MONASH University

Medicine, Nursing and Health Sciences

2019 Honours Guide

Immunology and Human Pathology

Central Clinical School

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WELCOME

***<u>This is the official guidebook for BSc students only</u>**. This handbook will be useful for Biomedical Science students undertaking their honours year at CCS. However, Biomedical Science students are asked to refer to their official unit guide.*

Dear Students,

Welcome to your Honours year based at the Central Clinical School. As you should already be aware, this year will be quite different from your undergraduate experience and will allow you to sample, first hand, the field of biomedical research. For many of you, this will be the start of a career in medical research and will lead onto higher degrees such as a PhD. For all of you, this year will be invaluable in developing your skills in critical analysis, organisation and communication that will stand in you in good stead in whatever career path you choose. We congratulate you on reaching this point and we hope it is an enjoyable year for you.

This is a research-focussed year, with 75% of your assessments directly associated with your research project. You will primarily be located in a research laboratory and researchers conducing active research projects will supervise you. You should not view your role as a token gesture for the year from your supervisor. Each project has its worth and addresses important questions likely to be used in future publications and funding applications. As a researcher, you will probably experience many of the highs and lows of research as you strive to complete your projects. Frustration and doubt are quite normal experiences. Results may be unpredictable and "negative" results do not mean failure. Research is about experimental design, data collection, analysis and interpretation. Attention to detail is paramount as trouble-shooting experiments and techniques are a critical part. Your task with the project is to address a question and compose a thesis based on your findings. Finally, through oral presentations, you will develop the valuable skill of compiling data and presenting it to your peers. You should not underestimate this as a skill; remember the last boring talk that you attended!

Once again, welcome and do not hesitate to contact us if you have any problems.

A/Prof Justin Hamilton
Honours Coordinator
(Human Pathology)
Justin.Hamilton@monash.edu

A/Prof Margaret Hibbs
Honours Coordinator
(Immunology)
Margaret.Hibbs@monash.edu

Dr Vilija Jokubaitis
Honours Coordinator
(Neuroscience)
Vilija.Jokubaitis@monash.edu

COURSE OBJECTIVES

BROAD AIM

To provide students with a solid grounding for a career in biomedical research or laboratory based employment, which will be achieved through a specific research project and discipline based tasks.

COURSE OBJECTIVES

On completion of the Honours year of the Bachelor of Science or Bachelor of Biomedical Science, students will:

1. Be able to undertake a critical review of the scientific literature in a specific research area.
2. Understand and execute the processes involved in the design, development and implementation of a research project.
3. Be able to execute and analyse a set of laboratory-based, or other appropriate, studies.
4. Be proficient in computer-based data acquisition, analysis, presentation, and word processing.
5. Be able to write up scientific work in a potentially publishable way.
6. Be able to demonstrate communication skills in both oral and written presentations.
7. Have acquired a range of technical skills appropriate to their research area.
8. Have the capability to perform a variety of scientific procedures and techniques that are essential to the satisfactory completion and reporting of a research project.
9. Have the opportunity to pursue higher studies and learning in selected research areas of science.
10. Have gained insight into the breadth and diversity of the sciences through exposure to research and seminars conducted outside their specific field.

CALENDAR OF EVENTS FOR 2019

BSc(Hons)

Event	Date and room location
Commercialisation and IP	Monday 25th February 2019 2:00pm – 3:00pm Lecture theatre S3, 16 Rainforest Walk, Clayton campus
Laboratory Animal Care and Use (Completion compulsory)	All students will need to complete the two online modules by Friday, 8th of March 2019. The two modules are: • Animal Ethics 101 • Animal Ethics 102 Further information can be found at: https://www.intranet.monash/researchadmin/start/ethics/animal/training and page 15 of this manual.
OHS session **Student Project Safety and Biosafety 1** Attendance compulsory	Wednesday 27th February 2019 9:30am – 2:00pm Lecture theatre S6, 15 Rainforest Walk, Clayton campus
OHS session **Biosafety 2 and OGTR** Attendance compulsory	Wednesday 27th February 2019 3:00pm – 4:30pm Lecture theatre S6, 15 Rainforest Walk, Clayton campus
CCS Honours orientation Attendance compulsory	Thursday 28th February 2019 10:00am - 1:30pm Lecture theatre, Level 5, Alfred Centre, 99 Commercial Road, Melbourne 3004
Finding information for your literature review ******Bring your laptop for the Endnote session and with the Endnote up and running in your computer.***	Finding information for your literature review Monday 4th March 2019 9:00am - 10:30am Introduction to Endnote sessions *** Monday 4th March 2019 1:30pm – 3:00pm Literature Review Writing class Monday 4th March 2019 3:00pm – 4:30pm All sessions will be conducted in the Seminar room, Alfred Research Alliance, 75 Commercial Road, Melbourne 3004
Surviving Your Honours Year session Attendance compulsory	Wednesday 6th March 201 10:00am – 11:30am Seminar Room 1, Level 5, Alfred Centre
Coursework component **Discipline specific** attendance compulsory at all lectures **10% of final mark**	Lectures begin 5th March 2019 and are scheduled for 2:30pm - 4:30pm Every session is held in the Alfred Research Alliance Lecture Theatre 75 Commercial Road, Melbourne 3004 Students **must** bring their own device as each lecture will conclude with a graded quiz. Details of assessment dates provided later in the calendar.

Coursework Component (common) **Stats course** **7.5% of final mark** Students **must** bring their own device as this is not a computer lab.	Commences week beginning the 4th of March 2019 Ends week beginning the 15th of April 2019 6 tutorials and 1 drop in session **CCS students:** Thursdays 10am to 11:30 am Lecture theatre, Level 5, Alfred Centre
Common Core Stats Course Multiple Choice Question in class test	Thursday, 11th of April 2019 at 10am
Submission of literature review with Project outline deadline **7.5% of final mark**	Tuesday 16th April 2019 at 4:00pm Submit an electronic copy via Moodle
Common Core Stats Course Assignment deadline	Monday 29th April 2019 at 4:00pm
Seminar 1: **Literature review of project, outline and methodology** Attendance compulsory	**Day 1:** Monday 29th April 2019 from 8:00am – 5:00pm **Day 2:** Tuesday, 30th April 2019 from 8:00am – 5:00pm **Day 3:** Wednesday, 1st May 2019 from 9:00am – 11:30 & 2:30pm – 5:00pm Seminar room, Alfred Research Alliance Lecture Theatre 75 Commercial Road, Melbourne 3004
Coursework component **Discipline specific** Journal article submission for poster	Friday 3rd May 2019 at 4:00pm Submit an electronic copy via Moodle
Critique writing workshop This is ONLY for BSc students	Monday, 20th May 2019 1:30pm – 4:30pm Lecture theatre, Level 5, Alfred Centre
Coursework component **Discipline specific** Poster submission	Thursday 30th May 2019 at 4:00pm Submit an electronic copy via Moodle
Coursework component **Discipline specific** Poster presentation session	Friday 31st May 2019 1:00pm – 5:00pm Level 5, Alfred Centre
Common Core Component **Written Critique** **7.5% of final mark**	Tuesday, 11th June 2019 12:00pm – 4:00pm Seminar rooms 1 and 2, Level 5, Alfred Centre
Seminar 2 Abstract due	Thursday 17th October at 4:00pm Submit an electronic copy via Moodle
THESIS DEADLINE Late submissions will incur a penalty **60% of final mark**	Thursday 17th October at 4:00pm Submit an electronic copy via Moodle
Research seminar – FINAL Attendance compulsory **7.5% of final mark**	**Day 1:** Monday 21st October, 2019 8:00am – 6:00pm **Day 2:** Tuesday 22nd October, 2019 8:00am – 6:00pm **Day 3:** Thursday 24th October, 2019 11:00am – 6:00pm **Day 4:** Friday 25th October, 2019 8:00am – 6:00pm Lecture theatre, Level 5, Alfred Centre

Thesis oral review Attendance compulsory	Interviews will be conducted over a two-week period beginning Monday 28th of October, 2019 between the hours of 8am – 6pm. Specific details will be provided once assessors have been appointed.

BBiomedSci(Hons)

Event	Date and room location
Faculty Orientation Program **Welcome Lunch** **(This is ONLY for BMS students)**	Monday 25th February 2019 10:00am – 12:00pm Lecture theatre S1, 16 Rainforest Walk, Clayton campus 12:00pm – 1:30pm Exhibition Space, 19 Innovation Walk, Clayton campus.
Commercialisation and IP	Monday 25th February 2019 2:00pm – 3:00pm Lecture theatre S3, 16 Rainforest Walk, Clayton campus
Laboratory Animal Care and Use **(Completion compulsory)**	All students will need to complete the two online modules by Friday, 8th of March 2019. The two modules are: • Animal Ethics 101 • Animal Ethics 102 Further information can be found at: https://www.intranet.monash/researchadmin/start/ethics/animal/training and page 15 of this manual.
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Finding information for your literature review ******Bring your laptop for the Endnote session and with the Endnote up and running in your computer.*** ***Students can nominate to complete this at the Clayton Campus. Please see your BBiomedSc(Hons) guide for details.***	Finding information for your literature review Monday 4th March 2019 9:00am - 10:30am Introduction to Endnote sessions *** Monday 4th March 2019 1:30pm – 3:00pm Literature Review Writing class Monday 4th March 2019 3:00pm – 4:30pm All sessions will be conducted in the Seminar room, Alfred Research Alliance, 75 Commercial Road, Melbourne 3004
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Coursework component **Discipline specific** Journal article submission for poster	Friday 3rd May 2019 at 4:00pm Submi t an electronic copy via Moodle
Critique writing workshop This is ONLY for BBiomedSc students	Monday, 20th May 2019 1:00pm – 4:00pm G31, 19 Ancora Imparo Way, Clayton campus (Ground floor, Teaching and Learning Building)
Coursework component **Discipline specific** Poster submission	Thursday 30th May 2019 at 4:00pm Submit an electronic copy via Moodle
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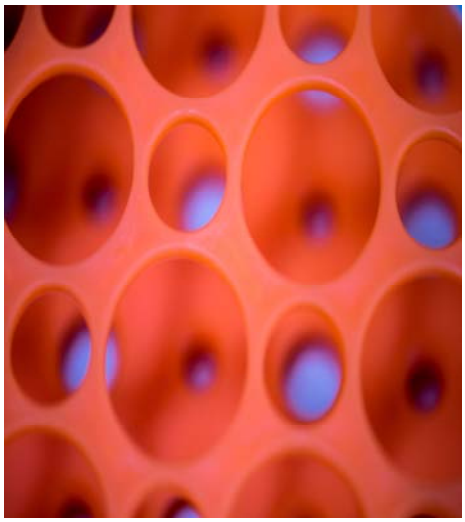
ORIENTATION PROGRAM

