

UNSW



THE UNIVERSITY OF NEW SOUTH WALES

**Exercise Physiology Program
School of Medical Sciences
Faculty of Medicine**

HESC2501

Exercise Physiology

Semester 2, 2013
Course Outline

Course details

Credit Points: 6 UOC

Course Prerequisites / Assumed Knowledge

BIOC2181 Fundamentals of Biochemistry; PHSL2501 Human Physiology A

Course Description

The focus of this course is on the physiological adaptations of the respiratory, cardiovascular, endocrine and musculoskeletal systems to acute and chronic exercise, building on knowledge and skills developed in Human Physiology A and concurrently developed in Human Physiology B. Specific adaptations to the different component of exercise (intensity, duration, type) will be presented. Skills and techniques used to monitor and analyse those adaptations will be developed throughout this course, e.g. submaximal and maximal exercise tests, ECG, spirometry.

Aims of the Course

1. To encourage a comprehensive understanding of the human physiological response (energy utilisation, endocrine, cardiovascular, respiratory, musculoskeletal) to both acute and repeated bouts of exercise
2. To provide knowledge of measurement principles and techniques commonly utilised in exercise physiology
3. To provide confidence in performing basic measurements in exercise testing

Student Learning Outcomes

This course will enable students to explore and gain further understanding of the response of the human body to physical activity with an emphasis of their application to real situations in the field of Exercise Physiology. This course provides the fundamental knowledge and promotes the development of skills which will work towards the realisation of the overall Bachelor of Exercise Physiology program objectives and skills of an Exercise Physiologist.

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

- Have developed knowledge of the changes in energy utilisation, endocrine, cardiovascular, respiratory and musculoskeletal systems in response to acute or repeated bouts of exercise.
- Demonstrate basic competencies in skills associated in exercise testing (eg. heart rate and blood pressure measurement; the collection of blood by fingerprick for the analysis of lactate).
- Communicate effectively through written reports of scientific laboratory experiments.

Graduate Attributes

The students will be encouraged to develop the following Graduate Attributes by undertaking the selected activities and knowledge content. These attributes will be assessed within the prescribed assessment tasks. At the conclusion of this course the student will be able to be:

- Understand the relationship between physical activity and health
- Apply clinical skills and knowledge relevant to health and fitness assessments
- Engage in independent and reflective learning for the betterment of professional practice, following an evidence-based approach
- Work as a member and a leader of a team
- Communicate effectively with patients, colleagues and other health professionals

Rationale for the inclusion of content and teaching approach

How the course relates to the Exercise Physiology profession – The content allows students to develop a fundamental knowledge of the human physiological response to physical activity. This forms the basis upon which further knowledge and skills enable an Exercise Physiologist to deliver lifestyle programs that use exercise with an aim of promoting disease prevention and rehabilitation of chronic disease. This course also

enables students to develop the skills of communication and critical thinking. It reflects the position of the course convenor that their practice within the field will require these skills for ongoing development.

How the course relates to other courses in the Exercise Physiology program – The course will build upon material presented in earlier courses in the program, in particular Introductory Exercise Science (HESC1501), Exercise Programs and Behaviour (HESC1511), as well as Human Physiology A (PHSL2501). The skills and knowledge developed in this course will provide a strong base in exercise physiology essential for the clinically oriented courses offered in third stage such as Physical Activity and Health (HESC3504) and Clinical Exercise Physiology (HESC3541).

Teaching strategies

Lectures – Lecture notes are available in PDF format on Moodle:
<http://lms-blackboard.telt.unsw.edu.au/webapps/portal/frameset.jsp>

Lectures are considered by the course convenor to be only a summary of the concepts and theory essential for meeting the course objectives and student learning outcomes outlined above. In order to do well in this course it is **ABSOLUTELY ESSENTIAL** that students make use of other resources such as the recommended and additional textbooks (page 8) and Web based sources.

