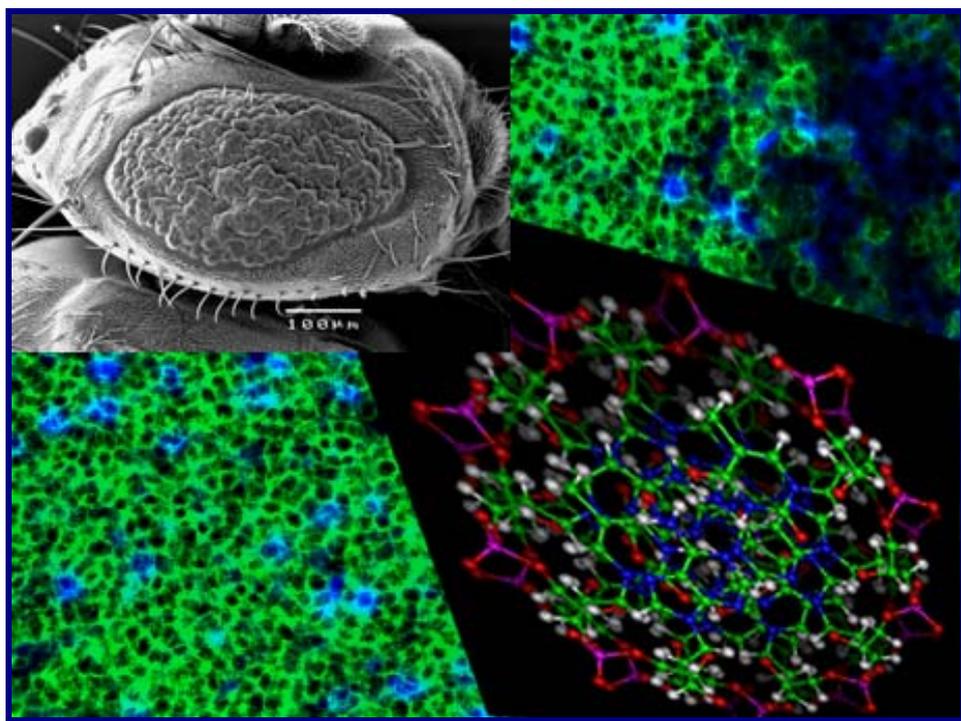




SCHOOL OF PHARMACY &
MOLECULAR SCIENCE

MOLECULAR BIOLOGY HONOURS 2009



Head of School: Dr. Michael Ridd
Program Coordinator: Dr. Bill Leggat

Useful Contact Information

		Extension 4781+	Email:
Honours Coordinator	Dr Bill Leggat	6923	Bill.Leggat@jcu.edu.au
Head of Biochemistry	Prof. Jim Burnell	5684	James.Burnell@jcu.edu.au
Biochemistry Technician	Ms. Veronica Graham	4095	Veronica.Graham@jcu.edu.au
School Safety Officer	Mr. Randy Johnson	4243	David.Jusseume@jcu.edu.au

Also have a look at the School of Pharmacy & Molecular Science web page:

<http://www.jcu.edu.au/fmhms/school/pms/>

Here you will find information about the different research groups, safety and contact details.

Contents

1. Timetable.....	2
2. What to expect.....	2
3. Learning objectives.....	3
4. Choosing a lab / project.....	3
5. Assessment.....	4
6. Grades.....	7
7. Attendance.....	9
8. Safety.....	9
9. Plagiarism.....	9
10. Professional Editing.....	10
Appendix	12
A. Scientific inquiry	
B. Controls	
C. Scientific Writing	
D. Statistics	
E. Outline of criteria for the PhD proposal assignment	
F. Structure of an honours thesis	
G. Review of Assessment	

1. Timetable 2009

	Beginning January 2009	Beginning July 2009
Apply to honours coordinator	14.11.09	15.5.09
Start	2.2.09	6.7.09
Introductory seminar	19.3.09	20.8.09
Literature review due	31.3.09	1.9.08
Mid year seminar	9.7.09	18.2.10
Assignment due	11.8.09	02.03.10
Cessation of lab work	16.10.09	23.4.10
Poster due	21.10.09	27.4.10
Thesis due	10.11.09	18.5.10
Final seminar	17.11.09	25.5.10
Oral defence	23.11.09	27.5.10
Release of grades	24.11.09	28.5.10

2. What to Expect

Honours is essentially one year's experience in a real research environment. The year is broken up by key assessment pieces but the main object of the year is to successfully complete a small independent piece of research.