Thursday 28th February 2019
10:00am - 1:30pm
Lecture Theatre, Level 5, Alfred Centre

10:00am	**Introduction** Course objectives, year outline, Alfred support services and mentorship ***A/Prof Margaret Hibbs, Honours Coordinator - Immunology***
10:30am	**Panel discussion** Recent honours and current PhD students experiences ***Chair:*** ***A/Prof Margaret Hibbs, Honours Coordinator – Immunology*** ***Dr Vilija Jokubaitis, Honours Coordinator - Neuroscience*** ***Panel:*** ***Ms Pia Campagna, Past honours student / Current Research Assistant*** ***Ms Lakshanie Wickramasinghe, Current PhD student*** ***Mr Jasper Cornish, Current PhD student***
11:00am	**Library Skills and workshops** ***Ms Cassandra Freeman, Subject Librarian- MNHS, Hargrave Andrew Library***
11:15am	**Student safety** ***Ms Rachael Borg, Senior Research Services Officer***
11:30am	**Student well-being** ***Ms Mio Ihashi (Psychologist), Coordinator, Counselling and Mental Health Programs, University Health Service***
11:45am-	**School Facilities:** • Monash Micro Imaging-AMREP • Flow cytometry: Procedures and use of flow facilities • Animal Facility: Introduction into procedures and requirements for the use and handling of animals in the AMREP animal facility • Pre-Clinical Imaging Facility (ARA MBI) • Bioinformatics • Histology • Biostatistics ***Dr Vilija Jokubaitis, Honours Coordinator - Neuroscience***
12:00pm	**Group photograph followed by Individual portrait photos** Individual portraits will be taken in Tutorial Room 6, Level 5 Alfred Centre
12:45pm	**Conclusion of program**

COURSE STRUCTURE



The BSc(Hons) and the BBiomedSc(Hons) year each comprise a number of assessment tasks.

The BSc Honours course is officially comprised of two units BMH4100: 36 points and BMH4200: 12 points. BMH4100 relates to your thesis and project-associated assessments, while BMH4200 is associated with common course work assessment tasks throughout the year. Your final grade is determined from all assessments. To avoid confusion, you should treat the year as one unit only.

The BBiomedSc Honours is officially comprised of two units BMS4100 and BMS4200, the details for these are provided within the BBiomedSc specific handbook.

COMMUNICATION WITH STUDENTS

Several students, while being administered and assessed at the Central Clinical School, will be conducting their research projects in external laboratories and not necessarily on the Alfred Research Alliance (A+) campus. Throughout the year, we will need to communicate with all students on a regular basis. The most efficient means is via email and **we will be using your student email accounts** for this. It is important that you get into the habit of checking your email daily. **If you intend to use other email accounts issued by your department or institute, then please ensure that you have your emails redirected.** Your local IT officer will be able to do this for you. We will not be sympathetic to those who "forget" to check their emails. The Honours calendar of events and important announcements will be sent to your student email address and posted on the current honours students web-page: http://www.med.monash.edu.au/cecs/education/current-honours.html

PROFESSIONAL CONDUCT

For many of you, this will be your first year as a professional. Unlike in the first three years of your undergrad degree when you could essentially come and go as you please, we expect you to keep professional hours and be present in your lab or department from 9 am to 5 pm. If you are ill or going to be absent for any reason, you must let your supervisor know as a matter of courtesy.

The Honours year does not have semesters, like in your previous undergrad years, and runs from Feb to Oct. While it is reasonable to take a short break from work during the year, you will need to structure any leave around the assessment due dates and plan this with your supervisor, with the best time being in late June or July.

During your Honours year you can expect close supervision but you cannot expect to be everyone's number one priority. The purpose of a research lab is not to host Honours students; everyone is busy with their own work and research projects, so make sure you plan discussions and meetings well ahead of time.

Now you are a lab member, it is also fair and reasonable for you to contribute to the lab, for example, making communal reagents, contributing to lab rosters or assisting in general lab organisation. You will get more out of your year if you become fully involved.

While completing research (including the honours year) at Monash, all students and staff must comply with the Australian Code for the responsible conduct of Research, which states that it is the responsibility of Universities and Researchers to retain research data, provide secure data storage, identify ownership and ensure security and confidentiality of research data.

Further information can be found at:

- https://guides.lib.monash.edu/gradres/research-data
- https://www.ands.org.au/guides/rdm-in-practice

Students should be aware that all research data is owned by the University, and must not leave the laboratory. This includes laboratory notebooks. If data has been obtained offsite, it must be returned to a student's supervisor and laboratory before submission of the thesis. Any student found to be in breach of these regulations will have their results withheld until the matter is resolved. Further penalties may also apply.

ETHICS RESPONSIBILITIES

All research involving animals or humans requires formal Ethics exemption or approval. Students are to determine with their supervisor:

1. if ethics approval for their project has been authorised prior to commencing their research, and
2. if their (the student) participation in the project has been approved by the appropriate ethics committee.

Animal Ethics

All research involving the use of animals by staff and students at the Central Clinical School must receive animal ethics approval from the Alfred Research Alliance Animal Ethics Committee. Further information is available from http://amrepaec.bakeridi.edu.au/.

Online Animal Ethics Training

All Honours students must complete the Online Animal Ethics Training. The two modules need to be completed by **Friday, 8th of March, 2019**. The two modules are:

- Animal Ethics 101 - Understanding your Legal Responsibilities
- Animal Ethics 102 - Getting Started - Using Animals at Monash University

To complete these modules, you must create a profile in myDevelopment. To create a profile in myDevelopment, please click on the link for student access (https://www.intranet.monash/talent-leadership-development/myDevelopment/student-access) and fill out the 'Access for Students' form. A myDevelopment user profile is created instantly and you will be sent an e-mail with your login details. Please note that you will be able to access this course 24 hours after you have completed the form.

Human Ethics

Human research as defined in the National Statement on Ethical Conduct in Human Research (2007) (https://nhmrc.gov.au/about-us/publications/national-statement-ethical-conduct-human-research) is "research conducted with or about people, or their data or tissue. Human participation in research therefore includes the involvement of human beings through:

- taking part in surveys, interviews or focus groups;
- undergoing psychological, physiological or medical testing or treatment;
- being observed by researchers;
- researchers having access to their personal documents or other materials;
- the collection and use of their body organs, tissues or fluids (e.g. skin, blood, urine, saliva, hair, bones, tumour and other biopsy specimens) or their exhaled breath;
- access to their information (in individually identifiable, re-identifiable or non-identifiable form) as part of an existing published or unpublished source or database."

Students whose project involves human research must discuss any concerns with their supervisors. Supervisors must ensure that students have been awarded appropriate ethics clearance.

FURTHER STUDIES TOWARDS THE DOCTOR OF PHILOSOPHY (PhD)

Students interested in extending their studies towards a PhD are free to discuss this with potential PhD supervisors. However, Honours students should be aware that no PhD positions can be offered until the outcome of the Honours year is known and scholarship ranking is determined. Interested students may contact CCS student services for advice about how to apply for a PhD scholarship; applications are due on the 31st of October each year. PhD scholarships are awarded on a competitive basis that takes into account undergraduate GPA, Honours mark, and first author SCOPUS listed publications by the applicant that have either been published or accepted for publication. Interested students should note that students are only eligible to enrol full-time into the CCS PhD program if they are awarded a PhD scholarship.

CONFIDENTIALITY AND SOCIAL MEDIA

Students must check with their supervisors before posting any data related to their Honours project online on social media for potential issues of confidentiality.

DEPARTMENTAL/INSTITUTIONAL SEMINAR AND TALKS

The broad aim of attending seminars and talks, or specially organised presentations, is to widen your exposure to the variety of science.

At the Alfred precinct, we are lucky to have a broad range of disciplines that will enrich your general knowledge.

Attending designated seminars is compulsory and assessed. Students are expected to attend their presentation sessions, which includes student literature reviews and final seminars.

Students should also attend those seminars offered by their local department or institute. This includes weekly talks by invited speakers or internal post-graduate progress seminars. For example, the Department of Immunology and Pathology has a seminar series on Wednesdays at 11.30am, the Australian Centre for Blood Diseases at 11am every Tuesday, the Burnet Institute has a seminar series every other Wednesday at 9am and the Department of Neuroscience seminars are on Mondays between 12:30 and 1:30pm. If your local department or institute does not have a regular seminar series, you should attempt to find one. The Department of Immunology and Pathology is delighted to welcome attendees to their talks. Please contact student services at Central Clinical School via email, ccs.hons@monash.edu for details.

From time to time, special seminars or talks may be offered. You should make every effort to attend these as well. Central Clinical School Events Calendar link below:

http://www.med.monash.edu.au/cecs/headlines/events-calendar.html

PASTORAL CARE

There are a number of counselling avenues available for students who experience problems during their Honours year that may be adversely affecting their performance. These problems may arise within the laboratory, department/institute or may be of a personal nature.

If possible, problems should initially be discussed with the Research Supervisor. In addition to this, the following options are available.