Laboratories – Students are expected to behave in an ethical, socially responsible and professional manner within the laboratory class. Punctual arrival is expected as important information including safety precautions are discussed at the beginning of each class and late students will be refused entry and marked as absent. Turn-off mobile phones before entering (mobile phones are not to be used or answered during the class). The use of computers for work not related to the current laboratory is not permitted in class. Eating is not permitted, however students may bring drinking water in a suitable unbreakable container. Students are required to bring to class, a printed copy of the laboratory which they are to download from MOODLE. It is recommended that students take the time to read the laboratory before coming to the designated laboratory session. All students must come prepared for active participation wearing clothing which is suitable for exercise, such as shorts or track pants, T-shirt or light sweater, and runners or cross-trainers. Enclosed footwear is compulsory. Students who do not have suitable attire with them (eg. open footwear) or do not have a legitimate reason for not participating (eg. medical complaint or injury) will be refused entry to the class and will then be marked absent. Students must take care with biological and hazardous material and leave all equipment clean and functional. Those who don't adhere to these basic laboratory rules will be marked absent.

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.

	Weight	Due Date
<i>ASSESSMENT TASK 1 – MID SEMESTER EXAM</i>	20%	Week 7
<i>ASSESSMENT TASK 2 – END OF SESSION EXAM</i>	40%	End semester exam period
<i>ASSESSMENT TASK 3 – LABORATORY ASSIGNMENT</i>	10%	Week 8
<i>ASSESSMENT TASK 4 – OSCE</i>	30%	Weeks 11 & 12

Assessment Task 1 – MID SEMESTER EXAM

The MID SEMESTER EXAM is a written exam comprised of multiple choice and/or short answer questions, and analytical interpretation of typical experimental situations. It will cover lecture and laboratory material from weeks 1-6. It will be held in week 7 during the lecture timeslot, and is 50 minutes duration (writing time). In the weeks prior to the mid-semester exam students will be allocated an examination rooms (TBA) to allow for adequate spacing between students. No extra time will be given to a student who has arrived at the wrong

room and needs to find their way to the other room to sit the exam. Students are only permitted to leave the room after they have submitted their mid-semester exam for assessment.

Assessment Task 2 – END OF SESSION EXAM

The END OF SESSION EXAM is a written exam comprised of multiple choice and/or short answer questions, and analytical interpretation of typical experimental situations. It will be held during the examination period following the end of semester, and will cover ALL lectures and laboratory material from the ENTIRE semester.

Assessment Task 3 – LABORATORY ASSIGNMENT

The goal of the laboratory report is to enable and consolidate learning by doing. Assessing this learning can enhance:

1. the student's conceptual understanding of the theory-practice relationship
2. their higher level reasoning skills and
3. the development of their exercise physiology practical competence.

Item 1 and 2 are assessed through the laboratory report writing and item 3 assessed through the OSCE.

Laboratory One (1) is to be submitted in week 3 for a brief review and so that students can receive feedback. Students are then required to provide a summary from their feedback, as to the improvements they Plan to implement on the next Laboratory report. Laboratory 2, 3, 4 or 5 are to be written up and submitted for assessment in week 8. The skill and knowledge content of all Laboratories must be completed and content will be assessed in either the OSCE (practical skill competency) or Final Examination (knowledge and application competency).

Marking Criteria for Laboratory Assignments (2013)

As indicated above, two (2) laboratories must be written up and submitted. To achieve the highest possible marks each student must do the following:

Title Page:

- Indicate the Laboratory number and title of the laboratory report. Provide your name, student number and unit code: HESC 2501.

Introduction:

- Must introduce and provide adequate background material on the key concepts related to the laboratory testing. It may also include previous research that has occurred in the topic.
- All explanations of key terms and concepts must be referenced using credible scientific journals. Textbooks are also useful for explaining key concepts. Avoid referencing lecture notes, the lecturer and non-peer reviewed material on the internet.
- At the end of the introduction, a clear a concise aim must be provided that outlines the purpose of the laboratory.

Methods:

- Must be included in the report, which outlines the procedural steps you took to collect the data for the report. This section can be written as a paragraph or use bullet to assist with procedural clarity.
- Please do not copy the laboratory manual. This document is a guide. My using your own terminology, it will demonstrate that you understand the procedures.
- Ensure adequate detail is provided, so that any person repeating the laboratory could do so, by following your procedures.
- As the procedure has already been conducted, the method needs to be written in the past tense.

