



**UNSW**  
A U S T R A L I A

Faculty of Medicine

School of Medical Sciences

# School of Medical Sciences Honours

SOMS4001 (Full-time)  
SOMS4002 (Part-time)

**(48 UOC)**

SEMESTERS 1 & 2, 2014

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## COURSE OBJECTIVES

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The main aim of the course is to introduce undergraduate students to medical research. Students will undertake a supervised research project that places emphasis on advanced disciplinary knowledge, the use of specialised techniques relevant to their chosen research area, critical thinking and scientific communication. Students also gain experience in scientific writing and oral presentation via the submission of a two written assessments, a literature review and a research manuscript based on substantial independent research activity, two student seminars and a student interview (if needed). The course is also comprised of compulsory attendance at Research Skills seminars (in semester 1), School seminars and Departmental/Research Institute/Lab Group seminars (all year round).

## SoMS HONOURS COMMITTEE

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The SoMS Honours Committee is comprised of representatives of each of the academic disciplines of the School of Medical Sciences. The Honours Committee oversees the assessment and grading of the Honours projects and makes recommendations to the Head of School on final grades and nominations for University Medals. The committee ensures that the assessment of each student is fair and appropriate. The committee is also a source of help and advice for Honours students and their supervisors.

### SoMS Honours Co-ordinator

Dr Andrew Moorhouse

[a.moorhouse@unsw.edu.au](mailto:a.moorhouse@unsw.edu.au)

Room 302, Level 3, Wallace Wurth Building Northwest

Ph: 9385 2575

### SoMS Honours Co-convenor

Dr Karen Gibson

[k.gibson@unsw.edu.au](mailto:k.gibson@unsw.edu.au)

Room 315, Level 3, Wallace Wurth Building Northwest

Ph: 9385 3650

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Dr Nicole Jones	9385 2568	<a href="mailto:n.jones@unsw.edu.au">n.jones@unsw.edu.au</a>
Dr Phoebe Phillips	9385 2785	<a href="mailto:p.phillips@unsw.edu.au">p.phillips@unsw.edu.au</a>
Dr Greg Smith	9385 8075	<a href="mailto:g.smith@unsw.edu.au">g.smith@unsw.edu.au</a>

### SoMS Honours Mentors

Students will be informed which member of the Honours Committee has been assigned as their mentor in week 1 of semester 1. Students should seek help and advice from their mentor when difficulties of personal or professional nature arise. The initial point of contact

should be via e-mail to set an appointment. Once assessment tasks have been graded students can meet with their mentor to receive feedback on their performance.

## **GRIEVANCE RESOLUTION**

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If you have a grievance, in the first instance, you should consult the member of the Honours committee who has been assigned as your mentor. If you are unable to reach an acceptable resolution of the issue you should then contact the Honours Coordinator. If you are still unable to resolve any grievance, you should consult the School's nominated Grievance Resolution Officer, [Dr Priti Pandey](#), 9385 2483.

## **APPROACH TO LEARNING AND TEACHING**

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The learning and teaching philosophy underpinning this course is centred on Honours students taking on their 'role as a researcher'. In doing so, they develop advanced disciplinary knowledge, the use of specialised techniques relevant to their chosen research area, critical thinking, evaluation and synthesis of information in addition to scientific research communication in the oral and written forms.

The principle form of teaching is based on research supervision and direction by specialist researchers within the Faculty of Medicine. Complementary to this, Research Skills seminars and Techniques workshops will be taught by experts and have been designed to provide training to Honours students in diverse areas that constitute research practice. Learning outcomes from this course will form the basis for future pursuits in medical research but are also highly relevant for many other professions.

The information for this course is in the form of techniques protocols, technical tips and materials, which are usually provided by each laboratory and supervisor. In addition, self-directed use of other resources such as Web based sources is expected. Information will also be provided at Research Skills seminars and Techniques workshops. It is up to you to ensure you perform well in each part of the course; attending and preparing for these seminars and workshops; completing assessments in due time; and seeking assistance be it mentoring or supervision to clarify your understanding.

## **STUDENT LEARNING OUTCOMES**

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This Honours course will develop those attributes that the Faculty of Science has identified as important for a Science Graduate to attain. These include; skills, qualities, understanding and attitudes that promote lifelong learning that students should acquire during their university experience.

### **GRADUATE ATTRIBUTES**

- A. Research, inquiry, analytical thinking abilities and reflective practice as a 'researcher'
- B. The capability and motivation for intellectual development
- C. Ethical, social and professional understanding
- D. Effective research communication in both oral and written formats
- E. Teamwork, collaborative and management skills
- F. Information Literacy – the skills to locate, evaluate, synthesise and use relevant information.

On completion of this course students should:

1. have an understanding of H&S and laboratory safety standard operating procedures
2. be able to access scholarly journal articles and create an endnote library

3. be able to critically evaluate and synthesise scientific literature that informs their research topic
4. have gained knowledge and practical skills in research techniques directly related to their specific research topic and indirectly related via the research skills workshops
5. be able to accurately record experimental data and draw conclusions from experimental data
6. critically assess their research data and integrate it into the wider field
7. be able to demonstrate their ability to work in teams and communicate scientific information effectively in both oral and written formats

## **ATTENDANCE REQUIREMENTS**

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The course extends from February to mid-November (semester 1 commencement) or June to late July (semester 2 commencement). Attendance requirements will be dictated by the nature of the work in relation to preparing and writing a literature review and subsequently a manuscript, preparing and delivering two seminars and by the nature of the research project. Attendance requirements will be agreed mutually between student and supervisor, depending on the nature of the work at the time. As with academic staff, the minimum time required is standard working hours on weekdays *i.e.* 40-45 hrs/week

The University acknowledges that students are involved in many extra-curricular activities throughout their studies. The School of Medical Sciences is generally supportive of students' activities but must be confident that these do not significantly impact on research activities or completion of assessment requirements.

## **MEDICAL CERTIFICATES AND SPECIAL CONSIDERATION**

Students who are unable to attend an assessment or submit an assessment by the due date should lodge a medical certificate to the Honours Co-ordinator as soon as possible, and within 3 days of the missed deadline/date at the latest. **Certificates lodged after 3 days will not be accepted.** If you believe that your performance in this course has been adversely affected by sickness or for any other reason, you should notify the Registrar and ask for special consideration in the determination of your results. Such requests should be made as soon as practicable after the problem occurs. When submitting a request for special consideration you should provide all possible supporting evidence (*e.g.* medical certificates). In exceptional circumstances, further assessment may be given. Special Consideration applications must be made via Online Services in *myUNSW*.

Please refer to <https://my.unsw.edu.au/student/atoz/SpecialConsideration.html> for further details regarding special consideration.

## **STUDENT SUPPORT SERVICES**

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Those students who have a disability that requires some adjustment in their teaching or learning environment are encouraged to discuss their study needs with the course coordinator prior to, or at the commencement of, their course, or with the Equity Officer (Disability) in the Student Equity and Disabilities Unit. Issues to be discussed may include access to materials, signers or note-takers, the provision of services and additional exam and assessment arrangements. Early notification is essential to enable any necessary adjustments to be made.

Student Equity and Disabilities Unit, Ground Floor, Goodsell Building

Tel: +61 2 9385 4734/5434

Email: [seadu@unsw.edu.au](mailto:seadu@unsw.edu.au)

Website: [www.studentequity.unsw.edu.au](http://www.studentequity.unsw.edu.au)

## **STUDENT RIGHTS AND RESPONSIBILITIES**

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<https://my.unsw.edu.au/student/resources/Policies.html#StudentResponsibilities&Conduct>

## **APPEAL PROCEDURES**

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Details can be found at *myUNSW* via the Student Central link.

<http://studentlifelearning.unsw.edu.au/studentcentral/index.html>

## **HEALTH AND SAFETY**

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UNSW aims to provide a physically safe, healthy and secure learning and working environment for all students. Your supervisors in this course are responsible for your safety during dedicated research time. In return you are expected to behave with respect toward them and your fellow students; you are expected to follow instructions from your supervisors and complete the necessary training. If you are concerned about your health or safety during the course please tell your supervisor immediately.

It is important that you familiarise yourself with the risks and hazards involved with your research work and the control measures in place to prevent harm to you and others. At the start of your honours year you must complete mandatory H&S courses, and identify with your supervisor other H&S courses or training you need to undertake. Before commencing specific laboratory tasks you should familiarise yourself with any relevant risk assessments and safe work procedures. You should document your completion of these H&S activities. You should discuss specific training and other requirements with your supervisor.

Information and contacts regarding H&S training and requirements can be found at:

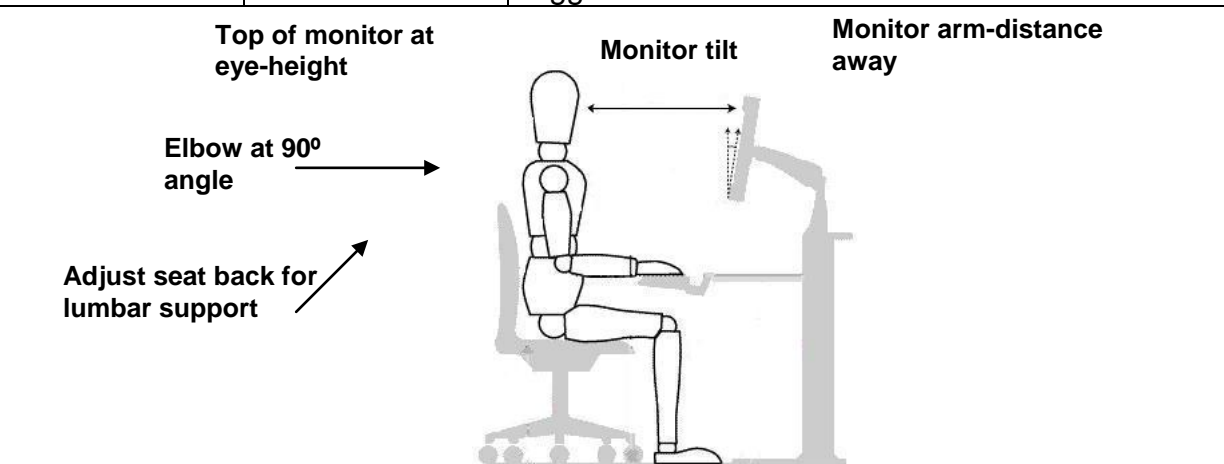
<http://medicallsciences.med.unsw.edu.au/staff/health-safety/induction-and-training>

Below is a list of the mandatory and other common H&S courses that honours students at SOMS undertake. Students will be bulk enrolled into the online mandatory courses following enrolment, and need to self-enrol in other mandatory & necessary courses.

- OHS awareness training (online, mandatory for all students)
- Ergonomics training (online, mandatory for all students)
- Green lab (online, mandatory for all students undertaking laboratory work)
- Lab safety awareness for students (online, mandatory for all students undertaking laboratory work)
- PC2 Biosafety training (mandatory for all students who will be working in a PC2 laboratory, enrol via *MyUNSW*)
- Ionising radiation training (mandatory for all students who will be working with radiation, enrol via *MyUNSW*)
- Others – Animal Handling / Ethics, S8 drugs, Gene Technology (GMOs) – as required (discuss with supervisor).

