EXERSCI 705
Research in the Exercise Sciences
(15 points)
(Semester 1, Newmarket Campus)

Who should take this course?

This course is an essential requirement of the postgraduate BSc (Hons) and PGDipSci (Exercise Sciences, Clinical Exercise Physiology) programmes.

Course Prescription:

Examines the nature and value of research contributions in the Exercise Sciences and their application to further research and evidence-based practice. Evaluates the process of research including the development of research questions and hypotheses, concepts in research design, the collection and analysis of data, data interpretation and presentation and the writing and dissemination of findings.

General Information:

The main purpose of this course is to address the issues underlying how researchers plan, justify and gather data in an ethical and unbiased manner and how they analyse and interpret data and disseminate the results. The aim is that by understanding the process of research, students will be better able to respect, understand and evaluate scientific evidence. In doing so, students will be able to correctly interpret and apply scientific evidence in further research or practice.

Learning Outcomes

At the completion of this course, a student would be expected to be able to:

- Explain the process of original scientific research and its importance.
- Explain how evidence from scientific research provides the basis for further research and evidence-based practice.
- Formulate and express clearly research questions designed to test, refine, and build scientific evidence.
- Identify and explain principles behind research design and data collection strategies that are appropriate to a particular research project.
- State and explain the ethical basis upon which decisions around scientific research conduct are made.
- Formulate a logical plan for data analysis that will adequately answer a particular research question or questions.
- Understand and explain to others fundamental concepts in statistics and their appropriate visual presentation.
- Interpret research findings and draw appropriate conclusions.
- Evaluate the quality of scientific publications, focussing on the research process and presentation, including research design and statistical analyses.
- Identify the importance of and avenues for the dissemination of research and present a audio-visual summary of a research project.
Learning and Teaching

Students are expected to prepare for, attend and actively contribute to 2h seminar-type classes and 1h hands-on, interactive tutorial sessions for 12 weeks. Seminar sessions include structured opportunities for peer discussion and learning and follow a sequence of topics aligned with the process of research. The tutorial/group study hour each week will support seminar learning and research skill development.

These topics are:

- The nature and value of scientific research
- The process of scientific research
- Science ethics and principles for research
- Selecting, reading and evaluating scientific research
- Research design and implementation
- Data analysis and presentation
- Critical evaluation of scientific research
- Research dissemination

The required, written or oral assessments for each topic are linked such that students develop a notional research project from conception to dissemination of the results. A final examination covers the nature and value of research, the analysis, presentation and interpretation of research evidence and its scope for application in further research or practice.

Contact: We are available to meet with you by prior arrangement. You are also welcome to approach us before or after seminar times, or at our offices. If we are not available at a particular time, make an arrangement with us to meet at another time.

Teaching Staff

Course Coordinator and Lecturer:

A/Prof Heather Smith

Email: h.smith@auckland.ac.nz

Office: 907.237 Newmarket Campus

Phone: 373 7599 ext 84681

Please contact me first by phone or email for any formal academic and/or administrative matters.
Lecturers:

Dr Angus McMorland
Email: a.mcmorland@auckland.ac.nz
Office: 907.230 Newmarket Campus

Dr Rebecca Meiring
Email: rebecca.meiring@auckland.ac.nz
Office: 907.228 Newmarket Campus

Assessment (*subject to change*)

- Topic assessments  60%
- Final examination   40%

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