

Unit
Information

Master of
Environmental
Management

Research Projects

ENV820-840

Research Projects

ENV840-820

College of Engineering, IT & Environment

Awards

*Master of Tropical Environmental Management/
Master of Environmental Management*

Prerequisites

Relevant course-work

Duration

*Full-time - 1 semester
Part-time - 2 semesters*

Credit

ENV820 20 points or ENV840 40 points

Assessment tasks

*Research proposal (hurdle assessment)
Thesis*

The complete study package contains:

Unit Information

Prepared by

Penny Wurm

Acknowledgements

This information booklet was originally prepared by Samantha Setterfield and Deborah Hector, and has been updated by Penny Wurm. We also drew heavily from the GIS Project Handbook and the SBES Honours Handbook. Thank you to Chris Devonport and Michael Douglas for providing these. Some sections, such as Thesis presentation, are drawn from the CDU Calendar

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Welcome

Welcome to ENV840/820 *Research Project* in the Master of Environmental Management/Master of Tropical Environmental Management at the Charles Darwin University.

Your research project provides you with a unique opportunity to apply and consolidate many of the skills you have developed while undertaking the course-work component of your Master. Your project also allows you to focus on one area of investigation that particularly interests you. Undertaking independent research is invariably a transforming experience.

Unit objectives

While undertaking a Research Project you will:

- Gain a deeper understanding of an aspect of natural resource management that interests you
- Develop your intellectual independence and resilience
- Deepen your skills in evaluating and constructing arguments
- Develop advanced levels of literacy, numeracy and analytical skills
- Develop your skills in problem-solving
- Draw upon your planning skills
- Build your professional network
- Contribute to improved natural resource management

Unit Coordinator

The MEM Research Project is coordinated by Brett Murphy.

Phone: (08) 8946 6049

Email: brett.murphy@cdu.edu.au

Office location: Yellow 2, Level 2, Room 26

Post: Brett Murphy
College of Engineering, IT & Environment
Charles Darwin University
DARWIN NT 0909

Study Mode

The Research Project in the Master of Environmental Management is a 40-credit point unit, and may be completed part-time or full-time, commencing in either semester 1 or 2 each year.

Students working and living away from CDU Darwin may opt to enrol in external mode.

For these reasons there are two Unit Codes relating to the MEM Research Projects unit. If you are commencing part-time study on your project in Semester 2, you will be required to re-enroll in Semester 1 of the following year.

Code	Title	Credit Points	Duration	Commences
ENV840	Research Project #40	40	15 weeks	Semester 1 or 2
ENV820	Research Project #20	20	15 weeks	Semester 1 or 2

Length of thesis and time commitments

A 40-credit point thesis is typically between 10, 000 and 15, 000 words in length.

A 40-credit point MEM thesis taken *full-time* will be completed in one semester, working approximately 40 hours per week. A 40-credit point thesis taken *part time* will be completed over two semesters, working approximately 20 hours per week.

Content and format of thesis

MEM Research Projects are distinguished by having a management focus to the research question being addressed. We request that your thesis be formatted like a journal article – in terms of length, structure and format.

A MEM research project may be based on:

- data you collect yourself,
- data collected by others but provided to you for analysis, or
- a critical review and analysis of the literature.

Regardless of the approach or methods used, or who collected the data you will analyse, the thesis will address a research question or hypothesis, and establish a theoretical context for the work undertaken.

Copies of previous theses are available in the CDU Library. They can be found in the CDU eSpace at <http://espace.cdu.edu.au/> in the MEM thesis collection. Hard copies of older theses can be found in the general collection using the **series** search term “MTEM” and are all shelved together under catalogue number 500.72. Only theses awarded a Distinction or High Distinction grade have been included in Library collection.

Study plan

It may be useful to think of your project in terms of 4 phases: *initiation and planning*, *research*, *writing* and *presentation*. The following table outlines each phase and an approximate timetable. (The dates and weeks are applicable for a fulltime student completing their thesis in one semester.)

DATE	PHASE	ACTIONS
Prior to semester	1. Initiation & planning	Meet with the Unit Coordinator Meet with prospective Project Supervisor(s) Select project topic and supervisor Identify training needs (e.g. searching skills, writing workshops, Endnote training etc.)
Weeks 1 - 3		Finalise selection of Project Supervisor(s) Finalise access to resources Literature research to inform proposal development Complete Project Proposal, Project Timeline Complete Supervisory Agreement
Weeks 3 - 10	2. Research	Seek advice on design and analysis for your study Field work or laboratory work (if applicable) Regular meetings with supervisor(s) Review and update Project Timeline Prepare outline of thesis structure/Table of Contents
Weeks 10 - 14	3. Writing	Regular meetings with Supervisor(s) Meetings with the College Statistical Adviser, as required Regular submission of chapter drafts Regular implementation of feed-back
Week 15	4. Presentation	Collate and submit your thesis. Your thesis is due on the Monday after Week 15 of semester.

Project Identification and Development

Hallmarks of a good MEM research project include:

- a topic that is relevant to natural resource management
- project objectives that are achievable, within the time frame available
- adequate resources to implement the project, within the budget available
- a supervisor who has the skills and time to mentor you
- a topic that inspires you!

