



THE UNIVERSITY OF  
NEW SOUTH WALES

## HESC4551/ HESC4571 – Research Project

**UNITS OF CREDIT: 6 UOC**  
**Session 1/2 and summer break 2010**

**Convenor:** Dr Romain Barres  
[romain.barres@unsw.edu.au](mailto:romain.barres@unsw.edu.au)  
Health and Exercise Science  
Office: Goodsell rm250  
Ph 9385 1362  
Office Hrs: By appointment

**Organizational Unit responsible for course:**

Exercise Physiology

**School:** School of Medical Sciences

**Faculty:** Medicine

Academic Group Code (Faculty): MED

Academic Organization Code (Owner): HESC

Research electives are completed in stage 4 to refine skills for independent learning and to further develop understanding of research and the scientific method and how this informs clinical practice.

### **Course description**

---

This course consists in a supervised **RESEARCH INTERNSHIP or WRITING OF A REVIEW ARTICLE.**

Research internships can be inside or 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.

Writing of a review article will be a possible alternative to the research internships. It will consist in writing a review article dealing with a topic in relation to research in Exercise Physiology.

### **Aims of the Course**

---

The aim of the course is to provide skills for critical reading and presentation of scientific results. The student outcome is to have an awareness of current and likely future directions in Exercise Physiology research and an ability to independently research the literature to address questions related to the field that may arise in future professional activities.

### **Student learning outcomes**

---

At the conclusion of this course, the student will be:

1. Able to synthesize and present data from critical review of the literature
2. Aware of current techniques used in biomedical research
3. Able to write a literature review
4. Write an article on an imposed format and style
5. Create original scientific illustrations
6. Able to organize, present and discuss research data

# RESEARCH INTERNSHIPS

---

Research Internships will be assessed by 2 oral presentations and 1 written report. The supervisor will check the time spent in research activity.

- 1) **Literature overview and research plan (week 5).** Oral presentation on the format 5 minutes presentation and 10 minutes discussion.
- 2) **Defence of research report (week 13).** Oral presentation on the format 10 minutes presentation – 10 minutes discussion and written report.

## **The research report should follow the following guidelines:**

**Title** – Up to 150 characters

**Student number and Name, address of department and contact detail of supervisor**

**Abstract** – Up to 800 characters

**Introduction** – Up to 2000 characters

**Material and Methods** - Up to 3000 characters

**Results and discussion** – Up to 4000 characters

**Figures and tables** – 2 to 3 figures or tables including legends (up to 2000 characters)

**Conclusion** – Up to 500 characters, providing perspective and future directions

**References** – Up to 20 references of original research articles. No review article should be cited.

Space included. Article should be formatted in times roman, 1.5 line-spacing, Margins 3cm. Body text should be 12 font. Illustration legend text 10 font. The file should be a word document (.doc or .docx format).

## **Assessment**

---

The oral presentations and the written report will be assessed according to the criteria indicated in the tables below.

- 1- Literature overview and research plan (week 5, 20% of total marks)
- 2- Report (week 11, 40% of total marks)
- 3- Defence of research report (week 13, 20% of total marks)
- 4- Supervisor evaluation (20% of total marks)



# EVALUATION FORM FOR HESC4551/4571 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:

---

---

---

---

---

---

---

---

---



	<b>excellent</b>	<b>good</b>	<b>average</b>	<b>poor</b>	<b>does not apply</b>
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:



THE UNIVERSITY OF  
NEW SOUTH WALES

Signature of Supervisor and date of evaluation: \_\_\_\_\_

Electronic copies of completed evaluations should be sent to  
[romain.barres@unsw.edu.au](mailto:romain.barres@unsw.edu.au)

# Timetable

<b>WEEK (date) Location</b>	<b>Lecture / Seminar</b>
Week 1 (1-5/03/10) Biomedical Theatre F (K-E27-F)	Introductory Lecture
Week 5 (29-2/04/10) Wallace Wurth LG02 (K-C27-LG02)	Literature overview and research plan
Week 13 (31-4/06/10) Wallace Wurth LG02 (K-C27-LG02)	Defence of research report



## REVIEW ARTICLE

---

The choice of a particular topic will be negotiated at the commencement of the course with the course convenor.