You will be inducted into the laboratory and given guidance as to your starting point. You will need to become familiar with the current literature which means reading several papers per week, and you will be given assistance to get started on your preliminary experiments.

Regular discussions with your supervisor and everyday practical guidance will be offered as you design and carry out your own experiments.

The appendix at the back of this booklet offers further advice about how you should approach scientific study to ensure you stay on track during this critical year.

3. Learning Objectives

The main aims of the honours program are:

- a) To develop practical skills – students should emerge from their honours year with sound ability to perform a range of current techniques in molecular biology, biochemistry or cell biology with little or no supervision;
- b) To develop critical analysis skills - “Is my observation real?”, “Have I used appropriate controls / statistical methods?”;
- c) To be able to comment on and put their own work into the wider context of current literature in the field;
- d) To develop scientific communication skills of a high professional standard – clear, succinct scientific writing and presentation of results, lucid and organised oral presentations using appropriate visual aids;
- e) The ability to propose ongoing research projects, design new experiments to test hypotheses to the level of a starting PhD candidate.

4. Choosing a Lab

In choosing a laboratory to work in, you must consider what your interests are and, importantly, whether you will be able to work in that environment for a year. *Talk to prospective supervisors about their projects*, what techniques are used and what work ethic they expect. *Speak with other students within the lab* to find out what kind of supervision is offered and get some idea of the personalities you will be working with.

4.1 Projects offered

For details of lab groups within the discipline of Biochemistry go to the webpage (see page 1). A diverse range of projects relevant to medicine, agriculture and environment are offered. Joint supervision of projects between two or more supervisors within the discipline and with other departments at JCU or other universities is sometimes available. *eg* Joint honours in Biochemistry and Chemistry or honours supervised jointly by a staff member from JCU and from the hospital or AIMS.

5. Assessment

There are five components of assessment for Molecular Biology honours at JCU. They are in the form of assignments and there is no coursework component. All assessment relates to skills relevant to working in research but the most important and most heavily weighted is the thesis. Sometimes the project may not generate results but the initiative shown by the student, performance in the lab and communication is what will be graded. All pieces of assessment (apart from the supervisors mark) will be graded by at least two (2) academics.

Five Components of assessment

5.1. Review of current and relevant literature (10%)

Format for literature review

The literature review should cover the literature relevant to the research project to be conducted by the student. It should contain references to papers describing original work, not just to reviews, and should include descriptions of some of the theory of the techniques to be used in the research project. Diagrams are likely to assist in the presentation of the material and particular care should be taken to avoid plagiarism. The literature review should resemble the introduction of a thesis and should include the aims of the research project. It should consist of no more than 4,000 words, and include Background (literature review, hypotheses and aims) and References sections. You should submit 5 copies and send a PDF to the honours co-ordinator. Due to the breadth of subjects presented, assessment will be made on scientific criteria; an excellent literature review will be one in which:

- Background provides a literature review of sufficient depth to justify project
- Appropriate citation of literature
- Adherence to academic citation format
- One or more hypotheses or aims is explicitly stated
- The rationale for the work is provided
- High standard of general presentation
- Adequate binding

5.2. Application for PhD scholarship (5%)

(modified from NH&MRC NOI, see Appendix E for more information on assessment). Please submit 5 copies and a PDF to the honours co-ordinator.

Scientific Title

Ensure the title of your project reflects the topic, area and type of research to be undertaken.

Aims

Describe the aims of your project (maximum of three aims) and include your **hypothesis**.

Background

Describe the background of your proposal taking into consideration the minimum information that is required for the panel to understand your research proposal.

Research Plan

A short and concise plan of your research

Significance

This section should describe clearly the impact of your proposed project. Not more than 2 pages in total. This includes references!

Marking Criteria

1) Significance

Would the project, if successfully carried out, make an original and important contribution to a scientific discipline in the field of biochemistry, molecular biology, cell biology or genetics?