Results:

- Participant details and demographics need to be placed at the start of the results section.
- Tables and figures need to be completed with the numerical data obtained in class, with clearly labelled headings, units of measurement and axis labels.
- Answers to any additional numerical calculations need to be completed and entered in the appropriate space provided in the table.

- Under each table or graph, a description or summary of the key findings from the results must be provided. These key results set up the basis to the discussion section.

Discussion & Conclusion:

- The discussion is the most important component of the laboratory report.
- The discussion should commence by outlining the key finding from the results section.
- Relate the key findings to the original purpose of the laboratory.
- It is then necessary to put the results into perspective and provide meaning. This enables students to demonstrate that they understand the concept being tested and can interpret and explain the finding. Aspects could include:
 - Who performed the strongest, whose data indicates poor aerobic capacity and the reasons that could account for the results?
 - Were there unexpected results? Was there experimental error that may have accounted for the findings? How could the experimental errors be corrected next time?
 - How did your results compare to similar testing results in the literature. This is a way of confirming the accuracy of your results from the laboratory.
 - Can you identify possible implications of your results? Does the data suggest the participant is better suited to a particular sport as he or she excels in a physiological capacity.
- Discussion needs to be concise and grammatically correct.
- Finally, a concluding statements needs to summarize the major finding/s from the report.

Referencing:

- Particular attention and marks will also be given to correct referencing within the document (see APA referencing guidelines).
- You need to provide the correct reference within the discussion section
- A full reference list needs to be provided at the end of the assignment. Attention will be made towards the relevance of the reference source, use of peer reviewed journal articles, how current the journal article is and the journal source.
- You will also need to ensure the report is grammatically correct with correct spelling throughout (please use spell check and grammar check)
- The lab report need to demonstrate a professional presentation, with attention paid to design and layout.

Assignment Criteria	Developing (Not Yet Competent)	Basic Competence	Competent	Advanced Competence
Introduction & Aim <ul style="list-style-type: none"> • Introduction reviews the literature and explains key concepts. • Background research presented • Concise writing and relevant to topic. • Aim or purpose of the lab clearly stated. 	<ul style="list-style-type: none"> * Was not yet able to provide a review of background material * was not able to define the key concepts relevant to the lab. * Was not able to state a clear aim. 	<ul style="list-style-type: none"> * Was able to provide a review of some relevant background material. * Explained key terminology relevant to the lab. * Demonstrated an ability to reference statements but was inconsistent. * an aim was stated but did not outlined the major purpose of the lab. 	<ul style="list-style-type: none"> * Was able to provide an analysis of relevant background material. * Explained key terminology relevant to the lab. * Most statements were referenced throughout. * an aim was stated that outlined the purpose of the lab. 	<ul style="list-style-type: none"> * Was able to provide a detailed analysis of relevant background material. * Included an analysis of previous research on the topic. * Clearly explained all key terminology relevant to the lab. * All statements were consistently referenced throughout. * a clear aim was stated that detailed the purpose of the lab.
Methods <ul style="list-style-type: none"> • Procedures explained in adequate detail? • Presented in the past tense 	<ul style="list-style-type: none"> * Was not yet able to write the procedures in detail that would enable replication. * was unable to write the procedures in his/her own words, copying the procedures from the lab manual. * was not yet able to write the procedure using the past tense. 	<ul style="list-style-type: none"> * presented basic procedural steps but lacked the detail to enable task replication. * demonstrated an ability to write the procedures mostly in one's own words * procedures were written in present or inconsistent tenses. 	<ul style="list-style-type: none"> * presented procedural steps that would enable task replication. * demonstrated an ability to write the procedures in one's own words * procedure was written consistently in the past tense. 	<ul style="list-style-type: none"> * presented detailed procedural steps with detail that would enable task replication. * demonstrated an ability to write all of the procedures in one's own words, demonstrating understanding. * procedure was consistently written in the past tense.