Finding a suitable project and project supervisor

When choosing a project, it is perfectly acceptable to approach a range of researchers to discuss project ideas, prior to committing to any particular project or supervisory arrangement.

Perhaps you already have an idea about a topic and will be seeking a potential supervisor. In other cases, you may be seeking a supervisor who has an established project that you can join. Alternatively, you may have a project associated with your place of employment that would be suitable as a research project.

If you are yet to identify a project topic, start by meeting with the Research Project Unit Coordinator. After preliminary discussions with the Unit Coordinator, you will be directed to appropriate staff members of the University or staff in other agencies who may be able to help you formulate your ideas for a project topic, or serve as a supervisor for your project.

When approaching potential supervisors, it is a good idea to email them a copy CV, which you can use to introduce yourself, even if you have already worked with a potential supervisor or have studied with them during your coursework.

Writing text book and style guides

You are expected to purchase and use the following text book:

Lindsay D. (2013). *Scientific Writing = Thinking in Words*. CSIRO Publishing, Collingwood , Australia.

For referencing, you must correctly use APA. The Library referencing guide can be found at

<http://libguides.cdu.edu.au/cdureferencing/apa> .

For information about formatting and style of the thesis text, refer to the following.

- The *Cambridge Australian English Style Guide* (1995) written by Pam Peters, is in the reference collection in the CDU Library.
- Several copies of *The Style Manual for Authors, Editors and Printers* by the Australian Government Printing service are held in the general collection of the CDU Library.
- Refer also to the Australian Government Information Management Office, of information on style writing guides at http://www.agimo.gov.au/information/publishing/style_manual

Project proposal

Once you have a potential project you should start work on your Project Proposal, in consultation with your supervisor.

Your project proposal is a compulsory ***hurdle assessment***. This means it is not marked but you are required to complete it to the satisfaction of the unit coordinator.

*Please use the **MEM Research Project Proposal** template, available from the Unit Coordinator.*

The proposal is a working document that will change and evolve as you develop your ideas about your project. However, the research process starts with clearly identifying what your research question is, why the question is important, and how you are going to address it.

The thought put into the preparation of your proposal is an important contributing factor to the ultimate success of a project.

Once you have developed a first draft, use this as a working document to hone your ideas in consultation with supervisors, the Unit Coordinator and other colleagues who work within the discipline area you have chosen.

A final project proposal must be submitted to the Unit Coordinator. This must be **by the end of week 3** for students completing the thesis in one semester, and **the end of week 8** for students completing the thesis over 2 semesters.

Proposal content

A typical project proposal would have the following content.

1. Project Title
 2. Your name, student number and full contact details
 3. The name (and organization) of the project supervisor(s)
 4. Introduction and context (2-3 pages)
 5. Research aim
 6. Objectives
 7. Methods (0.5-2 pages)
 8. Ethical, legal or intellectual property clearances required
 9. Resources and Budget (maximum 1 page)
 10. Constraints & exclusions (0-0.5 page)
 11. References - Please take the opportunity to learn to use a reference managing software such as Endnote. The CDU holds workshops in person and online.
 12. Timeline (see template provided in separate Excel file) -
 13. Also, remember that everything takes at least twice as long as you think it will!
-

Full details of the requirements under each heading are provided in the *MEM Research Proposal template* available from the MEM Projects Coordinator.

Appraising your project proposal

To recap on all this, following are questions you should ask yourself when formulating your project proposal:

- Are the project aims and objectives well defined?
- Which objectives may not be achievable? Which objectives should I be prepared to drop if needs be?
- Does the project have a management application?
- Is the rationale for the project logically structured, concise and coherent?
- Do I have the time and necessary resources to complete everything?
- Are there any seasonal constraints to my project?
- Are the people I need to work with available when I need them?
- Is a project plan, including a schedule, included?
- Is the project feasible in view of constraints?
- Are there other commitments in my life that I need to sort out before I commence my project?

Your project Supervisor(s) will initially appraise your project proposal to ensure that it is feasible. The Unit Coordinator must finally approve of your project proposal, and ensure it meets the requirements of the MEM program.

You can then start work on your research!

Project Supervision

Candidates are required to have a supervisor from the Research Institute for Environment and Livelihoods, within the College of Engineering IT and Environment, at CDU, but may also have other supervisors within or external to the College or the University.

Students should consult regularly with their supervisor(s) for guidance and feedback on their work. It is recommended that you negotiate a schedule of regular meetings with your supervisor and record this in your Supervisory Agreement. Students should seek advice from their supervisor regarding all aspects of their project, including the experimental design, methodology and the structure and format of their thesis. The supervisor should read drafts of the major sections of the thesis as they are prepared and return these to the candidate with comments.

*Discuss and complete a **Supervisory Agreement** with your supervisor at the beginning of your project. This must be submitted to the MEM Research Projects Coordinator.*

Student Workshops

The unit coordinator facilitates workshops for research project students during Semesters 1 and 2 each year, depending on the level of interest and availability of students. Attendance is voluntary but recommended. However, students who have attended in the past agree that the Workshops have

proved an interesting and helpful supplement to their supervisory arrangements. As unit coordinator, I have also found our workshop sessions very rewarding.

