UNSW

THE UNIVERSITY OF NEW SOUTH WALES

Exercise Physiology Program

School of Medical Sciences

Faculty of Medicine

HESC4501

EXERCISE PHYSIOLOGY RESEARCH SEMINARS

Semester 1, 2010
Course Outline

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Staff Contact Details

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Course details

Credit Points: 6 UOC

Course Prerequisites / Assumed Knowledge

MATH1041 – Statistics for Life & Social Sciences

Course Description

This course is organised in seminar format with discussion of original research papers. It provides training in critical interpretation of scientific and clinical research linked to the field of exercise physiology. Seminars in this course will be delivered by staff, and also by students working in groups, with an emphasis on understanding the scientific method, ethics in scientific research and the evidence-base for clinical practice.

Aims of the Course

To encourage the development of:

1. critical skills for appraisal and interpretation of the scientific evidence-base for exercise physiology practice
2. an understanding of the common techniques used in the broad area of research in Exercise Sciences
3. an awareness of the techniques for an efficient communication of scientific results
4. an appreciation of the online resources available to find published research articles, book or conference abstracts
5. an appreciation of the quality of published articles, critical thinking
6. an awareness of the intellectual property law and the process from innovation to commercialisation.

Student Learning Outcomes

This term is used to describe what it is that you should be able to do, explain or understand if you have learned effectively in the course. For each lecture, seminar and assessment item, the expected learning outcomes will be explicitly stated. The assessment in the course will be matched as closely as possible to the stated learning outcomes. That is, the assessment will test how well you have achieved the learning outcomes of the course. The general learning outcomes for the course are as follows:

At the end of the course you should be able to:

- critically assess the strengths and weaknesses of a research article
- identify significant advances when reading a research publication
- summarize and present research articles in public
- anticipate the commercial valorisation of innovation
- identify the online resources of scientific publications
- apply critical thinking and presentation skills to evaluate and communicate the evidence base for clinical practice

Graduate Attributes

- Engage in independent and reflective learning for the betterment of professional clinical practice, following an evidence-based approach
- Communicate effectively with patients, colleagues and other health professionals
- Work as a member and a leader of a team
- Display a respect for diversity and a high standard of ethical practice

Rationale for the inclusion of content and teaching approach

How the course relates to the Exercise Physiology profession – The information and ideas presented in this course will enable to build critical thinking and good communication skills necessary to professionals. Good communication skills are necessary to build an effective relationship between the patient and the practitioners. Along with the base knowledge of techniques used in experimental research, understanding the how science is published and ranked is a prerequisite to appreciate the quality of science. A solid understanding of research in the field of Exercise Sciences is essential to appreciate the novel techniques and progress in the course of a professional carrier.

How the course relates to other courses in the Exercise Physiology program – Together with Research Projects (HESC4551 and HESC 4571), this fourth year course builds upon the knowledge accumulated throughout the whole program. It uses previously understood fundamental concepts to build the necessary critical thinking towards professional independence.

Teaching strategies

Lectures – Lectures will be every week (from week 2 to week 6) and lasting 2 hours.

Tutorials – After each lecture, a tutorial will be done to train on the concepts developed during the lecture. They will consist in one-hour exercises such as *figure description, what* method to use for verify which hypothesis?, Short oral presentation practice, etc… (tutorials are listed in *course schedule*)

Independent study – Alone or in group, independent studies will represent a significant component of the course, as you will be asked to retrieve publications from databases, synthesise and have critical reading on what you will present.

Assessments – These tasks have been chosen as tools to enhance and guide your learning as well as a way of measuring performance, and are therefore a central teaching strategy in this course.

Assessment

Summary of Assessments

ASSESSMENT TASK 1 – *CANDIDATE PAPERS FOR THE ExPHYS PRIZES 2011 (individual task)*	**Weight**	**Due Date**
Oral Presentation	**30%**	Week 7,8,9
Oral Presentation (peer assessed)	**10%**	Week 7,8,9
Online Content (one page summary of the presented publication)	**10%**	Week 7,8,9
ASSESSMENT TASK 2 – *INNOVATION IN EXERCISE PHYSIOLOGY (group task)*		
Oral Presentation	**30%**	Week 10,11,12
Oral Presentation (peer assessed)	**10%**	Week 10,11,12
Online Content (one page summary of the presented publication)	**10%**	Week 10,11,12

Assessment Task 1: Candidate papers for the ExPhys prizes 2010
Oral presentation (Weeks 7, 8, 9, Individual task)
For the purpose of these seminars, you will select a publication related to the field of Exercise Sciences. You will post a written summary of the paper online (via blackboard and 24 hours before the commencement of the student's seminar session) and present the publication to the class on the format 7 minutes presentation followed by 3 minutes discussion. The class will select the most significant research contribution in the field of Exercise Sciences.

Both the course convenor and the students will mark the presentation by according to the following criteria.

Assessment criteria template:

	10-9	9-8	8-7	7-5	5-0
BACKGROUND /10 x 0.5	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.
FIGURES /10 x 1.5	Very clear description of the figures to allow understanding by non-expert audience. Clear dissociation between description and interpretation.	Clear description of the figures to allow understanding by non-expert audience. Dissociation between description and interpretation.	Description of the figures to allow understanding by non-expert audience, but some details are lacking. Not always dissociation between description and interpretation.	Description of the figures is mostly clear. Major inconsistencies in experimental design. No dissociation between description and interpretation.	Description of the figures lacks major details, or methodology not described.
STYLE /10	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.
QUESTIONS /10	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.

