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:

1. Explain the nature and process of scientific research and discuss its value and importance.
2. Identify and apply strategies to select and summarize quality original research articles.
3. Propose and formulate research questions to test, refine, and build scientific evidence. Select and explain principles behind research design and data collection strategies. Identify and explain guiding ethical principles in the design and conduct of research with human participants.
4. Identify and apply fundamental concepts in statistics and their appropriate visual presentation.
5. Plan and interpret the results of data analyses to answer research questions.
6. Interpret research findings and construct appropriate conclusions.
7. Discuss and assess the quality of scientific publications, focussing on the research process and presentation, including research design and statistical analyses.
8. Prepare and present research findings to peers in an in-class scientific forum.
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:
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Assessment *(subject to change)*

- Topic assessments 60%
- Final examination 40%

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