The aims of the workshops are to provide:

- morale and intellectual support during the research process
- opportunities to learn about research by being part of the process of a number of research projects (i.e. those of your student peers)
- a forum in which to seek, and provide, advice on any aspect of research
- an additional forum for problem-solving
- a timeframe of (workshop) dates to assist with meeting deadlines and milestones
- a forum in which to test ideas
- a forum in which to practice speaking about your research
- an opportunity to extend your professional network (i.e. among your student peers)

Previous workshops have focused on:

- student presentation on project proposal or results
- discussions about managing the supervisor-student relationship and identifying how to get the most from your supervisory arrangements
- reports on outcomes of analysis, field trips or other project milestones
- how to approach writing your thesis
- workshops on other scholarship skills such as literature searching, note taking etc.

Please refer to Appendix A for copies of notes used to stimulate discussion at these workshops.

These are scheduled each semester approximately fortnightly. However, this is negotiated each semester to find the most convenient time for interested students.

Resources

The following resources are available for MEM students undertaking their research project.

Afterhours access

MEM students can apply for keys or swipe card access to enable after-hours access to research labs, computer rooms and main buildings.

- Swipe Card Access to external doors for Buildings Yellow 2 and Red 1 can be arranged by contacting College Administration (Yellow 2.2.05, phone 8946 6781; email: CEITE-admin-ops-services@cdu.edu.au).
- Keys to internal rooms in Building Yellow 2 or Red 1 can be obtained by contacting College Administration (Yellow 2.2.05, phone 8946 6781; email CEITE-admin-ops-services@cdu.edu.au)

Email

A user account for email is assigned to you upon enrolment at the Uni Info Shop. You will also have been provided with a password. Once you have been given this information you will be able to access email facilities and an internet-based service in general student computing labs.

Computing labs

You can use general computing facilities in the Learning Precinct in the Library foyer. The library computers have ARCGIS installed. Please refer to the CDU Library website for more information about these facilities <https://www.cdu.edu.au/library/>

Field work

All travel/fieldwork must be lodged with CDU.

Please email riel@cdu.edu.au for the relevant forms and information.

Funding

The College will provide up to \$600 towards research project expenses. Claims for reimbursements must be signed by the MEM Projects Coordinator and supervisor before submitting to College Administration CEITE-admin-ops-services@cdu.edu.au for reimbursement.

Library

The library is located on the Casuarina Campus, with smaller branches at Palmerston and regional campuses. The library runs orientation and information skills sessions, as well as training on database searching, internet use and *Endnote* bibliographic software.

We also recommend that you **make an appointment** with the Science reference librarian early in your candidature for advice and an update on searching for reference materials and use of the CDU library data bases.

The *Science Liaison Librarian* is Kelly George. She can be contacted for appointments as follows.

Phone: 08 8946 6759

Email: kelly.george@cdu.edu.au

Fax: 08 8946 7022

Office location: CDU library, Casuarina, Level 2, Rm 12

Website: <http://www.cdu.edu.au/library/how/librarians.html#LILLteam>

The Library's *Research Services Coordinator* is Jayshree Mamtora. Jayshree organises Advanced Information Skills Workshops during the year. You are urged to make use of these workshops. She can also be contacted for appointments as follows.

Phone: 08 8946 6541

Email: jayshree.mamtora@cdu.edu.au

Fax: 08 8946 7022

Office location: CDU library, Casuarina, Level 2, Rm 9

There are also very helpful online resources to support external students in using the library. They cover a range of topics including an introduction to the library, catalogue and database searching, Google Scholar, Endnote and others. They are also a very useful tool for students on-campus as a guide to using the services and resources more effectively. We hope you find them useful. Bernadette can assist you further with these.

<http://www.cdu.edu.au/library/LILL/podcasts.html>

<http://www.cdu.edu.au/library/LILL/videoTutes.html>

Off Campus Lending Service offers library support to all distance CDU students and staff who live more than 80 km from Darwin or in an isolated area. To access this service you must register with Off Campus Services. Visit the OCLS website at <https://www.cdu.edu.au/library/>

Interlibrary Loans can be requested by students in a course-work Masters program, who are undertaking projects, are entitled to up to 50 interlibrary loans. To access the service you must register for ILL's and complete a request form for each item wanted as an Interlibrary Loan. This is all done online using the following link:
<https://www.cdu.edu.au/library/>

Office Space

Space on campus is very limited. If you require a desk on campus please see College Administration (Yellow 2.2.01, phone 8946 6781; email CEITE-admin-ops-services@cdu.edu.au)

In some cases, your project supervisor may provide desk space for you in their research lab or team's offices.

Photocopying

A 4-digit PIN number for the photocopier can be obtained College Administration (Yellow 2.2.01, phone 8946 6781; email CEITE-admin-ops-services@cdu.edu.au)

Safety policy

See "Field Work" above.

