UNSW

THE UNIVERSITY OF NEW SOUTH WALES

Exercise Physiology Program

School of Medical Sciences

Faculty of Medicine

HESC1511

Exercise Programs and Behaviour

Semester 2, 2011
Course Outline

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Course details

Credit Points: 6 UOC

Course Prerequisites / Assumed Knowledge

HESC1501 – Introductory Exercise Science and PSYC1001 – Psychology 1A

Course Description

This course is a requirement for the degree of Bachelor of Exercise Physiology. The course builds on the information you have gained from the prerequisite courses and the emphasis is on exercise programming for apparently health populations. Practical training in this course will encompass: fitness assessments, basic pre-screening and interview techniques, and exercise technique and prescription. Psychological aspects of exercise, in particular motivation, adherence and addiction, will also be addressed. These skills will be put into practice with students developing and delivering a supervised exercise program for a healthy adult.

Aims of the Course

Building on basic skills learned in HESC1501, the aims of this course are to:

1. develop an understanding of the principles of safe exercise prescription
2. develop exercise programming skills
3. develop an understanding of the psychosocial factors contributing to exercise engagement and adherence
4. expose students to the principles underlying motivational interviewing

Student Learning Outcomes

HESC1511 will develop the following skills, qualities, understanding and attitudes that promote lifelong learning that students should acquire during their university experience.

On completion of this subject students should be able to:

1. apply basic fitness and health assessments and screening tools
2. undertake a basic dietary analysis using appropriate software
3. design and implement an exercise program for a healthy adult
4. design and implement a group exercise session
5. develop basic skills in motivational interviewing

Graduate Attributes

- Understand the relationship between physical activity and health
- Deliver lifestyle change programs that use exercise for the primary prevention of disease and the management of chronic disease
- 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 – This course develops understanding of programming for cardiovascular fitness, muscular strength and endurance and flexibility. It also examines the behavioural aspects of exercise adherence and addiction. The students' major assignment relates to their clinical practice in that they plan, assess and administer an exercise program for an apparently healthy adult.

How the course relates to other courses in the Exercise Physiology program – This course provides students with the principles underlying safe and appropriate exercise prescription, thus it supports the material found in HESC2501, HESC3541 and HESC3504. It provides essential background knowledge for the practice of Exercise Physiologists.

Teaching Strategies

Lectures - The learning and teaching philosophy underpinning this course is centred on student learning and aims to create an environment that interests, challenges, and enthuses students. The teaching is designed to be relevant and engaging in order to prepare students for future careers as Exercise Physiologists. Although the primary source of information for this course is the lecture material, effective learning can be enhanced through self-directed use of other resources such as textbooks, journal articles and Web based sources.

Practicals - Your practical classes will be directly related to the lectures and it is essential to prepare for practical classes before attendance. These classes are designed to assist in the development of practical skills and exercise technique. These classes allow students to engage in a more interactive form of learning than is possible in the lectures. The skills you will learn in practical classes are relevant to your development as professional Exercise Physiologists.

Clinical - Each student will also spend a total of eight hours over the semester developing their clinical skills. Four hours (2 x 2 hour sessions) will be spent at the Lifestyle Clinic examining case histories, client assessments and program development in clients from the *Lifestyle Plus program*. Four hours (2 x 2 hour sessions) will be spent undertaking your own client screening and assessment.

Tutorials - This format provides a more informal learning environment than a lecture. Sessions will be structured to encourage your participation in activities and discussions designed to enhance your learning. Tutorial readings will be uploaded into MOODLE (http://moodle2.telt.unsw.edu.au) and you are required to read these materials prior to each tutorial.

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.

Summary of Assessments	**Weight**	**Due Date**
ASSESSMENT TASK 1 - Exercise Programming for Healthy Individual	***30%***	***Week 4 (see note below)***
ASSESSMENT TASK 2 - GROUP Practical Presentation	***30%***	***Weeks 11 - 13***
ASSESSMENT TASK 3 – Final Exam	***40%***	***Exam Period***

Assessment Item

Assessment Task 1 – Exercise Programming for Healthy Individuals
(Week 4 and one week after you have finished your post-program assessments in your clinical hours)

This assignment is designed for you to put into practice the basic principles of programming for healthy individuals. In pairs with your fellow students you will conduct an interview, pre-screen your client and undertake basic fitness assessments including posture, body composition, weight, height, and an estimate of cardiovascular fitness and strength. You will be required to make a record of your own diet over three days (two weekdays and one weekend day). Your dietary intake information is given to your partner who will then analyse the macronutrient and micronutrient content using SERVE or FOODWORKS software. You will then give your partner a one page (maximum) double spaced recommendation for improving their diet. **This part of the assignment is to be handed in Week 4** and will contain the food intake, the computer analysis and your one page recommendation.

