit (65-74)</th>
<th>Distinction (75-84)</th>
<th>High Distinction (85-100)</th>
<th>Mark for Item</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Use of audio visual aids (manner and method)</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>• Text is not readable.</td>
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<tr>
<td>• Graphics use does not support the presentation.</td>
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<tr>
<td>• Slide composition format is clearly distracting, obscuring the presentation.</td>
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<tr>
<td>• Overall poor presentation.</td>
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<tr>
<td>• Text is readable.</td>
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<tr>
<td>• Graphics use mostly supports the presentation.</td>
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<tr>
<td>• Slide composition is not visually appealing, but does not detract from the presentation.</td>
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<tr>
<td>• Displays minimal eye contact with audience, while reading mostly from the notes.</td>
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<tr>
<td>• Text is easily readable.</td>
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<tr>
<td>• Graphics use constantly supports the presentation.</td>
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<tr>
<td>• Slide composition has a professional look that enhances the presentation.</td>
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<tr>
<td>• Consistent use of direct eye contact with audience, but still returns to notes.</td>
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<tr>
<td>• Effective / innovative use of slides/visual aids, good “interaction” with audience</td>
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<tr>
<td>• Good quality slides and kept to time.</td>
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<tr>
<td>• Holds attention of entire audience with the use of direct eye contact, seldom looking at notes</td>
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<tr>
<td>• Effective / innovative use of slides/visual aids, good “interaction” with audience</td>
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<tr>
<td>• Displays relaxed, self-confident nature about self, with no mistakes.</td>
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<tr>
<td>B. Content, Clarity/ cohesion of presentation and balanced use of time (matter)</td>
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<tr>
<td>• Poor sequencing of information.</td>
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<tr>
<td>• No progress beyond literature review.</td>
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<tr>
<td>• Research direction and argument difficult to understand</td>
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<tr>
<td>• Presentation concluded well short of allowed time, or student needs to be asked to conclude</td>
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<tr>
<td>• Inconsistencies in argument, but generally makes sense</td>
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<tr>
<td>• Progress towards intended outcomes looks sufficient.</td>
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<tr>
<td>• Use of jargon and acronyms without appropriate definition.</td>
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<tr>
<td>• Literature referenced appropriate.</td>
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<tr>
<td>• Presentation may be a few minutes short, or obviously truncated to fit within the time limit</td>
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<tr>
<td>• Sound structure and good technical content.</td>
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<tr>
<td>• Good progress towards intended outcomes.</td>
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<tr>
<td>• Well justified approach/method.</td>
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<tr>
<td>• Sound critique of literature demonstrates understanding of the topic area</td>
<td></td>
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</tr>
<tr>
<td>• Engineering terms and jargon used is defined within presentation.</td>
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<tr>
<td>• Presentation fits within time limit.</td>
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<tr>
<td>• Presents information in logical sequence which audience can follow.</td>
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<tr>
<td>• Excellent progress towards intended outcomes</td>
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<tr>
<td>• Critical analysis and discussion of literature demonstrates deep understanding of the topic area</td>
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<tr>
<td>• Clear and well thought out research approach linked with literature review</td>
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<tr>
<td>• Use of engineering terms and jargon mostly matches audience knowledge level.</td>
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<tr>
<td>• Presents information in logical, interesting sequence which audience can follow.</td>
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<tr>
<td>• Advanced progress towards intended outcome, some early results/data presented</td>
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<tr>
<td>• Clear and well thought out research is clearly informed by literature review</td>
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<tr>
<td>• Evidence of creativity in research approach</td>
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<tr>
<td>• Presentation is well timed.</td>
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<tr>
<td>C. Handling of discussion period (matter)</td>
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<tr>
<td>• Cannot answer questions about subject.</td>
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<tr>
<td>• Superficial responses to questioning, indicating limited understanding.</td>
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</tr>
<tr>
<td>• Developing understanding of topic area and is able to answer only rudimentary questions.</td>
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</tr>
<tr>
<td>• Confidently responds to all questions, without elaboration.</td>
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<tr>
<td>• Demonstrates full knowledge by answering all questions with explanations and elaboration.</td>
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</tr>
</tbody>
</table>

**Marking Guide**

- **100%** Very rarely, if ever, given. Must be exceptional presentation and one of the best presentations ever seen.
- **90%** Reserved for only the best presentation. Equivalent to Best Conference Paper Award.
- **80%** Excellent (very high standard presentation, well thought out, very high quality speaker).
- **70%** Very Good (well prepared, well presented, good local conference standard).
- **60%** Good (evidence of effort, some problems presentation, not out of place at local conference).
- **50%** Adequate (evidence of minimal effort, presentation lacked planning).
- **<50%** Poor (badly organised, poor illustrations, poor speaking).