**Workstation set-up**

Ergonomics	Musculoskeletal pain.	Correct workstation set-up.
Electrical	Electrical shock/fire	Check electrical equipment in good condition before use. All portable electrical equipment tested and tagged.



**Personal Protective Equipment**

Not necessary in these practicals.

**Emergency Procedures**

In the event of an alarm, follow the instructions of the demonstrator. The initial sound is advising you to prepare for evacuation and during this time start packing up your things. The second sound gives instruction to leave. The Wallace Wurth assembly point is in the lawn in front of the Chancellery. In the event of an injury inform the demonstrator. First aiders and contact details are on display by the lifts. There is a first aid kit on every floor in the Wallace Wurth building.

**Clean up and waste disposal**

No apparatus used in these practicals.

**Declaration**

I have read and understand the safety requirements for this practical class and I will observe these requirements.

Signature:.....Date:.....  
Student Number:.....

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**TIMETABLE FOR FULL-TIME STUDENTS COMMENCING SEMESTER 1 2014**

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<b>Component</b>	<b>Date</b>	<b>Venue for Seminar or Place for Submitting Assessment</b>
Research Skills Seminars	Thursday 5-6pm, Semester 1 2014	LG03, Wallace Wurth BLDG
Literature Review	16 April 2014, 4pm	G27 BSB Office, Biological Sciences BLDG
Introductory Seminars	11 - 13 June 2014	LG03, Wallace Wurth BLDG
Research Skills Test	19 June 2014, 5pm	G06/G07 Computer Lab, Wallace Wurth BLDG
Project Manuscript Submission	3 November 2014, 4pm	G27 BSB Office, Biological Sciences BLDG
Final Seminars	10 - 14 November 2014	LG03, Wallace Wurth BLDG

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**TIMETABLE FOR FULL-TIME STUDENTS COMMENCING SEMESTER 2 2014**

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<b>Component</b>	<b>Date</b>	<b>Venue for Seminar or Place for Submitting Assessment</b>
Research Skills Seminars	Thursday 5-6pm, Semester 1 2015	TBA
Literature Review	10 September, 2014	G27 BSB Office, Biological Sciences BLDG
Introductory Seminars	10 - 14 November 2014	LG03, Wallace Wurth BLDG
Research Skill Test	18 June 2015	TBA
Project Manuscript Submission	5 June 2015	G27 BSB Office, Biological Sciences BLDG
Final Seminars	8 - 12 June 2015	TBA

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## **TIMETABLE FOR FULL-TIME STUDENTS COMMENCING SEMESTER 2 2013**

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<b>Component</b>	<b>Date</b>	<b>Venue for Seminar or Place for Submitting Assessment</b>
Research Skills Seminars	Thursday 5-6pm, Semester 1 2014	LG03, Wallace Wurth BLDG
Literature Review	11 September 2013, 4pm	G27 BSB Office, Biological Sciences BLDG
Introductory Seminars	18 - 22 November 2013	LG03, Wallace Wurth BLDG
Research Skills Test	19 June 2014, 5pm	G06/G07 Computer Lab, Wallace Wurth BLDG
Project Manuscript Submission	6 June 2014, 4pm	G27 BSB Office, Biological Sciences BLDG
Final Seminars	11 - 13 June 2014	LG03, Wallace Wurth BLDG

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## RESEARCH TECHNIQUES SEMINARS

Semester 1, 2014: Thursday 5-6pm, LG03, Wallace Wurth Building

Week	Date	Topic	Speaker	Department
2	13 Mar*	Managing Scientific Literature	Ms Emma McLean	Library, UNSW
3	20 Mar	Writing a Literature Review	Ms Gwyn Jones	The Learning Centre, UNSW
4	27 Mar	Intellectual Property & Commercialisation	Ms Melissa Ran	NewSouth Innovations
5	3 Apr	Animal Ethics	Prof Peter Gunning	SoMS, UNSW
6	10 Apr	Human Ethics - Why is it important?	A/Prof Ute Vollmer-Conna	School of Psychiatry, UNSW
7	17 Apr	Research Ethics	Dr Angela Finch & Dr Patsie Polly	SoMS, UNSW
		Semester Break		
	Between 22 Apr & 9 May	Techniques Workshops (select 2 from the list)	Various	Please check Moodle for the timetable and list of workshops
10	15 May	Presenting Scientific Data	Dr Angela Finch	SoMS, UNSW
11	22 May	Analysis of Scientific Data	Dr Richard Vickery	SoMS, UNSW
12	29 May	Presentation Skills	Ms Gwyn Jones	The Learning Centre, UNSW
13	5 June	Continuing Your Studies & Careers in Science	A/Prof Pascal Carrive Dr Jess Siegle	SoMS, UNSW Biosense Webster

\* seminar on 13 Mar is from 4-5pm

Semester 2, 2014: TBA

Week	Date	Topic	Speaker	Department
TBA	Oct/14	Presentation Skills	Ms Gwyn Jones	The Learning Centre, UNSW

## ACADEMIC HONESTY AND PLAGIARISM

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### What is Plagiarism?

Plagiarism is the presentation of the thoughts or work of another as one's own.\* Examples include:

- direct duplication of the thoughts or work of another, including by copying material, ideas or concepts from a book, article, report or other written document (whether published or unpublished), composition, artwork, design, drawing, circuitry, computer program or software, web site, Internet, other electronic resource, or another person's assignment without appropriate acknowledgement;
- paraphrasing another person's work with very minor changes keeping the meaning, form and/or progression of ideas of the original;
- piecing together sections of the work of others into a new whole;
- presenting an assessment item as independent work when it has been produced in whole or part in collusion with other people, for example, another student or a tutor; and
- claiming credit for a proportion a work contributed to a group assessment item that is greater than that actually contributed.†

For the purposes of this policy, submitting an assessment item that has already been submitted for academic credit elsewhere may be considered plagiarism.

Knowingly permitting your work to be copied by another student may also be considered to be plagiarism.

Note that an assessment item produced in oral, not written, form, or involving live presentation, may similarly contain plagiarised material.

The inclusion of the thoughts or work of another with attribution appropriate to the academic discipline does *not* amount to plagiarism.

The Learning Centre website is main repository for resources for staff and students on plagiarism and academic honesty. These resources can be located via:

[www.lc.unsw.edu.au/plagiarism](http://www.lc.unsw.edu.au/plagiarism)

The Learning Centre also provides substantial educational written materials, workshops, and tutorials to aid students, for example, in:

- correct referencing practices;
- paraphrasing, summarising, essay writing, and time management;
- appropriate use of, and attribution for, a range of materials including text, images, formulae and concepts.

Individual assistance is available on request from The Learning Centre.

Students are also reminded that careful time management is an important part of study and one of the identified causes of plagiarism is poor time management. Students should allow sufficient time for research, drafting, and the proper referencing of sources in preparing all assessment items.

\* Based on that proposed to the University of Newcastle by the St James Ethics Centre. Used with kind permission from the University of Newcastle

† Adapted with kind permission from the University of Melbourne.

The School of Medical Sciences will not tolerate plagiarism in submitted work. The University regards this as academic misconduct [http://www.student.unsw.edu.au/academiclife/assessment/academic\\_misconduct.shtml](http://www.student.unsw.edu.au/academiclife/assessment/academic_misconduct.shtml) and imposes severe penalties. Written work is submitted via Turnitin® in Moodle and examiners can also detect possible cases of plagiarism. Evidence of plagiarism in submitted assignments, etc. will be thoroughly investigated and may be penalised by the award of a score of zero for the assessable work. Flagrant plagiarism will be directly referred to the Division of the Registrar for disciplinary action under UNSW rules.

The attention of students is drawn to the following extract from the above website:

*"The basic principles are that you should not attempt to pass off the work of another person as your own, and it should be possible for a reader to check the information and ideas that you have used by going to the original source material. Acknowledgment should be sufficiently accurate to enable the source to be located speedily."*

*"The following are some examples of breaches of these principles:*

- a) Quotation without the use of quotation marks. It is a serious breach of these rules to quote another's work without using quotation marks, even if one then refers to the quoted source. The fact that it is quoted must be acknowledged in your work.
- b) Significant paraphrasing, e.g., several sentences, or one very important sentence, which in wording are very similar to the source. This applies even if the source is mentioned, unless there is also due acknowledgment of the fact that the source has been paraphrased.
- c) Unacknowledged use of information or ideas, unless such information or ideas are commonplace.
- d) Citing sources (e.g., texts) which you have not read, without acknowledging the 'secondary' source from which knowledge of them has been obtained."

Appropriate citation of sources therefore includes surrounding any directly quoted text with quotation marks, with block indentation for larger segments of directly-quoted text. The preferred format for citation of references is an author-date format with an alphabetically arranged bibliography at the end of the assignment. Note that merely citing textbooks or website URLs is unlikely to yield a bibliography of satisfactory standard. ***The internet should be avoided as a primary source of information.*** Inclusion of appropriate journal articles, both primary research publications and reviews, is usually expected.

## **SCIENTIFIC ETHICS**

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Students should behave in an ethical, socially responsible and professional manner throughout the Honours year (Graduate Attribute C) as outlined in the Australian Code for the Responsible Conduct of Research<sup>1</sup>. Excerpts of this code are given below.

### **General Principles of Responsible Research**

**1.6 Maintain high standards of responsible research:** Researchers must foster and maintain a research environment of intellectual honesty and integrity, and scholarly and scientific rigour. Researchers must: respect the truth and the rights of those affected by their research, manage conflicts of interest so that ambition and personal advantage do not compromise ethical or scholarly considerations, adopt methods appropriate for achieving the aims of each research proposal, follow proper practices for safety and security, cite awards, degrees conferred and research publications accurately, including the status of any publication, such as under review or in press, promote adoption of this Code and avoid departures from the responsible conduct of research, conform to the policies adopted by their institutions and

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<sup>1</sup> Jointly issued by the National Health and Medical Research Council, the Australian Research Council and Universities Australia.

bodies funding the research.

1.7 Report research responsibly: Researchers should ensure that research findings are disseminated responsibly.

1.8 Respect research participants: Researchers must comply with ethical principles of integrity, respect for persons, justice and beneficence. Written approval from appropriate ethics committees, safety and other regulatory bodies must be obtained when required.

1.9 Respect animals used in research: Researchers must respect the animals they use in research, in accordance with the *Australian Code of Practice for the Care and Use of Animals for Scientific Purposes*

1.10 Respect the environment: Researchers should conduct their research so as to minimise adverse effects on the wider community and the environment.

1.11 Report research misconduct: A researcher who considers that research misconduct may have occurred must act in a timely manner, having regard to the institution's policies.

### **Management of Research Data and primary materials**

2.5 Retain research data and primary materials: When considering how long research data and primary materials are to be retained, the researcher must take account of professional standards, legal requirements and contractual arrangements.

