

UNSW



THE UNIVERSITY OF NEW SOUTH WALES

Exercise Physiology Program

School of Medical Sciences

Faculty of Medicine

HESC3504

Physical Activity and Health

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

HESC2501 Exercise Physiology
HESC1511 Exercise Programs & Behavior
PSYC1011 Psychology 1B

Course Description

The focus of this course is on exercise for apparently healthy populations across the lifespan. Psychological aspects of exercise, including the application of behaviour change/self-management strategies, comprise a significant component of this course. The literature addressing the impact of physical activity on the prevention of disease will be discussed in detail through examining the mechanisms by which exercise alters metabolic, vascular, immune, muscular and cognitive function, both chronically and acutely. Health-based screening and intervention techniques (including basic nutrition assessments) will be applied with students undertaking a supervised lifestyle change project.

Aims of the Course

On completion of this subject, students will be able to:

1. describe key models explaining why people do (or do not) exercise
2. describe the effects of regular physical activity on a variety of physical and psychological health variables
3. demonstrate an understanding of the need for primary prevention in the health care model

Student Learning Outcomes

On completion of this subject students should be able to:

1. conduct a range of health assessment and screening tests
2. design and implement a supervised lifestyle change program for a healthy adult
3. identify risk factors associated with sedentary lifestyles and metabolic dysfunction
4. demonstrate a basic knowledge of dietary assessment and a healthy food intake

HESC3504 will develop the following graduate attributes. These include skills, qualities, understanding and attitudes that promote lifelong learning that students should acquire during their university experience.

Graduate Attributes

1. Understand the relationship between physical activity and health
2. Deliver lifestyle change programs that use exercise for the primary prevention of disease and the management of chronic disease
3. Communicate effectively with patients, colleagues and other health professionals
4. 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 examines the positive changes induced by regular exercise and how to develop appropriate lifestyle change programs for apparently healthy adults. As well, students study the psychology of exercise and the interactions between physical activity and psychological health.

How the course relates to other courses in the Exercise Physiology program – The course builds on the information gained in Introductory Exercise Science (HESC1501), Exercise Programs and Behaviour (HESC1511), Exercise Physiology (HESC2501) and Psychology (PSYC1001 and PSYC 1011). Concepts gained in courses such as anatomy, human physiology, and biomechanics, contribute to learning in this course.

Teaching strategies

Lectures – Lectures will provide you with the concepts and theory essential for understanding how regular physical activity impacts on health. In the lectures the aetiology of lifestyle diseases will be outlined and a description of the effects of exercise on risk factors will be given. Lectures will examine the current research regarding exercise and nutritional interventions.

Laboratories – To assist in the development of practical skills in assessing health and fitness and implementing lifestyle change, laboratories will be held. 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 and in your involvement in planning and implementing a lifestyle change program are relevant to your development as professional exercise physiologists.

Tutorials – practical/tutorial sessions of up to 4 hours per week

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 - Lifestyle Change Program	50%	Staged
ASSESSMENT TASK 2 - Midterm examination	20%	Week 6
ASSESSMENT TASK 3 – End of Session Examination	30%	Exam period

Assessment Task 1 - Lifestyle Change Program

This major assessment task addresses Graduate Attributes A to F

Phase 1: *Planning and assessment.*

Week 3

This will include your needs assessment, goal setting, pre-screening, and other assessment items you chose to determine the health status of your client and their lifestyle change objectives. (20%)

Phase 2: *The Program.*

Week 6

This is a detailed description of the activities and strategies planned for the *lifestyle change* program for your client. It is essential that you not only include exercise programming but that you outline a program for addressing other aspects of the client's lifestyle change needs such as diet and stress management. (15%)

Phase 3: *Evaluation.*

Week 11

This report includes the final assessments you use to determine the success of your program. It must include a critical evaluation of the merits/demerits of the program and the processes used. It must also include a summary report to the client's medical practitioner. (15%)