<p>Results</p> <ul style="list-style-type: none"> Participant details are outlined. All data presented in tables and figures. Tables and figures labeled? Calculations correct? Brief summary of what the data is showing provided with each graph or table. 	<ul style="list-style-type: none"> * was not yet able to provide detail of the participants * was not able to present all data in tables of graphs * was unable to label the tables of graphs * was not yet able to provide a description of what the table or graphs are illustrating. 	<ul style="list-style-type: none"> * Demonstrated an ability to provide some demographic data for the participants * Present most data in tables of graphs * was able to label the tables of graphs * provided a brief or inconsistent description of what the table or graphs were illustrating. 	<ul style="list-style-type: none"> * Demonstrated an ability to provide demographic data for the participants * Present data in tables of graphs * was able to label the tables of graphs * provided a description of what the table or graphs were illustrating. 	<ul style="list-style-type: none"> * Demonstrated an ability to provide detailed demographic data for the participants * Present all data in tables of graphs * was able to label the tables of graphs * provided a detailed description of what the table or graphs were illustrating.
<p>Discussion & Conclusion</p> <ul style="list-style-type: none"> Provides key finding. Adequately discusses expected and/or unexpected results? Makes sense of the data Compares findings to other research? Implications of the findings provided. Major finding concluded at the end of the report. 	<ul style="list-style-type: none"> *was not able to clarify the major finding from the results. * was not able to explain and interpret the results. 	<ul style="list-style-type: none"> * identified some findings from the data. * was not yet able to explain & make sense of the key findings * was not yet able to identify unexpected findings and explain them. * was not yet able to compare own findings to that in the literature. * was not yet able to articulate the implication of the findings * was able to provide a conclusion 	<ul style="list-style-type: none"> * identified key findings from the data. * explained and made sense of the key findings * demonstrated an ability to identify unexpected findings and explain them. * was able to compare own findings to that in the literature. * was able to articulate the implication of the findings * was able to provide a clear conclusion at the end of the report. 	<ul style="list-style-type: none"> * clearly identified key findings from the data. * analyzed the findings and provided interpretation to make sense of the key findings * demonstrated an ability to identify unexpected findings and explain them, being critical of own methodology. * was able to compare own findings to that in the literature. * was able to articulate the implication of the findings * was able to reflect and provide a clear & concise conclusion at the end of the report.
<p>Reference, Grammar, spelling and overall presentation.</p> <ul style="list-style-type: none"> APA reference format used in report. Statements and information in the body of the report referenced. Adequate number of scientific articles in support of findings References relevant to topic and current. Report grammatically correct, with correct spelling Report professionally presented. 	<ul style="list-style-type: none"> * Aspects of APA style demonstrated but lacked consistency. * was unable to provide evidence of scientific journal references. * was not yet able to produce a grammatically correct, with correct spelling. * not yet able to present a professional report. 	<ul style="list-style-type: none"> * Aspects of APA style demonstrated but lacked consistency. * provided limited evidence of scientific journal references. * was able to produce a grammatically correct, with correct spelling, with only some inconsistency. * demonstrated a basic professional report 	<ul style="list-style-type: none"> * Correct use of APA format throughout report. * statements and concepts were correctly referenced throughout body of writing. * Used relevant scientific journals * Report grammatically correct, correct spelling and professional presentation 	<ul style="list-style-type: none"> * correct use of APA format throughout entire report. * Every statement and concept correctly referenced throughout body of writing. * Used relevant scientific journals * demonstrated use of current journals and references. * Demonstrated an ability to source the latest research in the field. * Report grammatically correct, professional presentation, and correct spelling.

Submission of Assessment Tasks

Laboratory assignments are to be submitted as an electronic version via MOODLE (Turn it in).

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

- For laboratories submitted after **9.00am** 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 time/date **will not be allocated a mark**, however, these assignments **must** still be submitted to pass the unit.

Assessment Task 4 –OBJECTIVE STRUCTURED CLINICAL EXAMINATION (OSCE)

The OSCE will be held in weeks 11 &12 during the small group laboratory timeslot and will be based on the assessment of the student's ability to perform various practical skills commonly used in exercise physiology. Each student will be required to attend on only one of these weeks. Further information confirming the location and times of the skills exam for each individual student will be provided in the weeks prior to the exam by the course convenor. Where possible, the assessment environment will mimic real-life practice and you will need to treat the station as such.

