



# THE UNIVERSITY OF NEW SOUTH WALES

## Health and Exercise Science School of Medical Sciences Faculty of Medicine

**Course Title:** Research Project

**Course Number:** HESC4551

Session 1

2009

**Coordinator:** Yati N. Boutcher

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**Office hours:** By appointment

### RATIONALE

This course gives an overview of the research process for exercise science. The steps of the research process in exercise science, which include preparation of human ethics, informed consent, and recruiting subjects, will be covered. Students will have hands on experience carrying out research.

### OBJECTIVES

The major aims are to provide the student with:

- (i) an overview of the research process in the physical activity area.
- (ii) an experience in designing a study, carrying out data collection and analysis using SPSS PC.

### ORGANISATION

Student will carry out a research project under staff supervision. Prior to the research process, the student will consult with the chosen supervisor in regard to the topic and research process, which includes preparing a human research ethics application, informed consent, and recruiting subjects. At the completion of their research project, students are required to present their results and produce a report in article format.

### ASSESSMENT

### WEIGHTING

### DATE

Research proposal presentation	10%	13 <sup>th</sup> March
Data collection process	30%	16 <sup>th</sup> March – 29 <sup>th</sup> May
Defence seminar presentation	10%	5 <sup>th</sup> June
Research report	50%	5 <sup>th</sup> June by 4.00 pm

### UNIT ATTENDANCE

There are no face-to-face lectures. However, students are expected to spend their time (collecting and analyzing the data) for a minimum of 72 hours. **Students are required to provide the experiment/data collection dates to the course coordinator for monitoring purposes.**

## PROGRESS REPORT

The progress report will be used to monitor the students' activity and to identify problems that may arise during the research process. *The progress report has to be attached to the research report.* During the experiment/data collection, student's activity will be monitored by two HESC staff (course coordinator and another staff member) to ensure that the experiment/data collection is done in accordance with ethics and lab policies.

## PENALTIES FOR LATE SUBMISSION OF RESEARCH REPORT /ASSIGNMENT

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

- For assignments submitted after **4.00pm** 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 days late.
- Assignment received two or more days after the due date **will not be allocated a mark**, however, the assignment **must** still be submitted to pass the unit.

## 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 TIME-TABLE

Week	Day/time	Activity	Content
1		Preparation for research proposal presentation	<ul style="list-style-type: none"><li>- The topic has to be within the Health and Exercise Science area (within HESC staff areas).</li><li>- Consult with staff regarding the research project topic.</li><li>- If the research project is part of another investigation (PhD student or staff) there is no need to apply for ethics approval otherwise the ethics application has to be submitted (<a href="http://www.ro.unsw.edu.au">http://www.ro.unsw.edu.au</a>). <i>However, ethics approval letter has to be attached to the research report.</i></li></ul>
2	Friday 14 <sup>th</sup> March	Research Proposal presentation	The students will present their research proposal to the rest of the class and HESC Staff
Between week 3-11, students will have a regular meeting (monthly or depending on the arrangement between student and supervisor) with their supervisor to monitor their research progress			
12	Friday 6 <sup>th</sup> June	Defence seminar presentation	Students will present their research proposal to the rest of the class and HESC Staff

## PRESCRIBED TEXT

- Berg, K.E., and Latin, R.W. (2004). Essentials of Research Methods in Health, Physical Education, Exercise Science, and Recreation (2<sup>nd</sup> edition). Lippincot Williams & Wilkins. Baltimore, MD, USA.
- Thomas, J., and Nelson, J.K. (2001). Research Methods in Physical Activity (4<sup>th</sup> edition). Human Kinetics. Champaign, Illinois, USA.
- Burns, R.B. (2000). Introduction to Research Methods (4<sup>th</sup> edition). Sage Publications Ltd., London.