### **Examples of topics:**

- \*Gene expression signature of exercise training
- \*Epigenetic mechanisms involved in metabolic disorders
- \*Genetics of athletic performance
- \*Skeletal muscle as an endocrine organ
- \*Dietary fatty acids and Cancer
- \*Role of physical activity on health in children and adolescents
- \*Age, physical fitness and health
- \*Free fatty acids and exercise
- \*Lipid disorders in HIV infected patients in response to highly active antiretroviral treatment
- \*Metabolic abnormalities and polycystic ovary syndrome: improving insulin sensitivity to restore fertility
- \*Improving walking speed in the elderly to prevent or limit loss of mobility
- \*Metabolic complication in long term leukaemia survivors
- \*Muscle dysfunction in COPD: improving oxidative capacity to decrease dyspnea

The course will be divided in 4 Stages:

**Stage 1 – A Mid-stage oral presentation** summarizing 3 original articles of particular interest in the selected topic will be performed. This oral presentation will be performed on a 10 minutes presentation – 5 minutes question format.

**Stage 2 - First version of manuscript** (word document). The manuscript should contain the following elements:

**Key words** – Up to five key words defining the topic developed in the review

**Abstract** – up to 500 words

**Introduction** – up to 700 words

**Headings and body text** – up to 2000 words

**Illustrations** – 2 to 3 original art figures and legends will be made to schematize or summarize the current knowledge in the topic

**Conclusion** – Up to 200 words, providing perspective and future directions

**Summary points** – Up to 5 summary points developed in the review

**References** – Up to 50 references of original research articles

Article formatted in times roman, 1.5 line-spacing, Margins 3 cm. Body text should be 12 font. Illustration legend text 10 font.

**Stage 3 – Revised version of the manuscript.** The manuscript will be reviewed by the course authority. The reviews should be addressed on the final version of the review article, and a final version of the review article should be submitted the following week.

**Stage 4 – Oral defense.** The review article will finally be defended orally on a format 10 minutes presentation followed by 5 minutes question.

## **Assessment**

---

Each of the 4 stages will be assessed according to the following criteria:

**Stage 1 - Mid-stage presentation (week 5, 20% of total marks)**

**Stage 2 - First version of manuscript (week 8)**

**Stage 3 - Revision of the manuscript (week 10, 60% of total marks)**

**Stage 4 - Oral defense (week 13, 20% of total marks)**

# Assessment criteria

## 1- Written reports:

	10-9	9-8	8-7	7-5	5-0
<b>TITLE</b>  ..... /10 x 0.2	Concise and informative title fitting the size of 150 characters	Rather concise and informative title fitting the size of 150 characters	Title is fitting the size of 150 characters, but not exactly in line with the report.	Title is fitting the size of 150 characters, but not in line with the report.	Title not informative and exceeding the size by more than 20%(150 characters)
<b>ABSTRACT</b>  /10	Concise and very clear summary of the article. Contains the following pattern: Background, Methods, Results and Conclusion. Fitting the text size (500 characters)	Concise and clear summary of the article. Contains the following pattern: Background, Methods, Results and Conclusion. Fitting the text size (500 characters)	Abstract in line with the article. Some unclear points. Contains the following pattern: Background, Methods, Results and Conclusion. Fitting the text size (500 characters)	Abstract not entirely in line with the article. Do not contain one of the following section: Background, Methods, Results and Conclusion. Fitting the text size.(500 characters)	Abstract not in line with the article. Do not contain one or more of the following section: Background, Methods, Results and Conclusion. Exceeding the text size by more than 20% size.
<b>INTRODUCTION</b>  /10 x 0.8	Introduction very much in scope with the topic. All concepts and terminology described to allow understanding of the background. Very clear link between background, hypothesis and aims. Final sentence summarize the conclusions. Fitting the text size (1000 characters)	Introduction in scope with the topic. Most concepts and terminology described to allow understanding of the background. Clear link between background, hypothesis and aims. Final sentence summarize the conclusions. Fitting the text size.	Introduction lacks scope with the topic. Many concepts and terminology not described to allow understanding of the background. Reasonable link between background, hypothesis and aims. No final sentence to summarize the conclusions. Fitting the text size.	Introduction lacks scope with the topic and has inadequate details. Most concepts and terminology not described to allow understanding of the background. Moderate link between background, hypothesis and aims. Fitting the text size.	Introduction out of scope with the topic. Cannot be understood. No link between background, hypothesis and aims, or no hypothesis or aims. No final sentence to summarize the conclusions. Exceeding the text size by more than 20% size.
<b>METHODS</b>  /10 x 1.5	Very clear description of the methodology to allow understanding of the whole procedures.	Clear description of the methodology to allow understanding of the whole procedures.	Some details are lacking in the description of the methodology to allow understanding of the whole procedures.	Description of the methodology is not clear. Major inconsistencies in experimental design.	Description of the methodology lacks major details, or methodology not described.
<b>RESULTS</b>  /10 x 2	Very clear, simple but technical. Very appropriate choice of figure. Figures clearly labeled. No errors. Clear and logical structure throughout. Appropriate interpretations of results.	Clear and technical. Appropriate choice of figure. Figures clearly labeled. Some minor errors. Clear and logical structure throughout. Appropriate interpretations of results.	Mostly clear. Reasonable choice of figure. Figures clearly labeled. Some minor errors. Clear and logical structure throughout. Appropriate interpretations of results.	Not entirely clear. Questionable choice of figure. Figures not clearly labeled. Not a logical structure throughout. Some errors in interpretations of results.	Lacking clear and logical structure. Inappropriate choice of figure. Some major errors in interpretation.
<b>DISCUSSION</b>  /10 x 0.5	Very clearly explains the interpretations of the result section. Critical analysis of the results. Replaces nicely the findings in the scope of the literature. Very elegant predictions of next directions.	Clearly explains the interpretations of the result section. Critical analysis of the results. Replaces the findings in the scope of the literature. Further predicts the next directions of the research.	Explains the interpretations of the result section. Some minor errors. Critical analysis of the results. Replaces the findings in the scope of the literature. Lacks in prediction of the next directions of research.	Explains the interpretations of the result section. Some errors. No critical analysis of the results. Fail to replace the findings in the scope of the literature. Do not predict the next research directions	Fail to explain the interpretations of the result section. Major errors. No critical analysis of the results. No attempt to replace the findings in the scope of the literature. Do not predict the next research directions