EACH student will be required to perform a range of skills listed below, under the supervision of an examiner. Broadly the assessment is based on a given student's ability to perform the skill with regard to the following three categories or assessment domains:

(1) *exercise physiology competency*

- a. demonstrate an ability to correctly perform the measurements taught throughout the exercise physiology unit,
- b. demonstrate an ability to correctly set up an assessment ensuring safety of the test and identify criteria for test completion or test termination
- c. demonstrate an ability to execute an assessment, performing the tasks in a logical sequence.
- d. demonstrate an ability to monitor the client throughout the test or assessment

(2) *technical skill*

- a. demonstrate an ability to correctly use all of the equipment used throughout this course.
- b. demonstrate an ability to correctly set up of a subject for testing
- c. demonstrate an ability to use all equipment safely, ensuring client safety and the following of OHS guidelines
- d. able to propose alternative strategies when equipment fails

(3) *communication skills*

- a. demonstrate an ability to effectively communicate verbally to the client
- b. demonstrate an ability to establish a good rapport with the client
- c. demonstrate an ability to explain testing procedures to a client and check their understanding
- d. demonstrate an ability to explain the results to the client in a manner that the client can understand

The exam venue will be divided into 8 stations. More specifically the exercise physiology skills which could be assessed for competency during the examination are:

Skill Area	Competencies. Students need to be able to demonstrate an ability to:
<i>Cardiovascular Function Assessment</i>	<ul style="list-style-type: none"> • perform a manual and electronic measurement of resting & manual heart rate. • perform a measurement of resting and exercise systolic and diastolic blood pressure • interpret and explain the results to the subject
<i>Blood Collection and Blood Lactate Assessment</i>	<ul style="list-style-type: none"> • perform the collection of blood from a subject by fingerprick • perform the collection of blood from a subject following an exercise bout and examine the sample for blood lactate • interpret and explain the results to the subject • perform all tasks following the rules governing safe handling of blood and sharps disposal
<i>Respiratory Function Assessment</i>	<ul style="list-style-type: none"> • perform a measurement of vital capacity and FEV_{1.0} • interpret and explain the results to the subject
<i>Aerobic Capacity Assessment</i>	<ul style="list-style-type: none"> • perform a correct set up of a subject on a Monark bicycle ergometer in preparation for exercise • correctly attach and fit a polar heart rate monitor to the subject prior to commencing the test • explain the protocols used to assess sub-maximal fitness in

	<p>healthy populations to a participant</p> <ul style="list-style-type: none"> • adjust the workloads on the bicycle to allow the subject to exercise at a power output designated by the examiner • set up an athlete for a VO_2 max assessment, using the metabolic cart • explain a VO_2 max test to an athlete prior to testing and confirm understanding • monitor the subject throughout testing using pre-established cues • interpret and explain the results to the subject
<i>Anaerobic Capacity Assessment</i>	<ul style="list-style-type: none"> • correctly set up a client for a Wingate test • correctly set up the computer for the measurement of peak power or anaerobic capacity • explain the testing protocol to the client • ensure the client understands the requirements of them to correctly perform the test • ensure the client is informed of safety issues and test termination • monitor and verbally encourage the subject throughout testing • guide the subject at test completion into a cool down
<i>ECG Assessment</i>	<ul style="list-style-type: none"> • correctly set up a 12 lead ECG with close attention to lead placement • describe a protocol used in a 12 lead ECG stress test • run an ECG assessment • interpret and explain the results to the subject

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>.

Referencing for the laboratory assignment

Referencing is a process that identifies the sources of information used in your assignment. Some of the main purposes of referencing are: to justify/support the position you take in your assignment, to show the arguments put forward by different writers, and to allow the reader to locate the sources used. Please refer to examples cited below. Further information can be found at <http://www.apastyle.org>