## Recommended Texts

- Pallant, J. (2001) SPSS Survival Manual. Allen and Unwin.
- Coakes, S.J., and Steed, L.G. (2001). SPSS analysis without anguish. Wiley

**Progress Report HESC 4551**

Student's name:

Project title:

Supervisor:

Week 1- Date:

Hrs:

Activity:

Week 2- Date:

Hrs:

Activity:

Week 3- Date:

Hrs:

Activity:

Week 4- Date:

Hrs:

Activity:

Signature

Student:

date:

Supervisor:

date:

Week 5- Date:  
Activity:

Hrs:

Week 6- Date:  
Activity:

Hrs:

Week 7- Date:  
Activity:

Hrs:

Week 8- Date:  
Activity:

Hrs:

Signature

Student:  
Week 9- Date:  
Activity:

Hrs:

date:

Supervisor:

date:

Week 10- Date:  
Activity:

Hrs:

Week 11- Date:  
Activity:

Hrs:

Week 12- Date:  
Activity:

Hrs:

Signature

Student: \_\_\_\_\_ date: \_\_\_\_\_ Supervisor: \_\_\_\_\_ date: \_\_\_\_\_

Week 13- Date: \_\_\_\_\_ Hrs: \_\_\_\_\_  
Activity: \_\_\_\_\_

Week 14- Date: \_\_\_\_\_ Hrs: \_\_\_\_\_  
Activity: \_\_\_\_\_

Signature \_\_\_\_\_ date: \_\_\_\_\_ Supervisor: \_\_\_\_\_ date: \_\_\_\_\_  
Student: \_\_\_\_\_

**Comments**

Student: \_\_\_\_\_

Signature: \_\_\_\_\_ date: \_\_\_\_\_

Supervisor: \_\_\_\_\_

Signature:

date:

## **Research Report Guidelines**

### **Research Project course HESC 4551**

**The structure of the research report is as follow:**

1. Title page
2. Abstract (with key words)
3. Introduction
4. Methods
5. Results
6. Discussion
7. References
8. Figures/tables
9. Figures caption

**1. The manuscript formatted as follow:**

- typewritten on one side
- times Roman font and 12-point type size
- top/bottom margins: 1" (2.5 cm); left/right margin: 1.25" (3 cm)
- doubled-spaced throughout
- page numbering (in the bottom centre)
- maximum 20 pages excluding the tables, figures, and references.

**2. Title page:**

- title should be no more than 85 characters and spaces
- full names of the authors; institution
- running title should be no longer than 45 characters and spaces.

**3. Abstract:**

- limit of 250 words
- structure to state: purpose; methods; results; conclusion
- the abstract should be informative
- it should be self explanatory without reference to the text of the manuscript
- it should include essential significant results that support the conclusion of the work.

**4. Key words:**

- four (4) to six (6) words following the abstract
- should not repeat terms from the title.

**5. Introduction:**

- state clearly the purpose and hypothesis of the study
- provide relevant references
- do not exhaustively review the area.

**6. Methods:**

- present subject information
- clearly describe the experimental subjects and their controls
- "written informed consent" as well as statement regarding ethics committee approval required

- identify the methods, apparatus, and procedures employed with sufficient details to allow others to reproduce the results
- provide references for established methods and statistical procedures
- if methods utilized are not well known, provide rationale for use and include a description of possible limitations
- denote statistical significance when appropriate and include detailed statistical analyses, mathematical derivation, or computer programs with an appendix. When used in the text, numbers below 10 are spelled out while number 10 and above are expressed numerically.

## 7. Results:

- findings of the study should be presented logically in the text, tables, or figures; do not include the same data in tables and figures
- all figures and tables must be cited in the text
- tables and figures to be on separate pages
- figures caption on a separate page
- each table should have a brief title
- statistical measures of variation : SD, SE, etc., should be identified
- "Insert Figure 1" or "Insert Table 2" following the text where you want to insert the figure or table.

## 8. Discussion:

- should emphasize the original and important features of the study and should avoid repeating all the data presented within the results section
- incorporate within the discussion the significance of the findings and the relationship (s) and relevance to published observations
- provide only those conclusions that are supported by the study.

## 9. References:

- *For a book*

The details required, in order, are:

1. **name(s)** of author(s), editor(s), compiler(s) or the institution responsible
2. **year of publication**
3. **title** of publication and subtitle if any (all titles must be underlined or italicised)
4. **edition**, (if other than first)
5. **place of publication**
6. **publisher**

Rowell, L.B. (1993). *Human Cardiovascular Control*. New York: Oxford University Press.

- *For a journal article*

The details required, in order, are:

1. **name(s) of author(s)** of the article
2. **year** of publication
3. **title** of article
4. **title of journal** and **volume number** (underlined or italicised)
5. **issue (or part) number** for journals without continuous pagination
6. **page number(s)**

Ludbrook, J. (1966). The musculo-venous pumps of the human lower limb. *American Heart Journal*. 71, 635-64.