2.6 Manage storage of research data and primary materials: Researchers must manage research data and primary materials in accordance with the policy of the institution. To achieve this, researchers must:

- Keep clear and accurate records of the research methods and data sources, including any approvals granted, during and after the research process.
- Ensure that research data and primary materials are kept in safe and secure storage provided, even when not in current use.

2.7 Maintain confidentiality of research data and primary materials: Researchers given access to confidential information must maintain that confidentiality. Primary materials and confidential research data must be kept in secure storage. Confidential information must only be used in ways agreed with those who provided it. Particular care must be exercised when confidential data are made available for discussion.

### **Responsibilities of Research Trainees**

3.7 Seek guidance: A research trainee must demonstrate a professional attitude towards the research. Frequent meetings with the supervisor are important, requiring the cooperation of both parties. The trainee should not wait until approached by the supervisor but should play an active part in maintaining an appropriate schedule of meetings.

3.8 Undertake induction and training: A research trainee should complete all induction and training courses as soon as practical after starting research in an institution.

### **The Office of Research Integrity (ORI)**

<http://www.ori.hhs.gov/thelab>

## ASSESSMENT

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Literature Review	10%
Introductory Seminar	7.5%
Research Skills Test	2.5%
Project Manuscript	50%
Final Seminar	15%
Research Performance & Seminar Engagement	15%

### Literature Review

The literature review should be not more than 3,000 words and as the name implies should give a detailed account of published scientific investigations which are relevant to the project being undertaken. It should contain an introduction, and aims, hypotheses and methods sections. The introduction should identify the limitations of the literature and/or areas of controversy and assess them critically. It should be adequately referenced with recent and appropriate studies and have clear and logical flow. The aims, hypotheses and methods sections should together be a maximum of 450 words (i.e. only 15% of the literature review). The stated aims should clearly relate to the areas outlined in the introduction and the hypotheses should also be clear and valid. Methods are to be summarised clearly and concisely and be appropriate and valid for the stated aims. Absolutely no results are to be included in the literature review. The word count for the literature review excludes diagrams, tables etc. which should be integrated into the appropriate sections of the text. Penalties will apply for an inability to observe the word limit. The general and referencing style should follow the "School of Medical Sciences Honours Manuscript - Instructions to Authors" (see below).

Due: 4pm, 16 April 2014 (late penalties apply); Student Inquiries Office (G27), BSB Office, Biological Sciences BLDG

Length: Not more than 3,000 words

Copies: Three hard copies (comb bound). One soft copy must be submitted via Turnitin© via Moodle. Only a single submission to Turnitin© is permitted.

Attachment: One assignment coversheet to accompany the hard copies.

### Introductory Seminar

The introductory seminar is a 10 minute presentation with 5 minutes of questions. The presentation should cover the background and methods of the project and not contain any preliminary results. The introduction of the talk should include a critical analysis of strengths and limitations of the literature. The hypotheses and aims should be clearly stated and relate to the strengths and limitations of the literature identified. The methods should be explained clearly and concisely. The seminar should have clear and logical flow, good pace (i.e. neither hurried nor laboured) and use good visual quality slides. The student should demonstrate an understanding of the questions raised during question time by giving appropriate answers. All aspects of the seminar should be able to be understood by a non-expert audience. Each student's final seminar presentation will be assessed by academics from the audience and the dedicated Examiners 1 and 2. Dedicated Examiners 1 and 2 are expected to attend and mark the students they have agreed to examine (see 'Guidelines for Examination' below).

NOTE: An abstract is requested by 3 June *i.e.* one week prior to commencement of the Introductory Seminars.

Date: 11-13 June 2014

Venue: LG03, Lower Ground Floor, Wallace Wurth Building East

Length: 10 minute presentation, 5 minute question time

## **Research Skills Test**

Format: Multiple Choice Questions covering all the material presented in the Research Skills Seminars & Techniques Workshops

Date: 19 June 2014

Venue: G06/G07 computer labs, Ground Floor, Wallace Wurth Building East

Length: 50 minutes

## **Project Manuscript**

The format of the project manuscript is to comply with the guidelines set out in the School of Medical Sciences Honours Manuscript - Instructions to Authors and should contain an abstract, statement of contribution and acknowledgments, brief introduction with aims and hypotheses, materials and methods, results, discussion and references sections. The word count should be not more than 5,000 words. This word limit excludes the abstract, statement of contribution, acknowledgements and references sections, as well as supplementary data (if present), tables, figures and figure legends. Penalties will apply for an inability to observe the word limit. The abstract should succinctly and accurately summarise the aims and outcomes of the project. The statement of contribution should be a brief sentence or two that clearly indicates the specific components of the research that was undertaken independently by the student, and any components of the research that were done in collaboration with others, or that were performed by others. Being trained or supervised in a technique, but then generating the data independently, or being given advice or feedback from a supervisor or colleague, does not need to be described in this statement of contribution (but could be listed in acknowledgements). The acknowledgments should recognise the contributions (reagents, training, advice, feedback, support etc) of others to the project. The brief introduction, aims and hypothesis section should define the problem being examined and place it in the context of published work in the area without being a complete review of the literature. It should identify the limitations of the literature and areas of controversy and give clear and valid aims and hypotheses. The methods should be appropriate and valid for the stated aims and be clearly described and fully referenced. The results should reflect a significant body of work including sufficient controls and replicates and analysis of data using appropriate statistical tests. Material needed for a complete understanding or evaluation of the work, but which does not fit well in the manuscript format, should be included as supplementary data. Presentation of the results should be clear and logical and should use figures, tables, etc. The discussion should be relevant to the introduction, methods, and results sections, logical in presentation and scientific content, show critical/creative analysis, place the findings of the study in the context of past studies and have suggestions for future studies. Please note that all work which is integral to the manuscript but was not performed by the Honours student (i.e. was undertaken by another member of the supervisor's and/or co-supervisor's research group) is to be clearly disclosed in the Methods, Results and/or Supplementary Data sections of the Project Manuscript, where appropriate. This work may then be referred to in the Discussion and be assessed in the context of the work undertaken by the Honours student. The referencing style of the project manuscript should also comply with the guidelines set in the School of Medical Sciences Honours Manuscript - Instructions to Authors.

Due: 4pm, 3 November 2014 (late penalties apply); Student Inquiries Office (G27), BSB Office, Biological Sciences BLDG

Length: Not more than 5,000 words

Copies: Three hard copies (comb bound). One soft copy must be submitted via Turnitin© via Moodle. Only a single submission to Turnitin© is permitted.

Attachment: One assignment coversheet to accompany the hard copies.

## **Final Seminar**

The final seminar is a 12 minute presentation with 8 minutes of questions. The presentation should largely cover the results of the research project. A clear, concise and appropriate introduction should be provided which identifies the limitations of the literature and areas of controversy. Clear and valid aims and hypotheses should also be stated. The results should reflect a significant body of work including sufficient controls and replicates and analysis of data using appropriate statistical tests. The specific contribution of the student to the results, should be included as a single Statement of Contribution slide (see above description of Statement of Contribution). Presentation of the results should be clear and logical and should use figures, tables, etc. The significance of any important findings should be addressed and appropriate conclusions made. The results of the study should be placed within a broader context and suggestions should be made for future experiments. The seminar should have clear and logical flow, good pace (*i.e.* neither hurried nor laboured) and use good visual quality slides and/or overheads. The student should demonstrate understanding of the questions raised during question time by giving appropriate answers. Each student's final seminar presentation will be assessed by academics from the audience and the dedicated Examiners 1 and 2.

NOTE: An abstract is requested by 4 November *i.e.* one week prior to commencement of the Final Seminars.

Date: 10-14 November 2014

Venue: LG03, Lower Ground Floor, Wallace Wurth Building East

Length: 12 minute presentation, 8 minute question time

## **Student Interview – Clarification and/or Adjudication of Mark**

In special cases, the two examiners may interview the student to clarify the assessment and adjudication of the project manuscript. This interview will be chaired by a member of the Honours committee in the presence of the Supervisor(s). It will be not be more than 30 minutes in duration. Laboratory notebooks, must be available at the interview. During this interview the student should address all queries, clearly demonstrate that they understand the project's methods and can place the project's findings in the context of past studies, as well as make suggestions for future experiments. The chair of the interview may also conduct interviews with examiners and/or supervisors in the absence of the student. The student may also be interviewed in the absence of the supervisor. Note that student interviews are not a regular component of the assessment process, and students will be notified of the requirement to attend an interview after the final seminar.

Date: 17-19 November 2014

Venue: TBA

## **Adjudication of Marks by a Third Assessment**

In the event that the project manuscript assessments are seriously and justifiably discrepant, the Course Coordinator will obtain assessments from additional staff members.

## **Research Performance & Seminar Engagement**

Research Performance: Supervisors will provide an assessment on the level of research skill development that the student has attained at the completion of the Honours year. This assessment will be based on student's research performance throughout the year including;



motivation and organisational skills, research (laboratory) skills, note keeping, critical analysis and communication skills.

**Seminar Engagement:** Students are required to attend relevant seminars, which include those of your Research Institute / Division or Department, as well as the monthly SoMS seminars. Students must keep a seminar notebook that records details about at least 12 seminars attended throughout the year, including date, title and presenter, a minimum of 1 pages (but can be more) of notes of the main points of the seminar, including a small labelled “Reflections” paragraph (1-2 sentences) indicating what specific generic aspect of research and its communication the was learnt from the seminar. The seminar notebook must be written-up during the actual seminar, and should be available to be viewed by supervisor or mentor at any time throughout the year.

Supervisors will submit the “Research Performance and Seminar Engagement” assessment rubric at the Final Seminar.

## **GUIDELINES FOR SUPERVISION**

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Primary supervisors of School of Medical Sciences (SoMS) Honours students must have an academic appointment (paid or conjoint) through the Faculty of Medicine. Associate or Co-Supervisors may be appointed to play a role in the training and supervision of the student in the laboratory. This role can be undertaken by postdoctoral staff; however postgraduate students cannot take on the role of the associate or co-supervisor. Primary / Co / Associate supervisors in a close personal relationship must declare this to the Honours Convenor, who will then appoint an additional independent, School Associate supervisor.

Given the time and energy commitments needed to effectively supervise students, primary supervisors will generally have only one Honours student. However, experienced supervisors may be allowed a second student, after providing evidence to the Honours Convenor of a successful track record of supervision in SoMS and justification of how they can effectively supervise 2 students. Supervisors are required to confirm, prior to the commencement of the project, that they are financially able to support the project for the duration of the Honours year and that all ethics and other approvals required for the project have been obtained.

Supervisors should bear in mind three important points when proposing an Honours project: firstly, Honours is only an introduction to research so expectations should be realistic; secondly, the proposed project needs to yield results within the period of the Honours “year”; and finally, the Honours year is, in fact, not a full year but only 7 months of research activity plus approximately 2 months to produce and submit a Literature Review and a Project Manuscript.

Supervisors are required to attend the two presentations of their Honours student(s) in June (Introductory Seminar) and November (Final Seminar) in order to be aware of their student's performance. All supervisors are also required to attend the Student Interview of their student in November if it is required. Please see the timetable above for the precise dates of the assessments. Detailed information regarding the requirements, structure and format of the Literature Review, Introductory and Final Seminars, Project Manuscript and Student Interviews are listed under “Honours assessments” on the School of Medical Sciences Honours website.