1. The Honours course co-ordinators, A/Prof Justin Hamilton, A/Prof Margaret Hibbs and Dr Vilija Jokubaitis are available to discuss any problems that may arise.
2. Departments and Institutes often have Graduate Student Committees that assist in the pastoral care of Honours students and problems can be brought to their attention. This provides students with an avenue to raise issues that, in the first instance, they may not wish to discuss directly with their supervisors or associated academic staff members. The following is a list of departmental representatives to seek out if the need arises:

    - Burnet Institute: Dr Raffi Gugasyan
    - ACBD: A/Prof Justin Hamilton
    - Medicine, Surgery: Ms Bonnie Dopheide
    - MAPRc: Dr Stuart Lee
    - Infectious Disease: Prof Jennifer Hoy
    - Baker IDI: A/Prof Julie McMullen
    - Immunology and Pathology: A/Prof Margaret Hibbs
    - Gastroenterology: Dr Jane Muir
    - Hudson Institute of Medical Research: A/Prof Mark Hedger
    - Diabetes: Dr Christos Tikellis
    - Neuroscience: Dr Vilija Jokubaitis and Dr Bridgette Semple

STUDENT SUPPORT

Student Support Services

It is well-known that what affects you personally will also affect you academically – so taking action early is good self-management and many students have successfully completed their courses despite having difficulties of a personal nature. Please contact the Student Services officer on ccs.hons@monash.edu or phone 9903 0784.

Health Services

The Monash University Health Services offers a range of facilities to students including *general health (GPs); counselling; dental, mental health, pathology and nutrition*. Services are confidential and generally free. Further information can be found at https://www.monash.edu/health/home.

Counselling Service

Counselling can help you with problems coping with study or university life, stress and anxiety or depression, loneliness, drug and alcohol abuse and addictions, negative feelings or suicidal thoughts, relationship or family issues.

Contact: 9905 3020, website: https://www.monash.edu/health/counselling

In addition, Ms Mio Ihashi from the counselling service is based at the Alfred Precinct every Wednesday to provide counselling services to students and staff.
http://www.monash.edu/counselling

After hours counselling for students: 1300 788 336.

Safer Community Unit

The Safer Communities Unit will help keep you and our Monash community safe. So if you are going through a difficult situation, reach out to them and they will get you the right support. Community Care Line (9905 1599) offers assistance to any staff or student who feels threatened or unsafe, or has concerns about someone's wellbeing. For further information: https://www.monash.edu/safer-community.

Be proactive – ask for help early if concerned about yourself or someone else!

PRIZES

The top-ranked CCS honours student will be awarded the Robyn O'Hehir Medal and a cash prize of $1,000 in recognition of their achievements.

Professor Robyn O'Hehir AO is the Head of the Department of Allergy, Clinical Immunology and Respiratory Medicine at the Central Clinical School, Director of the Department of Allergy, Immunology and Cystic Fibrosis at the Alfred Hospital, and Deputy Director Research at Alfred Health. She is a highly respected clinician and researcher who has made an outstanding contribution to research at CCS over many years.

ROLE OF THE SUPERVISOR(S)

Supervisors of Honours students have a major responsibility in ensuring day-to-day supervision. In practice, this will vary from lab to lab and student to student but the student should feel comfortable with the situation. As a student, you should take responsibility and highlight any issues of supervision that are not clear. While supervisors are there to guide and support students, it is unrealistic to expect 100% attention at all times.

CO-SUPERVISION

All students need a co-supervisor and it is common for senior members of laboratories who have a significant input into student supervision and progress to act as co-supervisors.

Some of the responsibilities of a supervisor include:

Student based

- Assisting the student in understanding the rationale behind their project
- Guide the student through introduction to relevant literature
- Instruct students in experimental techniques required for their project
- Assist students in designing experimental protocols
- Assist students in analysis and interpretation of data
- Assist students in developing oral and communication skills through their various assessments and lab presentations
- Guide students in structuring their thesis
- Provide informative feedback throughout the year to ensure effective learning

Course based (see calendar for dates)

- Attend oral presentations and participate in assessment of students as an examiner
- Assess and provide comment on literature reviews submitted by other honours students (comments will be returned to students as feedback)
- Assess and give a mark for honours theses. Each supervisor is expected to mark 2-3 theses

for each student they supervise
- Attend the oral review of your student(s) as an observer
- Participate in the oral review as an examiner for those students whose theses you have marked

BSC (Hons) COURSE COMPONENTS

Assessed Component Summary

BMH4100 (75% of total mark)

• Literature Review seminar	(S/NS)
• Thesis	60%
• Literature Review & Project Outline	7.5%
• Final Seminar	7.5%
• Thesis defence	

BMH4200 (25% of total mark)

• Part 1: Discipline specific module	10%
• Part 2: Statistics module	7.5%
• Part 3: Written Critique exam	7.5%

Total	**100%**

Final Grades

• Honours Class I	80 – 100%
• Honours Class IIA	70 – 79%
• Honours Class IIB	60 – 69%
• Honours Class III	50 – 59%
• Fail	< 50%

ASSESSED COMPONENTS

Written literature review and Project Outline

Due Date: 4:00pm, Tuesday April 16th, 2019

Submission

The literature review and attached project outline should be submitted electronically – no printed versions are needed. Submission of all assessment tasks are via Moodle. Please upload your work to the relevant dropbox within the "IMM and HUP Honours 2019" Moodle site. Students should be aware that all submissions are automatically run through Turnitin after they are uploaded.

Details of task

For the **literature review**, attention is drawn to the following requirements/guidelines:

- ***Front cover***: (project title, student name and ID number, department/institute, word count).
- ***Table of Contents***
- ***Literature Review***
- ***Project outline***
- ***References*** - Students may choose the referencing system they wish to use, but the system must be one of those in regular use in biomedical journals. If in doubt, students should consult with their supervisor and use a system in regular use in journals in their discipline.

For the **Project outline** the student is required to submit a summary of the background/rationale of the research, the aims of the project, the experimental design and methodology, (including the statistical methods proposed for analysing the data), and the anticipated outcome of the research which has been agreed to by both the supervisor and student. The supervisor can assist the student in putting this together. The aim of this task is to get the student and supervisor talking, planning and discussing possible obstacles, difficulties, etc. A timeline outlining your anticipated progress through the year should also be included. The project outline is NOT a binding document, and changes to the research project are permitted, even after submission of the outline.

Please refer to **Criteria for marking Literature review (see page 31).** These are the requirements that the examiners will be looking for in your Literature review.

Supervisor input into the literature review

Supervisors should be involved with their students in the planning of the literature review. Students and supervisors should plan together the layout of the literature review, the nature of figures, etc. They should advise, but leave to the student, decisions about data interpretation, etc. Students should then prepare a first draft. Students may submit one draft only of the literature review for comment by their supervisor(s). The supervisor can edit the hard copy of this first draft but only very broadly. Grammar, spelling corrections, and other typographical errors are the responsibility of the student.

Supervisors should NOT CIRCULATE draft versions of the review to staff, other than the co-supervisor, for detailed comments. Supervisors and co-supervisors must comment on the exact same version of the review. Supervisors should never write any part of the review themselves. **Supervisors are not permitted to edit the literature review draft using track changes**. This is important since the review must be original work that is clearly identified as the student's effort and not that of the supervisor. Note that drafts cannot be circulated by the student to any other staff member, postdoctoral fellows, and research assistants or to postgraduate students. Note that supervisors and co-supervisors will not be examiners of the literature reviews written by their own students.

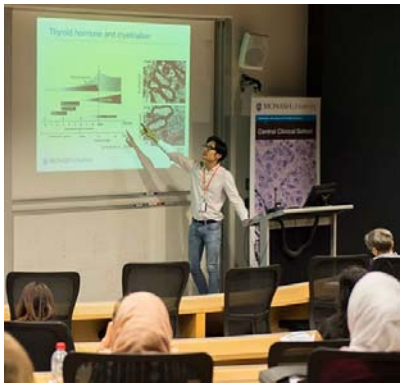
Word limit

4000 (± 10%) words. Please note that the word count DOES NOT include the references in the bibliography, figures, figure legends, tables and graphs or PROJECT OUTLINE. The word limit only applies to the words in the body of the text. Project outline should be a maximum of four pages.

Value: 7.5%

Presentation requirements: 11 point Arial font, double spacing.

Literature Review Seminar – Non Assessed



The aim of literature review seminar is to communicate to a lay audience the basis of your area of research in a set time. It also gives the other students, supervisors and members of the school, the first opportunity to see what you will be doing throughout the year. While this oral presentation is not formally graded, it will form part of first impressions, so be sure to make the required effort.

Talks will be 10 minutes in length with 5 minutes (extra) for audience questions. It is advisable and recommended that you practice your talk beforehand.

The literature review seminar should provide a review of the relevant literature (with key references indicated), a statement of the hypothesis to be tested, the specific aims of the research, an outline of

the experimental design, (including information on the statistical tests you expect to use and a justification of them), and a very brief indication of the expected outcomes of the project. There is no requirement to present results at this seminar, even if you have already obtained data from experiments in progress.

All presentations should be delivered using Microsoft PowerPoint. There is no absolute time prescription for the various components of the seminar. Clearly, the structure and emphasis of each seminar will to some extent be influenced by the project structure and the nature of background information on which it is based. Seminars may differ greatly in emphasis depending on the timing of the various segments. However, as a general guide, you should consider the following time allocations for each of the components when planning your seminar.

General introduction	1 minute
Review of the literature / rational for the project	4 minutes
Aims	1 minute
Experimental plan (including statistical analysis)	3 Minutes
Expected Outcomes	1 Minute
Total	**10 minutes**

Student presentations will be timed and the 10 minute allocation will be strictly adhered to. For those who have thoroughly prepared and practised their seminars, timing should not be a problem.

Coursework Components

There are three independent coursework components incorporated into the Honours year and they are designed to promote self-learning techniques and develop skills in the interpretation of information and communication of this in various forms.

Discipline Specific Module (10%) – APPLICABLE FOR ALL HONOURS STUDENTS

Students are required to attend compulsory technology lectures that are scheduled on **Tuesdays from March 5th**. **All students must bring their own device to each class**. There will be different speakers for each of the lectures over a number of broad topics that will constitute a theory module. There will be two assessment pieces for the discipline specific module.

1. On conclusion of each lecture, there will be a short invigilated online quiz. The final grade will constitute each student's top 5 quiz results (4%).
2. At the completion of the lecture series, students will be required to prepare and present a poster on a published piece of work utilising one or more of the technologies that have been discussed during the lecture series (6%).