Lindinger, M.I., & Sjogaard, G. (1991). Potassium regulation during exercise and recovery. *Sports Medicine*. 11(6), 382-401.

- *References in the text*

Kenney and Armstrong (1987) have suggested that.....

Regular endurance aerobic exercise typically results in PV expansion (Brotherhood et al., 1975; Dill et al., 1974).

Up to five authors:

State all authors in first citation and cite the first author followed by et al. in subsequent citation.

First entry: Astrand, Cuddy, Saltin, & Stenberg (1964)

Subsequent entry: Astrand et al. (1964)

More than six authors: in first citation and subsequent citation cite the first author followed by et al.

Saltin et al. (1987) proposed that....

- For further information refer to UNSW learning centre (APA style):  
[http://www.lc.unsw.edu.au/onlib/ref\\_apa1.html](http://www.lc.unsw.edu.au/onlib/ref_apa1.html)

## **10. Symbol and units of measurement:**

Maximal oxygen uptake:  $\dot{V}O_{2\max}$  (ml·kg<sup>-1</sup>·min<sup>-1</sup>)

Heart rate: HR (b·min<sup>-1</sup>)

Blood pressure: SBP/DBP (mm Hg)

All measurements should be given in metric units.

## **The assessment components of student presentation:**

### **Material/10**

- Is the research question presented of relevance of the domain of Health and Exercise Science?
- Is the theoretical background/conceptual framework sufficiently presented?
- Are the questions derived appropriately?

### **Methodology/10**

- Is the methodology appropriate to provide an answer to questions raised?
- Are the data collected appropriately?
- Are the statistical analyses appropriate to interpret the data?

### **Discussion/conclusion/10**

- Is the discussion appropriately developed?
- Are the results appropriately interpreted?
- Does the discussion draw acceptable conclusions from the findings of the study?

### **Presentation (quality of presentation & style)/10**

- Are overheads/slides well made?
- Is the delivery of the presenter well paced and professional?
- Is the speaking voice clear and interesting?
- Does the presenter point to the overheads/slides?
- Are the points well made?

### **Answer (quality of answers to questions)/10**

- Did the presenter answer questions competently?

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## **The keys to a successful talk are:**

- use overheads or powerpoint
- do not clutter the overheads (maximum of 6 lines of text)
- use the overheads by pointing to the key points
- rehearse the talk numerous times before presenting
- stand in a position that does not obscure the overheads
- do not fidget or use distractive behaviours
- look at the audience as you present
- avoid pauses and delays in the talk
- finish on time
- make a clear, written plan of the talk before the day of the talk
- make up some likely questions and rehearse answers

## Research Report Assessment

**Name:**

**Project title:**

Criteria	Comments
<p><b>Introduction/20</b></p> <ul style="list-style-type: none"> <li>• Is the research question presented of relevance of the domain of health and sport science?</li> <li>• Is the theoretical background/conceptual framework sufficiently presented?</li> <li>• Are the questions derived appropriately?</li> </ul>	
<p><b>Methodology/40</b></p> <ul style="list-style-type: none"> <li>• Is the methodology appropriate to provide an answer to questions raised?</li> <li>• Is the sample representative and/or sufficient?</li> <li>• Are the data collected appropriately?</li> <li>• Are the procedures for the study correctly manipulated? (instructions to participants, interventions, period of data collection, consent forms, etc.)</li> <li>• Are the statistical analyses appropriate to interpret the data?</li> <li>• Have the results been interpreted appropriately?</li> <li>• Are the data and results of any analyses presented appropriately?</li> <li>• Has the data been described (including figures and tables) adequately?</li> </ul>	
<p><b>Discussion/conclusion/summary/30</b></p> <ul style="list-style-type: none"> <li>• Is the discussion appropriately developed?</li> <li>• Are the results appropriately interpreted?</li> <li>• Does the discussion draw acceptable conclusions from the findings of the study?</li> <li>• Does the author point out relevant future directions?</li> <li>•</li> </ul>	
<p><b>General impression/10</b></p> <ul style="list-style-type: none"> <li>• Is the manuscript clearly readable?</li> <li>• Are the arguments/statements logically developed?</li> <li>• Does the manuscript follow APA style?</li> </ul>	

**Total score =**