Supervisors are responsible for ensuring that their student(s) meet the assessment deadlines of the Honours program, including ensuring attendance at the seminars and timely submission of Literature Review and Project Manuscript, for which late submission penalties exist (see “penalties” below). Supervisors should also ensure that their student(s) attend the Research Techniques Seminars (during semester 1) and the School/Department/Institute

research seminars (throughout the year). Supervisors are asked to regularly review the students' Seminar Notebooks ensuring that they are attending at least 80% of relevant seminars, and taking notes and reflecting on selected seminars throughout the year (see "Research Performance and Seminar Engagement" above). Supervisors should also regularly check up on the students' laboratory books to ensure experimental details and protocols are being effectively recorded. Please visit the School's website for the Research Techniques and School/Department Research seminar timetables, topics and details for the seminar notebook.

Supervisors are required to assess their student(s) performance using the "Research Performance and Seminar Engagement" assessment rubric and submit this at the end of the honours project.. This form is included below and outlines the criteria for assessing the student's performance, worth 15% of the final honours grade.

Primary supervisors should have prior primary or co-supervision experience of a SoMS honours student, or of a student in a similar honours course.

Primary supervisors may also be asked to be an Examiner of another SoMS honours student, and this role is part of the responsibility of supervision of a SoMS student.

## GUIDELINES FOR EXAMINATION

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Each student will have (at least) two examiners. Examiner 1 will be nominated by the supervisor for approval by the honours committee. Examiner 2 will be appointed by the honours committee from amongst the cohort of primary supervisors or from the SoMS academic staff.

Examiners with readily identifiable conflicts of interest should not be nominated. Examiners are asked to declare that they have no conflict of interest with the candidate, supervisor, or the project. Potential examiners who should be excluded include those: (i) have a current collaboration with the supervisor on the research area of the project or have published in the last 3 years or currently hold a grant with the supervisor on the research area of the project, or (ii) have substantial direct involvement in the student's work or (iii) have a current or previous personal relationship with the supervisor or student. Those potential examiners who have collaborations/publication/grants with the supervisor in a different area of research to that of the student's project may be an examiner however they are asked to declare this conflict. The appropriateness of the examiner will then be assessed by the Honours committee.

Examiners are required to attend the Student Interviews (17<sup>th</sup>–20<sup>th</sup> Nov) if required, and should attend the Introductory Seminars (11-13<sup>th</sup> June) and Final Seminars (10-14<sup>th</sup> November) (the specific time and date for each student's presentation/interview will be posted on the SoMS website). **Note:** examiners who are **unable** to attend these seminars should provide two questions and the answers such that the chair can ask those questions. Failure of the examiner to attend the Final Seminar and Student Interview (if required) may put the student at risk if there is a serious mark discrepancy in the Project Manuscript Mark between examiners.

Examiners are required to fill out the assessment forms, on each occasion of providing their grades, for the Literature Review and Project Manuscript, and for the Introductory and Final Seminars. Dedicated examiners are required have assessed the Project Manuscript prior to attending the Final Seminar. Feedback regarding the Literature Review should be provided for the student to use in their writing of the Project Manuscript.

To try to standardise marking, examiners are asked to grade students using the rubric assessment tables available below and on the School's website. A completed example will be circulated to examiners along with the assessment rubrics. Please circle or mark the relevant levels attained for each criteria and base your score (/10) on these levels. You don't need to compile your total score (/100), this will be done by the honours administrator.

The Student Interviews may be undertaken in special circumstances in order to clarify the student's assessment. If required, students, supervisors and examiners will be notified following the final seminar. Each interview is conducted by the two examiners in the presence of the supervisors as well as a member of the Honours committee.

Please note that the final marks for the honours year will only be released to students via the standard *myUNSW* format, and will not be released to supervisors.

## **PENALTIES**

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A penalty of 1% of the total Honours mark will be imposed per day for the late submission of the literature review and/or the Project Manuscript, except where an extension to the deadline has been applied for and granted. Application for an extension must be made to the Honours coordinator via Special Consideration procedures, and will only be granted in exceptional circumstances. In addition, a 1% penalty of the total Honours mark will be imposed if students fail to attend at least 80% of seminars. These include SoMS Seminars and Departmental and/or Research Institute/Lab Group seminars. You are expected to sign off your attendance at these events.

## **HONOURS GRADES**

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>85 (Honours 1)

Work of superior quality in all aspects of research, scientific writing, and oral presentation, demonstrating the ability to organise information in a clear and concise manner, the integration of information from a wide range of sources and containing clear examples of excellent critical evaluation.

75-84 (Honours 2.1):

Work of very good quality in all aspects of research, scientific writing, and oral presentation, but showing lesser ability to organise information in a clear and concise manner, integrate information from range of sources and critically evaluate the literature and research data.

65-74 (Honours 2.2):

Good quality in all aspects of research, scientific writing, and oral presentation but with inadequacies in understanding, critical skills, organisation and presentation.

50-64 (Honours 3):

Adequate quality work with significant deficiencies in understanding, critical skills, organisation and presentation

## **School of Medical Sciences Honours Manuscript - Instructions to Authors**

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(Adapted from the Uniform Requirements for Manuscripts Submitted to Biomedical Journals, the British Journal of Pharmacology, the Journal of Anatomy, the Journal of Pathology and the Journal of Physiology)

Project Manuscripts must include: 1. Title Page, 2. Abstract, 3. Statement of Contribution, 4. Acknowledgements, 5. Introduction, 6. Methods, 7. Results, 8. Discussion, 9. References, 10. Supplementary Data (optional). Figures and Tables should be integrated at appropriate places in the text.

### Title Page

Title: The title should contain no more than 150 characters (including spaces) and clearly indicate the subject matter of the paper.

Authors: The author's name in full and the name and addresses of the department(s) and institution(s) to which the work should be attributed.

Running Title: A running title containing no more than 50 characters (including spaces) is required.

Key Words: Three to Five key words should be provided.

Word Count: The word count excluding abstract, statement of contribution, acknowledgments, references and figure legends should be listed.

Abbreviations: list all abbreviations used

### Abstract

An abstract of up to 250 words should follow the title page. The abstract should provide the background for the study, experimental approach, major findings and conclusions. It should be understandable without reference to the rest of the paper. References may not be cited.

### Statement of Contribution

The statement of contribution should specifically identify the components of research undertaken by the student. To do this, indicate which aspects of the research results included in the thesis were done in collaboration with, or undertaken by, other members of the research group or by external collaborators. Examples of this may include (but not limited to); some surgeries being undertaken by more experienced lab colleagues, tissue cultures being maintained or processed by lab assistants, survey response or patient databases generated or analysed in whole or partly by others, a subsection of the same experimental data obtained by lab colleagues, nucleotide sequences or gene mutations being outsourced to an external company. Seek advice from your supervisor or mentor if you are unsure about this.

### Acknowledgements

The author should acknowledge those who have provided funds, reagents, technical guidance and/or training and scientific advice.

### Introduction

The introduction should give a clear account of the background for the study, and the research objective or hypothesis tested should be stated. The introduction should be understandable to a non-specialist.

## Methods

The methods must be described in sufficient detail to allow the experiments to be interpreted and repeated by an experienced investigator. Give references to established methods, provide references and brief descriptions for methods that have been published but are not well known; describe new or substantially modified methods. Identify the apparatus, drugs and chemicals used, give the manufacturer's name and address in parentheses after each item. Describe the statistical methods used and define all statistical terms, abbreviations, and symbols. Specify the computer software used. Where appropriate, describe your selection of the subjects (patients or laboratory animals, including controls), identify the age, sex, strain, number used and other important characteristics of the subjects.

## Results

Present your results in logical sequence in the text, tables, graphs and illustrations. The description of the experimental results should be succinct, but in sufficient detail to allow the experiments to be analysed and interpreted by the reader. Where group data is presented, the averaged or median results with some measure of variability (standard deviations, confidence intervals, standard errors of the means), along with the number of observations, and statistical significance, should be given as appropriate. The rationale for performing the experiments may be briefly mentioned in the Results section, but conclusions or interpretation of results should not be presented. Do not repeat in the text all the data that is presented in the tables or graphs. Headed paragraphs maybe used to aid in the presentation of the results.

Work which is integral to the manuscript but that was performed by another member of the supervisor's and/or co-supervisor's research group can be included in results and discussed, but is to be clearly disclosed in the Statement of Contribution and Methods or Results as appropriate.

## Discussion

In the discussion explore possible mechanisms or explanations for the findings of your study, compare and contrast your results with those from other relevant studies, state the limitations of the study, and explore the implications of the findings for future research. Do not repeat in detail data or other material given in the Introduction or the Results sections. The main conclusions should be conveyed in the final paragraph.

## References

In the text, references to other work should take the form: (Bolton and Kitamura, 1983) or 'Bolton and Kitamura (1983) showed that...' When a paper written by two authors is cited, both names are given; for three or more authors only the first name is given, followed by 'et al.' References to unpublished observations or personal communications should be mentioned in the text only, and not included in the list of references. Direct reference to original research sources should be used whenever possible.

The reference list at the end of the manuscript must be arranged alphabetically according to the surname of the first author. When the names of first authors are identical, the alphabetical order of the surnames of subsequent authors takes precedence over the year of publication. The authors' names are followed by the year of publication in brackets. If more than one paper by the same authors in one year is cited, a, b, c, etc. are placed after the year of publication, both in the text and in the list of references. All authors should be quoted for papers with up to seven authors; for papers with more than seven authors, the first six should be quoted followed by et al.

The format for references to papers and books, and to chapters in books, is as follows:

Lipp P, Egger M & Niggli E (2002). Spatial characteristics of sarcoplasmic reticulum  $\text{Ca}^{2+}$  release events triggered by L-type  $\text{Ca}^{2+}$  current and  $\text{Na}^+$  current in guinea-pig cardiac myocytes. *J Physiol* **542**, 383-393.

Adrian ED (1932). *The Mechanism of Nervous Action*. Humphrey Milford, London.

Buchan AMJ, Bryant MG, Polak JM, Gregor M, Ghatei MA & Bloom SR (1981). Development of regulatory peptides in the human fetal intestine. In *Gut Hormones*, 2nd edn, ed. Bloom SR & Polak JM, pp. 119-124. Churchill Livingstone, Edinburgh.

For those articles published online ahead of print, that have not been assigned full publication details the DOI (digital object identifier) should be used. See example below:

Lipp P, Egger M & Niggli E (2002). Spatial characteristics of sarcoplasmic reticulum  $\text{Ca}^{2+}$  release events triggered by L-type  $\text{Ca}^{2+}$  current and  $\text{Na}^+$  current in guinea-pig cardiac myocytes. *J Physiol*; DOI: 10.1113/jphysiol.2001.013382.

An endnote file will be available to download from Moodle, but the ultimate responsibility for adhering to prescribed format rests with the student.