Guidelines for choosing a paper

The student is required to choose a published paper on a study that employs one or more of the technologies that they have learned about during the lecture series. The paper must be from a reputable international journal (e.g., Cell, Nature, Immunity, J Exp Med, Cancer Cell, Blood, Circulation, Neuron, EMBO J) and cannot be directly related to the student's own research project or be a paper published by the student's supervisors. The chosen paper must be submitted via Moodle by **Friday 3rd May** for ratification by the Honours coordinators.

We recommend students discuss their choice of paper with their supervisor and/or senior department members for appropriate content prior to submission. Once your paper has been approved, you can prepare your poster according to the guidelines below. Assessment will be via oral presentation of your poster (***31st of May, Level 5 Alfred Centre***) and review of a PDF of your poster, which is to be submitted via Moodle (***Deadline: 4pm on the 30th of May***).

Preparation of Poster and Poster Design

When designing your poster, please consider the following:

- The poster should be Size A0, portrait orientation.
- Use your own words; do not plagiarise text from the paper when completing the poster.
- Separate the poster into different sections:
  - Title and authors (include original citation details)
  - Background/Introduction, including hypotheses
  - Brief description of methods, highlighting the technology of choice
  - Results – use the figures from the paper. Many papers have several figures – if too many to appropriately fit on your poster, choose the most pertinent to the story and technology.
  - Discussion
  - Strengths and Limitations
  - Future directions
- Only include the essential points in text, and use your oral presentation to expand on these.
  - Words should be kept to a minimum and any main body text should be in dot points. For a poster, nobody will read densely written text, keep it brief, keep it simple – less is more!
  - Clear and concise is a part of every marking criteria for the poster component.
- Use your discretion when selecting font styles, colours, readability, to ensure that your poster is visually appealing.
- Make the poster clear, ensure it flows in a logical manner and is easy to read – the audience will read from 1-2 meters away and they will be wandering around many posters.
- Needs to be attractive and eye-catching to the audience!
- Note: When writing the text for your poster, DO NOT copy from the authors' words directly. You should *think* about what each figure means *without* the original paper in front of you, and make notes/dot points of *your* thoughts and interpretations. This is important to not only ensure that you have a good understanding of the papers and figures, but also minimises the risk of plagiarism.

Oral Presentation of the Poster

For the presentation itself, you will be examined by different groups of examiners separately during the session. Each time your poster is visited by an examiner, you will be allocated 5 minutes to present your poster in an informal presentation. You should begin by describing the background, then the experiments and results, and a short conclusion highlighting the main findings and use of technology. Assessors will then ask questions for 5 minutes - you should be prepared to answer questions based on the whole paper including specific questions about the technology used, experimental details and controls, results, how it fits into the overall scientific story on the poster and the wider literature.

Coursework Component - Statistics Module (7.5%)

This task will involve students participating in a series of workshops on biostatistics theory and practice. **All students must bring their own device to each class**. Assessment will be by MCQ test and written assignment.

Written Critique Exam (7.5%)

Due Date: Tuesday 11th June, 2019, from 12pm – 4pm

Details of task:

Students will be presented with a number of published research articles that have had their titles and abstracts removed. The articles will be unrelated to each student's specific research project. A

number of articles will be provided to accommodate differing student backgrounds and interests. Students will be given one hour of reading time in which to peruse the articles and decide which one to critique.

After you have made your choice of paper, you will be asked to do the following:

- Provide a title that reflects the content of the paper
- Provide a 200 word abstract highlighting the major findings and significance of the paper;
- Write a critique by answering the designated questions applicable to the paper you have chosen;
- Provide details of subsequent studies that would further the research in the paper.

You will have one-hour reading time followed by three hours to complete the exam.

How should a written critique be approached?

Assume that the paper is still unpublished and has been sent to you by the editor of a journal to review. Do not be fazed by the fore knowledge that the paper has already been peer-reviewed (presumably by experts in the field) and subjected to tight editorial scrutiny. There are still many opportunities for critical appraisal of many published works.

Some questions that you should consider are:

1. Does the introduction to the paper clearly indicate the basis on which the ideas for the experiment(s) were developed?
2. Is there a clear hypothesis to be tested and are the aims clearly outlined?
3. Does the study address the aims adequately?
4. Are the methods clearly explained? Could you easily repeat the experiments using the information on animals, experimental planning and techniques?
5. Are the results concisely described?
6. Are the statistical methods appropriate?
7. Does the discussion cover all the important aspects of the results and in particular place the data from the study within the context of previous studies?

This is only a guide to the types of critical questions you should be addressing and is not exhaustive!

You need to write a brief background to the paper for context, explain the methods in enough detail to provide an understanding of experimental plan outline the most important aspects of the results and explain why the data is important. A critical review does not mean that you need to be negative about the study. Point out where you think the science was good and why, but also, where appropriate, indicate any shortcomings of the study.

It is advised that you practise writing a critique. Several articles will be placed on the Moodle site for students to use as practise. Sample answers are also posted on the site. Try to set time limits to make the exercise realistic.

The Thesis

Due Date: Thursday 17th October, 2019 by 4:00pm

Submission

SUBMIT an ELECTRONIC COPY on Moodle.

All research data, including laboratory notebooks, must be returned to a student's supervisor before submission of the thesis. Any student found to be in breach of these regulations will have their results withheld until the matter is resolved and further penalties may also apply.

Details of task

The Honours thesis is the culmination of all the work that you have done during the year in your research project. It is one of three avenues in the course that provides you with an opportunity to display and discuss your research achievements. Honours students should achieve, in quality and quantity, a high standard of work that is publishable in a reputable, peer-reviewed journal. Flick through a previous Honours thesis to get a clear idea of what is expected in terms of content and presentation.

When to finish your research?

Students are advised to try to finish their experimental work at least one month before the thesis submission date. It is important that you let your supervisor read and comment on each section of your thesis and provide feedback, not only on content but also on format. It is important that you ensure that your supervisor has sufficient time to comment on your section drafts well in advance of that date, several weeks before submission should be allowed. Of course, syntax, corrections, and typing are the responsibility of the student. Students are advised to discuss the format of their thesis and the proposed content with their supervisor well before commencing writing. Additional advice may be sought from the Course Coordinator.

Thesis structure and content

The thesis should contain the following sections:

- A title page (Thesis length should be stated on this page)
- Declaration. A confirmation of the originality of the work and a clear indication of any significant practical input into the research by others.
- Acknowledgments
- Abstract (300 words, 11 point Arial font, double-spaced)
- Introduction (modified literature review to suit the project and results obtained, aims and hypothesis tested). Generally, this would be shorter than the literature review that was written at the beginning of the year and would begin with an explanation of the research problem.
- Materials and Methods
- Results
- Discussion
- Conclusions and Future Directions
- Bibliography
- Appendices

Abstract

The abstract should be no more than 300 words and should be broken up into 5 sections: Introduction, Objective, Methods, Results and Conclusion. The Introduction should be very brief and in 2-3 sentences, should summarise the state of the literature and where the gap in knowledge is. The Objective of the research project should be clearly stated; the Methods should be indicated briefly (unless your project was biased heavily towards development and testing of methodology); the Results should be concisely presented and their significance clearly indicated. The Conclusion should be a succinct summary of the outcomes of your research.

Introduction

This section should give a comprehensive background to the research project, the reason(s) for undertaking the study and its significance. A clear statement is required of the problem(s) under investigation and this should be supported by references to all the pertinent published information on the subject. Most of this information will have already been incorporated into the literature review you completed earlier in the year. In most cases your literature review can be included in the thesis

with some revisions to ensure that the content is still relevant. Any relevant new information, which has been published on your thesis topic, should be included. In some situations, however, because of changes in the direction of your project during the year, it may be necessary to restructure your literature review to reflect the new direction(s) of your research.

Materials and methods

All the methods used in the study need to be described in detail and particular attention should be given to any specific innovations or any changes that have been made to standard methods or techniques. A strong justification should be provided for the research methodology employed. Explain clearly the animals used, the experimental plan - especially the controls and why they were selected - and explain the rationale for the particular procedures that you have chosen. Particular attention to the methods selected for data analysis is required. The statistical methods used to analyse the data needs to be explained and the values provided.

Results

The results should be concise and focussed on the tables, figures and diagrams, which provide the detail of your research findings. Do not discuss your results in this section (the discussion is obviously the place for this!). In order for your results to have the most impact on the reader, careful planning and display of the data is needed and this should be done in collaboration with your supervisor. You are required to prepare all of your own tables and diagrams if possible. If for some reason (e.g. complexity) you need assistance from another person, acknowledge this assistance in your thesis.

Tables require a concise but informative heading and should be understandable without reference to the text.

Figures and diagrams should be clearly presented and be supported by a caption situated below or on a facing page. **Figure legends** should be standalone and adequately describe the figure independently of the main text and should start with a title that describes the figure clearly and succinctly indicating the major finding that can be drawn from the data in the figure. Do not include detailed results in your legend. Any symbols, lines, patterns, colours, abbreviations, error bars or scale bars need to be defined and described in the legend. Figure legends should also state the number of independent data points or the number of times the experiment was repeated. The statistical significance of the data presented in tables and figures should be clearly indicated using standard methods and include the statistical test used and specifically statistical parameters. Note: all photographs or diagrams should include an indication of scale or magnification.

Statistics

A small practical point - if expert advice on statistical analysis is required it is advisable to do this during the critical planning of the project, rather than at the end of the year. Students will attend a compulsory assessable statistics course as part of the Common Core Component (BMH4200) at the beginning of the year.

Discussion

This section should be used to synthesise the results of your study and relate them to the findings of previously published studies. The discussion provides an opportunity for you to demonstrate your intellectual capacity for originality, logic and critical analysis. It is important that you provide a clear interpretation of the data and explain the significance of the findings in the context of previous studies. It is also appropriate to indicate in this section what you believe the important future directions should be in this area of research. Be objective and constructive in your interpretations and conclusions.