2) Approach

Is the experimental approach, model system, experimental methods and data analyses proposed well conceived and appropriate to the aims and hypotheses of the project?

3) Feasibility

Could the proposed project be accomplished by a single student within a 3 year timeframe with access to materials and resources costing less than \$15,000 per year? Could the project be performed with currently available equipment and infrastructure at James Cook University?

4) Presentation

Is the assignment of two (2) A4 pages or less in length, written in 12 point Times New Roman Font, single-spaced, with margins no less than 2cm? Is the assignment clearly written and presented with a logical flow of information that includes background, hypotheses, aims and a research plan?

5.3. Final seminar (10%)

Format for final seminar

Twenty minute Powerpoint™ presentation and five minutes for questions. Due to the breadth of subjects presented, assessment will be made on scientific criteria; an excellent seminar will be one in which:

- One or more hypotheses or aims are explicitly stated
- The rationale for the work is provided
- Data are clearly presented
- Logic is sound
- Conclusions are justified by the data presented
- Future directions or final conclusion of the study are/is indicated

5.4. Supervisor mark and lab book assessment (15%)

Laboratory book assessment

Laboratory books are expected to be kept up to date, provide an accurate record of methods, work performed and results, and to conform to the standards required for the work within them to withstand patent defence. Specifically:

- Entries are to be dated

- Errors are not to be overwritten, covered over, deleted or removed, but are to be ruled out, corrected, dated and signed
- Pages are to be numbered
- Methods should be in sufficient detail to allow replication by a third party
- Blank spaces are to be ruled out
- Lab books MUST be handed to your supervisor 2 days before your oral defence

Your supervisor will provide a mark based upon your laboratory book but also your conduct and application throughout the year. This mark will reflect how effectively you have functioned in a laboratory environment and be based upon

- Your general laboratory skills
- Your ability to interpret data, design and conduct experiments
- Your ability to effectively communicate your results to your supervisor and other members of the laboratory where appropriate
- Your punctuality for meetings and other lab events
- Your general contribution to the laboratory, for example in lab meetings or lab maintenance
- Your professional conduct as a scientist, including how you interacted with other members of the lab

5.5. Poster, oral defence of thesis and thesis mark (60%)

Format for thesis (45%)

Between 10,000 and 20,000 words, consisting of Background (literature review, hypotheses, aims), Methods, Results, Discussion and Conclusions, References. Please submit four copies (and prepare one for yourself) and a PDF to the honours co-ordinator. Due to the breadth of subjects presented, assessment will be made on scientific criteria; an excellent thesis will be one in which:

- Background provides a literature review of sufficient depth to justify the project
- Appropriate citation of literature
- Adherence to academic citation format
- One or more hypotheses or aims is explicitly stated
- The rationale for the work is provided
- Methods described with sufficient clarity to allow replication
- Data are clearly presented
- Logic is sound
- Conclusions are justified by the data presented
- Future directions or final conclusion of the study are/is indicated
- High standard of general presentation.
- Adequate binding

Assessment Criteria

The development of research aims and outcomes

Analysis and presentation of results

Use of literature in the thesis

Originality of the thesis and quality of argument

Quality and standard of illustrations, tables and overall production

Overall style and accuracy of the thesis

Overall understanding of the project and methods used during completion of the project

Format for viva (oral defence) (10%)

The poster will be used as a centre point for discussion. Staff will have already read it, but would appreciate a brief reminder of its major points. You will then be asked questions related to your work, but other scientific issues may be raised, such as those that have arisen from work presented in honours meetings, the CGC seminar series and your undergraduate biochemistry course.

Poster (5%)

The poster should be a clearly presented summary of your work for the year. Posters are often used at conferences to present research findings. It is advisable that you look at those posters that are present around the building and use these as a guide for your poster. Posters should be printed on A0 size paper (or equivalent) and be laminated. The poster will be assessed by a number of academics and examined on clarity of presentation and quality of the research. Remember to make sure that the text and figures are easily read from a distance.

6. Grades

The following is a broad guide to what the thesis grade and overall honours grade means. The points relate to the thesis quality and the general statement relates to the overall assessment of the student's potential for further study.