The format to reports, thesis and other works should take the form as found in recent issues of the British Journal of Pharmacology, the Journal of Anatomy, the Journal of Pathology and/or the Journal of Physiology.

### Tables

Each table should be given on a separate page integrated at an appropriate position within the text. Tables are numbered consecutively according to the order in which they have been first cited in the text. Tables should be numbered with Arabic numerals and the number should be followed by a brief descriptive title at the head of the table. Tables should be self-explanatory, with necessary descriptions provided in footnotes underneath the table. Give each column a short or abbreviated heading.

### Figures and Legends

Figures should be numbered consecutively according to the order in which they have been first cited in the text. Figure legends can appear below the figure and/or on a separate page. Each figure should be given a title and a legend that explains the figures in sufficient detail that, whenever possible, they can be understood without reference to the text. All symbols and abbreviations should be explained within the legend. If a figure has been published, acknowledge the original source.

### Supplementary Data

Material needed for an in depth evaluation of the work, but which does not fit well in manuscript format, should be included as Supplementary Data. These data should only be included if they provide material that further supports or substantiates the results presented or summarized in the main manuscript, but would not be able to readily fit in the main text. They should be summarized and referred to in the main text, and should not be essential for the understanding of the manuscript nor for the major conclusions. Supplementary data should be as brief as possible, and/or submitted as a separate pdf in electronic format only.

### Abbreviations, Units and Symbols

Use only standard abbreviations; the full term for which an abbreviation stands should precede its first use in the text. SI units and symbols should be used for physicochemical quantities. Gene names and loci should be in italics, and proteins should be in roman. Virus nomenclature (and acronyms) should follow the guidelines of the International Committee on the Taxonomy of Viruses (ICTV). Chemical nomenclature should follow the International Union of Pure and Applied Chemistry (IUPAC) definitive rules for nomenclature. Pharmacological units should follow the guidelines given in the British Journal of Pharmacology.

### Formatting and Technical Instructions

Text should be times roman, 12 point font, with 1.5 line-spacing throughout the manuscript. Margins should be 3 cm on the left-hand side, 2 cm on the right-hand, 2 cm at the top and 2 cm at the bottom. The manuscript should be no more than 5000 words excluding; the abstract, acknowledgements and references, tables, figures, legends, and supplementary data.



Criteria	Literature Review (Mark out of 10 for each marking criteria)						
	10-9.0 Outstanding	8.9-8.5 Excellent	8.4-8.0 Very Good	7.9-7.5 Good / Average	7.4-6.5 Fair	6.4-5.0 Poor	4.9-0 Very Poor
<b>Background</b> ____/10 x 2.5	Very comprehensive, detailed and focused introduction.	Highly detailed and focused introduction.	Detailed and focused introduction	Detailed introduction.	Some key basic information missing in introduction.	Major lack of key basic information in introduction.	Lack of significant detail in introduction.
<b>Critical Analysis</b> ____/10 x 2.5	Comprehensive critical analysis of strengths and limitations of the literature.	Critical analysis of strengths and limitations of the literature	Some critical analysis of strengths and limitations of the literature.	Some critical analysis of strengths and limitations of the literature but mostly descriptive	Limited critical analysis of strengths and limitations of the literature, mostly descriptive	Very limited critical analysis of strengths and limitations of the literature.	No critical analysis of strengths and limitations of the literature presented
<b>Hypotheses &amp; Aims</b> ____/10 x 1	Hypotheses and aims clearly and concisely outlined and comprehensively justified.	Hypotheses and aims clearly outlined and justified.	Hypotheses and aims outlined and justified. Bit long or some aspects less clear	Hypotheses, Aims partly outlined and justified. Some aspects unclear or excessive.	No clear hypotheses. Aims outlined but not justified.	Hypotheses and aims not at all clear.	No hypotheses or aims apparent.
<b>Methods</b> ____/10 x 1	Clear and concise description of proposed experiments. Well developed, very clear and concise links between hypotheses, aims and literature.	Clear description of proposed experiments. Very clear links between hypotheses, aims and literature.	Mostly clear description of experiments, some elements unclear. Clear links between hypotheses, aims and literature.	Description of experiments mostly clear, some elements lacking. Minor inconsistencies in experimental design. Some links between hypotheses, aims and methods and literature.	Description of experiments lacked some major aspect. Poor links between hypotheses, aims and methods and literature.	Description of experiments unclear and lacks major aspects. No links between hypotheses, aims and methods and literature.	Experiments not described. No hypotheses, aims or methods
<b>References</b> ____/10 x 1	Predominant and comprehensive use of primary articles. Many articles presented from recent or seminal publications.	Predominant use of primary articles. Many articles presented from recent or seminal publications.	Predominant use of primary articles. Could have used more articles from recent or seminal publications.	Some over reliance on reviews or texts. Could have used more articles from recent or seminal publications	Some over reliance on reviews or texts. Many articles not from recent or seminal publications.	Significant over reliance on reviews or texts. Limited number of recent or seminal articles used.	Use of literature limited to a few articles and reviews. Poor attempt to explore literature.
____/10 x 1	Citation style correct and consistent throughout. Reference list completely accurate with no errors.	Citation style correct and consistent. Reference list complete, but a few minor errors.	Citation style consistent. Reference list incomplete, and some minor errors.	Some references inconsistent between text and list with many minor errors. Citation style mostly consistent.	Many references inconsistent between text and list with many minor errors. Citation style incorrect / inconsistent.	Many inconsistencies between text and list. Some major errors. Inappropriate citation style used.	Many references inconsistent between text and list. Many major errors.
<b>Presentation</b> ____/10 x 1	No grammatical or spelling errors. Professional expression and style used consistently. All figures accurate, focussed and informative	No grammatical or spelling errors. Professional expression and style mostly used. All figures accurate, focussed and informative.	No grammatical errors and minor spelling errors. Professional expression and style used. All figures accurate, focussed and informative	Minor grammatical errors and minor spelling errors. Professional expression and style used. Most figures accurate and informative.	Minor grammatical errors and minor spelling errors. Professional expression used. Most figures accurate, but not so relevant.	Major grammatical and spelling errors. Professional expression used Numerous errors in figures or largely irrelevant	Major grammatical and spelling errors. Language used not professional. No relevant figures.

Introductory Seminar (Mark out of 10 for each marking criteria)							
Criteria	10-9.0 Outstanding	8.9-8.5 Excellent	8.4-8.0 Very Good	7.9-7.5 Good / Average	7.4-6.5 Fair	6.4-5.0 Poor	4.9-0 Very Poor
<b>Background</b>  /10 x 3	<ul style="list-style-type: none"> <li>Very focused introduction with sufficient detail and all concepts and terminology described to allow for understanding by a non-expert audience.</li> </ul>	<ul style="list-style-type: none"> <li>Focused introduction with sufficient detail and most concepts and terminology described to allow for understanding by a non-expert audience</li> </ul>	<ul style="list-style-type: none"> <li>Somewhat focused introduction with satisfactory detail and most concepts and terminology described to allow for understanding by a non-expert audience</li> </ul>	<ul style="list-style-type: none"> <li>Introduction lacks some focus, has adequate detail and most concepts and terminology described to allow for understanding by a non-expert audience</li> </ul>	<ul style="list-style-type: none"> <li>Introduction lacks focus and detail. Many concepts and terminology not described to allow for understanding by a non-expert audience</li> </ul>	<ul style="list-style-type: none"> <li>Introduction lacks focus and has inadequate detail. Most concepts and terminology not described to allow for understanding by a non-expert audience</li> </ul>	<ul style="list-style-type: none"> <li>Cannot be understood by a non-expert audience</li> </ul>
<b>Hypotheses &amp; Aims</b>  /10 x 1	<ul style="list-style-type: none"> <li>Very clear and well developed links between hypotheses, aims and literature.</li> </ul>	<ul style="list-style-type: none"> <li>Very clear links between hypotheses, aims and literature.</li> </ul>	<ul style="list-style-type: none"> <li>Clear links between hypotheses, aims and literature.</li> </ul>	<ul style="list-style-type: none"> <li>Links between hypotheses, aims and literature.</li> </ul>	<ul style="list-style-type: none"> <li>Some links between hypotheses, aims and literature.</li> </ul>	<ul style="list-style-type: none"> <li>No clear links between hypotheses, aims and literature.</li> </ul>	<ul style="list-style-type: none"> <li>No hypotheses or aims</li> </ul>
<b>Methods</b>  /10 x 1	<ul style="list-style-type: none"> <li>Clear and detailed description of proposed experiments.</li> <li>Linked clearly to aims and literature</li> </ul>	<ul style="list-style-type: none"> <li>Clear description of proposed experiments.</li> <li>Mostly linked well to aims and literature</li> </ul>	<ul style="list-style-type: none"> <li>Clear description of experiments, but minor detail lacking.</li> <li>Linked to aims and literature</li> </ul>	<ul style="list-style-type: none"> <li>Descriptions of experiments mostly clear, some minor aspects or linking to aims lacking..</li> </ul>	<ul style="list-style-type: none"> <li>Description of experiments lacked some major detail or poorly linked to aims.</li> </ul>	<ul style="list-style-type: none"> <li>Description of experiments lacked some major detail and poorly linked to aims.</li> </ul>	<ul style="list-style-type: none"> <li>Experiments not described.</li> </ul>
<b>Presentation: Structure &amp; material</b>  /10 x 1.5	<ul style="list-style-type: none"> <li>The font, colour, graphics and slide layout used greatly enhances the presentation. Figures clearly labelled. No errors.</li> <li>Clear and logical structure throughout</li> </ul>	<ul style="list-style-type: none"> <li>The font, colour, graphics and slide layout used enhances the presentation. Figures clearly labelled. Minor errors.</li> <li>Clear and logical structure throughout</li> </ul>	<ul style="list-style-type: none"> <li>The font, colour, graphics and slide layout used enhances the presentation. Figures labelled. Minor errors.</li> <li>Mostly clear and logical structure throughout</li> </ul>	<ul style="list-style-type: none"> <li>The font, colour, graphics and slide layout used sometimes distracts from the presentation. Figures labelled with some errors.</li> <li>Mostly clear and logical structure throughout</li> </ul>	<ul style="list-style-type: none"> <li>The font, colour, graphics and slide layout used sometimes distracts from the presentation. Not all figures used are labelled or have errors.</li> <li>Lacking clear and logical structure</li> </ul>	<ul style="list-style-type: none"> <li>The font, colour, graphics and slide layout used distracts from the presentation. Poor use of figures including lack of labels or errors.</li> <li>Lacking clear and logical structure</li> </ul>	<ul style="list-style-type: none"> <li>The font, colour, graphics and slide layout used distracts from the presentation.</li> <li>Figures used not labelled.</li> <li>No logical structure to presentation</li> </ul>
<b>Presentation: Engagement</b>  /10 x 1.5	<ul style="list-style-type: none"> <li>Delivery clear, articulate and professional. Well paced and timing perfect. Confident stance and body language. Enthusiastic.</li> </ul>	<ul style="list-style-type: none"> <li>Delivery clear, articulate and professional. Well paced. Confident stance and body language. Enthusiastic.</li> </ul>	<ul style="list-style-type: none"> <li>Delivery mostly clear, articulate and professional. Well paced. Mostly confident stance and body language. Enthusiastic.</li> </ul>	<ul style="list-style-type: none"> <li>Delivery mostly clear, occasional lapses in clarity and/or speed. OK stance and body language, some lapses.</li> </ul>	<ul style="list-style-type: none"> <li>Delivery mostly clear, occasional lapses in clarity and/or speed. Some major lapses in body language.</li> </ul>	<ul style="list-style-type: none"> <li>Delivery largely unclear / inaudible. Poorly paced. Major lapses in body language.</li> </ul>	<ul style="list-style-type: none"> <li>Delivery largely unclear / inaudible. Poorly paced. Didn't engage with audience at all.</li> </ul>
<b>Questions</b>  /10 x 2	<ul style="list-style-type: none"> <li>All responses to Qs demonstrated clear understanding of the project and its relevance.</li> <li>Consistently strongly argued and accurate answers to questions drawing from related literature.</li> </ul>	<ul style="list-style-type: none"> <li>Responses to Qs demonstrated clear understanding of the project and its relevance.</li> <li>Strongly argued and accurate answers to questions drawing from related literature.</li> </ul>	<ul style="list-style-type: none"> <li>Responses to Qs demonstrated understanding of the project and its relevance.</li> <li>Mostly accurate answers to questions, drew from related literature</li> </ul>	<ul style="list-style-type: none"> <li>Responses to Qs demonstrated some understanding of the project and its relevance.</li> <li>Average but seemingly accurate answers to questions.</li> </ul>	<ul style="list-style-type: none"> <li>Responses to Qs demonstrated some understanding of the project or its relevance.</li> <li>Multiple minor errors made in responses to questions</li> </ul>	<ul style="list-style-type: none"> <li>Responses demonstrated little understanding of the project and its relevance.</li> <li>Major errors made in responses to questions.</li> </ul>	<ul style="list-style-type: none"> <li>Responses did not demonstrate any understanding of the project.</li> <li>Significant errors made in responses to questions.</li> </ul>