Statistical Advice

Dr Mirjam Kaestli and Dr Leigh-Ann Woolley are offering biostats advice. Leigh is an expert in classic field ecology while Mirjam is a microbial ecologist and specialises in multivariate analyses. Support is available for the following stats methods:

- General stats
 - How to create an analysis plan, study design, statistical power analysis
 - Generalized linear models (GLMs), generalized additive models (GAMs)
 - GLMs using Bayesian methods
 - Mixed models i.e. GLMMs, GAMMs incl. longitudinal analyses
 - Time-series analyses
 - Machine learning based methods: boosted regression trees or random forest
 - Multivariable analysis, analysis of species community data
 - Occupancy and species distribution modelling
 - Population size and density estimation through (spatially explicit) capture–recapture analysis
-

-
- Population modelling and viability analysis
 - Home range and habitat selection estimation
 - Stats software:
 - R
 - Stata
 - SPSS
 - Primer-E, PAST, Estimate-S

If you have a request, please send an email to biostatsRIEL@cdu.edu.au outlining your question and Mirjam or Leigh will meet with you and/or address the question by email correspondence. Please be aware that both are providing biostats support in a part-time capacity and depending on other requests and projects, it might take a few days to address a request.

Text books: the following biostats R books by Alain Zuur are available to borrow at RIEL:

- Analyzing Ecological Data
- A Beginner's Guide to R
- Mixed Effects Models and Extensions in Ecology with R
- Zero inflated Models and Generalized Linear Mixed Models with R (2012) Zuur, Saveliev, Ieno.
- Beginner's Guide to GAM (2012) Zuur.
- Beginner's Guide to GLM and GLMM with R (2013) Zuur, Hilbe, Ieno.
- Beginner's Guide to Generalized Additive Mixed Models with R (2014) Zuur, Saveliev, Ieno.
- Beginner's Guide to Data Exploration and Visualization with R (2015) Zuur, Ieno.
- Beginner's Guide to Zero-Inflated Models (2016) Zuur, Ieno.
- Beginner's Guide to Spatial, Temporal and Spatial-Temporal Ecological Data Analysis with R-INLA. Volume I: Using GLM and GLMM (2017). Zuur, Ieno, Saveliev
- Beginner's Guide to Spatial, Temporal and Spatial-Temporal Ecological Data Analysis with R-INLA. Volume II: GAM and Zero-Inflated Models (2018). Zuur, Ieno

These are excellent books and a great guide to learn about data analysis methods using applied ecological data examples and providing the R codes – more information on <http://www.highstat.com/index.php/books>.

The books are currently in Research Operations Officers office next to reception in Y2 (Y2.2.02) – you can borrow them for two weeks at a time.

Software available for use: the scientific graphing and (basic) biostats software GraphPad Prism is now installed on the left of two PCs allocated for data analysis in the Honours room (Y2.2.22). This software does publication-quality graphs for various data exploration plots as well as nonlinear curve fitting. It's very user-friendly and ideal if you need a nice data summary plot quickly – more info on <https://www.graphpad.com/scientific-software/prism/>. You can borrow the key to the Honours room from the Research Operations Officer. Other software installed on both analysis PCs include R/R studio, Primer-E v7, SPSS and ArcGIS.

Telephone

Telephones are located in all research labs. Students can use these phones while undertaking their research project. STD calls must be made through the switchboard (dial 9), and require supervisor approval. Internal phones are located in the foyer of all buildings and can be used to call security after hours (ext 6500).

Thesis formatting

Please refer to the section on Thesis structure following later in this document. Dr Keith McGuinness has kindly developed a resource for helping you format and style your thesis. Refer to Keith's resources web site at: <http://www.naturalumina.com.au/sfaq/index.htm>

Travel Associated with Research Projects

If you have specific project funding, you may book central University vehicles. You will be required to register as a user of University vehicles. If you plan to use a 4WD you have to complete an approved 4wd training course.

Depending on the nature of your travel, one of these options may be cheaper. Ask College Administration staff in Yellow 2 for advice.

Claims for the use of personal vehicles must be made using vehicle running sheets issued by the University. These can be obtained from College Administration staff in Building Yellow 2, or the Faculty Office, Building Yellow 2.

Make sure you have identified a source of funds for travel before you commence.

Technical Services

The Technical Services Unit has procedures in place for service utilisation by students and staff. All new students should see the Laboratory Manager For more information see the Laboratory Manager (Room Y2.1.33, ext 6881, yolande.yep@cdu.edu.au) before inquiring about, or borrowing, any materials or equipment.

Requests for borrowing equipment or materials should be made on a "Requisition for Technical Services" form and left in the tray provided in the stairwell near the Technicians office, or emailed to the Laboratory Manager (Room Y2.1.33, ext 6881, yolande.yep@cdu.edu.au). Forms should be filled out at least 1 week in advance of the required time.

You should keep records of all requisitions. At the end of each month, a form requesting a transfer of funds from your budget will be sent to you, to be signed by the MEM Coordinator, and returned to the Lab Manager.

It is a good idea to introduce yourself to staff in the Technical Services area before you commence. The Unit Coordinator will be happy to arrange this with you.

