EXERSCI 705
Research in the Exercise Sciences
(15 points)
(Semester 1, Tāmaki Innovation/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/defend 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.
- Explain how scientists determine the quality of evidence about a particular scientific issue or question, and what this has in common with a lay publication about the issue/question.
- Evaluate critically the quality of a scientific publication, focussing on the research process and presentation, including research design and statistical analyses.
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 11 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 meaning 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 assignments 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 value and process of research, the analysis, presentation and interpretation of 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

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Assessment (subject to change)
- Topic assessments 60%
- Final examination 40%

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