Criteria	Project Manuscript (Mark out of 10 for each marking criteria)						
	10-9.0 Outstanding	8.9-8.5 Excellent	8.4-8.0 Very Good	7.9-7.5 Good / Average	7.4-6.5 Fair	6.4-5.0 Poor	4.9-0 Very Poor
<b>Abstract</b> ____/10 X 0.5	<ul style="list-style-type: none"> <li>Concise and informative summary of project rationale, results and relevance</li> </ul>	<ul style="list-style-type: none"> <li>Concise and informative summary of project rationale, results and relevance. Minor aspect unclear/missing</li> </ul>	<ul style="list-style-type: none"> <li>Nice summary of project rationale, results and/or relevance. Some key aspect potentially missing</li> </ul>	<ul style="list-style-type: none"> <li>Nice summary of project rationale, results and/or relevance. Some aspect missing and/or some error(s).</li> </ul>	<ul style="list-style-type: none"> <li>Fair summary of project, some aspect missing, and/or some error(s). Potentially inconsistent with main text.</li> </ul>	<ul style="list-style-type: none"> <li>Significant inaccuracies in the summary of project.</li> </ul>	<ul style="list-style-type: none"> <li>Significant inaccuracies in the summary of project.</li> </ul>
<b>Introduction, Hypothesis &amp; Aims</b> ____/10 X 1	<ul style="list-style-type: none"> <li>Concise and clear account of the scientific background and the rationale of the experiment. Very clear links between hypotheses / aims and literature.</li> </ul>	<ul style="list-style-type: none"> <li>Concise and clear account of the scientific background and the rationale of the experiment. Clear links between hypotheses / aims and literature.</li> </ul>	<ul style="list-style-type: none"> <li>Clear account of the scientific background and the rationale of the experiment. Clear links between hypotheses / aims and literature. Minor errors.</li> </ul>	<ul style="list-style-type: none"> <li>Clear account of the scientific background and the rationale of the experiment. Minor omissions or errors. Links between hypotheses / aims and literature</li> </ul>	<ul style="list-style-type: none"> <li>A good introduction of the scientific background and the rationale of the experiment. Some factual error or omissions. Some links between hypotheses / aims and literature</li> </ul>	<ul style="list-style-type: none"> <li>Some introduction to the scientific background and the rationale of the experiment. More detail needed. Some links between hypotheses / aims and literature. Factual errors or omissions in text.</li> </ul>	<ul style="list-style-type: none"> <li>Lacking detail of the rationale of the experiment and scientific background. No links between hypotheses / aims and literature. Factual errors or omissions in text.</li> </ul>
<b>Materials &amp; Methods</b> ____/10 X 1	<ul style="list-style-type: none"> <li>Clear and detailed description of experiments and data analysis (including statistical analysis).</li> </ul>	<ul style="list-style-type: none"> <li>Clear description of experiments and data analysis (including statistical analysis).</li> </ul>	<ul style="list-style-type: none"> <li>Good description of experiments and data analysis (including statistical analysis), with minor errors.</li> </ul>	<ul style="list-style-type: none"> <li>Description of experiments and data analysis (including statistical analysis) mostly clear but significant detail lacking. Minor errors present in methods.</li> </ul>	<ul style="list-style-type: none"> <li>Description of experiments and data analysis (including statistical analysis) lacking major details. Minor errors present in methods.</li> </ul>	<ul style="list-style-type: none"> <li>Description of experiments and data analysis (including statistical analysis) lacking major details. Major errors in methods.</li> </ul>	<ul style="list-style-type: none"> <li>Description of experiments and data analysis (including statistical analysis) absent or unclear.</li> </ul>
<b>Results: Description &amp; Content</b> ____/10 X 1.5	<ul style="list-style-type: none"> <li>Logical and clear description of the experimental results with reference to tables and figures. No conclusions or interpretation of results presented.</li> <li>Sufficient controls and replicates with appropriate data analysis (including statistics) performed correctly. Represents an extensive body of work</li> </ul>	<ul style="list-style-type: none"> <li>Clear description of the experimental results with reference to tables and figures. No conclusions or interpretation of results presented.</li> <li>Sufficient controls and replicates with minor errors in data analysis (including statistics). Represents an large body of work</li> </ul>	<ul style="list-style-type: none"> <li>Clear description of the experimental results with reference to tables and figures. No conclusions or interpretation of results presented.</li> <li>Sufficient controls and replicates with minor miscalculations in data analysis (including statistics) or inaccurate presentation of data. Represents an large body of work</li> </ul>	<ul style="list-style-type: none"> <li>Good description of the experimental results with reference to tables and figures in most instances. Generally no conclusions or interpretation of results presented.</li> <li>Sufficient controls and replicates with significant minor miscalculations in data analysis (including statistics) or inaccurate presentation of data. Represents an adequate body of work</li> </ul>	<ul style="list-style-type: none"> <li>Description of the experimental results lacks required detail and appropriate reference to figures and tables. Some conclusions or interpretation of results presented.</li> <li>Sufficient controls and replicates. Inappropriate data analysis, including statistics, used in some parts or inaccurate presentation of data. Represents an adequate body of work</li> </ul>	<ul style="list-style-type: none"> <li>Description of the experimental results lacks required detail. Some conclusions or interpretation of results presented.</li> <li>Insufficient controls and replicates used. Major errors or omissions in data analysis. Represents an inadequate body of work</li> </ul>	<ul style="list-style-type: none"> <li>No description of the experimental results given. Lack of controls and replicates with appropriate data analysis (including statistics) performed. Represents an inadequate body of work</li> </ul>