Using the dietary and fitness assessment and interview information you have collected, and in discussion with your partner, you will plan a training program for your partner based on their needs and fitness goals. You are advised to start work on this project as early as possible. After six weeks of exercise training, repeat the tests you used initially. Your final report will include a description of the fitness tests that you used and results for the pre- and post treatment assessments as well as a detailed description of the program and the exercises you prescribed.

In addition to the above you are required to do a formal risk assessment (RA) (you can find a copy of the University's RA in MOODLE http://moodle2.telt.unsw.edu.au) on ***one aspect*** of your fitness assessment. You may choose to undertake a RA on the potential risk/s associated with:

- The repeated use of a HR monitor on a series of clients
- Posture assessment
- Flexibility assessment
- Strength assessment
- Balance testing
- Submaximal VO2 testing
- Blood pressure measurement
- Skinfold measures

MARKING CRITERIA
TASK 1 – EXERCISE PROGRAMMING FOR HEALTHY INDIVIDUALS

Assignment component	*How do I achieve top marks?*	*Mark for this section (100%)*
Dietary analysis	Use SERVE or FOODWORKs to analyse the diet and include the dietary intake for three days. Compare food intake with the RDIs for macro- and micronutrients. Make sure the diet matches the recommendations for macronutrient composition and fibre intake.	10
Diet recommendations	Compare your partner's intake with the RDIs and examine their actual intake. Comment appropriately (eg. Are they getting 5 serves of vegetables per day?) and make recommendations to improve the quality of their food intake. Maximum one page double spaced.	10
Fitness Testing and Pre-screening	Interview and choose and administer appropriate tests for your client, do pre-exercise screening and assess their needs. Present the pre- and post training test results in tables and compare with normative data where appropriate.	20
The Exercise Program	Plan and implement a training program for your partner. Show how you have incorporated overload and variety. Illustrate and/or explain the exercises/activities prescribed.	25
Risk Assessment	You have completed the risk assessment for one aspect of your fitness testing protocol following UNSW's RA form. This includes assessing potential risks and outlining a course of action to manage or reduce those risks.	10
Evaluation	This should be a maximum of one page. Discuss your partner's post training results. Discuss problems you faced (eg. Poor motivation/adherence, boredom) and how you overcame them. What were the successful aspects? What changes would you make to improve the program?	20
Presentation	The report should be well written, concise and easy to read. There should be no spelling, grammatical or typographical errors. Graphics and/or tables should support the information in the text. The report should be double spaced and appropriately referenced. Pages must be numbered.	5

Assessment Task 2 – GROUP Practical Presentation

The purpose of this activity is to provide you with an opportunity to put into practice the principles of exercise programming in a group setting. **In groups of four**, students will plan a one hour exercise session for a group of healthy participants of their choice (children, elderly, university students, etc). When delivering the session, you will have 15 minutes to lead the class in exercises selected from your planning document. It is compulsory for all students to attend these sessions. The planning document will be handed in as part of the assessment and include the aims of the exercise session and the activities used to fulfil those aims. The group of four will act as instructors for the other students who are acting as the chosen population.

- one student will conduct the warm up,
- another the conditioning phase,
- another the resistance activities and
- another, the cool down and flexibility exercises.

Information on planning and structuring the exercise session will be provided in practical sessions and lectures.