The overall honours class and grades are given as follows:

Class	Grade	Mark
Class 1 or H1	Equivalent to High Distinction	85 - 100%
Class 2A or H2A	Equivalent to Distinction	75 - 84%
Class 2B or H2B	Equivalent to Credit	65 - 74%
Class 3 or H3	Equivalent to Pass	50 - 64%

6.1 Class 1 (HD, 85-100%)

All Class 1 students are considered to be capable of pursuing a higher research degree.

Outstanding command of expression and logical argument

Coherent use of research sources and data

Critical evaluation of extant literature appropriate to the topic

Strong sense of issue in relation to the discipline

Command over a particular theoretical approach

Originality of project and ideas

Excellent overall production including tables, illustrations, etc.

Upper H1s (90-94 & 95-100) Display excellence in all these areas.

Lower H1s (85-87 & 88-89) Are still excellent, but less well balanced in overall quality.

6.2 Class 2A (D, 75-84%)

Class 2A students are considered capable of pursuing a higher degree.

Well-written, logically argued and well-structured

Good use of sources and data, but a key example is missing

Strong sense of the literature and good integration with text

Sense of issue and demonstrated knowledge of discipline

Attempt to grasp an appropriate theoretical approach

Evidence of original thought but could be better integrated

Overall good production

6.3 Class 2B (C, 65-74%)

Overall, a 2B student is capable of pursuing postgraduate work, but would be encouraged to complete a Masters degree before attempting a PhD.

Generally good written expression and organisation of thesis

Adequate coverage of extant literature, but noteworthy omissions

Intimations of relevance of topic to the discipline

Weak understanding of appropriate theory or use of inappropriate theory

Little evidence of originality of thought

Solid overall production

6.4 Class 3 (P, 50-64%)

While a student undertaking an undergraduate degree may show evidence of suitability for honours, their performance in honours may raise doubts about their potential for higher degree research. Students awarded an H3 should consider pursuing a coursework Masters if they want to do further study.

Not well written with flaws in expression and logic, needs editing

Weak coverage of extant literature with glaring omissions

Weak understanding of research methods and analysis of data

No strong sense of overall issue and relevance to the discipline

Lacking in originality and superficial in interpretation

Inadequate grasp of theoretical approaches

Poor presentation of data

Serious flaws in the coverage of extant literature

Misunderstanding of key concepts

Misunderstanding of research techniques and data analysis

Inability to demonstrate the finding of the research in a clear manner

6.5 Penalties for late submission of work for assessment

Escalating penalties **will** be imposed for submission of an honours thesis or assignments after the date specified in the honours guide. The formula of the penalty is "Percentage Reduction = 1 x days squared" including part-days, weekends and public holidays.

Extensions may be granted for genuine circumstances at the discretion of the honours co-ordinator and head of discipline.

6.6 Extensions and Medical certificates

In extenuating circumstance extensions for submission of work MAY be granted, if in the opinion of course co-ordinator and head of discipline the circumstances have significantly affected the students ability to perform their study. If you are contemplating a request for an extension you should consult the honours co-ordinator as soon as possible, requests for extensions must be made at least 2 weeks prior to the due date.

Medical conditions which have affected your work may be used for an extension request however the honours co-ordinator and academics reserve the right to not grant an extension, or grant an extension for only part of the period of illness, if they feel the student was able to undertake some or all of their honours study during their illness. Original medical certificates should be submitted to the honours co-ordinator within 1 week of the date in which you return to study. Medical certificates MUST include as a minimum:

- i. The dates of illness
- ii. The date you were seen by the doctor (this must be in the period you were ill or within 1 week of the illness)
- iii. Within the bounds of patient privacy, clearly indicate which duties that you are able to complete and those which you can not (e.g. The patient was unable to perform laboratory duties due to a broken leg but was able to use a computer). A general statement that you were unable to perform your studies will not be accepted.

7. Attendance

Honours students will normally be expected to attend during business hours. You will have after-hours access, but early starts are encouraged. For mid-year honours, the university shuts down for one week between Christmas and New Year.

You are strongly encouraged to attend seminars offered by the department and participate in normal lab routine.