MARKING CRITERIA
Lifestyle Change Program
Phase 1 – Planning and Assessment

<i>Assignment component</i>	<i>How do I achieve top marks?</i>	<i>Mark for this section</i>
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.	2.5/20
Diet recommendations	Compare your client'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.	2.5/20
Testing	Choose and administer appropriate tests for your client, do preexercise screening and assess their needs. Ensure that part of your assessment examines possible barriers to exercise. Present the pre-training tests in tabular form and compare with normative data where appropriate.	5/20
Goal Setting	In conjunction with your client, set appropriate long, medium and short term SMART goals based on their needs and desire for change.	5/20
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.	5/20

Phase 2 – The Program

<i>Assignment component</i>	<i>How do I achieve top marks?</i>	<i>Mark for this section</i>
Strategic component	<p>Do the planned strategies for change support the needs and goals of the client?</p> <p>The strategies are logical, realistic and will help the client achieve their goals.</p> <p>Client feedback is an integral part of the program.</p>	2.5/20
Education component	<p>The educational needs of the client have been stated.</p> <p>There are strategies in place to address these client needs.</p> <p>This component supports the needs and goals of the client.</p> <p>A list of resources to support the client's educational needs is included.</p>	2.5/20
Activities	<p>The activities are clearly stated and a rationale given for each activity.</p> <p>The activities address the needs and goals of the client.</p> <p>There is a logical progression of activities that support the achievement of both short and long term goals.</p> <p>These activities address all the client's needs including exercise, dietary change, stress and time management, smoking or whatever is pertinent to that client.</p>	10/20
Presentation	<p>The report should be well written, concise and easy to read.</p> <p>There should be no spelling, grammatical or typographical errors.</p> <p>Graphics and/or tables should support the information in the text.</p> <p>The report should be double spaced and appropriately referenced. Pages must be numbered.</p>	5/20

Phase 3 – Evaluation

<i>Assignment component</i>	<i>How do I achieve top marks?</i>	<i>Mark for this section</i>
Testing	<p>The testing is appropriate to the goals, needs and program prescribed for the client.</p> <p>Pre- and post-training testing data are presented in tables and/or graphs and compared to normative data where appropriate.</p>	5/20
Analysis	<p>The student objectively analyses the data from any testing.</p> <p>Analyses and conclusions derived are appropriate.</p>	5/20
Evaluation	<p>The program is critically evaluated by the student. Suggestions are made to address areas of weakness or where goals were not met. The student attempts to determine the cause for success or lack thereof.</p> <p>Include a separate one page report to the client's General Practitioner briefly outlining the treatment and treatment effects.</p>	5/20
Presentation	<p>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.</p>	5/20

Assessment Task 2 - Midterm examination

The **midterm examination** will be held in week 6 after the Easter break. This examination will test not only your knowledge of physical activity and health but also your ability to apply the knowledge you have acquired from lectures and practicals to client management. The questions will be based on the material covered in the lectures and practical classes and the prescribed readings. The exam will address graduate attributes A and B.

Assessment Task 3 – End of Session Examination

The **end of session examination** will be held during the official examination period. This examination will test not only your knowledge of physical activity and health but also your ability to apply the knowledge you have acquired from the course material to client management. The questions will be based on the material covered in the lectures and practical classes and the prescribed readings over the entire semester. The exam will address graduate attributes A and B.

Submission of Assessment Tasks

Written assessment tasks must be handed in via Turn-it-in which can be found on the TELT Blackboard website. Penalties apply for late submissions.