MARKING CRITERIA
TASK 2 – GROUP PRACTICAL PRESENTATION

Assignment component	*How do I achieve top marks?*	*Mark for this section (100%)*
Session Plan	Plan the session so that is it safe and enjoyable for the population you have selected. Your planning document will outline the aims of the activities, the activities, and the equipment required to achieve those aims. The planning document must be clear, concise, easy to read and contain no spelling, grammatical or typographical errors.	25
Warm up	Are the activities appropriate for achieving your stated aims? Do you communicate well? Are the activities fun? Safe? Is this section structured so that the activities flow in a logical sequence? Is the equipment you use appropriate to the activity and your chosen population?	15
Aerobic conditioning	Are the activities appropriate for achieving your stated aims? Do you communicate well? Are the activities fun? Safe? Is this section structured so that the activities flow in a logical sequence? Is the equipment you use appropriate to the activity and your chosen population?	15
Strength/muscle endurance conditioning	Are the activities appropriate for achieving your stated aims? Do you communicate well? Are the activities fun? Safe? Is this section structured so that the activities flow in a logical sequence? Is the equipment you use appropriate to the activity and your chosen population?	15
Cooldown	Are the activities appropriate for achieving your stated aims? Do you communicate well? Are the activities fun? Safe? Is this section structured so that the activities flow in a logical sequence? Is the equipment you use appropriate to the activity and your chosen population?	15
Professionalism	Are you well prepared and practiced? Is your equipment ready and safe to use? Do you have all the necessary materials? Is your interaction with the clients friendly and professional? Are you dressed appropriately for the activity?	15

Assessment Task 3 – Final Exam
The purpose of the final exam is to test your understanding of the concepts covered in the ENTIRE COURSE. Material from lectures, tutorials, laboratories and readings may be assessed. The format will be multiple choice and short answer questions. The exam will be held during the end of session exam period.

OPTIONAL **FEEDBACK ONLINE QUIZZES**

Week 5
Week 8

There will be two (2) online quizzes throughout the course. There are no marks awarded to this activity however, research in SoMS has shown that students who complete the online activities perform better than students who do not. The material in the online quizzes arises from the lectures, tutorials or labs and will give you practice with examination formats. You are required to complete this task independently. The purpose of this optional assessment is to give you practice in answering questions relating to the course material and to give you feedback regarding your understanding of that material.

Submission of Assessment Tasks
Written assessment tasks must be handed in via Turn-it-in which can be found on the MOODLE website. Penalties apply for late submissions. http://moodle2.telt.unsw.edu.au

Penalties for late submission of assignments – Any extension must be applied for in advance of the due date. In cases where an extension has NOT been granted, the following penalties will apply:

- For assignments submitted after the designated time on the due date, a penalty of 50% of the maximum marks available for that assignment will be incurred.
- Assignments received two (2) 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** Biomed B Wed 1-2 pm	**Lecture 2** Biomed B Thurs 9-10am	**Tutorial** Biomed B	**Laboratory** 24 Arthur St or Unigym	**Clinical Hours** 24 Arthur St Clinical Rooms A/B or Lifestyle Clinic (38 Botany St)
2	25 Jul	Introduction Behaviour change ***GT***	Motivational Interviewing ***GT***			
3	1 Aug	Nutrition: CHO, lipids, protein, vitamins, minerals and GIycemic Index ***GT***	Nutrition during the lifespan ***GT***	Diet analysis	Computer diet analysis Motivational interviewing	Lifestyle Clinic Client Assessment
4	8 Aug	Body Composition ***GT***	Screening and contraindications to exercise ***GT***		Posture Body composition	Lifestyle Clinic Client Assessment
5	15 Aug	Exercise analysis ***GT***	FITT principle ***GT***	Screening and risk assessment	Exercise analysis and core stability	Lifestyle Clinic Client Assessment
6	22 Aug	Field tests of fitness ***GT***	Strength Training ***BB***		Strength training 1	Lifestyle Clinic Client Assessment
7	29 Aug	Strength Training ***BB***	Strength Training ***BB***		Strength training 2	Lifestyle Clinic Client Assessment
8	12 Sept	Acute response to endurance training ***GT***	Chronic adaptations to endurance training ***GT***		Endurance training	Lifestyle Clinic Client Assessment
9	19 Sept	Endurance training programming ***GT***	Flexibility training ***GT***		Flexibility training	Lifestyle Clinic Client Assessment
10	26 Sept	Considerations for planning group exercise ***GT***	Safe exercise ***GT***	Goal setting	Planning group exercise	Lifestyle Clinic Client Assessment
11	3 Oct	Functional and core exercise ***GT***	Adherence and burnout ***GT***	Obstacles to exercise	Group exercise assessment	
12	10 Oct	Supplementation and ergogenic aids ***GT***	Occupational health and safety issues ***GT***		Group exercise assessment	
13	17 Oct	Psychosocial and cultural barriers to exercise ***JC***	Review ***BB***		Group exercise assessment	