8. Safety

All students will be required to attend a safety induction on or near their first day. Training in Biosafety is usual for Molecular Biology laboratories and depending on where you are working you may also require radiation safety training and induction into areas where radioisotopes are used.

General points to note:

- Fully enclosed footwear should always be worn in the building;
- People in the building between 6 pm and 6 am should always be signed in the after-hours book;
- You should not use equipment such as autoclaves, HPLC, gel tanks, ethidium bromide without first being trained by a member of staff;
- Gross breaches of safety are punishable by dismissal.

9. Plagiarism

Plagiarism means "publishing borrowed thoughts as your own" (OED). It has been defined by the university for disciplinary purposes as "Reproduction without

acknowledgement of another person's words, works or thoughts (including a fellow student's) from any source... The definition of words, works or thoughts includes such representations as diagrams, drawings, pictures, objects, text artistic works and other such expressions of ideas." Plagiarism is a serious offence and will not be tolerated in any form - in the scientific community; people lose jobs if they are found guilty of plagiarism.

When you write your literature review, assignment and thesis (and scientific papers), you are obliged to express all of the material in your own words; read the background material, think about what it means and say what needs to be said in your way. If you use sentences from the background material (or from anywhere else) without acknowledging that the sentence is not yours by putting it in quotation marks (as well as including a citation at the end of the sentence), you are guilty of plagiarism. Note that this kind of device is hardly ever used in scientific writing, so use it sparingly in your own work; in general you will receive better marks if you use your own words on all occasions.

You may not copy any published (or unpublished) work of others without acknowledging that the sentence is not yours by putting it in quotation marks (as well as including a citation at the end of the sentence). If in any assessable material a student uses a single sentence that is demonstrably not their own, that student will be penalised severely.

10. Professional Editing

Below is the Universities policy on the use of professional editors for thesis. If you are using a professional editor please ensure that you discuss this with your supervisor and the honours co-ordinator before you proceed.

The Editing of Research Theses by Professional Editors

Policy developed by the Deans and Directors of Graduate Studies collaboratively with the Council of Australian Societies of Editors

Background

Professional editors need to be clear about the extent and nature of help they offer in the editing of research students' theses and dissertations. Academic supervisors of research students also need to be clear about the role of the professional editor as well as their own editorial role. This policy has been developed primarily to give guidance to professional editors. It also provides a guide for academic supervisors. This document has been developed with close attention to the current Australian Standards for Editing Practice (ASEP).

Proof-reading and Editing of Research Theses and Dissertations

It is expected that the academic supervisors of research higher degree students will provide editorial advice to their students. This type of advice is covered in Standards C, D and E of ASEP:

- Standard C, Substance and Structure
- Standard D, Language and Illustrations
- Standard E, Completeness and Consistency.

Students may use a professional editor in preparing their thesis for submission, but they should discuss this with their principal supervisor and provide the editor with a copy of this policy before they commence work.

Professional editorial intervention should be restricted to:

- Standard D
- Standard E

Where a professional editor provides advice on matters of structure (Standard C), exemplars only should be given.

Material for editing or proofreading should be submitted in hard copy. In electronic copy it is too easy for the student to accept editorial suggestions without thinking about their implications.

When a thesis has had the benefit of professional editorial advice, of any form, the name of the editor and a brief description of the service rendered, in terms of Australian Standards for Editing Practice, should be printed as part of the list of acknowledgements or other prefatory matter. If the professional editor's current or former area of academic specialisation is similar to that of the candidate, this too should be stated in the prefatory matter of the thesis.

The Australian Standards for Editing Practice is available on the following website:
www.case-editors.org

Appendix

A. Thinking scientifically

Scientific inquiry revolves around designing *controlled* experiments specifically designed to test one or more *hypotheses* for a question. Conclusions can be drawn from *reproducible, empirical observations*. Ultimately you aim to generate publishable results that can withstand rigorous peer review. You must therefore be confident that you have interpreted your data correctly and presented them in a clear and detailed way.

Take care not to jump to conclusions and to account for alternative explanations. Understand the difference between an association and causation. An association might raise an hypothesis about causation, but the hypothesis will still need to be tested. Showing the same association under different circumstances does not do this.