Course schedule HESC 2501, 2013

Wk	Wk	Lecture 1 (1 hr) MON 10.00-11.00	Lecture 2 (1 hr) MON 4.00-5.00	Lecture 3 (1 hr) THURS 1.00-2.00	Large Lab (2 hrs) WED 1.00-3.00 WED 3.00-5.00 <i>Wallace Wurth</i> 115/116	Small Lab (2 hrs) MON 2.00-4.00 WED 1-3.00 3-5.00 <i>24 Arthur St</i>
1	29 rd July	1.1: Introduction to Exercise Physiology. Review of the Course Review of Assessment. <i>Lecturer: FN</i>	1.2: Biochemistry Review Review of Metabolism & Energy Generation CHO, Lipid, Protein <i>Lecturer: CM</i>	1.3: Measurement of Human Energy Expenditure BMR, daily energy expenditure, RQ, RER, MET <i>Lecturer: CM</i>	LAB 1: Introduction Wingate & Lab reports VENUE: 24 Arthur St	
2	5 th Aug	2.1: Exercise Biochemistry I Energy Pathways for Ex. Anaerobic Metabolism during Exercise <i>Lecturer: FN</i>	2.2: Exercise Biochemistry I Assessment of Anaerobic Capacity <i>Lecturer: FN</i>	2.3: Exercise Biochem II Aerobic Metabolism during Exercise CHO, Lipid, Protein during Ex <i>Lecturer: CM</i>	LAB 2: CV response to Exercise HR, BP, RPE.	
3	12 th Aug	3.1: Exercise Biochemistry II Assessment of Aerobic Capacity. VO ₂ max, lactate & vent threshold <i>Lecturer: FN</i>	3.2: Nutritional basis of exercise fuel sources, CHO, lipids, protein <i>Lecturer: CM</i>	3.3: Optimal Nutritional for sports performance Fueling energy supply pre, during and post exercise. <i>Lecturer: CM</i>	LAB 1 Due: Mon 12 th Aug, 9.00am	LAB 3: The VO₂max
4	19 th Aug	4.1: Specific Nutritional requirements of athletes – endurance, strength training <i>Lecturer: CM</i>	4.2 Respiratory response to exercise. Assessment of Resp capacity during exercise <i>Lecturer: FN</i>	4.3: Cardiovascular response to exercise. <i>Lecturer: YB</i>		LAB 3: The VO₂max
5	26 th Aug	5.1: Cardiovascular response to exercise. <i>Lecturer: YB</i>	5.2 Cardiovascular response to exercise. <i>Lecturer: YB</i>	5.3 Assessment of Cardiovascular Response During Exercise <i>Lecturer: YB</i>	LAB 4: Cardio-Respiratory Response to Exercise. VT & LT	
6	2 nd Sept	6.1 Ex Biochemistry & Cardio-Respiratory Application Session <i>Lecturer: FN</i>	Mid-semester Exam Room TBA Supervisor: FN	6.3 Review of Exam – Feedback, Intro to Lab 5 <i>Elective & Gen Ed Session</i> <i>Lecturer: FN</i>		LAB 5: Combined Exercise Physiology Lab

7	9 th Sept	7.1: Overview of the ECG signal, normal rhythm, reading the trace, measuring heart rate, <i>Lecturer: SB</i>	7.2: ECG lead placement, response to exercise. <i>Lecturer: SB</i>	7.3: : ECG anomalies: arrhythmias, AV blocks, myopathies, ischemia, flutters <i>Lecturer: SB</i>		LAB 5: Combined Exercise Physiology Lab
8	16 th Sept	8.1 Exercise Training principles. Anaerobic system training response to exercise <i>Lecturer: FN</i>	8.2: Aerobic system training response to exercise <i>Lecturer: FN</i>	8.3: Training methodology Writing an aerobic & anaerobic training program <i>Lecturer: FN</i>	LAB 6: The exercise and diagnostic ECG.	
9	23 rd Sept	9.1 Strength Training and DOMS <i>Lecturer: BB</i>	9.2: Muscle Fatigue <i>Lecturer: BB</i>	9.3: Muscle adaptations to strength training, Muscle fibre type, changes as a result of exercise <i>Lecturer: SH</i>		LAB 7: OSCE Skills Practice
		Mid Semester Break				
10	7 th Oct	LABOUR DAY	LABOUR DAY	10.3: Overtraining, immune system suppression, iron deficiency <i>Lecturer: DS</i>		LAB 7: OSCE Skills Practice
11	14 th Oct	11.1 Exercise Physiology & Pre-Post Natal <i>Lecturer: MM</i>	11.2: Exercise Physiology for Children and Adolescents <i>Lecturer: MM</i>	11.3: Gender Specific Exercise Physiology <i>Lecturer: FN</i>		OSCE Exam
12	21 st Oct	12.1: Exercise and the environment: thermal stress. <i>Lecturer: YB</i>	12.2: Exercise and the environment: altitude <i>Lecturer: SB</i>	12.3: Review lecture <i>Lecturer: FN</i>		OSCE Exam

Please note that there may be some slight alterations to the above schedule.