Bibliography

Students may use any referencing system. Keep references to a minimum and cite only those, which are directly relevant. Try not to cite too many reviews or textbooks. Remember that your work is original research and therefore most of your reading and citations should be of other original works. The easiest and most efficient method of maintaining an updated list of your bibliography is using the program EndNote. Tutorials on how to use EndNote will be conducted at the beginning of the year. For further information, please contact the Faculty of Medicine, Nursing and Health Sciences liaison for the Alfred hospital, Cassandra Freeman (Cassandra.Freeman@monash.edu) from the Hargrave-Andrews Library.

Appendices

Appendices should be kept to a minimum. You may include information on methods in an appendix but it is preferable, if possible, to cite standard methodology to an appropriate published journal article. Any method you have developed or modified should be included in your methods section. It is acceptable to provide tables of data in appendices for material that is presented graphically in the text.

Role of your supervisor in thesis preparation

Supervisors are expected to participate with students in the design of experiments, other data collection methods and the interpretation of data. Supervisors should interact freely with their students in the planning of the thesis. Note that submission of Honours work in the format of a journal article is not acceptable. Students and supervisors should plan together the layout of the thesis, the disposition of figures, etc. They should advise and discuss, but leave to the student, decisions about data interpretation, etc. Students should then prepare a first draft. Students may submit one draft only of the thesis for comment by their supervisor(s). The supervisor can edit a hard copy of this first draft but only very broadly. Grammar, spelling corrections, and other typographical errors are the responsibility of the student. Supervisors should NOT CIRCULATE draft versions of the thesis to staff, other than the co-supervisor, for detailed comments. Supervisors and co-supervisors must comment on exactly the same version of the thesis. Supervisors should never write any part of the thesis themselves. **Supervisors are not permitted to edit the thesis draft using track changes**. This is important since the thesis must be original work that is clearly identified as the student's effort and not that of the supervisor. Note that drafts cannot be circulated by the student to any other staff members, postdoctoral fellows, research assistants or to postgraduate students.

Tips and tricks for thesis preparation

1. **Always** backup all your work. Always save any alteration that you make to your thesis draft. Computer CRASHES cannot be used as grounds for seeking an extension. Avoid the last minute rush in case of hardware/software faults and human exhaustion.
2. Use your spell check and grammar check programs (or for scientific/medical reference the internet dictionary at: www.dictionary.com). Avail yourself of them if you have any doubt of your capabilities. Assessors get very upset when they see too many spelling and grammatical errors.
3. Figures and tables must be referenced from the text and must be appropriately captioned.
4. Failure to include cited references in the bibliography is an unacceptable error.
5. All information, which is not your own work, must be referenced to its source.
6. Quality rather than quantity is the measure of achievement!

Journal articles arising from Honours project

Submission of Honours work in the format of the journal article manuscript is not acceptable. If you are lucky enough to have produced results that can be written up as a journal article, you cannot

submit the journal article manuscript as your thesis; i.e. you need to follow thesis guidelines as outlined and after submission you may then harass your supervisor about a manuscript!

Extent of the work included in your thesis

Only work undertaken during your Honours degree year (February – October) can be included in your thesis for examination. Work conducted prior to the start of the Honours degree cannot be included in your thesis (e.g. work undertaken during a Summer Vacation Scholarship period or as part of a "Research in Action" unit).

What to do if all your results are negative?

Do not panic. While it is obviously better for your esteem and your thesis to be able to report on an excellent set of data, it sometimes happens, for reasons not of your own making, that well-conceived and executed studies produce negative results, despite your best efforts. If you find yourself in this situation, it is important that you provide a convincing discussion of why the results were negative (obviously, lack of diligence or care is not a good defence). Give a logical appraisal of how the protocols and experimental approach may be changed in a future study to achieve your original aims. If your project is not working, see the Honours Coordinator as soon as possible.

Final check of your thesis before submission

The following questions are provided to assist you before submitting your thesis. This is what each assessor will be looking for:

Organisation and presentation

- Are the ideas in the study lucid, clearly expressed and well presented?
- Are all graphs, tables and diagrams clearly presented and legible and supported by a detailed heading or caption? Make sure the font size in Figures is large enough to read on a printed copy as many examiners will read a printed version of your thesis.
- Is the thesis layout and general presentation well structured?
- Is the bibliography complete and comprehensive, and cited correctly?
- Has the student satisfactorily completed all the requirements for the thesis?
- Does the thesis contain negligible typographical and grammatical errors?

Abstract

- Does the abstract clearly summarise all the important findings of the project?
- Do the conclusions provided give an accurate interpretation of the results?

Understanding of the topic

- Are the aims of the study and the hypotheses that were tested by the experimental design clearly defined?
- Does the background clearly give context and explain the study?

Methodology and experimental design

- Are the methods sound and used appropriately, and is the experimental strategy appropriate?
- Has the student provided sufficient details of the methods used?
- Have all relevant procedures been considered in the experimental design?
- How innovative or novel is the design of the experiments?

Data collection, treatment and analysis

- Are the results relevant and have they been displayed in a clear and appropriate manner?
- Does the text of the results section(s) draw the reader's attention to the important features of the data?

Discussion

- Has the candidate demonstrated the capacity to interpret the results in a clear, effective,

critical and logical manner?
- Has the student demonstrated the capacity for intellectual originality?
- Is the discussion systematic and relevant and has the significance of the findings been made clear?
- Has the student explained the limitations of the study?
- Has the student suggested future directions for the research and are they appropriate?

Word limit
10,000 - 15,000 maximum

Presentation requirements: Minimum 11 point Arial font. Double-spacing.

Please note that late submission will incur a penalty of 5% per day or part thereof. This is to ensure fairness to all involved.

Assessment of the Honours Thesis or What are the examiners looking for?

All Honours theses will be assessed by two examiners, selected from the pool of supervisors and academic scientists from the departments and institutes of Alfred Research Alliance. An additional examiner will be enlisted if marks differ widely. No supervisor is to be involved in the examination of his/her student's thesis. If appropriate, comments on the thesis by the supervisor may be requested by the chief examiner.

Criteria for Marking:
The Honours thesis assessment is based on the following criteria:

(a) A clear understanding of the research topic and the relevant background literature,
(b) A logical sequence of experiments from which a set of appropriate conclusions are drawn,
(c) Demonstrated skills in and understanding of experimental planning and design, experimental procedures and equipment used in the project,
(d) Placement of the findings of the research project into an accurate and appropriate scientific context,
(e) A thesis that is well prepared and organised, and presented clearly and concisely.

A guide to Honours Grades for the thesis
FIRST CLASS (H1 Upper) - This grade is for an outstanding thesis that achieves a mark of 90% or above
FIRST CLASS (H1 Lower) - This grade is for an excellent thesis that achieves a mark between 80% and 89%.
SECOND CLASS (H2A) - This grade is for a very good thesis that achieves a mark between 70% and 79%.
SECOND CLASS (H2B) - This grade is for a good thesis that achieves a mark between 60% and 69%.
THIRD CLASS (H3) - For a satisfactory thesis, that achieves a mark between 50% and 59%.
FAILED (F) - Very seldom. For an unsatisfactory thesis which does not achieve at least 50%.

The BSc Honours thesis rubric is on page 37.

Reconciling mark discrepancies
If the difference between the two examiners marks is less than 10%, the final mark will be the mean of the two marks.

If the difference is greater than 10%, the following actions shall be taken:

1. The markers will seek to reduce the difference to less than 10% by discussing their reasons for awarding their marks. If this succeeds, the mark awarded shall be the mean of the two.
2. If the above procedure does not result in sufficient agreement (i.e. the difference remains

greater than 10% but less than 20%), a third marker shall be appointed

- If the three marks each fall within 8% of the nearest mark, the mean of the three marks is used to calculate the final mark.
- If one of the three marks falls >8% from the nearest mark, after consideration of the points outlined below, the outlier mark may be excluded and the aligned two marks averaged to calculate the final mark. Discussion with outlier assessors about the appropriate awarding of marks is encouraged where possible.
  - Examining written comments for fairness and accuracy and/or
  - Considering the experience and tendency of the markers for "hard" or "easy" marking at other times, and/or
  - Using any other information that may assist in determining the reason for the unacceptably large difference

3. In cases of irreconcilable disagreement, a fourth examiner will be appointed

Supervisor's report

- Supervisors may be requested to submit a truthful written assessment of the thesis and/or student.

Final Research Seminar

Due Date: Starts Monday 21st October, 2019.

You will give a research seminar after submission of your thesis. This will be for 15 minutes plus 5 minutes (extra) for questions and discussion. Students will be assessed on their presentation of data, their ability to communicate this clearly to the audience and participation in questions and discussion. An assessment sheet follows for your information and reference, which provides information on areas that make up a successful presentation. Senior scientists and academics within the audience will conduct the assessment. When preparing your talk, do not assume that everyone in the audience is an expert in your field.

Note that an abstract of 300 words must be submitted on-line at the same time as your Honours thesis submission. The abstract should be identical to the abstract included in your Honours thesis. This information will be included in a presentation booklet that is made available to examiners before the Research Seminar sessions.

Power Point is the preferred mode of presentation. **Presentations should be saved on a USB stick and tested before the day.** You should ensure that you give yourself plenty of time to prepare and practice your talks with other students or people from your research laboratory. You should also resist the temptation to make your slides busy or distracting with too much text. Assessors will be looking for clarity and the ability to read and understand the information being presented. The use of animations can make a presentation easier to follow. Presentations will be timed and the 15 minute allocation strictly adhered to.

Thesis Defence

This is an opportunity for examiners to discuss specific or general issues with the student. At the start of the thesis defence, each student will be asked to provide a very brief 1 min summary of the results obtained in their Honours year. They will then be questioned by their two thesis examiners (and the Chief Examiner) for 10-15 minutes. If the Chief Examiner is one of the thesis examiners, then another

staff member will be enlisted so that the number of examiners is three. Questioning will take place in a round table environment. Supervisors are encouraged to be present in the room but may not participate.

After questioning has finished, the student is asked to leave the room briefly, whereupon the supervisors are asked their opinion of the student's progress and the grade that they would consider fair. Special consideration issues are raised with the supervisors at this time.