When an occurrence elicits multiple possible explanations, the simplest explanation is usually correct (Ockham).

B. Controls

Experiments performed without controls are meaningless.

Controls are used to ensure that the experiment tests the hypothesis and is not influenced by extraneous factors. Positive and negative controls may be appropriate. Usually they involve the inclusion or exclusion of a component or step which predicts a negative or positive result. The fewer the variables the simpler this will be.

C. Writing

In general, good scientific communication is accurate, specific, concise and precise. You should pay close attention to the following:

- Make sure you understand and clearly state in your thesis the questions being asked in your study and the hypothesis/es being tested;
- Make sure that diagrams and figures are appropriate and *clearly labelled*;
- Avoid excessive wordiness – aim for lucid, succinct writing with a logical flow;
- Material *must* be referenced correctly;
- In summary the reader must be able to follow exactly what you did and be able to repeat the work if necessary.

D. Statistics - some preliminary advice

Great care must be taken in the application of statistical analysis.

Make sure you understand the test you use and consult with others who use the techniques. Consideration of the statistic to be used is an integral part of the experimental plan. This decision affects how many *replicates* are needed.

**Firstly: Are the data biologically significant?
 Are they statistically significant?**

☞ The answers to these two questions are not always the same.

☞ Statistical significance does not always correlate with what intuitively appears to be significant.

Often a small "look-see" experiment will allow you to predict outcomes with greater accuracy and more confidence. This allows better experimental design for large expensive experiments.

The following questions may be useful:

- Is the test valid? Are the mathematical assumptions satisfied?
- Is the sample size large enough, are there enough replicates? (A minimum of three is required for any measurement, many more may be required to achieve statistical significance depending on the type of experiment and analysis used).
- Is the experimental design robust?
- Are the controls adequate?

To determine robustness:

Enter the expected results into a statistical analysis program (InStat is best) and apply the appropriate test. What happens if the real results vary from your expectation? Use the program to determine how precarious your experimental design is. Try to have enough replicates that things need to diverge strongly from your expectation to change your conclusion.

Some statistical tests that are commonly used in Biological research are:

- Student's T-test – used to compare two means, or for regression analysis;
- Chi-square test – test statistic has a chi squared distribution when the null hypothesis is true;
- Analysis of variance (ANOVA) - a collection of statistical models which compare means by splitting variance into different parts.

A parametric test (such as a T test) is rarely appropriate unless you know the values are normally distributed (and to do that you need more than 21 replicates).

If the values of two samples do not overlap and there are 5 replicates in each sample, the p value is <0.05 by the Mann Whitney U test (a nonparametric test).

As a generalisation, if a Fisher's exact test can be used, it is better than a Chi squared test (because it provides an exact statistic).

Testing multiple hypotheses in a single experiment (for example, by measuring multiple parameters) creates particular statistical complications. Make sure you know how you are going to handle them before starting the experiment.

Your supervisor will help you choose appropriate methods and expert advice is readily available within the school.

E. Outline of criteria for the PhD proposal assignment

Students are required to submit a written assignment in the form of a 2 page PhD Funding proposal. These assignments, which can (but DO NOT have to) be extensions of the student's current research project, will be marked using the following general criteria.

1) SIGNIFICANCE

Would the project, if successfully carried out, make an original and important contribution to a scientific discipline in the field of biochemistry, molecular biology, cell biology or genetics?

2) APPROACH

Is the experimental approach, model system, experimental methods and data analyses proposed well conceived and appropriate to the aims and hypotheses of the project?

3) FEASIBILITY

Could the proposed project be accomplished by a single student within a 3 year timeframe with access to materials and resources costing less than \$15,000 per year?
Could the project be performed with currently available equipment and infrastructure at James Cook University?

4) PRESENTATION

Is the assignment of two (2) A4 pages or less in length, written in 12 point Times New Roman Font, single-spaced, with margins no less than 2cm? Is the assignment clearly written and presented with a logical flow of information that includes background, hypotheses, aims and a research plan?