Penalties for late submission of assignments – In cases where an extension has NOT been granted, the following penalties will apply: For assignments submitted after **9:00am** on the due date, a penalty of 50% of the maximum marks available for that assignment will be incurred. A further 25% of the maximum possible allocated marks (i.e., a total of 75%) will be deducted from assignments which are two (2) days late. Assignments received more than two (2) 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 Tues 11-12 Biomed E	Lecture 2 Tues 12-13 Biomed E	Lecture 3 Wed 11-12 Matthews C	Laboratory/Tutorial Goodsell 225
1	March 1	Introduction EGT	The lifestyle change model EGT	Models of exercise behaviour 1 LV	
2	March 8	Screening EGT	Health/fitness Assessments EGT	Models of exercise behaviour 2 LV	Body composition assessment
3	March 15	Exercise prescription EGT	Exercise prescription EGT	Motivation and obstacles to exercise LV	Fitness assessment
4	March 22	Metabolic Calculations	Home based exercise EGT	Behaviour change LV	Assessing strength and balance
5	March 29	Healthy Built Environments ST	Healthy Built Environments ST	Environmental and policy based approaches LV	Individual client based clinical hours
6	April 12	Energy balance during exercise DS	Midterm examination	Social influences on exercise LV	Individual client based clinical hours
7	April 19	Fat loss and exercise Weight management EGT	Metabolic syndrome and diabetes EGT	Body image and exercise EGT	Individual client based clinical hours
8	April 26	CholesterolEGT	Cardiovascular disease EGT	Physical activity and stress LV	Individual client based clinical hours
9	May 3	Hypertension EGT	Cancer EGT	Physical activity and anxiety and depression LV	Individual client based clinical hours
10	May 10	Epigenetic change RB	Epigenetic change RB	Physical activity and well-being LV	Individual client based clinical hours
11	May 17	Pregnancy EGT	Children and physical activity EGT	Physical activity and sleep LV	Individual client based clinical hours
12	May 24	Writing professional reports EGT	Review EGT	Considerations for diverse populations LV	

EGT Dr. E. Gail Trapp; **LV** Dr. Lenny Vartanian; **ST** Assoc. Prof. Susan Thompson; **DS** Dr. David Simar; **RB** Dr. Romain Barres

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>

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

Bouchard, Blair, & Haskell (2007). Physical Activity and Health. Human Kinetics, Champaign; Illinois.

Griffin, J.C. (1998). Client-centred Exercise Prescription. Human Kinetics. Champaign, Illinois, USA.

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

Hardman, A., & Stensel, D. (2003). Physical Activity and health: The evidence explained. Routledge, London.

Lox, C. L., Marin Ginis, K. A., & Petruzzello, S. J. (2006). The psychology of exercise: Integrating theory and practice (2nd edition). Holcomb Hathaway: Scottsdale, Arizona, USA.

Suggested Reference Books

The following articles may be found on the TELT Blackboard website: <http://lms-blackboard.telt.unsw.edu.au/webapps/portal/frameset.jsp>

Libby, P. (2002). Atherosclerosis: the new view. Scientific American, May, 47-55.

Myers, J. et al (2002). Exercise capacity and mortality among men referred for exercise testing. New England Journal of Medicine, 346, 793-801.

Pescatello, L. et al. (2004). Exercise and hypertension. Medicine and Science in Sports & Exercise, 36, 533-553.

- Shaw K, Gennat H, O'Rourke P, Del Mar C. Exercise for overweight or obesity. Cochrane Database Syst Rev (2006), 4:CD003817.
- Boutcher & Dien (2007). Factors impeding fat loss.
- Engler & Engler, (2006). Omega-3 fatty acids: role in cardiovascular health and disease. J Cardiovascular Nursing, 21, 17-24.
- Eriksson, J. et al. (1997). Exercise and the metabolic syndrome. Diabetologia, 40, 125-135.
- Friendenreich, C.M., (2002). Physical activity and cancer prevention: from observational to intervention research. Cancer Epidemiology, Biomarkers and Prevention, 10, 287-301;
- Boutcher, S.H.& Hamer, M. (2006). Physical activity and cardiovascular reactivity. In E. Acevedo & P. Ekkekakis (Eds.), The Psychobiology of Exercise and Sport. Champaign: Human Kinetics.
- Heyn et al. (2004). The effects of exercise training on elderly persons with cognitive impairment and dementia: a meta-analysis. Arch Phys Med Rehabil, 85, 1694-1704.
- Youngstedt, S.D. (2005). Effects of exercise on sleep. Clinical Sports Medicine, 24, 355-365.
- Ekkekakis, P & Acevedo, E. (2001). Affective responses to acute exercise: toward a psychobiological dose-response model. The Psychobiology of Exercise and Sport. Champaign: Human Kinetics.
- Mutrie (2001). The relationship between physical activity and clinically defined depression. In Biddle, S., Fox, K., & S.H. Boutcher (Eds.), Physical Activity and Mental Health, Routledge.

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 to ensure a safe work/study environment for everyone. 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, practicals and tutorials for this course. Attendance at all practicals, tutorials and clinicals 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.

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>