At this point, the supervisors leave the examination and the student is invited back into the room. The student is then given the opportunity to discuss any problems they encountered during the year, including those related to supervision - this will be in strict confidence. Any helpful comments may be passed onto the supervisor at the discretion of the Chief Examiner. At this time, any special consideration issues will be discussed.

After the student has left the room, the examiners will discuss the oral defence of the student and finalise their thesis marks.

Final Marks

After the last oral examination, the Board of Examiners will reconvene to review the rank order and overall marks.

There will be a "cooling-off" period of 1 day during which time theses can be re-examined by any, or all, of the Board of Examiners and any problems discussed including dissatisfaction with the supervisor. The marks will then be finalised by the Board of Examiners. After finalising, the marks there will be no more discussion of the matter.

The rank order used for PhD scholarship allocation will take into consideration your final Honours result, your rank in the cohort, and your performance in your previous undergraduate years.

EXAMPLES OF ASSESSMENT SHEETS

Criteria for marking of Literature review

Section	H1 Upper (90-100)	H1 Lower (80-89)	H2A (70-79)	H2B (60-69)	H3 (50-59)	Fail (≤ 50)
Comprehension of topic Out of 20 marks	An outstanding piece of work. The student demonstrates that they have a comprehensive understanding of the relevant literature and shows an outstanding synthesis of factual and conceptual components.	An excellent piece of work. The student demonstrates a high-level of understanding of the relevant literature.	A good piece of work. The student shows a firm grasp of the majority of the relevant literature.	An adequate piece of work, which shows evidence of background reading.	Argument obscure, weak or unbalanced. Evidence of only partial comprehension of the topic.	There is little evidence of comprehension of the topic.
Coverage of topic Out of 20 marks	The background is highly focussed, clear and detailed, but concise. All concepts are highly integrated. Where appropriate, strengths, weaknesses and discrepancies in the literature are highlighted and explained. Work contains extensive and appropriate reference to original articles. For a systematic review, the search strategy used is justified and explained precisely.	The background is focussed, clear and detailed. All concepts are well-linked. Where appropriate, discrepancies in the literature are highlighted and explained. Work contains thorough and appropriate reference to original articles . For a systematic review, the search strategy used is explained very clearly.	Evidence of fairly extensive background reading with appropriate reference to original articles. For a systematic review, the search strategy used is explained clearly.	Clear links between aim and literature sometimes included. For systematic reviews, the search strategy is included, but poorly explained.	Much of the basic information is missing. For systematic reviews, the search strategy is absent or very poorly explained . Links between aims and literature are missing.	Coverage of the literature is inadequate with little information and no critical review. For systematic reviews, no search strategy is included.

Section	H1 Upper (90-100)	H1 Lower (80-89)	H2A (70-79)	H2B (60-69)	H3 (50-59)	Fail (≤ 50)
Analysis and integration Out of 20 marks	Hypothesis(es) or research question and aim(s) are clearly stated. There is excellent integration of the aim(s) of the study and the literature.	Hypothesis(es) or research question and aim(s) are clearly stated. There is very good integration of the aim(s) of the study and the literature.	Hypothesis(es) or research question and aim(s) are clearly stated. There is a clear link between the aim(s) of the study and the literature.	Hypothesis or research question does not match well with the aim or methods to be used.	Hypothesis/research question is poorly described, poorly justified and does not match with aims or methods.	No aim, hypothesis, or research question provided.
Originality and critical thought Out of 20 marks	Shows outstanding insight and an ability to structure and synthesise published material with research project. The candidate could be expected to achieve no more.	A commendable degree of academic originality.	Evaluative, critical, and analytical skills present but not highly developed. No obvious weaknesses except it lacks originality.	Some understanding, reflection, and critical thought. Partially successful attempt to use relevant examples and facts but a lack of originality.	Partially successful attempt to use relevant examples and fact and minimal reflection and critical thought.	Largely irrelevant. Little or no understanding.
Organisation and presentation Out of 20 marks	Well structured, logical layout with headings and subheadings to emphasize ideas. Outstanding quality of visual aids (figures, tables, graphs). Negligible typographical and grammatical errors. References are cited correctly in the text and correctly formatted in the reference list.	Logical layout with headings and subheadings to emphasize ideas. Excellent quality of visual aids (figures, tables, graphs). Very few typographical and grammatical errors. References are cited correctly in the text and correctly formatted in the reference list.	Acceptable layout with headings and good quality visual aids. Some typographical and grammatical errors. References are mostly cited correctly in the text and generally correctly formatted in the reference list.	Layout and general presentation lacks structure. Reasonable use of visual aids. Typographical and grammatical errors are common. References are mostly cited correctly in the text and generally correctly formatted in the reference list.	Layout and general presentation makes it cumbersome and difficult to read. Frequent typographical, grammatical, citation and referencing errors.	Literature review is poorly organised and difficult to read. Very poor grammar and spelling. Figures badly presented. Little citation or inaccurate referencing. References primarily refer to review articles.

Literature Review Assessment Sheet

Student Name:	
Title of thesis:	

Please provide a mark in each row	
1. Comprehension of Topic	**20 marks**
Please provide feedback to the student here. Justify your mark using terminology from the rubric.	
2. Coverage of Topic	**20 marks**
Please provide feedback to the student here. Justify your mark using terminology from the rubric.	
3. Analysis and Integration	**20 marks**
Please provide feedback to the student here. Justify your mark using terminology from the rubric.	
4. Originality and Critical Thought	**20 marks**
Please provide feedback to the student here. Justify your mark using terminology from the rubric.	
5. Organisation and Presentation	**20 marks**
Please provide feedback to the student here. Justify your mark using terminology from the rubric.	
Total numerical mark	**/100**
Is the lit review within the word limit? (4,000 words ± 10%; refer to guidelines for exclusions)	**Y / N**

90-100: H1 upper	70-79: H2A	50-59: H3
80-89: H1 lower	60-69: H2B	<50: Fail

Examiner's name (please print):	Date:
Examiner's signature:	Contact phone number:
Examiner's email address:	

Seminar 1 – Literature Review Assessment Sheet

Student Name:	
Title of thesis:	

Rating – put mark in appropriate box (marks in parentheses will direct you)	HD	D	C	P	N
1. Command of expression and quality of presentation ***(10 marks available)***	(8 – 10)	(7 - 7.5)	(6 – 6.5)	(5 – 5.5)	(0 – 4.5)
2. Evaluation and integration of existing literature ***(20 marks available)***	(16 – 20)	(14 – 15)	(12 – 13)	(10 – 11)	(0 – 9)
3. Clearly stated aims and rationale for project ***(10 marks available)***	(8 – 10)	(7 - 7.5)	(6 – 6.5)	(5 – 5.5)	(0 – 4.5)
4. Understanding of research methods, attention to critical design issues in the execution of project ***(20 marks available)***	(16 – 20)	(14 – 15)	(12 – 13)	(10 – 11)	(0 – 9)
5. Significant insights and original thoughts dealing with the critical issues ***(20 marks available)***	(16 – 20)	(14 – 15)	(12 – 13)	(10 – 11)	(0 – 9)
6. Response to questions ***(20 marks available)***	(16 – 20)	(14 – 15)	(12 – 13)	(10 – 11)	(0 – 9)
SUB TOTALS					
Total of 100 marks available					

Comments:

Please keep feedback above this line

Examiner's name: _____ Examiner's Signature: _____

Discipline specific component – Poster construction and quality

Student Name:	

	Criteria	HD	D	C	P	N
Introduction *(10 marks available)*	A clear and concise description of the research area is outlined. The scientific question/s leading to the research and/or hypothesis and/or aims is posed.	(8 - 10)	(7 – 7.5	(6 – 6.5)	(5 – 5.5)	(0 – 4.5)
Results / Figures *(10 marks available)*	The flow of results is logical and presented in a clear and easy to read manner. The figures are accompanied by clear and concise figure legends. An appropriate sentence or two of methods has been provided in a methods panel or figure legend. A clear and concise take home message for each figure is offered.	(8 - 10)	(7 – 7.5	(6 – 6.5)	(5 – 5.5)	(0 – 4.5)
Discussion and Conclusion *(20 marks available)*	A clear, concise and accurate interpretation of the results in the context of the broader literature and current paradigms is presented. A clear and concise overall description of the results, including their significance, is presented. A clear and concise description of future directions has been presented which may include clinical implications, and unresolved questions/further experiments.	(16 - 20)	(14 – 15	(12 – 13)	(10 – 11)	(0 – 9)
Visual presentation of the poster and quality *(10 marks available)*	All the following sections are present: Title, authors, Institutional affiliation/logo, Introduction, Methods, Results, Discussion, Conclusion, References, Acknowledgements The flow of the poster is evident without requiring guidance by the presenter. The poster is visually appealing (uncluttered, good use of space and colour, good balance between text and figures) Amount of text is appropriate for a poster and easy to read from a distance of ~1-2 metres.	(8 - 10)	(7 – 7.5	(6 – 6.5)	(5 – 5.5)	(0 – 4.5)
Total of 50 marks available					**Total**	**/50**

Discipline specific component – Poster – Oral presentation

	Criteria	HD	D	C	P	N
Presentation of poster and response to questions	1. The context of the research is clearly articulated. *(10 marks available)*	(8 - 10)	(7 – 7.5	(6 – 6.5)	(5 – 5.5)	(0 – 4.5)
	2. The key features of the study: methods, controls, results, and discussion are clearly articulated. *(10 marks available)*	(8 - 10)	(7 – 7.5	(6 – 6.5)	(5 – 5.5)	(0 – 4.5)
	3. A clear and concise conclusion is articulated. *(10 marks available)*	(8 - 10)	(7 – 7.5	(6 – 6.5)	(5 – 5.5)	(0 – 4.5)
	4. Answers to questions have been carefully considered and are well expressed. *(20 marks available)*	(16 - 20)	(14 – 15	(12 – 13)	(10 – 11)	(0 – 9)
Total of 50 marks available					**Total**	**/50**

Comments:

Please keep feedback above this line

Examiner's name (please print):	Date:
Examiner's signature:	Contact phone number:
Examiner's email address:	

Criteria for marking of Thesis

Section	Criteria	H1 Upper (90-100)	H1 Lower (80-89)	H2A (70-79)	H2B (60-69)	H3 (50-59)	Fail (≤ 50)
Background, review of the literature and rationale for the study Marked out of 10	Is the research problem clearly explained and in context?	An outstanding piece of work. Demonstrates a comprehensive understanding of the relevant literature and an outstanding synthesis of the factual and conceptual components. The background is highly focussed, clear, detailed and concise.	An excellent piece of work. Demonstrates a high-level of understanding of the relevant literature. The concepts are well linked. The background is focussed, clear and detailed.	A very good piece of work. Demonstrates a firm grasp of the majority of the relevant literature. The background is generally clear but could have included greater depth, detail, context and perspective.	Background not well focussed or concise, and it lacks completeness and depth.	Much of the basic information is missing. Links between aims and literature are missing.	The work is poorly written. There is a complete lack of structure and no logical argument.
	Are the strengths , weaknesses and discrepancies in the literature clearly explained and reference made to original articles?	Where appropriate, strengths, weaknesses and discrepancies in the literature are highlighted and explained. Contains extensive and appropriate reference to original articles.	Where appropriate, discrepancies in the literature are highlighted and explained. Contains thorough and appropriate reference to original articles.	Contains appropriate reference to original articles.	Referencing is limited with limited evidence of background reading.	Referencing is limited with limited evidence of background reading.	Coverage of the literature is inadequate with little information and no critical review. Serious misunderstanding of key concepts and issues. References primarily to review articles.
	Are the aims of the student's experimental program explained clearly and simply?	Hypothesis (or research question) and aim(s) are clearly stated. There is a very clear link between the aim(s) of the study and the literature.	Hypothesis (or research question) and aim(s) are clearly stated. There is a clear link between the aim(s) of the study and the literature.	Hypothesis (or research question) and aim(s) are clearly stated. There is a clear link between the aim(s) of the study and the literature.	Clear links between aim and literature sometimes included. Hypothesis (or research question) does not match well with the aims or methods used.	Hypothesis (or research question) poorly described, poorly justified, and do not match with aims or methods.	Aim/hypothesis (or research question) not provided or not clear.

Section	Criteria	H1 Upper (90-100)	H1 Lower (80-89)	H2A (70-79)	H2B (60-69)	H3 (50-59)	Fail (≤ 50)
Methods Marked out of 10	Are research methods clearly explained and well justified, including statistical methods?	Sophisticated understanding of research design and methods. The design is rigorous and methods explained with outstanding clarity and detail. A strong justification is provided for the research design and/or methodology, including statistical methods.	Excellent understanding of research design and methods. The design is good and the methods explained very clearly and with sufficient detail to allow replication of the study. A justification is provided for the research design and/or methodology, including statistical methods.	Clear description of the methods and analysis. Minor details are missing. No, or little justification, for the research design and/or methodology, including statistical methods.	The description of the methods and analyses are superficial. No, justification for the research design and/or methodology, including statistical methods.	Description of research design, methods and analysis is unclear and lacks major details, including for statistical methods.	Knowledge of research methods is lacking and the description of research design and methods, including statistical methods is inadequate.
	For Qualitative and mixed method theses: -is there sufficient information about qualitative methods, when employed?	For qualitative and mixed methods theses: - a thorough explanation of how categories and themes were derived and checked and how the qualitative and quantitative methods used were formulated to inform each other. - a critical reflection of the role of the researcher is included	For qualitative and mixed methods theses: - an explanation of how categories and themes were derived and checked and how the qualitative and quantitative methods used were formulated to inform each other.	For qualitative and mixed methods theses: - the justification of methods is described but the justification of how the methods inform each other is simplistic.	For qualitative and mixed methods theses: - methods are described briefly but justification of how the methods inform each other is poorly conceptualised or missing.	For qualitative and mixed methods theses: - it would be difficult to replicate much of the study.	For qualitative and mixed methods theses: -it would be impossible for others to replicate the study.

Section	Criteria	H1 Upper (90-100)	H1 Lower (80-89)	H2A (70-79)	H2B (60-69)	H3 (50-59)	Fail (≤ 50)
Findings / Results Marked out of 40	Are the data / research findings presented in a clear, logical way? Is the data relevant, intelligible and accurate?	Outstanding presentation of data or research findings. Only relevant findings are presented. The selection of the data or findings presented, are described.	Excellent presentation of data or research findings. Data is relevant. Presentation of data/findings are arranged logically and are intelligible and accurate.	Clear presentation of results.	Data selection not described and data reported very briefly.	Data reporting brief and poorly constructed.	Weak, lacking evidence of preparation and evaluation and significant concerns about accuracy.
	Are tables and figures well used, intelligible and accurate and are figures presented with stand-alone legends?	Presentation of data/findings is always arranged logically and is intelligible and accurate. Sophisticated usage of tables, figures, graphs (where appropriate), to present important findings, with stand-alone legends.	Excellent usage of tables, graphs, figures (where appropriate) with stand-alone legends.	Data selection and reporting logical but lacks important detail in the text and/or in tables and figures.	Presentation of figures and tables is adequate but figures and tables are unable to be read alone without reference to text.	Missing details in figures / tables; absence of stand-alone legends and inconsistent presentation of data (e.g. significant figures).	Poor presentation of figures and figures lack adequate explanation.
	Does the text bring the salient points to the attention of the reader?	The text always accurately describes the findings in a logical, clear and concise manner. All salient points are included. Concerns about the credibility of findings are raised: e.g. respondent validation, co-coding, poor quality samples or reagents, equipment malfunction etc. Contradictory data is indicated and highlighted.	The text always accurately describes the findings in a clear manner. Most salient points are included. Concerns about the credibility of findings are raised. Contradictory data is indicated.	Most of the time the text accurately describes the findings but some details are missing. Only some salient points are brought to the attention of the reader. If relevant, credibility of data raised but detail not included.	The text does not always accurately describe the findings and does not bring the salient points to the attention of the reader. No discussion of credibility issues.	The text is confusing and does not accurately describe the findings. In addition, it does not bring the salient points to the attention of the reader. Confusion or errors in findings present.	The description of the findings in the text is poor and not clear to the reader.

Section	Criteria	H1 Upper (90-100)	H1 Lower (80-89)	H2A (70-79)	H2B (60-69)	H3 (50-59)	Fail (≤ 50)
Discussion and Conclusions Marked out of 30	Has the student demonstrated an ability to think critically about their own work?	Outstanding ability to critically appraise his/her own work. Comprehensive understanding of the importance of the findings in relation to the literature in the field without overstating its contribution. Alternative explanations that show insight, critical thinking and are within the bounds of possibility have been described.	Excellent ability to critically appraise his/her own work. Strong understanding of the importance of the findings in the context of the literature in the field. Alternative explanations that show critical thinking and are within the bounds of possibility have been described.	Discussion clear and logical. Most major findings discussed. Evidence of a critical approach and general understanding of the contribution of the study to existing knowledge.	Interpretation of findings is adequate but limited. There is little integration of the findings with other literature in the field. Alternative explanations lack insight and critical thinking.	Discussion is superficial and does not extend beyond results to show an understanding of how their work has extended the field. There may be a major misalignment between data and conclusions.	No evidence of interpretation of the findings or critical thinking. Major gaps or inaccuracies are present.
	Have limitations and future directions, as well as the role and transferability of research findings been explored?	Limitations, future directions and implications (including transferability to other research areas/ populations) are comprehensive. Speculations are comprehensive but not excessive.	The main limitations, future directions and implications are discussed.	Conclusions supported by the data are appropriate but only contain limited implications for the future. The limitations of the study may not be comprehensively described	Few or no limitations or future directions identified.	No limitations and/or no future directions.	No limitations and no future directions described.
	Does the conclusion concisely and accurately summarise the key findings and their significance?	The conclusion concisely and accurately summarises the key findings and their significance.	The conclusion concisely and accurately summarises the key findings and their significance.	Conclusions are concisely and accurately summarised but only a general understanding of the significance of study findings.	Conclusions are relevant but lacking in comprehensiveness. The significance of findings are not fully appreciated.	Conclusions are overextended and somewhat speculative or the significance of findings are not fully appreciated.	No conclusion provided or irrelevant to findings.

Section	Criteria	H1 Upper (90-100)	H1 Lower (80-89)	H2A (70-79)	H2B (60-69)	H3 (50-59)	Fail (≤ 50)
Organisation and presentation Marked out of 10	Has thought been given to layout and general presentation (within the constraints of guidelines)?	Outstanding structure and logical layout with headings and subheadings to emphasize ideas.	Logical layout with headings and subheadings to emphasize ideas.	Acceptable layout with headings and good quality visual aids.	Layout and general presentation of thesis is lacking structure. Visual aids are of little benefit.	Layout and general presentation of thesis makes it cumbersome and difficult to read or follow.	Thesis is very poorly organised and difficult to read.
	Quality of the figures and other visual aids.	Outstanding quality of visual aids throughout (figures, tables, graphs) with stand-alone legends and no labelling errors.	Excellent quality of visual aids (figures, tables, graphs) with stand-alone legends, no labelling errors.	Good quality of visual aids (figures tables and graphs) with stand-alone legends.	Visual aids are adequately presented but some labelling and other errors.	Visual aids contain errors and no stand-alone legends.	Figures (if present) are poorly presented.
	Are there typographical or grammatical errors?	Negligible typographical and grammatical errors.	Very few typographical and grammatical errors.	Some typographical and grammatical errors.	Typographical and grammatical errors are common.	Frequent typographical, grammatical, citation.	Very poor grammar and spelling.
	Is the reference list or bibliography appropriately presented?	References are cited correctly in the text and correctly formatted in the reference list.	References are cited correctly in the text and correctly formatted in the reference list.	References are mostly cited correctly in the text and generally correctly formatted in the reference list.	References are mostly cited correctly in the text and generally correctly formatted in the reference list.	Frequent referencing errors.	Little citation or consistent inaccurate referencing.