(Cont.)	10-9.0 Outstanding	8.9-8.5 Excellent	8.4-8.0 Very Good	7.9-7.5 Good / Average	7.4-6.5 Fair	6.4-5.0 Poor	4.9-0 Very Poor
<b>Results: Presentation</b>  ____/10 X 1	<ul style="list-style-type: none"> <li>Graph axes labelled and units of measurement given in parentheses. Legends explain the figures in sufficient detail that they can be understood without reference to the text. Tables clearly labelled with clear footnotes if necessary so self-explanatory.</li> <li>No errors in presentation.</li> </ul>	<ul style="list-style-type: none"> <li>Graph axes labelled and units of measurement given in parentheses. Legends explain the figures in sufficient detail that they can be understood without reference to the text. Tables clearly labelled with footnotes if necessary so self-explanatory..</li> <li>A few minor errors in data presentation.</li> </ul>	<ul style="list-style-type: none"> <li>Graph axes labelled and units of measurement given in parentheses. Not all legends explain the figures in sufficient detail. Most tables clearly labelled with footnotes if necessary so self-explanatory.</li> <li>Some minor errors in data presentation.</li> </ul>	<ul style="list-style-type: none"> <li>Most graph axes labelled and units of measurement given in parentheses. Not all legends explain the figures in sufficient detail to be understood without reference to the text. Most tables clearly labelled with footnotes if necessary so self-explanatory.</li> <li>Some significant errors in data presentation.</li> </ul>	<ul style="list-style-type: none"> <li>Results are poorly presented, most graph axes labelled and units of measurement given in parentheses. Not all legends explain the figures in sufficient detail that they can be understood without reference to the text. Most tables are self-explanatory, some errors in description or labels.</li> <li>Some significant errors in data presentation</li> </ul>	<ul style="list-style-type: none"> <li>Results are poorly presented. Most graph axes not labelled or missing units of measurement. Most legends do not explain the figures in sufficient detail that they can be understood without reference to the text. Most tables are not self-explanatory and/or poorly labelled.</li> <li>Major errors in data presentation</li> </ul>	<ul style="list-style-type: none"> <li>Results poorly presented or missing. Graph axes not labelled and units of measurement absent. Legends do not explain the figures in sufficient detail that they can be understood without reference to the text. Tables are not self-explanatory and/or poorly labelled.</li> <li>Major errors in data presentation</li> </ul>
<b>Discussion</b>  ____/10 X 3.0	<ul style="list-style-type: none"> <li>Discussion is insightful, clear and logical. Extensive interpretation of the results with reference to previous scientific studies. Significance of findings extensively placed within the broader context of the field.</li> <li>Comprehensive critical analysis of strengths and limitations of experiments. Future directions identified and clearly justified.</li> </ul>	<ul style="list-style-type: none"> <li>Discussion is clear and logical. Appropriate interpretation of the results with reference to previous scientific studies. Significance of findings well placed within the broader context of the field.</li> <li>Significant critical analysis of strengths and limitations of experiments. Future directions identified and justified</li> </ul>	<ul style="list-style-type: none"> <li>Discussion is clear. Appropriate interpretation of results, some reference to previous studies, but not always. Significance of findings placed within the broader context of the field.</li> <li>Critical analysis of strengths and limitations of experiments. Future directions identified and justified</li> </ul>	<ul style="list-style-type: none"> <li>Discussion is mostly clear. Appropriate interpretation of the results with a few minor errors. Reference to previous scientific studies in most cases. Significance of some findings placed within the broader context of the field.</li> <li>Some critical analysis of strengths and limitations of experiments. Future directions identified and mostly justified</li> </ul>	<ul style="list-style-type: none"> <li>Discussion is unclear in many areas. Some inappropriate interpretation of the results. Lacking reference to previous scientific studies. Significance of findings not placed within the broader context of the field.</li> <li>Lacking some critical analysis of strengths and limitations of experiments. Future directions identified.</li> </ul>	<ul style="list-style-type: none"> <li>Results are restated with little interpretation or reference to previous scientific studies. Major findings not placed within the broader context of the field.</li> <li>No critical analysis of strengths and limitations of experiments. No future directions identified.</li> <li>Misunderstanding of some major concepts.</li> </ul>	<ul style="list-style-type: none"> <li>Results are restated with no interpretation or reference to previous scientific studies. Findings not place within the broader context of the field.</li> <li>No critical analysis of strengths and limitations of experiments. No future directions identified.</li> <li>Little understanding of most major concepts.</li> </ul>
<b>References</b>  ____/10 X 1	<ul style="list-style-type: none"> <li>Predominant and comprehensive use of primary articles. Many articles presented from recent or seminal publications.</li> <li>Citation style correct and consistent throughout. Reference list completely accurate with no errors.</li> </ul>	<ul style="list-style-type: none"> <li>Predominant use of primary articles. Many articles presented from recent or seminal publications.</li> <li>Citation style correct and consistent. Reference list complete, but a few minor errors.</li> </ul>	<ul style="list-style-type: none"> <li>Predominant use of primary articles. Could have used more articles from recent or seminal publications.</li> <li>Citation style consistent. Reference list incomplete, and some minor errors.</li> </ul>	<ul style="list-style-type: none"> <li>Some over reliance on reviews or texts. Could have used more articles from recent or seminal publications.</li> <li>Some references inconsistent between text and list with many minor errors. Citation style mostly consistent</li> </ul>	<ul style="list-style-type: none"> <li>Some over reliance on reviews or texts. Many articles not from recent or seminal publications.</li> <li>Many references inconsistent between text and list with many minor errors. Citation style incorrect / inconsistent.</li> </ul>	<ul style="list-style-type: none"> <li>Significant over reliance on reviews or texts. Limited number of recent or seminal articles used.</li> <li>Many inconsistencies between text and list. Some major errors. Inappropriate citation style used.</li> </ul>	<ul style="list-style-type: none"> <li>Use of literature limited to a few articles and reviews. Poor attempt to explore literature.</li> <li>Many references inconsistent between text and list. Many major errors.</li> </ul>
<b>Overall Presentation</b>  ____/10 X 1	<ul style="list-style-type: none"> <li>No grammatical or spelling errors. Professional expression and style used consistently. All figures accurate, focussed and informative</li> <li>Word count 5000±500</li> </ul>	<ul style="list-style-type: none"> <li>No grammatical or spelling errors. Professional expression and style used. All figures accurate, focussed and informative. Word count &lt;or&gt;5000±500</li> </ul>	<ul style="list-style-type: none"> <li>No grammatical errors but some spelling errors. Professional expression and style used. All figures accurate, focussed and informative</li> <li>Word count 5000±500</li> </ul>	<ul style="list-style-type: none"> <li>Some grammatical and spelling errors. Professional expression and style used. Most figures accurate and informative.</li> <li>Word count 5000±500</li> </ul>	<ul style="list-style-type: none"> <li>Some grammatical and spelling errors. Professional expression used. Most figures accurate, but not so relevant.</li> <li>Word count: &lt;or&gt;5000±500</li> </ul>	<ul style="list-style-type: none"> <li>Major grammatical and spelling errors. Professional expression used. Numerous errors in figures or largely irrelevant</li> <li>Word count: 5000±500</li> </ul>	<ul style="list-style-type: none"> <li>Major grammatical and spelling errors. Language used not professional. Numerous errors in figures or largely irrelevant</li> <li>Word count: &lt;or&gt;5000</li> </ul>

Criteria	Final Seminar (Mark out of 10 for each marking criteria)						
	10-9.0 Outstanding	8.9-8.5 Excellent	8.4-8.0 Very Good	7.9-7.5 Good / Average	7.4-6.5 Fair	6.4-5.0 Poor	4.9-0 Very Poor
<b>Background, Hypotheses &amp; Aims &amp; Methods</b>  /10 x 1	<ul style="list-style-type: none"> <li>Very clear &amp; concise description of background. Can be easily understood by a non-expert audience. Well developed links between hypotheses, aims, methods and literature</li> </ul>	<ul style="list-style-type: none"> <li>Clear &amp; concise description of background. Can be understood by a non-expert audience. Clear links between hypotheses, aims and methods and literature</li> </ul>	<ul style="list-style-type: none"> <li>Clear description of background. Can mostly be understood by a non-expert audience. Good links between hypotheses, aims and methods and literature</li> </ul>	<ul style="list-style-type: none"> <li>Good description of background. Occasionally difficult for non-expert audience to understand. Links made between hypotheses, aims and methods and literature</li> </ul>	<ul style="list-style-type: none"> <li>Unclear description of background. Occasionally difficult for non-expert audience to understand. Insufficient links between hypotheses, aims and methods and literature</li> </ul>	<ul style="list-style-type: none"> <li>Poor description of background. Difficult for non-expert audience to understand. Lacking links between hypotheses, aims and methods and literature</li> </ul>	<ul style="list-style-type: none"> <li>Lacking description of background. Cannot be understood by a non-expert audience. No links between hypotheses, aims, methods and literature</li> </ul>
<b>Results</b>  /10 x 2	<ul style="list-style-type: none"> <li>All data presented very clearly, accurately and with sufficient detail</li> <li>Direct and clear links to aims</li> <li>Controls, replicates and group data and analysis appropriate and presented</li> </ul>	<ul style="list-style-type: none"> <li>All data presented clearly, accurately and with sufficient detail</li> <li>Some links to aims</li> <li>Controls, replicates and group data and analysis appropriate and presented</li> </ul>	<ul style="list-style-type: none"> <li>Most data presented clearly, accurately and with sufficient detail</li> <li>Some links to aims</li> <li>Controls, replicates and group data and analysis appropriate and presented</li> </ul>	<ul style="list-style-type: none"> <li>Most data presented clearly and accurately but some errors</li> <li>some links to aims.</li> <li>Controls, replicates and group data and analysis presented only sometimes</li> </ul>	<ul style="list-style-type: none"> <li>Most data presented clearly and accurately but some errors</li> <li>Limited links to aims.</li> <li>Limited controls, group data and analysis presented</li> </ul>	<ul style="list-style-type: none"> <li>Some data presented clearly but with major errors.</li> <li>Limited links to aims.</li> <li>No controls, group data and/or analysis presented</li> </ul>	<ul style="list-style-type: none"> <li>Data presentation confusing and with major errors / omissions.</li> <li>No links to aims</li> <li>No controls, group data and/or analysis presented</li> </ul>
<b>Discussion</b>  /10 x 2	<ul style="list-style-type: none"> <li>All data evaluated critically. Significance of findings placed within the broader context of the field. Conclusions appropriate. Clear demonstration of an understanding of the limitations of the data</li> </ul>	<ul style="list-style-type: none"> <li>All data evaluated critically. Most findings placed within the broader context of the field. Good demonstration of an understanding of the limitations of the data</li> </ul>	<ul style="list-style-type: none"> <li>Most data evaluated critically. Most findings placed within the broader context of the field. Good demonstration of an understanding of the limitations of the data</li> </ul>	<ul style="list-style-type: none"> <li>Most data evaluated critically. Most findings placed within the broader context of the field. Most conclusions appropriate. Some demonstration of an understanding of the limitations of the data</li> </ul>	<ul style="list-style-type: none"> <li>Some critical evaluation of data. Some findings placed within the broader context of the field. Errors in conclusions. Some demonstration of an understanding of the limitations of the data</li> </ul>	<ul style="list-style-type: none"> <li>Limited critical evaluation of data. Most findings not placed within the broader context of the field. Some conclusions. Lack of demonstration of an understanding of the limitations of the data</li> </ul>	<ul style="list-style-type: none"> <li>No critical evaluation of data. Findings not placed within the broader context of the field. No conclusions. No demonstration of an understanding of the limitations of the data</li> </ul>
<b>Presentation: Structure &amp; Material</b>  /10 x 1	<ul style="list-style-type: none"> <li>The font, colour, graphics and slide layout used greatly enhances the presentation. Figures clearly labelled. No errors.</li> <li>Clear and logical structure throughout</li> </ul>	<ul style="list-style-type: none"> <li>The font, colour, graphics and slide layout used enhances the presentation. Figures clearly labelled. Minor errors.</li> <li>Clear and logical structure throughout</li> </ul>	<ul style="list-style-type: none"> <li>The font, colour, graphics and slide layout used enhances the presentation. Figures labelled. Minor errors.</li> <li>Mostly clear and logical structure throughout</li> </ul>	<ul style="list-style-type: none"> <li>The font, colour, graphics and slide layout used sometimes distracts from the presentation. Figures used and labelled with some errors.</li> <li>Mostly clear and logical structure throughout</li> </ul>	<ul style="list-style-type: none"> <li>The font, colour, graphics and slide layout used sometimes distracts from the presentation. Not all figures used are labelled or have errors.</li> <li>Lacking clear and logical structure</li> </ul>	<ul style="list-style-type: none"> <li>The font, colour, graphics and slide layout used distracts from the presentation. Poor use of figures including lack of labels or errors.</li> <li>Lacking clear and logical structure</li> </ul>	<ul style="list-style-type: none"> <li>The font, colour, graphics and slide layout used distracts from the presentation.</li> <li>Figures used not labelled.</li> <li>No logical structure to presentation</li> </ul>
<b>Presentation: Engagement</b>  /10 x 1	<ul style="list-style-type: none"> <li>Delivery clear, articulate and professional. Well paced and timing perfect. Confident stance and body language. Enthusiastic.</li> </ul>	<ul style="list-style-type: none"> <li>Delivery clear, articulate and professional. Well paced. Confident stance and body language. Enthusiastic.</li> </ul>	<ul style="list-style-type: none"> <li>Delivery mostly clear, articulate and professional. Well paced. Mostly confident stance and body language. Enthusiastic.</li> </ul>	<ul style="list-style-type: none"> <li>Delivery mostly clear, occasional lapses in clarity and/or speed. OK stance and body language, some lapses.</li> </ul>	<ul style="list-style-type: none"> <li>Delivery mostly clear, occasional lapses in clarity and/or speed. Some major lapses in body language.</li> </ul>	<ul style="list-style-type: none"> <li>Delivery largely unclear / inaudible. Poorly paced. Major lapses in body language.</li> </ul>	<ul style="list-style-type: none"> <li>Delivery largely unclear / inaudible. Poorly paced. Didn't engage with audience at all.</li> </ul>
<b>Questions</b>  /10 x 3	<ul style="list-style-type: none"> <li>All responses to Qs demonstrated clear understanding of the project and its relevance.</li> <li>Consistently strongly argued and accurate answers to questions drawing from related literature.</li> </ul>	<ul style="list-style-type: none"> <li>Responses to Qs demonstrated clear understanding of the project and its relevance.</li> <li>Strongly argued and accurate answers to questions drawing from related literature.</li> </ul>	<ul style="list-style-type: none"> <li>Responses to Qs demonstrated understanding of the project and its relevance.</li> <li>Mostly accurate answers to questions, drew from related literature</li> </ul>	<ul style="list-style-type: none"> <li>Responses to Qs demonstrated some understanding of the project and its relevance.</li> <li>Average but seemingly accurate answers to questions.</li> </ul>	<ul style="list-style-type: none"> <li>Responses to Qs demonstrated some understanding of the project or its relevance.</li> <li>Multiple minor errors made in responses to questions</li> </ul>	<ul style="list-style-type: none"> <li>Responses demonstrated little understanding of the project and its relevance.</li> <li>Major errors made in responses to questions.</li> </ul>	<ul style="list-style-type: none"> <li>Responses did not demonstrate any understanding of the project.</li> <li>Significant errors made in responses to questions.</li> </ul>