Project Management

The purpose of managing a project is to ensure that a defined goal or suite of objectives is successfully achieved on time, within the constraints of available resources. In practice this means planning the project carefully by identifying the tasks and resources required, and putting in place processes to manage those activities and resources over the life of the project. It is also vitally important that progress and final outcomes of the project are communicated on time and effectively.

See Appendix A in this Guide for further tips.

Thesis structure and formatting

Thesis structure will vary considerably depending on the project undertaken. The results of the thesis project may be in a range of forms, including elements of environmental management plans, a research report or other technical report, or a review and analysis.

Regardless of the nature of your project the following elements are **required** for all MEM theses.

Title cover page (see following for more details)
Statement of authorship
Acknowledgments
Table of contents
List of tables
List of figures
List of appendices
List of acronyms
Abstract (see following for more details)

Most types of MEM thesis will include the following sections. The actual names of the sections may vary according to the specific circumstances of the study.

Abstract (required) - 300 words

The abstract is written in introduction-body-conclusion form, and all information contained in it must be discussed within the main part of the dissertation. This is a concise statement that outlines the objectives, methods, results and principal conclusions. A useful structure to follow is:
What did you do? Why did you do it now? How did you do it? What did you find? What does it mean (what are your recommendations)?

Introduction

This should introduce the topic that is being investigated and include background on the project topic (review of previous work), a description of the significance and scope of your project, and a clear statement of the project aim and objectives. You should assume that the readers are unfamiliar with the thesis topic, and therefore you must provide them with information about the topic and convey to them the significance of the work, and justify why the topic is important.

In your introduction, you should lay the foundations for the questions you plan to address later in the discussion. Your Introduction and Discussion are like two sides of the one coin. In the Introduction you raise the questions and in your *Discussion* you resolve those questions, and see if any new ones have been uncovered.

Methodology

This should include a concise description of the methods used in a field or laboratory study, statistical analyses, legislation or procedural protocols, interview procedures or questionnaires used, ethical considerations or a theoretical justification for the approach you have used. This section should contain sufficient information to enable the reader to repeat the procedures you used, or to locate the appropriately detailed references that described them to you.

Results

This section will include a detailed description of the results of an experiment or field study, or description of what you found from a review of literature, or analysis of a current practice, depending on the approach of your thesis.

Discussion

Make sure you do not repeat results here, but presume your reader had read your Results section already. Focus on the bigger picture – what do your results mean? This could include a discussion of the significance or application of the results of an experiment or field study, or recommendations arising from the review or analysis of the literature. The discussion should describe the significance of project outcomes, and a comparison of outcomes with expected/intended outcomes. You should also suggest recommended actions based upon your research topic.

Recommendations

This section should focus on the application of your findings, how they might be used and by whom and specific gaps in knowledge you have identified that may benefit from further research.

References

see following section.

Appendices

This section can be used for material that is too long or detailed to be included in the main body of the dissertation, or is not essential to the main argument being presented, but which substantiates it. It may include raw data used to derive summary tables which are included in the main body of your thesis. It may include copies of field data proformas or interview questionnaires. You must ensure appendices are referenced in the body of the thesis, and that each appendix starts with a paragraph that summarises the content and outlines its relevance to the thesis.

Thesis format

Your final thesis is submitted electronically as soft copies, in both *Word* and *PDF* format files. If an examiner requests a hard copy the College staff will provide that to them.

Text should be at least 1.5 spacing, with a 4cm margin on the inner and 2.5 cm on the outer, top and bottom. Double-sided printing is acceptable, provided it does not diminish the print quality. This allows room for examiners comments to be inserted.

Font size for the main body of the text should be consistent throughout the thesis and either 11 or 12 point. The thesis pages must be numbered.

The *Title page* will include the title of the thesis in full, the full names and degrees of the candidate, the College in which the candidate carried out the work, the degree for which the thesis is submitted, and the date of submission.

The *Statement of Authorship* should be worded similarly to the following, but modified to suit your circumstances if necessary:

“I declare that this thesis my own work and has not been submitted in any form for any other degree or diploma at any university or other institute of tertiary education. Information derived from the published and unpublished work of others has been acknowledged in the text and list of references.”

This page should be signed and dated.

Illustrations, diagrams, tables, maps etc are to be incorporated into the text. Photos or figures should be of high quality, clearly legible. They must be clearly and sequentially numbered and identified, and referred to by these numbers throughout the text.

Full-page figures should be inserted at the first opportunity after reference to them in the text. Otherwise figures should be inserted directly into the text as soon as possible after the text which refers to them. The legends should be below figures, or if insufficient room, on the left-hand page facing the figure or figure.

A table may be inserted as part of a text page, or as a full-page table. The legend for a table is placed above the table, or in the case of full page tables, if insufficient room, on the left-hand page facing the table.

References

After the conclusion of the main text, there shall be a bibliography listing only the references cited in the text. The style of citation of references must be consistent through the text and the list of references. **We request APA referencing format.**

Submission of your thesis

At the beginning of your candidature, you and the Unit Coordinator will negotiate a submission date for your thesis. Typically, this will be the Monday immediately after week 15 of the semester during which you are to submit your thesis.

