Faculty of Medicine
School of Medical Sciences

HESC4561

Research Internship A

COURSE OUTLINE

TERM 2, 2020

CRICOS Provider Code 00098G

CONTENTS PAGE

Please read this outline in conjunction with the following pages on the School of Medical Sciences website:

- Advice for Students
- Learning Resources

(or see "STUDENTS" tab at medicalsciences.med.unsw.edu.au)

HESC4561 Course Information

This course comprises the first half (10 weeks) of a 20 week (2 term) experimental research project, supervised by a suitable staff member of an institution. The project may encompass a systematic review, project development, clinical or laboratory experiments, statistical analyses, and oral and written reporting. Projects may also involve 'placements', possibly outside UNSW, in the form of externally funded research programs, industrial placements or other programs either during the usual session or in the session breaks. In these cases students will require an academic member of staff to supervise the internship. The course will develop your ability to formulate research questions, conduct in-depth studies, analyse and present data, and write reports.

OBJECTIVES OF THE COURSE

- To develop critical thinking in relation to the scientific literature
- To foster independence in undertaking research projects, such as collecting and analysing scientific and clinical data or conducting a systematic review
- To provide skills in effective scientific communication

COURSE CO-ORDINATOR and LECTURERS

Course Coordinator:

Dr Carolyn Broderick
School of Medical Sciences
Wallace Wurth, Lvl 2 NW, Rm 221
Available Wednesdays & Thursdays
c.broderick@unsw.edu.au

Students wishing to see the course coordinator should make an appointment *via* email as our offices are not readily accessible. We will organize to meet you in a convenient location elsewhere in the building.

For administrative matters, please submit enquiries via the UNSW Student Portal Web Forms

COURSE STRUCTURE and TEACHING STRATEGIES

- **Credit Points:** 6 UOC

Course Prerequisites / Assumed Knowledge

- MATH1041 - Statistics for Life and Social Sciences (UG)
- HESC4501 - Exercise Physiology Research Seminars (UG)
- WAM equal or above 65

Course Contact hours

- Introductory lecture: Week 1, Wednesday (2 hour session)
- Oral Presentations seminar: Wed or Thurs Week 5 (2 hour session)
- Regular meetings with research supervisor

A 6 UOC course at UNSW requires approximately 150 hours of student work in total. From these 150 hours, subtract the time required for course attendance (4 hours - i.e., 2 hour introductory lecture and 1 x 2 hour seminar) and the time needed to complete the research integrity modules, background reading and to prepare the presentation and written assessments (~ 66 hours or 6 – 7 hours per week).

The difference equates to assisting with data collection and analysis, and other relevant tasks (e.g. learning experimental procedures), for up to 8 hours per week across 10 weeks (i.e., 80 hours total).

TEACHING STRATEGIES:

Lecture and seminars – These are the only classroom contact hours in Research Internship A. Nonetheless, these activities provide a valuable opportunity to get direction on course requirements and assessment tasks as well as to see and learn from what your colleagues have completed for their projects.

Online Research Integrity Module & Quiz – Before embarking on a research project it is important to learn the principles of conducting responsible research. These 2 online modules with quizzes will ensure students understand the importance of intellectual integrity and honesty in research.

Independent study – Independent study will make up a major portion of the course.

Assessments – These tasks have been chosen as tools to enhance and guide your learning as well as a way of measuring performance and are therefore a central teaching strategy in this course. The assessments have been designed as authentic tasks that replicate the processes a scientist or research-active clinician would undertake to conduct and present research. It is commonplace for practicing clinicians to see the end-product of this process when attending conferences run by professional associations as part of ongoing education as a healthcare professional.

APPROACH TO LEARNING AND TEACHING

The learning and teaching philosophy underpinning this course is centred on student learning and aims to create an environment which interests and challenges students. The teaching is designed to be engaging and relevant in order to prepare students for future careers.

Although the primary source of information for this course is the lecture material and online modules, effective learning can be enhanced through self-directed use of other resources such as textbooks and Web based sources. It is up to you to ensure you perform well in each part of the course; preparing for oral presentations; completing assignments; reading background information relating to your research topic and seeking assistance to clarify your understanding.