F. Structure for an Honours Thesis

- Title Page (see attached)
- Statement of Access (see attached)
- Statement of Sources Declaration (see attached)
- Abstract (300-500 words)
- Acknowledgements
- Table of Contents
- List of Figures
- List of Tables
- Chapter 1 – Introduction
 - Background information/literature review
 - Significance and Aims of Project
- Chapter 2 – Material and Methods *
 - Detail should be sufficient for someone to repeat you work
 - You are required to include details of chemical suppliers (Company, Country)
 - Common mistakes
 - Ensure you use g not rpm for centrifugation
 - DNA and proteins are not “run” on a gel
- Chapter 4 - Results*
- Chapter 5 – Discussion
 - This should include a discussion placing your data in context with the literature and a conclusions and future directions
- References
- Appendices (if necessary)

* Note that in some theses it may be more convenient to have the methods/results in a single chapter per sub-project if there are several different sub-projects in the thesis. Please discuss your options with your supervisor

Thesis Format

- 1.5 line spacing
- text: 12 pt font, headers/sub-headers: 12-16 pt
- Single-sided printing and copying, must be properly bound and a PDF submitted

Thesis Title

(22 pt)

Thesis submitted by

(Name of Student)

(16 pt)

In (Month Year)

Thesis submitted in partial fulfilment of the requirements for the
(Name of Degree) in the School of Pharmacy and Molecular
Sciences at James Cook University, Townsville, Queensland

(16 pt)

STATEMENT OF ACCESS

I, the undersigned, author of this work, understand that James Cook University will make this thesis available for use within the University Library and, via the Australian Digital Theses network, for use elsewhere.

I understand that, as an unpublished work, a thesis has significant protection under the Copyright Act and;

I do not wish to place any further restriction on access to this work.

Or

I wish this work to be embargoed until:

Or

I wish the following restrictions to be placed on this work :

.....

(Author's signature)

.....

(Date)

DECLARATION

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

.....

(Author's signature)

.....

(Date)

G. Review of Assessment

The procedure for a review of assessments can be found at http://www.jcu.edu.au/policy/student/assessment/JCUDEV_005333.html and is summarised below.

Review of Assessment - Individual Piece of Assessment

1. Students may request a remark of any piece of assessable work within two weeks of the mark for that work being provided to the student. In the case of oral presentation this is subject to section 9 below.
2. Prior to requesting a remark the student must have sought and received feedback about their performance for the assessment from the subject coordinator or lecturer concerned.
3. To request a remark, the student must provide in writing to the Head of School a substantial case to show how the mark awarded does not reflect their performance with respect to the published assessment criteria for that assessment.
4. In considering a request for a remark, the Head of School will be mindful of equity matters relating to other students in the subject. The Head of School will determine if grounds for a remark exist, and, where a request is granted, will nominate an alternative qualified person to mark the assessment.
5. Remarking is done only under exceptional circumstances. Where a remark is granted, in all cases the remark will replace the original mark in the calculation of the final grade, which may result in the grade going up, down or remaining the same as the original grade.
6. A student who, having followed the procedures above, remains dissatisfied with the outcome may appeal in writing to the Faculty Pro-Vice-Chancellor, who may authorise a second remark or deny the request. In the case of the latter, the Faculty Pro-Vice-Chancellor will provide the student with a written reply to explain why the request is denied. No further appeal will be permitted.
7. Where the Head of School is also the lecturer, the initial application for a remark may be directed to the Faculty Pro-Vice-Chancellor, with any appeal directed to the Chair of the Academic Board.
8. For a review of mark for participation, the staff member's recorded comments on class participation will form the basis of the review.

9. Oral presentations

- a. If the value of the presentation is over 20 per cent of the aggregate mark for the subject, staff must provide a means by which a remark is possible - for further details, see the '[Assessment Practices Policy](#)'.
- b. Where the oral presentation is 20 per cent or less of the aggregate mark for the subject these review procedures are advisory only and reviews may be conducted by considering the oral presentation marks in the context of marks for all other pieces of assessment.