Both you and your supervisor will receive written confirmation of this date, shortly after the commencement of your project.

You are required to submit **two soft copies** of your thesis to the Unit Coordinator – one Word file and one PDF file - on the agreed submission date.

You are not required to submit a final copy to the Library, although the Unit Coordinator may request a copy for future reference.

Extensions and late submission

Extensions must be negotiated with the research Unit Coordinator, **well ahead** of the submission date. Please see the extension request form in Appendix E.

Academic integrity

Academic misconduct is the unacknowledged use of material written by others. It may also include use of un-reworked materials, written by you that are available in another document. All sources of information and ideas used in your thesis must be referenced. This applies regardless of the source.

Plagiarism will result in an automatic fail and the student may be subject to disciplinary action by the University.

If you are unsure about plagiarism, please refer to the Library referencing guides which contain information about plagiarism, or ask the unit coordinator for more information. The CDU policy on academic misconduct and supporting resources are available at <http://www.cdu.edu.au/academic-integrity>.

Thesis examination

Your thesis will be examined by two examiners. In most cases this will include at least one internal examiner from CDU, and one external examiner from outside College.

Following consideration and acceptance of the examiners reports by both the MEM Course Coordinator and Unit Coordinator, your grade will be calculated as the mean of the two grades awarded by the examiners. If there is greater than 10% difference between the grades awarded by the two examiners, the opinion of a third examiner will be sought. Your final grade will then be calculated as the mean of all three marks awarded.

The examiners will be selected on the basis of:

- appropriate formal academic qualifications (or in special cases, equivalent professional experience),
- relevant discipline expertise,
- an absence of any conflict of interest with the student, their supervisor or the approach taken in the research,
- them being a person whose opinion the student values,
- understanding of the educative role of examination, and
- their availability to return a report in a timely manner.

The choice of examiners is an opportunity to build your professional network. For example, examiners may be potential employers in the future and your thesis is a way of introducing yourself.

Examiners will be chosen in consultation with you and your supervisor. You are entitled to object to an examiner, prior to the dispatch of the thesis. You are also welcome to recommend potential examiners to the Unit Coordinator and your Supervisor.

The examiners will be contacted on your behalf by the Unit Coordinator. You ***should not contact*** a potential examiner yourself, nor have contact with an examiner while your thesis is being examined.

Please refer to the Appendix for a copy of the marking sheet provided to examiners. Please read this carefully before finalising and submitting your thesis.

The following general considerations serve as a guide to what your thesis examiners will be looking for:

- Are the aims explicitly stated?
 - Is there sufficient background provided to justify the aims of the study?
 - Is the scope of the project clearly defined?
 - Are the methodology and procedures clearly described?
 - Does the student show an understanding of the assumptions, limitations, and problems with the methods used?
 - Are the analysis and interpretation adequately done and clearly presented?
-

-
- Are the project outcomes clearly described?
 - Are the project outcomes discussed with adequate reference to other published studies?
 - Are the outcomes clearly related to the project's aims and/or objectives?
 - Are limitations/problems made clear?
 - Are conclusions or management recommendations based on evidence?
 - Is the project clearly and correctly written?
 - Are figures and tables used effectively, presented effectively and cited correctly?
 - Is there an adequate consideration of relevant literature and/or primary sources of information? Are these adequately acknowledged?
 - Is the reference list correct?

You will be provided with all feed-back provided by each examiner. This feed-back will include a marking sheet which is required of all examiners. Feed-back may also include a written report and/or an annotated version of your thesis.

Resubmission

In a situation where your work is assessed as being less than a pass grade, the opportunity to re-submit **may** be offered to you.

Appendix A – NOTES to help with managing your project

Following are copies of “discussion starters” used to prompt discussion at MEM Project Workshops. Copies of these will be provided at workshops.

Managing your supervisor: Tips to ensure you get the best from your supervisory arrangements

Some questions to consider when writing.

Managing your supervisor: Tips to ensure you get the best from your supervisory arrangements

This is your chance to do your thesis and you should not be reserved about asking for exactly what you need, so you produce the best thesis you can. Don't wait for your supervisor to notice that you need something, and don't wait til everything is perfect before discussing your work with your supervisor.

As much as possible, *identify your own needs*, so you know whom to ask for help. For example, if you just need some encouragement, it might be better to call a friend or drop in to see the unit co-ordinator, rather than see your supervisor, if they are not the type of person to offer empathy.

Get to know how your supervisor works. Is it best to contact them by phone or email? When are they most busy and therefore least likely to be receptive?

Chose the best communication method. Email is usually the best for university lecturers. Also email gives both you and the recipient more time to put thought into your communication. You also then have a record of agreements.

Prepare for meetings. Taking a written list of things you want to talk about, a draft chapter, or written summary of your problem makes it easier for your supervisor to help, and for you both to get the most out of the meeting time.

Do not avoid your supervisor because you 'don't know enough'. Knowing enough is not the issue. At the beginning of your project especially, it is highly likely that your supervisor will know more about the theory and practicalities behind your project than you do, or has additional skills in writing, research or analysis. At least you would hope so! So just accept that as a given. The issue is that you get exactly the help you need, to do the best possible job you can, in the available amount of time. Don't squander precious time waiting til things are perfect.