Criteria	Research Performance and Seminar Engagement (Mark out of 10 for each marking criteria)					
	10 – 9.0 Outstanding	8.9 - 8.5 Excellent	8.4 - 7.5 Very Good	7.4 - 6.5 OK/Average	6.4 – 5.0 Fair/below average	4.9 – 0 Poor
<b>Motivation &amp; Organisational Skills</b>  _____/10 X 1.5	<ul style="list-style-type: none"> <li>Exceptionally planning and time-management skills</li> <li>Demonstrated appropriate initiative in all situations</li> <li>Demonstrated independent motivation and a deep understanding of when, or when not to, persist in relation to trouble-shooting and/or data collection</li> </ul>	<ul style="list-style-type: none"> <li>Excellent planning and time-management with rare lapses</li> <li>Demonstrated appropriate initiative in most situations</li> <li>Demonstrated independent motivation and a good understanding of when or when not to, persist in relation to trouble-shooting and/or data collection</li> </ul>	<ul style="list-style-type: none"> <li>Good planning and time-management with occasional lapses</li> <li>Demonstrated initiative in many but not all situations</li> <li>Demonstrated motivation and a understanding of when or when not to, persist in relation to trouble-shooting and/or data collection</li> </ul>	<ul style="list-style-type: none"> <li>Planned well but struggled to manage multiple activities or complex tasks</li> <li>Demonstrated initiative in many but not all situations, sometimes the initiative was inappropriate</li> <li>Motivated but lacked an understanding of when to persist in relation to trouble-shooting and/or data collection</li> </ul>	<ul style="list-style-type: none"> <li>Inadequate planning lacks due regard of time limits</li> <li>Demonstrated little initiative, or initiative was largely inappropriate</li> <li>Moderate motivation but showed little or no persistence in relation to trouble-shooting and/or data collection.</li> </ul>	<ul style="list-style-type: none"> <li>Very poor time-management skills</li> <li>Demonstrated little or no initiative</li> <li>Lacked motivation and failed to persist in relation to trouble-shooting and/or data collection</li> </ul>
<b>Research Skills</b>  _____/10 X 2	<ul style="list-style-type: none"> <li>Exceptionally high laboratory/research skills, required minimal teaching and supervision</li> <li>Appropriate attention to precision and accuracy</li> <li>Is able to trouble-shooting experimental problems without input from supervisor.</li> </ul>	<ul style="list-style-type: none"> <li>Excellent laboratory/ research skills, required minimal teaching and supervision</li> <li>Appropriate attention to precision and accuracy, with minor lapses</li> <li>Is able to trouble-shooting experimental problems with minimal input from supervisor.</li> </ul>	<ul style="list-style-type: none"> <li>Good laboratory/ research skills, required minimal teaching and supervision</li> <li>Appropriate attention to precision and accuracy with occasional lapses.</li> <li>Is able to trouble-shooting experimental problems with some input from supervisor</li> </ul>	<ul style="list-style-type: none"> <li>Good laboratory/ research skills, required some on-going teaching and supervision</li> <li>Limited attention to precision and accuracy</li> <li>Can provided initial ideas on trouble-shooting but these are limited in their scope</li> </ul>	<ul style="list-style-type: none"> <li>Poor laboratory/research skills, required constant teaching and supervision</li> <li>Limited attention to precision and accuracy</li> <li>Largely relied on the supervisor for trouble-shooting</li> </ul>	<ul style="list-style-type: none"> <li>Extremely poor laboratory/ research skills, required constant teaching and supervision</li> <li>No attention to precision and accuracy</li> <li>Relied on supervisor for trouble-shooting</li> </ul>
<b>Laboratory Notebook and Data Storage</b>  _____/10 X 1.5	<ul style="list-style-type: none"> <li>The protocols for all experiments are described with enough detail to allow another researcher to follow with ease</li> <li>All data collected are presented or location of stored recorded. The data are clearly labelled.</li> </ul>	<ul style="list-style-type: none"> <li>The protocols for all experiments are described with enough detail to allow another researcher to follow</li> <li>All data collected are presented or location of stored recorded. The data are clearly labelled, with minor omissions</li> </ul>	<ul style="list-style-type: none"> <li>The protocols for most experiments are described with enough detail to allow another researcher to follow</li> <li>Most of the data collected are presented or location stored recorded. Some of the data storage or labelling unclear</li> </ul>	<ul style="list-style-type: none"> <li>The protocols for some but not all experiments are described with enough detail to allow another researcher to follow</li> <li>Some lapses in links between data collection / presentation or their storage location. Most data is clearly labelled</li> </ul>	<ul style="list-style-type: none"> <li>Some experimental protocols recorded, but without enough detail to allow another researcher to follow</li> <li>Poor record of data collected or location where it is stored. The data are not labelled at all clearly.</li> </ul>	<ul style="list-style-type: none"> <li>No detail of experimental protocols recorded</li> <li>No record of data collected or location where it is stored.</li> </ul>

(cont.)	10 – 9.0 Outstanding	8.9 - 8.5 Excellent	8.4 - 7.5 Very Good	7.4 - 6.5 OK/Average	6.4 – 5.0 Fair/below average	4.9 – 0 Poor
<b>Critical Analysis Skills</b>  _____/10 X 1.5	<ul style="list-style-type: none"> <li>Excellent knowledge of relevant literature and the ability to relate the relevant literature to interpretation of results</li> <li>Thorough awareness of limitations of the study and appreciation of future directions</li> </ul>	<ul style="list-style-type: none"> <li>Able to discuss, interpret and apply the relevant literature to own data with minimal supervisory guidance</li> <li>Good appreciation of the limitations of the data and can suggest future directions for the study</li> </ul>	<ul style="list-style-type: none"> <li>Able to discuss, interpret and apply the relevant literature to own data with some supervisory guidance</li> <li>Understands the limitations of the data and can suggest future directions for the study</li> </ul>	<ul style="list-style-type: none"> <li>Able to discuss, interpret and apply the relevant literature to own data but needed significant supervisory guidance</li> <li>Has some appreciation of the limitations of the data and future directions of the study</li> </ul>	<ul style="list-style-type: none"> <li>Limited ability to discuss, interpret the relevant literature. Relied on heavily on supervisor for critical analysis and interpretation of the data</li> <li>Has limited understanding of the limitations and future directions of the study</li> </ul>	<ul style="list-style-type: none"> <li>Has no knowledge of the relevant literature</li> <li>Unable to critically analyse and interpret own data</li> <li>Little or no appreciation of the limitations of the study. Unable to suggest future directions.</li> </ul>
<b>Written Communication Skills</b>  _____/10 X 1.5	<ul style="list-style-type: none"> <li>No supervisor contribution needed to complete assessment tasks</li> <li>Written work is excellent in every way. No correction necessary.</li> <li>Results presented suitable for publication, including appropriate graphical presentation and consistency in treatment of data</li> </ul>	<ul style="list-style-type: none"> <li>Minimal supervisor contribution needed to complete assessment tasks</li> <li>Written work is coherent well-structured and very easy to follow and read. Few corrections required.</li> <li>Results presented in a manner that is largely suitable for publication, including appropriate graphical presentation and consistency in treatment of data</li> </ul>	<ul style="list-style-type: none"> <li>Some supervisor contribution needed to complete assessment tasks</li> <li>Written work easy to read and follow. Few structure, grammatical or typographical errors present</li> <li>Presented results in a manner that is satisfactory but not necessarily ideal minor inconsistent in the presentation</li> </ul>	<ul style="list-style-type: none"> <li>Some supervisor contribution needed to complete assessment tasks</li> <li>Written work has many structure, grammatical or typographical errors.</li> <li>Results presented in manner that is mostly satisfactory with some errors in the presentation</li> </ul>	<ul style="list-style-type: none"> <li>Significant supervisor contribution needed to complete assessment tasks</li> <li>Written work lacked structure and required significant correction of spelling and grammar.</li> <li>Results presented in a manner that is unsatisfactory with many errors</li> </ul>	<ul style="list-style-type: none"> <li>Large amount of supervisor contribution needed to complete assessment tasks</li> <li>Written work lacked structure. Very poor written English skills.</li> <li>Presentation of results inappropriate with many errors. Not all results presented.</li> </ul>
<b>Seminar Engagement</b>  _____/10 X 2	<ul style="list-style-type: none"> <li>Regular attendance at relevant seminars accompanied with note-taking during seminars</li> <li>Notes for 12 relevant seminars</li> <li>Notes were very clear with date, title, main points and reflection</li> <li>Consistently insightful and meaningful reflections, including critical and positive appraisal of presentation.</li> <li>Seminar notes were frequently shown to me throughout the year</li> </ul>	<ul style="list-style-type: none"> <li>Regular attendance at relevant seminars</li> <li>Mostly clear seminar notes with date, title, main points and reflection. Occasional lapses</li> <li>A few of the reflections seemed repetitive or less meaningful, but most were pretty good</li> </ul>	<ul style="list-style-type: none"> <li>Most notes taken during seminars, some appear to be taken or written up later</li> <li>Notes for 9-12 relevant seminars only</li> <li>Seminar notes / reflections were shown or discussed me only a few times throughout the year.</li> <li>Reflections sometimes bland, such as simple positive statements only</li> </ul>	<ul style="list-style-type: none"> <li>Attendance and note-taking seemed a bit irregular</li> <li>Notes often on loose sheets poorly compiled rather than in clear book / binder</li> <li>Notes were OK, but quite a few were missing some key points.</li> <li>Reflections seldom identified key generic aspects useful for the students progression</li> </ul>	<ul style="list-style-type: none"> <li>Unaware of which seminars student attended</li> <li>Less than 9 seminars attended</li> <li>Student didn't seem to engage with seminars</li> <li>Hard to follow from the notes what the student learnt from the seminar</li> <li>I only saw the seminar notebook at the end of the course</li> </ul>	<ul style="list-style-type: none"> <li>Student never discussed any seminars with supervisor team</li> <li>I never saw the seminar notebook.</li> <li>This is the 1<sup>st</sup> time I have heard of "seminar engagement" mark.</li> </ul>