RATIONALE FOR COURSE & TEACHING APPROACH

How the course relates to the Exercise Physiology profession – The information and ideas presented in this course will enable development of the critical thinking and good communication skills necessary to professionals. Good communication skills are necessary to build an effective relationship between the patient and the practitioners. Along with the knowledge of techniques used in experimental research, understanding how science is published and ranked is a prerequisite to appreciate scientific output quality. A solid understanding of research in the field of Exercise Sciences is essential to evidence-based clinical practice and to appreciate the progress and evolution of techniques and knowledge in exercise physiology.

How the course relates to other courses in the Exercise Physiology program – Together with Research Seminars (HESC4501), this fourth year course (& its linked course HESC4571) builds upon the knowledge accumulated throughout the whole program. It uses previously understood fundamental concepts to build the necessary critical thinking towards professional independence.

See also medicalsciences.med.unsw.edu.au/students/undergraduate/learning-resources

STUDENT LEARNING OUTCOMES

HESC4561 will develop those attributes that the Faculty of Medicine has identified as important for an Exercise Physiology graduate to attain. These include; skills, qualities, understanding and attitudes that promote lifelong learning that students should acquire during their university experience.

The assessment in the course will be matched as closely as possible to the stated learning outcomes. That is, the assessment will test how well you have achieved the learning outcomes of the course. The general learning outcomes for the course are as follows:

At the end of the course you should be able to:

- Develop a research question based on review of existing scientific or clinical research
- Develop an understanding of current techniques used in biomedical research
- Synthesise, organise and present data from critical review of the literature
- Develop skills in scientific communication, including oral and written skills
- Communicate and work effectively with peers, colleagues and stakeholders

Graduate Attributes

- Engage in independent and reflective learning for the betterment of professional clinical practice, following an evidence-based approach
- Communicate effectively with patients, colleagues and other health professionals

COURSE EVALUATION AND DEVELOPMENT

For course evaluation, feedback will be gathered at the completion of the course, using among other means, UNSW's Course and Teaching Evaluation and Improvement Process and myExperience. Student feedback is taken seriously, and continual improvements are made to the course based, in part, on such feedback.

ASSESSMENT PROCEDURES

Assessment will consist of a research integrity quiz, an oral presentation, a written research protocol and a supervisor report.

Summary of Assessment tasks	Weight	Due Date
ASSESSMENT TASK 1 – ***RESEARCH INTEGRITY QUIZ*** Safe and responsible research practices are essential to sustain high quality research. This assessment item consists of 2 online research integrity modules and quizzes designed to help prepare students to undertake a research project. The learning objectives of this assessment task are to: • Gain knowledge of the basics of safe research practice • Gain knowledge of ethical and responsible research practices	**20%**	**Week 3**
ASSESSMENT TASK 2 – ***ORAL PRESENTATION*** An oral presentation introducing the topic of the research internship and its importance to exercise physiology. This will include background information, research project aims, hypothesis and methods to be used or developed. The presentation will be of 10 minutes duration, with 3 minutes question time and 2 minutes verbal feedback provided after the presentation. The feedback provided will guide your research direction and subsequent completion of the Research Protocol assignment.	**30%**	**Week 5**
ASSESSMENT TASK 3 – ***WRITTEN RESEARCH PROTOCOL*** A written assignment of 2000 words, detailing the intended research protocol. This includes background information, relevance and importance to exercise physiology, project aims, hypothesis and methods to be used or developed. It will also include a statistics analysis plan.	**40%**	**Week 9**

*ASSESSMENT TASK 4 – **SUPERVISOR REPORT***	**10%**	**Week 10**
A report by the internship supervisor commenting on the student's performance throughout the term. A rubric will form the basis for the Supervisor Report.		

Submission of Assessment Tasks

Written assignments are to be submitted electronically through Turnitin via Moodle.

Penalties for late submission of assignments

In cases where an extension has NOT been granted, the following penalties will apply:

- For assignments submitted after **the advised time** on the due date, a penalty of 50% of the maximum marks available for that assignment will be incurred.
- A further 25% of the maximum possible allocated marks (i.e., a total of 75%) will be deducted from assignments which are two (2) days late.
- Assignments received more than two (2) days after the due date **will not be allocated a mark,** however, these assignments **must** still be submitted to pass the unit.