## 2- Oral presentation:

	10-9	9-8	8-7	7-5	5-0
<b>BACKGROUND</b>  /10 x 2	Introduction very well in scope with the topic. All concepts and terminology described to allow understanding by a non-expert audience.	Introduction well in scope with the topic. Most concepts and terminology described to allow understanding by a non-expert audience.	Introduction lacks scope with the topic. Many concepts and terminology not described to allow understanding by a non-expert audience.	Introduction lacks scope with the topic and has inadequate details. Most concepts and terminology not described to allow understanding by a non-expert audience.	Introduction out of scope with the topic. Cannot be understood by a non-expert audience.
<b>HYPOTHESIS and AIMS</b>  /10 x 0.5	Very clear link between background, hypothesis and aims.	Clear link between background, hypothesis and aims.	Reasonable link between background, hypothesis and aims.	Moderate link between background, hypothesis and aims.	No link between background, hypothesis and aims. Or no hypothesis or aims.
<b>METHODS</b>  /10 x 1.5	Very clear description of the methodology to allow understanding by non-expert audience.	Clear description of the methodology to allow understanding by non-expert audience.	Clear description of the methodology to allow understanding by non-expert audience, but some details are lacking	Description of the methodology is mostly clear. Major inconsistencies in experimental design.	Description of the methodology lacks major details, or methodology not described.
<b>STYLE</b>  /10 x 3	The font, colour graphics and slide layout used greatly enhanced the presentation. Figures used and clearly labeled. No errors. Clear and logical structure throughout. Delivery clear, well paced, articulate and technical. Confident stance and body language. Enthusiastic and interesting.	The font, colour graphics and slide layout used enhanced the presentation. Figures used and clearly labeled. Minor errors. Clear and logical structure throughout. Delivery clear, well paced, articulate and technical. Confident stance and body language. Enthusiastic.	The font, colour graphics and slide layout used sometimes distracted from the presentation. Figures used and labeled with some errors. Mostly clear and logical structure throughout. Delivery mostly clear, and technical. Some major lapses in body language observed	The font, colour graphics and slide layout used sometimes distracted from the presentation. Figures used and labeled with some errors. Lacking clear and logical structure throughout. Delivery mostly clear, and technical. Some major lapses in body language observed	The font, colour graphics and slide layout used distracted from the presentation. Figures used not labeled with major errors. No logical structure to presentation. Delivery unclear or inaudible. Not confident with poor body language.
<b>QUESTIONS</b>  /10 x 3	All responses demonstrated clear understanding of complex technical and contextual issues. Consistently strongly argued and accurate answers to questions drawing from related literature.	Responses demonstrated clear understanding of complex technical and contextual issues. Strongly argued and accurate answers to questions drawing from related literature.	Responses demonstrated understanding of complex technical and contextual issues. Accurate answers to questions drawing from related literature.	Responses demonstrated some understanding of complex technical and contextual issues. A number of major errors made in answers to questions.	Responses demonstrated little or no understanding of complex technical and contextual issues. Significant number of errors made in answers to questions.

The Mid-stage discussion will not be subject to assessment BUT any absence will implicate a **50% reduction of total marks**. Assessment items completed in addition to 8 hours of participation in a research project each week for 12 weeks (96 hours) will achieve the 150 hours of student work typically required for 6 UOC.

# Timetable

<b>WEEK (date) Location</b>	<b>Lecture / Seminar</b>
Week 1 (1-5/03/10) Biomedical Theatre F (K-E27-F)	Introductory Lecture
Week 5 (29-2/04/10) Wallace Wurth LG02 (K-C27-LG02)	Mid-Stage presentation
Week 13 (31-4/06/10) Wallace Wurth LG02 (K-C27-LG02)	Defence of review article

## **ADMINISTRATIVE MATTERS**

### **Communication via email**

Students are advised that e-mail is the official means by which the School of Medical Sciences at UNSW will communicate. All emails will be sent to the official UNSW e-mail address (e.g. [z1234567@student.unsw.edu.au](mailto:z1234567@student.unsw.edu.au)). Getting the official correspondence forwarded from the UNSW email address to a different email address must be organised by the student.

Correspondence with the course coordinator or any other UNSW member should always include a signature allowing the recipient to identify the sender.

It is recommended to check this address at least every other day. Facilities for checking e-mail are available in the School of Medical Sciences and in the University library. Further information and assistance is available from DIS-Connect, ph. 9385 1777.

Free e-mail courses are run by the UNSW Library.

### **Unit Attendance**

100% ATTENDANCE is expected at all lectures and seminars specified in the timetables above. Attendance will be recorded. Students who do not participate in laboratories for any reason other than medical, will be marked absent and will be awarded a grade of FAIL for the entire course. If absent for medical reasons, a medical certificate must be lodged with the lecturer within 7 days of the time period of the certificate's expiry. No consideration will be given after this time.

**If students attend less than 80% of lecture classes, they will be refused final assessment and therefore fail the entire course.**

### **Penalties for Submission of Late Work**

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

1. For assignments submitted after **9.00am** on the due date, a penalty of 50% of the maximum marks available for that assignment will be incurred.
2. Assignments received two (2) or more days after the due date **will not be allocated a mark**, however, these assignments **must** still be submitted to pass the unit.