Be as clear as you can be about what you want from a meeting with your supervisor. This will help make sure you get the assistance you need.

Expect to get lost. It is a normal part of the research process. Seek your supervisors help whenever you get lost.

Put thought into the suitability of different people for different problems. It is unrealistic to think that your supervisor will be able to provide all the help and insight you need. Consult widely, and build a network

Don't be put off by a negative response. It is important to develop professional resilience. It may be that you asked the wrong person for what you needed, or that you asked someone for whom *how* they provide feed-back is not important.

Seek support from a range of people, in addition to your supervisor. Your candidature is an opportunity to build your professional network. Plus, it is unlikely that your supervisor will have all the answers.

Some questions to consider when writing

Audience and the bigger picture

To whom am I writing? – *who do you want to use the results of your work?*

What is my key point overall? - *can you state that key point in the title?*

Why did I start this thesis in the first place? - *keep in touch with your passion for what you are doing*

Structure

Where is the best place to start writing? It may not be the Introduction – *this structure applies to experimental papers, but literature reviews can also use this structure, remembering that the literature is data*

Introduction – what the problem is (expressed as an engaging argument)

Methods – what you did

Results – what you found

Discussion – what it means (in relation to the original problem)

Recommendations – how your findings be used

Is there anything included in the Introduction that is not directly related to your objectives and that is not addressed in the discussion? If so, then delete it – *avoid temptation is to introduce everything that was ever known about the topic!*

Does the first sentence of each paragraph introduce the remaining content of each paragraph? If not: consider deleting some text, rearrange the content of this paragraph, so the first sentence does capture the main point of the paragraph, consider splitting the paragraph into two.

The process of writing

How do I learn to write? - *I learnt to write by receiving detailed feed-back on my work. Make sure you allow yourself the opportunity to learn to write. How do you receive feed-back?*

What is my writing process? - *gather and process internally, then write one or two drafts? Lots of drafts and lots of feed-back? Procrastination or talking followed by bursts of productivity and close to final version?*

Who can I ask to read drafts? – *Supervisor, student colleague, informed lay person, “critical friend”, another MEM project student?*

How can I get the feed-back I need? – *who will read, how much time will they need? Rushing means that you miss out on the most important part of the process, learning to write.*

Appendix B – CDU Assessment grades

Following is a list of grades used for assessment at CDU.

See <https://www.cdu.edu.au/governance/doclibrary/index.php> for further information on assessment rules.

Notation	Grade and explanation	Range	Contribution to GPA*
HD	High Distinction Demonstrates imagination, originality or flair, based on proficiency in all aspects of the unit; work is interesting or surprisingly exciting, challenging, well read or scholarly.	85 to 100 0%	7
D	Distinction Demonstrates awareness and understanding of deeper and less obvious aspects of the unit, such as ability to identify and debate critical issues or problems, ability to solve non-routine problems, ability to adapt and apply ideas to new situations, and ability to evaluate new ideas.	75 to <85%	6
C	Demonstrates ability to use and apply fundamental concepts and skills of the unit going beyond mere replication of content knowledge or skill to show understanding of key ideas, awareness of their relevance, some use of analytical skills, and some originality or insight.	65 to <75%	5
P	Pass Satisfies all of the basic learning requirements of the unit, such as knowledge of fundamental concepts and performance of basic skills; demonstrates satisfactory, adequate, competent, or capable achievement.	50 to <65%	4
PU	Pass Ungraded Indicates that the unit is assessed only a basis of pass or fail and that the student's work has achieved a pass level.		NA
F	Fails to satisfy the requirements of the unit.	<50%	0
FNS	Fail Not Submitted Fails to satisfy the requirements of the unit. Did not complete 50% or more of the assessment		0

Appendix C – Thesis examination forms

Following is a copy of the standard marking sheets for a MEM thesis, used by examiners.

Marking Pro-forma for Examination of MEM Theses

A. Reporting on experimental or field study

Name of candidate:

Title of thesis:

1 INTRODUCTION (20 Marks)		
1.1 Sufficient background provided to justify the aims of the study	1 2 3 4 5	
1.2 Understanding of previous research in this field	1 2 3 4 5	
1.3 Clarity of aims of the investigation explicitly stated	1 2 3 4 5	
1.4 Clarity of scope of the research	1 2 3 4 5	
Total		
2 METHODS (20 Marks)		
2.1 Appropriateness of methods to the research aims	1 2 3 4 5	
2.2 Understanding of the assumptions and limitations of methods used	1 2 3 4 5	
2.3 Clarity with which methods are described	1 2 3 4 5 6 7 8 9 10	
Total		
3 RESULTS (20 Marks)		
3.1 Analysis and interpretation of data	1 2 3 4 5 6 7 8 9 10	
3.2 Clarity of presentation of results	1 2 3 4 5 6 7 8 9 10	
Total		
4 DISCUSSION (30 Marks)		
4.1 Discussion of results with adequate reference to other published studies	1 2 3 4 5 6	
4.2 Coherent arguments and supporting evidence	1 2 3 4 5 6	
4.3 Relationship between results and aims	1 2 3 4 5 6	
4.4 Discussion of limitations (problems?) of results	1 2 3 4 5 6	
4.5 Contribution of the study to the topic	1 2 3 4 5 6	
Total		
5 PRESENTATION (10 Marks)		
5.1 Literature/primary sources of information comprehensive & correctly cited	1 2 3	
5.2 English expression	1 2 3 4	
5.3 General presentation eg typographical errors, appearance	1 2 3	
Total		
GRAND TOTAL (%)		