Clinical Hours - note that each student will have a total of four (4) hours over the semester at each of the clinical locations leading to a total time commitment of eight (8) hours of directly supervised clinical practice, plus additional preparation and project requirements. Visits to the Lifestyle Clinic or the Clinical Rooms are interleaved (e.g. Lifestyle Clinic in weeks 4 and 8, Clinical Rooms A/B in weeks 6 and 10 – exact weeks depend on group)

Resources for students

MOODLE

Information about the course and a number of electronic study resources can be accessed via the online learning management system, MOODLE. MOODLE is an internet-based set of Course Tools designed to enable online learning. You can access the system from the following site:
http://moodle2.telt.unsw.edu.au

You can use MOODLE to download lecture notes, access reading materials, 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

Virtual Laboratory

This resource is there for you to practice your laboratory skills in an online environment. Links to access the Virtual Laboratory will be made available in MOODLE.

Computing Facilities

There are computing facilities in Wallace Wurth, rooms G2, G4, 108 and 109. SERVE and FOODWORKS, along with VHI exercise kits have been downloaded for your use.

UNSW Library

The University Library provides a range of services to assist students in understanding how to identify what information is required for assignments and projects; how to find the right information to support academic activities; and how to use the right information most effectively.
http://www.library.unsw.edu.au

Reserve (MyCourse)

Many items (books and journal articles) set as recommended reading for courses will be located in Reserve, which is on Level 2 of the Main Library. Some of the journal articles will be available in electronic format via MyCourse. To search for these items, go to the library website catalogue and search for the course code.

Textbooks

Griffin, J.C. (2006). Client Centered Exercise Prescription (2nd ed.), Human Kinetics, Champaign, Ill.

Suggested Reference Books

Abernethy, B., Hanrahan, S.J., Kippers, V., Mackinnon, L., T., & Pandy, M. G. (2005). The Biophysical Foundations of Human Movement, 2nd ed., Palgrave Macmillan, South Yarra.

Batman, P. & Van Capelle, M. (1994) Exercise Analysis Made Simple: a step by step approach, 4th ed., Fit 4 U Publications, Sydney.

Baechle, TR and Earle, RW (eds). (2000). Essentials of Strength Training and Conditioning, 2nd ed. National Strength and Conditioning Association. Human Kinetics, Champaign, Ill.

Dwyer, G.B. & Davis, S.E. (2005). ACSM's Health-Related Physical Fitness Assessment Manual, Lippincott, Williams & Wilkins, Phil.

Egger, G. & Champion, N. (1993) Fitness Leader's Handbook, 3rd ed., Kangaroo Press, Sydney

Gore, C.J. & Edwards, D.A. (1992). Australian Fitness Norms: A Manual for Fitness Assessors, Health Development Foundation, Adelaide.

Kennedy,C.A. & Yoke, M.M. (2005). Methods of Group Exercise Instruction, Human Kinetics, Campaign, Ill.

McArdle, W. D., Katch, F. I., & Katch, V. L. (2006). Exercise Physiology: Energy, Nutrition, and Human Performance, 6th ed., Lippincott, Williams and Wilkins, Phil.

NHMRC (2006). Nutrient Reference Values for Australia and New Zealand Including Recommended Dietary Intakes. http://www.nhmrc.gov.au (follow the links to publications)

Norton, K. & Olds T. (eds.) (1996). Anthropometrica: a textbook of body measurement for sports and health courses. UNSW Press, Syd.

Additional reading material will be placed in MOODLE http://moodle2.telt.unsw.edu.au.

Course evaluation and development
Each year feedback is sought from students about the courses offered in Exercise Physiology and continual improvements are made based on this feedback. The Course and Teaching Evaluation and Improvement [CATEI] Process of the UNSW is the way in which student feedback is evaluated and significant changes to the course will be communicated to subsequent cohorts of students.

Occupational Health and Safety
Class activities must comply with the NSW Occupational Health & Safety Act 2000 and the Occupational Health & Safety (OHS) Regulations 2001. It is expected that students will conduct themselves in an appropriate and responsible manner in order not to breach OHS regulations and ensure a safe work/study environment for themselves and others. Further information on relevant OHS policies and expectations is outlined at: http://www.hr.unsw.edu.au/ohswc/ohs/ohs_policies.html

Examination procedures and attendance requirements
Attendance is expected at all lectures, laboratories and tutorials for this course. Attendance at all laboratories, tutorials and clinical sessions 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 will be available on ilecture, student participation is encouraged in both the lectures and the tutorials and these are important to attend. Research has shown that students who attend all scheduled activities in courses, perform better in tertiary studies.

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