---

18-20
### Table of Assessment Criteria

<table>
<thead>
<tr>
<th>Assessment</th>
<th>Criteria</th>
<th>High Distinction (90-100)</th>
<th>Distinction (75-84)</th>
<th>Credit (65-74)</th>
<th>Pass (50-64)</th>
<th>Fail (0-49)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select mark for A</td>
<td>Use of technical terminology and abbreviations throughout the thesis, which demonstrates a high level of technical knowledge and application in the topic area.</td>
<td>17-20</td>
<td>15-16</td>
<td>13-14</td>
<td>10-12</td>
<td>0-9</td>
</tr>
<tr>
<td>Select mark for B</td>
<td>The approach is original and creative; it demonstrates a high level of independent thought and an ability to innovate within the topic area.</td>
<td>17-20</td>
<td>15-16</td>
<td>13-14</td>
<td>10-12</td>
<td>0-9</td>
</tr>
<tr>
<td>Select mark for C</td>
<td>The execution of the work demonstrates mastery of technical skills, and a high level of independent thought.</td>
<td>17-20</td>
<td>15-16</td>
<td>13-14</td>
<td>10-12</td>
<td>0-9</td>
</tr>
<tr>
<td>Select mark for D</td>
<td>The execution of the work is presented in an accurate, concise and coherent fashion. Scientific and technical style. Appropriate referencing to a correctly formatted bibliography.</td>
<td>17-20</td>
<td>15-16</td>
<td>13-14</td>
<td>10-12</td>
<td>0-9</td>
</tr>
<tr>
<td>Select mark for E</td>
<td>The work demonstrates an appropriate level of autonomy and effort throughout the project management. Leadership in project management.</td>
<td>17-20</td>
<td>15-16</td>
<td>13-14</td>
<td>10-12</td>
<td>0-9</td>
</tr>
</tbody>
</table>

### Technical Content /60

| Select mark for A | The approach systematically follows from the background research. The work presented is relevant and accurate, and includes an evaluation of alternative approaches. | 34-40                     | 30-33               | 26-29         | 19-23        | 9-12        |
| Select mark for B | The approach is systematic and includes evaluation of alternative approaches. | 34-40                     | 30-33               | 26-29         | 19-23        | 9-12        |
| Select mark for C | The approach demonstrates an appropriate level of autonomy and effort. | 34-40                     | 30-33               | 26-29         | 19-23        | 9-12        |
| Select mark for D | The approach is appropriate and acknowledges the work of others. | 34-40                     | 30-33               | 26-29         | 19-23        | 9-12        |
| Select mark for E | The approach is appropriate and acknowledges the work of others. | 34-40                     | 30-33               | 26-29         | 19-23        | 9-12        |

### Problem Definition /20

| Select mark for A | The execution of the work demonstrates mastery of technical content and includes an appropriate level of autonomy and effort. | 9-10                     | 7-8                 | 6-7          | 5-6         | 0-4         |
| Select mark for B | The execution of the work demonstrates mastery of technical content and includes appropriate level of autonomy and effort. | 9-10                     | 7-8                 | 6-7          | 5-6         | 0-4         |
| Select mark for C | The execution of the work demonstrates mastery of technical content. | 9-10                     | 7-8                 | 6-7          | 5-6         | 0-4         |
| Select mark for D | The approach is appropriate and acknowledges the work of others. | 9-10                     | 7-8                 | 6-7          | 5-6         | 0-4         |
| Select mark for E | The approach is appropriate and acknowledges the work of others. | 9-10                     | 7-8                 | 6-7          | 5-6         | 0-4         |

### Total mark /100

<table>
<thead>
<tr>
<th>Total mark</th>
<th>0-9</th>
<th>10-12</th>
<th>13-14</th>
<th>15-16</th>
<th>17-20</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student Effort</td>
<td>0-9</td>
<td>10-12</td>
<td>13-14</td>
<td>15-16</td>
<td>17-20</td>
</tr>
<tr>
<td>Presentation of Thesis /20</td>
<td>0-9</td>
<td>10-12</td>
<td>13-14</td>
<td>15-16</td>
<td>17-20</td>
</tr>
<tr>
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<td>15-16</td>
<td>17-20</td>
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<tr>
<td>Problem Definition /20</td>
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<td>10-12</td>
<td>13-14</td>
<td>15-16</td>
<td>17-20</td>
</tr>
</tbody>
</table>

### Notes
- Level of autonomy and effort: Appreciation of engineering content (80% of effort only).
- Leadership in project management.