Online content (24h prior to the oral presentation, Individual task)
A one page summary of the publication will be posted via blackboard 24h prior to the oral presentation.

Assessment Task 2: Innovation in Exercise Physiology

Oral presentation (Week 10, 11, 12): Innovation in Exercise Physiology.
This assessment is a group assessment (The number of student within one team will normally be no more than 4). You will be asked to create a tool or a technique with an application to research in Exercise Science. You will check for anteriority and write a short patent (one page). This "patent" simulation will be posted online (via blackboard and 24 hours before the commencement of the student's seminar session). Posters will be presented to the class in the format 10 minutes presentation, 10 minutes discussion. The best innovation will be nominated from the peer assessment outcome.

Both the course convenor and the students will mark the presentation by according to the following criteria.

Assessment criteria template:

	10-9	9-8	8-7	7-5	5-0
BACKGROUND OF INVENTION /10 x 1.5	Very clear description of the problem that the invention wants to solve.	Clear description of the problem that the invention wants to solve.	Moderately clear description of the problem that the invention wants to solve.	Poor description of the problem that the invention wants to solve.	Very unclear or no description of the problem that the invention wants to solve.
DESCRIPTION OF INVENTION /10 x 1.5	Very clear description of the invention using adequate communication tools. Highly creative and innovative.	Clear description of the invention using adequate communication tools. Creative and innovative.	Clear description of the invention Moderately creative and innovative.	Unclear description of the invention. Marginally creative and innovative.	Poor description of the invention and Lack of creativity and innovation.
QUESTIONS /10	Consistently strongly argued and accurate answers to questions.	Strongly argued and accurate answers to questions.	Accurate answers to questions. Some minor errors.	A number of major errors made in answers to questions.	Significant number of errors made in answers to questions.

Online content (24h prior to the oral presentation, Group task)
A one page description of the invention will be posted via blackboard 24h prior to the oral presentation.

Submission of Assessment Tasks

Assignments are to be submitted electronically through Turnitin via Blackboard.

Penalties for late submission of assignments – In cases where an extension has NOT been granted, the following penalties will apply:

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

Academic honesty and plagiarism

Plagiarism is using the words or ideas of others and presenting them as your own. Plagiarism is a type of intellectual theft and is regarded by the university as academic misconduct. It can take many forms, from deliberate cheating to accidentally copying from a source without acknowledgement. The University has adopted an educative approach to plagiarism and has developed a range of resources to support students. The Learning Centre can provide further information via http://www.lc.unsw.edu/plagiarism.

Course schedule

Week	Date	Lecture 1 Biomedical Theatre A	Tutorial	Seminar
2	10/3	Overview of research in Exercise Physiology	Figure description an results interpretation	
3	17/3	Techniques of investigation in Exercise Science research	What technique to perform for what hypothesis?	
4	24/3	Communication for Science – Oral and Posters Presentations	Short oral presentation practice	
5	31/3	Ethics and Intellectual property	How to prepare the different sections of a patent	
6	14/4	Clinical investigation in Exercise Physiology	How to plan a clinical investigation?	
7	21/4			Candidate papers for the ExPhys prizes 2010
8	28/4			Candidate papers for the ExPhys prizes 2010
9	5/5			Candidate papers for the ExPhys prizes 2010
10	12/5			Innovation in Exercise Physiology
11	19/5			Innovation in Exercise Physiology
12	26/5			Innovation in Exercise Physiology
13	2/6			Innovation in Exercise Physiology

Resources for students

Blackboard

Information about the course and a number of electronic study resources can be accessed via the UNSW Blackboard system. Blackboard is an internet-based set of Course Tools designed to enable online learning. You can access the system from the following site:
http://lms-blackboard.telt.unsw.edu.au/webapps/portal/frameset.jsp

You can use Blackboard to download lecture notes, access your grades, find reference material in the course (such as this document), and communicate with the lecturer and your peers. Please see the lecturer if you would like more information to help you to make the most of this resource.

Lectopia

The Lectopia system (iLecture) provides digital audio recordings of lectures that can be accessed via streaming media over the web or as a podcast (if permitted by the lecturer). Lecture slides may be embedded in these presentations. http://telt.unsw.edu.au/lectopia/content/default.cfm?ss=1

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. 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.

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.

Examination procedures and attendance requirements

Attendance is expected at all lectures, tutorials and presentations for this course. Attendance at all classes will be recorded. Students who do not participate in these sessions for any reason other than medical or misadventure, 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. Although lectures and tutorials will be available on ilecture, student participation is encouraged in the lectures and tutorials and these are important to attend.

Deferred Exams

If you miss an exam for medical reasons you must supply adequate documentation (including a medical certificate). Your request for consideration will then be assessed and a deferred exam may be granted. You cannot assume you will be granted supplementary assessment. The deferred exam may include a significant oral element.

Special consideration in the event of illness or misadventure

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. **Applications made more than three working days after the relevant assessment will not be accepted except in TRULY exceptional circumstances.**

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.

Student equity and diversity issues

Students requiring assistance are encouraged to discuss their needs with the course convenor prior to, or at the commencement of the course, or with the Equity Officer (Disability) in the Equity and Diversity Unit (EADU) (9385 4734). Further information for students with disabilities is available at http://www.studentequity.unsw.edu.au/disabil.html