### **Application for special consideration for missed assessments / exams**

**Please note the following Statement regarding Special Consideration.**

If you believe that your performance in a course, either during session or in an examination, has been adversely affected by sickness, misadventure, or other circumstances beyond your control, 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.

**Special considerations sought outside the 3 day time period WILL NOT be accepted except in TRULY exceptional circumstances.**

**It is intended that supplementary exams for School of Medical Sciences courses in Semester 1, 2010 will be held in the week commencing Monday 19th July, 2010.**

When submitting a request for special consideration you should provide all possible supporting evidence (eg medical certificates) together with your student number and enrolment details. Consideration request forms are available from Student Central in the Chancellery or can be downloaded from the web page linked below.

Note that normally, if you miss an exam (without medical reasons) you will be given an absent fail. If you arrive late for an exam no time extension will be granted. It is your responsibility to check timetables and ensure that you arrive on time.

Students who apply for consideration to Student Central must also contact the course convenor immediately.

All applications for Special Consideration will be processed in accordance with UNSW policy (see: <http://my.unsw.edu.au/student/atoz/SpecialConsideration.html>). If you miss an assessment and have applied for Special Consideration, this will be taken into account when your final grade is determined. You should note that marks derived from completed assessment tasks may be used as the primary basis for determining an overall mark. Where appropriate, supplementary examination may be offered, but only when warranted by the circumstances.

#### **Course evaluation and development.**

Every year, feedback from the student is collected through the Course and Teaching Evaluation and Improvement (CATEI) organised online by UNSW. This evaluation and feedback are used to constantly improve the course content and make it more relevant to the students. Significant changes are then communicated to the following cohort of students.

## **Library support for Undergraduate students**

### **Reference Services**

For basic reference enquiries come to the Level 2 Service desk, call 9385 2650, or email [libraryinfo@unsw.edu.au](mailto:libraryinfo@unsw.edu.au). If your enquiry is more detailed you will be referred to a subject specialist who can provide a more in-depth response.

### **Online Tutorials**

The **ELISE tutorial** <http://elise.library.unsw.edu.au/> is a beginners tutorial to help give you the basic knowledge about dealing with information appropriately.

The **new Library Online Information Skills Tutorial** <http://info.library.unsw.edu.au/skills/tutorials/InfoSkills/sitemap.htm> is a task-based approach to information literacy and the skills you need to be effective. It contains modules on searching databases (which include videos and screen captures), evaluating different types of resources like peer-reviewed journals and websites and citing references.

The **ELISE postgraduate tutorial** <http://pgelise.library.unsw.edu.au/> will help you develop your information skills to advanced undergraduate level. The five modules will step you through the fundamental processes of research and information seeking, they cover; selecting and searching, finding and using and critically evaluating all sources of information

### **Subject Guides**

The Subject Guides <http://info.library.unsw.edu.au/web/guides/guides.html> are designed to be your starting place for research, or for when you have a topic and not much else. These bring together the core web and print resources in one place and provide a one click portal into the online resources.

### **How to use Guides**

The How to use Guides <http://info.library.unsw.edu.au/skills/howto/howto.html> are excellent step-by-step guides on how to use the main library tools, the databases and catalogue. Guides have screen captures, FAQs and video footage of actual searches.

### **Database Help sheets**

The Database Help sheets <http://info.library.unsw.edu.au/skills/helpsheets.html> include cheat sheets for specific databases. They help you learn the tips and tricks of individual databases.

## **Plagiarism**

---

Plagiarism either from another student's work or other written material (for example, a textbook, journal or web article) will not be tolerated at this university. Students who submit the work of others as their own run the risk of failing the unit and possible expulsion from the university. Please refer to your university handbook for further information and the UNSW web site: <http://www.lc.unsw.edu.au/plagiarism>.

## **Course Pre-requisites / Assumed Knowledge**

---

MATH1041