Signature of examiner:

Date:

Appendix D – MEM Thesis submission date extension request form

Following is the form you must submit if you are requesting an extension to your thesis submission date.

Application for assignment extension

MEM Research Project

Applications Details

Student name:	Student ID:
Email:	
Unit name:	Unit code:
Project title:	
Due date:	Proposed due date:

Evidence to support request

<input type="checkbox"/> medical certificate	<input type="checkbox"/> bereavement notice
<input type="checkbox"/> letter from employer	<input type="checkbox"/> letter from university counsellor
<input type="checkbox"/> other	

Details or other reasons:

I certify that the information contained in this application is true and correct

Student signature:	date:
Project Coordinator Name:	date:
Project Coordinator Signature:	<input type="checkbox"/> Approved <input type="checkbox"/> Rejected
Comments:	

Notes for the Application for Extension

Extensions to the due date will only be made due to special circumstances that are supported by documentary evidence, and with the written support of your supervisor.

The MEM Research Project Coordinator, may grant an extension, special assessment or special consideration if the Head of College is satisfied that a candidate was or will be unable, for medical, compassionate or technical reasons associated with their project or as a result of other exceptional circumstances, to submit the thesis on its specified due date.

This is simply to maintain a consistent and fair approach to approving extensions.

Unless the MEM Research Project Coordinator considers that there is good reason why an application could not have been made in due time, any application for an extension shall be submitted to the MEM Research Project Coordinator not less than seven (7) days prior to the previously agreed to submission date (unless the reason for the extension precludes this condition).

Should students foresee potential difficulties with submission of the thesis, they should contact their supervisor or MEM Research Project Coordinator immediately the difficulties come to notice, to discuss suitable arrangements etc for the submission of those assessment times. Leaving a request for an extension or special consideration until the last moment, based on grounds that students could have reasonably been able to foresee, may result in the application being rejected.

A student who applies for an extension or special consideration on the grounds of illness or medical condition must provide a student medical certificate signed by a qualified medical practitioner. The student medical certificate does not require disclosure of the specific medical condition; however it does require the medical practitioner to indicate the affect the student's medical condition will have on their ability to complete their thesis on time. Generally (but not necessarily) the medical condition should relate to unforeseen and/or a non pre-existing illness arising after the date that the assignment details are provided.

Application for special consideration can be made in cases of special needs, long term (pre-existing) injury or illness or on account of physical disability. If you are unsure about appropriate use of Medical Certificates, or wish to make an extension, special assessment or special consideration based on special needs etc., please ask staff at Equity and Student Access, either by appointment or by phoning (08) 8946 6288.

A student who applies for an extension or special consideration on other than medical grounds, may be asked to submit a statutory declaration stating the facts upon which the application relies and shall offer such corroborative evidence as may be available. Compassionate grounds might include:

- * Death of family member or close relative
- * Serious illness of a family member or close relative
- * Involvement in an accident where this does not involve injury (If injured a medical certificate would be appropriate)
- * Significant and unexpected employment problems and pressures
- * Significant relationship problems

CDU Staff do not wish to pry into the personal affairs of students however in interests of ensuring the principles of equity and fairness, appropriate evidence (preferably documentary) to support the application will be required. If students are concerned about their privacy in these situations, they should

seek assistance from appropriate, unrelated, responsible persons to provide verification of their circumstances. The University provides confidential access to University Counsellors who are available to assist students.

Appropriate documentary evidence for compassionate grounds might include:

- * Bereavement notice
- * Letter from employer, professional or practitioner
- * Statutory declaration
- * Copy of accident report

Please note that University Counsellors are generally not able to provide supporting documentation for compassionate grounds unless the student has seen them prior to requesting an extension, special assessment or special consideration.

An extension request may also be based upon technical problems beyond the control of the student themselves. These may include situations such as equipment failure, unforeseen weather events, unexpected equipment requirements, unexpected field or experimental situations or failures. ***Supervisors are expected to secure Research Ethics Permits before full-time, or very early in part-time, candidatures such that they do not impact on research timelines.***

Attendance on holidays and other discretionary travel, activities and/or other foreseeable events etc. will not constitute valid events and/or circumstances outside the students control and therefore will not constitute valid reasons for an extension, special assessment or special consideration. An Appeal against a decision can be made by submitting a Formal Letter of Complaint addressed to the Office of Leadership and Organisational Culture, Charles Darwin University.

Good Luck!

Good luck, work hard, and don't forget to enjoy the process!