GENERAL INFORMATION

Attendance Requirements

For details on the Policy on Class Attendance and Absence see Advice for Students and the Policy on Class Attendance and Absence.
Guidelines on extra-curricular activities affecting attendance can be found on the School of Medical sciences Website. Advice for Students – Special Consideration

Attendance at seminars is compulsory and must be recorded in the class roll at the start of each class. Arrival more than 15 minutes after the start of the class will be recorded as non-attendance. It is your responsibility to ensure that the demonstrator records your attendance and no discussions will be entered into after the completion of the class. It should be noted that non-attendance for other than documented medical or other serious reasons during the term may result in ineligibility to pass the course. Students who miss seminars due to illness or for other reasons must submit a copy of medical certificates or other documentation to the course coordinator.

Special Consideration

Please see Advice for Students – Special Consideration

Student Support Services

See: Student Advice-Student support services.

Academic Integrity and Plagiarism

The UNSW Student Code outlines the standard of conduct expected of students with respect to their academic integrity and plagiarism.
More details of what constitutes plagiarism can be found here

Health and Safety

See also Advice for Students

Class activities must comply with the NSW Health & Safety Act 2011 and the Work Health & Safety Regulations 2017. For students completing lab-based projects, it is mandatory to complete minimal HS training. The training courses that you have to undertake also depend of the nature of the techniques you will be using or the environment itself.

To get a list of your specific mandatory training, contact your supervisor at least one month before the commencement of your internship.

Health and safety training

Some internships will be completed in a laboratory environment, which will have particular health and safety requirements that your supervisor and/or a lab manager will convey. When undertaking internships in a laboratory the UNSW Health and Safety Awareness course will typically be required at a minimum and is completed online following the instructions below. The course convenor or your supervisor can arrange for you to have access to the online course.

1. Go to myUNSW and use the new single sign on button to access myUNSW
2. Look at the top right of the screen and click on the Moodle logo
3. On the right hand side will be a box labelled “My Courses” with the UNSW OHS Awareness course listed there
4. Click on the course and you will be taken to the home page of the course containing the introduction to the course, the module and the assessment
5. Click on Part One to access the course – please note that it may take a few moments to load on your computer – please be patient during this time and don’t click anything on the screen
6. One you have finished with the course, click on Part Two and complete the assessment

Insurance Cover

UNSW students undertaking external placements as a component of their degree program are covered by the University’s insurance policy for public liability, professional indemnity and personal accident. The University has liability insurance in excess of $10 million for any one claim in the event of such an occurrence.
If requested, the employer hosting a placement can be provided with a Letter of Indemnity issued by the Program Officer or Authority prior to commencement of the placement confirming insurance coverage.
The university, employers and students should undertake all reasonable measures to ensure the safety of students, employers and the general public is maintained at all times. In the situation that such an event occurs, the Program Officer, Course Convenor or Program Authority should be immediately informed.

TIMETABLE

Week	Day	Item	Details
1	Wednesday	**Introductory lecture**	
2			
3	Friday	**Research Integrity Modules with Quizzes**	**Assessment task 1 to be completed no later than 5PM Friday of WEEK 3**
4			
5	Wednesday or Thursday	**Oral Presentation**	**Assessment task 2 is to be submitted no later than 9 AM Monday of WEEK 5** *(i.e., the PowerPoint presentation used during your poster presentation is to be posted via Moodle).*
6			
7			
8			
9	Friday	**Written Research Protocol**	**Assessment task 3 is to be submitted no later than midnight Friday of WEEK 9** *(i.e., the final written report is to be posted via Moodle).*
10	Friday	**Submission Supervisor Report**	**Assessment task 4 is to be submitted no later than Friday 5pm of WEEK 10**

ASSESSMENT TASKS

Task	Due Date
RESEARCH INTEGRITY MODULES	**Week 3**
ORAL PRESENTATION	**Week 5**
WRITTEN RESEARCH PROTOCOL	**Week 9**
SUPERVISOR REPORT	**Week 10**

Assessment Task 1 – RESEARCH INTEGRITY MODULES & QUIZZES

Purpose: To develop an understanding of the factors that contribute to the responsible conduct of research.

Safe and responsible research practices are essential to sustain high quality research.

This assessment item consists of 2 online research integrity modules and quizzes designed to ensure that research is conducted with honesty and integrity.

Learning Outcomes

- Gain knowledge of the basics of safe research practice
- Gain knowledge of ethical and responsible research practices

See *Course Outline and Moodle Announcements* for details regarding accessing online modules and quiz

Assessment Task 2 – ORAL PRESENTATION

Of the format 10 minutes presentation, 3 minutes questions/discussion followed by 2 minutes of feedback/ direction from the markers. The feedback provided will guide your research direction and subsequent completion of the Research Protocol assignment.