Thesis Assessment Sheet

Student Name:	
Title of thesis:	

Please provide a mark in each row	
1. Introduction and statement of the problem	**10 marks**
Please provide feedback to the student here. Justify your mark using terminology from the rubric.	
2. Methodology	**10 marks**
Please provide feedback to the student here. Justify your mark using terminology from the rubric.	
3. Results, data treatment and analysis	**40 marks**
Please provide feedback to the student here. Justify your mark using terminology from the rubric.	
4. Discussion and Conclusions	**30 marks**
Please provide feedback to the student here. Justify your mark using terminology from the rubric.	
5. Organisation and Presentation	**10 marks**
Please provide feedback to the student here. Justify your mark using terminology from the rubric.	
Total numerical mark	**/100**
Is the thesis within the word limit? (15,000 words; refer to guidelines for exclusions)	**Y / N**

90-100: H1 upper	70-79: H2A	50-59: H3
80-89: H1 lower	60-69: H2B	<50: Fail

Examiner's name (please print):	Date:
Examiner's signature:	Contact phone number:
Examiner's email address:	

Seminar 2 – Final Research Seminar Assessment Sheet

Student Name:	
Title of thesis:	

Rating – put mark in appropriate box (marks in parentheses will direct you)	HD	D	C	P	N
1. Clear introduction and statement of hypothesis ***(10 marks available)***	(8 – 10)	(7 - 7.5)	(6 – 6.5)	(5 – 5.5)	(0 – 4.5)
2. Choice of data analysis, presentation and reporting of results ***(20 marks available)***	(16 – 20)	(14 – 15)	(12 – 13)	(10 – 11)	(0 – 9)
3. Critical evaluation and interpretation of data. ***(20 marks available)***	(16 – 20)	(14 – 15)	(12 – 13)	(10 – 11)	(0 – 9)
4. Conclusions and clear summary that includes a personal opinion. ***(20 marks available)***	(16 – 20)	(14 – 15)	(12 – 13)	(10 – 11)	(0 – 9)
5. Clarity of presentation and quality of audio-visual aids. Command of expression and logical argument. ***(10 marks available)***	(8 – 10)	(7 - 7.5)	(6 – 6.5)	(5 – 5.5)	(0 – 4.5)
6. Response to questions ***(20 marks available)***	(16 – 20)	(14 – 15)	(12 – 13)	(10 – 11)	(0 – 9)
SUB TOTALS					
Total of 100 marks available					

Comments:

Please keep feedback above this line

Examiner's name: _____ Examiner's Signature: _____

ADDITIONAL INFORMATION

Matters of concern

Students are encouraged to discuss any issues that arise during the year with their supervisors or lab colleagues. As mentioned, there are a number of "neutral" people to act in this capacity if the lab option is not viable; this has worked well in the past.

Students are encouraged to discuss any issues that may have significantly affected their progress with their Chief Examiner. If the issues are of a serious nature, then a written application for special consideration should be submitted. Otherwise, at the oral examination the examiners can discuss any matters of concern with the student and the supervisor(s). The supervisor will be consulted at this time or subsequently to determine if they consider the outcome to be fair to the student in question and the other Honours students. This procedure draws upon the experience of several supervisors who have had experience in collectively supervising and assessing numerous Honours student.

Special consideration

If you feel you have reasons for special consideration at any time during the year, please contact the Honours Coordinator to discuss the circumstances and they will be able to guide you. Official application for special consideration requires you to lodge a special consideration application with appropriate documentation, such as medical certificates, which are necessary. The application and your documentation must be sent to ccs.honours@monash.edu. Please note that if you are a Bachelor of Biomedical Science Honours student, you must follow the instructions as outlined in your course information.

An outcome of your application should be available within 5 working days. Please keep in mind that if you have discussed the application with your coordinator prior to submitting your application, it can speed up the processing time required.

Postgraduate scholarship ranking

Postgraduate scholarships have become increasingly competitive as the number of students wishing to continue their studies increases. While you should not become preoccupied with this and let it distract you, your performance in the Honours year will have a major impact on your competitiveness. However, failure to secure a scholarship does not mean you cannot pursue further study. The rank order used for scholarship allocation will take into consideration the final Honours result together with performance in your undergrad years. It should be stressed that students applying for a scholarship should think seriously whether they will take up the scholarship if awarded. For more information, contact the Student Services Officer.

Plagiarism

The issue of plagiarism has become a major matter in recent times and all efforts will be made by staff to ensure that it does not occur. University policy defines plagiarism and cheating as:

Plagiarism – To take and use another person's ideas and or manner of expressing them and to pass them off as one's own by failing to give appropriate acknowledgement.

Cheating – Seeking to obtain an unfair advantage in an examination or in other written or practical work required to be submitted or completed by a student for assessment.

It is your responsibility to ensure that your work cannot be accused of plagiarism or cheating.

Further information can be found on the following university web site:
http://www.monash.edu.au/lls/llonline/writing/general/plagiarism/index.xml

RESEARCH FACILITIES AVAILABLE AT THE CCS

Alfred Research Alliance Animal Services

Summary of the Facility's capabilities

Production, care and husbandry of animals used in approved Animal Ethics procedures; Basic animal training; Animal welfare matters; Technical training and surgical assistance; Support with AEC applications.

Key contact person

General Manager
Debbie.Ramsey@baker.edu.au
Phone: 8532 1484

Veterinary
Fenella.Muntz@bakeridi.edu.au
Phone: 8532 1225

Induction processes to gain facility access

Four steps are required to be completed:

1. Submission of a request for induction;
2. A guided tour of the facility, including specific areas (PAC, MICU);
3. A hands-on training session within the facility;
4. Completion of an online Training Module.

Only after all components are successfully completed will access to the animal house be enabled, as well as access to the AEC submission system and the online animal and service order system known as EthicsAppOrder.

Alfred Research Alliance Flow Cytometry Core Facility

Summary of the Facility's capabilities

Comprehensive training and education, experimental design and protocol guidance in flow cytometry. Sophisticated multi-laser cell-based analysis with nine cell analysis platforms; animal and human cell sorting in PC2 and PC3 environments with four high throughput cell sorters; AMNIS cell imaging flow cytometry.

Key contact person

Mr. Geza Paukovics – Flow Core Facility Manager
geza.paukovics@burnet.edu.au
amrepflow@burnet.edu.au
9282 2246 (desk)
9903 0601 (lab)

Induction processes to gain facility access

Please follow induction-licensing steps as outlined on our Flow website:
https://www.amrepflow.org.au/
https://www.amrepflow.org.au/licensing-steps/introduction-to-the-training-at-amrepflow

Alfred Research Alliance Preclinical Imaging Facility

Summary of the Facility's capabilities

The Alfred Research Alliance Preclinical Imaging Facility houses a Mediso NanoScan PET/CT, FLECT, and a state-of-the-art 9.4 Tesla Bruker MRI. This comprehensive suite of imaging equipment facilitates cutting-edge research into functional and structural studies of disease.

Key contact person

Dr. David Wright
Head of Preclinical Imaging
david.wright@monash.edu
Phone: 9903 0140

Induction processes to gain facility access

All new users must be inducted before they are allowed to enter the facility.

Biostatistics at Alfred Research Alliance

Summary of the Facility's capabilities

Biostatisticians provide consulting and collaborative assistance with: design of experiments, clinical trials and other studies, including sample size calculations and the development of proposals and protocols; statistical analysis and report of results; selection of appropriate bio-statistical methods including the preparation of statistical analysis plans for research projects; bio-statistical appraisal of protocols; research into new or specialised bio-statistical methods; statistical software advice and guidance.

Key contact person

A/Prof John Reynolds
John.Reynolds@monash.edu
Phone: 9903 0641

Induction processes to gain facility access

Limited access for Honours students.

Monash Bioinformatics Platform at Central Clinical School

Summary of the Facility's capabilities	Provides expert training and access to bioinformatics and data analysis capabilities in the genomics and proteomics areas, which includes: Bulk and single cell RNA-seq; Microbiome profiling; ChIP-seq / ATAC-seq; Variant analysis; Methylation analysis; Whole genome assembly and annotation; High throughput profiling of the proteome; Protein structure analysis; Custom analysis pipeline development.
Key contact person (email id/phone number)	Dr Nick Wong Nick.Wong@monash.edu Phone: 9903 0042
Induction processes to gain facility access	Not applicable

Monash Histology Platform

Summary of the Facility's capabilities	Professional histology services as well as access to specialist equipment and consumables for 'do-it-yourself' histology. Equipment includes a dissection and cassetting area, tissue processor, paraffin embedding units, microtomes, H & E staining and a cryostat for frozen sectioning.
Key contact person	Mr Ali Shad Ali.Shad@monash.edu Ph: 9903 0637
Induction Processes	All uses of the Monash Histology Platform are required to pre-register and undergo appropriate training induction. A dedicated Histology Officer is also available to undertake professional histology services and can assist with experimental design.

Monash Micro Imaging @ Alfred Research Alliance

Summary of the Facility's capabilities	Advanced microscopy; Confocal, super resolution; Fluorescence-based imaging; Time-lapse live cell imaging.
Key contact person (email id/phone number)	Stephen Cody Stephen.Cody@monash.edu Ph: 9903 0142
Induction processes to gain facility access	Contact the Facility for induction processes and to discuss and plan your experiments. Imaging is VERY time consuming, don't leave it until the last couple of months, plan early.

Further information

Central Clinical School

Student Services
Monash University
Level 6, Alfred Centre
99 Commercial Road
Melbourne VIC 3004

Telephone: +61 3 9903 0784
Fax: +61 3 9903 0843
Email: ccs.honours@monash.edu
Web: www.med.monash.edu/cecs/education

Social media:


@CCSMonash | twitter.com/CCSMonash


CCS blog|ccsmonash.blogspot.com.au


CCSMonash youtube |www.youtube.com/user/CCSMonash


CCS Google+ page


CCSMonash Pinterest | pinterest.com/CCSMonash/central-clinical-school-monash-university/


Facebook.com/Monash.University