Review of Assessment - Final Subject Grade

1. Enquiries about subject results are to be directed in the first instance to the examiner of the subject or to the Subject Coordinator. In urgent cases the Head of School may be able to assist with enquiries.
2. If the matter is not resolved through discussions at school level or if it is not possible to consult the examiner or Head of School concerned, students may apply to the Director, Student Services for a review of assessment, observing the procedures and time limits set out below.
3. Enquiries should be made as soon as possible, and applications for review should normally be made no later than:
 - a. 21 days after the Results Publication Date for the relevant Study Period; or
 - b. 21 days after publication of deferred and supplementary results.
4. An application for review may be withdrawn at any point in the review process.
5. A student who seeks a review of a final result shall apply in writing using the appropriate application form, to the Director, Student Services stating the reasons for the application and naming the examiner or Head of School, if any, who has been consulted.
6. If consultation at school level has not already taken place, the Director, Student Services shall request that it be undertaken. This consultation may be omitted only on the advice of the appropriate Faculty Pro-Vice-Chancellor.
7. The Pro-Vice-Chancellor of the appropriate Faculty shall be advised of the application.
8. Where there is agreement between the Faculty Pro-Vice-Chancellor and the Director, Student Services that an application is frivolous, trivial or vexatious, then the application may be dismissed. Where no such agreement is reached, then the application will proceed in accordance with the procedures outlined below.

9. In consultation with the appropriate Pro-Vice-Chancellor, the Director, Student Services may accept a later application. If consultation between the student and the examiner or the appropriate Head of School has already taken place, the Director, Student Services shall proceed as in clause 11 below.

10. If consultation between the student and the examiner or the Head of School has been waived (see clause 2 above), the Director, Student Services shall request the Head of School's comments on the application and shall report these comments to the student. If the student wishes to pursue the matter further, the Director, Student Services shall proceed as in clause 11 below.

11. On the advice of the appropriate Pro-Vice-Chancellor, the Director, Student Services shall inform the examiner concerned, in writing, of the application for review and of the grounds for it. Where possible this shall be done within 10 working days of the student confirming intention to pursue the matter further. The examiner shall respond to the application in writing and shall forward to the Director, Student Services all material relevant to the assessment. The Director, Student Services shall forward a copy of the examiner's response and all relevant material to the student. If the student wishes to pursue the matter further, the Director, Student Services shall forward all relevant documentation to the Faculty Pro-Vice-Chancellor.

12. The request for review of final grade shall be considered by the Faculty Subject Result Review Committee. On receiving the documentation the Pro-Vice-Chancellor (or, if the Pro-Vice-Chancellor is also the examiner, his/her nominee) shall as soon as practicable convene a meeting of the Committee. The Faculty Subject Result Review Committee shall comprise:

- a. The Pro-Vice-Chancellor or nominee (Convenor);
- b. The Faculty Associate Dean, Teaching and Learning or nominee;
- c. The relevant Faculty Registrar or Associate Dean or nominee;
- d. The relevant Head of School or nominee; and
- e. The Chair, Academic Board or nominee.

The examiner of the subject shall not be a member of the Committee.

13. Except with the express permission of the Convenor of the meeting of the Faculty Committee, no additional documentation shall be presented at the meeting.

14. An examiner who is a member of the Faculty Committee shall not attend the meeting except as provided for in clause 15.

15. The Faculty Committee shall consider the student's application together with the statement prepared by the examiner and shall hear either of them in person if either wishes to be heard. The opportunity to be heard is available only if the person who wishes to be heard is available at the time and date fixed by the Pro-Vice-Chancellor for the meeting of the Faculty Committee. Normally neither the student nor the examiner may be present while the other is being heard, but if both parties agree and the Convener considers that such a procedure would facilitate the review, each may be present while the other is being heard. The student and the examiner shall be present only for such time as is necessary for them to be heard by the Committee.

16. A student who appears in person before the Faculty Committee may choose to be accompanied by a member of the University community, who may assist in presenting the case but may not undertake the presentation of it on the student's behalf.

17. If the student or examiner satisfies the Convener of the meeting of the Faculty Committee that it is impracticable to appear in person before the Committee, the student or examiner may nominate a member of the University community to appear on his or her behalf.

18. After considering the application, the Faculty Committee shall confirm or amend the result or shall take or recommend such further action as it deems appropriate.

19. The result of the review shall be communicated to the Director, Student Services, who shall as soon as practicable inform the student and the examiner in writing of the result and take such other action as may be necessary.