Learning Outcomes

- To be able to organise, present and discuss a research topic
- To generate original scientific illustrations

Assessment Criteria

The marking scheme on next page will be used to grade your presentation

Background	**Max. Marks = 4**	**Unsatisfactory (mark = 0)**	**Below average (0.25)**	**Satisfactory (mark = 0.5)**	**Good (mark = 0.75)**	**Excellent (mark = 1.0)**	**Mark**
Adequate justification for internship	1						
Aims of internship adequately explained	1						
Scope of internship explained	1						
Able to be understood by a lay audience	1						
Content	**Max. Marks = 4**	**Unsatisfactory (mark = 0)**	**Below average (0.5)**	**Satisfactory (mark = 1.0)**	**Good (mark = 1.5)**	**Excellent (mark = 2.0)**	**Mark**
Information is relevant to topic	2						
Relevant background information included	2						
Slides appearance & Presentation Style	**Max. Marks = 10**	**Unsatisfactory (mark = 0)**	**Below average (0.5)**	**Satisfactory (mark = 1.0)**	**Good (mark = 1.5)**	**Excellent (mark = 2.0)**	**Mark**
Slides attractive	2						
Font size & colour easy to read	2						
Use of pictures, diagrams & tables	2						
Structure is logical & easy to follow	2						
Confident voice, audience engagement & timing (not too short long)	2						
Conclusions	**Max. Marks = 2**	**Unsatisfactory (mark = 0)**	**Below average (0.25)**	**Satisfactory (mark = 0.5)**	**Good (mark = 0.75)**	**Excellent (mark = 1.0)**	**Mark**
Summary of potential challenges	1						
Ability to interpret & answer questions	1						

Assessment Task 3 – WRITTEN RESEARCH PROTOCOL

The Research Protocol is to be a concise overview of the research topic, any hypotheses and the methods and procedures being used, with a discussion on outcome measures and statistical analysis

Background	**Max Marks = 10**	**Unsatisfactory (mark = 0)**	**Below average (0.5)**	**Satisfactory (mark = 1.0)**	**Good (mark = 1.5)**	**Excellent (mark = 2.0)**	**Mark**
Concise & relevant	2						
Clinical relevance of the research project / systematic review adequately explained	2						
Scope of the research project / systematic review adequately explained	2						
Coverage of appropriate research to date in this area	2						
Explanation of gaps in the literature	2						
Content	**Max Marks = 20**	**Unsatisfactory (mark = 0)**	**Below average (1.0)**	**Satisfactory (mark = 2.0)**	**Good (mark = 3.0)**	**Excellent (mark = 4.0)**	**Mark**
Accurate description of study design	4						
Accurate description of methods & procedures	4						
Description of outcome measures – primary and secondary	4						
Accurate description of power & sample size calculations	4						
Accurate description of how data will be analysed	4						
Quality of the writing	**Max Marks = 20**	**Unsatisfactory (mark = 0)**	**Below average (1.0)**	**Satisfactory (mark = 2.0)**	**Good (mark = 3.0)**	**Excellent (mark = 4.0)**	**Mark**
Clear, fluent writing	4						
Grammar & spelling	4						
Adherence to prescribed format	4						
Written for educated but non-expert reader	4						
Referencing (accuracy & format)	4						

Assessment Task 4 – SUPERVISOR REPORT

ASSESSMENT FORM FOR HESC4561 RESEARCH PROJECT

(To be completed by the supervisor)

The supervisor is encouraged to discuss this evaluation with the student before sending the evaluation to the course convenor.

Student Name: _____

Supervisor Name: _____

This internship started on (date) _____ *and was completed on (date)* _____

At (location) _____

Please give a brief summary of the internship:

Student attribute	***Excellent (1.0)***	***Good (0.75)***	***Average (0.5)***	***Poor (0.25)***	***Not applicable (N/A)***
Enthusiasm for the experience					
Accuracy and precision in experiments					
Decision-making, judgments, setting priorities					
Attention to detail					
Willingness to ask for guidance					
Persistence to complete tasks					
Data analysis skills					
Ability to synthesize information and communicate it effectively					
Ability to work cooperatively with others					
Ability to create and communicate possible solutions to problems					

Additional comments: ……..
Grade: /10 (scores will be averaged across number of applicable attributes)
Signature of Supervisor and date of evaluation: ……