Lecturers: Dr. Fiona Naumann (FN), Dr. Ben Barry (BB), Dr Chris Maloney (CM), Stewart Head (SH), Dr Yati Boutcher (YB), Associate Professor Stephen Boutcher (SB), Dr Maria Matuszek (MM), Dr Davis Simar (DS)

Tutor: Academic in Charge of Lab session: Dr Fiona Naumann (FN), Mr Andrew Keech (AK), Dr Maria Matuszek

Demonstrators: Andrew Keech (AK), David Mizrahi (DM), Matthew Jones (MJ), Ria Arnold (RA), Valarie Rincon (VR), Zac McKay (ZMc), Ehsan Gahreman (EG)

The mid-semester exam is held TBA, consists of 50 min reading/writing time. Rooms to be advised.

Resources for students

Moodle

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

You can use Moodle 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.

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

McArdle WD, Katch FI, Katch VL (2010) Exercise physiology. Energy, nutrition and human performance. (7th edition) Lippincott, Williams and Wilkins. Philadelphia, USA.

Suggested Reference Books

- **American College of Sport Medicine (2005)** ACSM's health-related physical fitness assessment manual. Lippincott, Williams and Wilkins, Philadelphia, USA.
- **American College of Sport Medicine (2010)** ACSM guidelines for exercise testing and prescription. (8th edition) Lippincott, Williams and Wilkins, Philadelphia, USA.
- **Australian Sports Commission (2000)** Physiological tests for elite athletes. (Gore CJ. Editor) Human Kinetics, Champaign, IL., USA.
- **Bourke L, Deakin V (2010)** Clinical sports nutrition. (4th edition) WCB/McGraw-Hill, Boston, USA.
- **Brooks GA, Fahey TD, White TP, Baldwin KM (2005)**. Exercise physiology: human bioenergetics and its applications (4th edition). Mayfield Publishing Company, Mountain View, CA., USA.
- **Gore C, Edwards D (1992)** Australian fitness norms: a manual for fitness assessors. Health Development Foundation, North Adelaide, Australia.
- **Hampton JR (2008)** The ECG made easy. (7th edition) Churchill Livingstone, Edinburgh, UK.
- **Houston ME (2001)** Biochemistry primer for exercise science. (2nd edition) Human Kinetics, Champaign IL, USA.
- **Jones DA, Round JM (1990)** Skeletal muscle in health and disease. Manchester University Press, Manchester, UK.
- **Powers SK, Howley ET (2009)** Exercise physiology. (7th edition) WCB/McGraw-Hill, Boston, USA.
- **Robergs RA, Keteyian SJ (2003)** Fundamentals of Exercise Physiology. WCB/McGraw-Hill, Boston, USA.
- **Wilmore JH, Costill DL (1999)** Physiology of sport and exercise. (2nd edition) Human Kinetics, Champaign, IL., USA.

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 UNSW is the method used for the collection of feedback. At the end of the semester

students will be asked by UNSW to provide feedback on HESC2501. Significant changes are then communicated to the following cohort of students.

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. Further information on relevant OHS policies and expectations is outlined at: http://www.hr.unsw.edu.au/ohswc/ohs/ohs_policies.html
All students must come prepared for active participation in laboratories. No open footwear is permitted. No consumption of food is permitted in class.

Examination procedures and attendance requirements

Attendance is expected at all lectures, practicals and tutorials for this course. Attendance at all practicals, tutorials and laboratories 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 Blackboard, 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. *It is intended that supplementary exams for School of Medical Sciences courses in Semester 2, 2013 will be advised on the SOMS website.*

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 Student Equity and Diversity Unit (SEADU) (9385 4734). Further information for students with disabilities is available at <http://www.studentequity.unsw.edu.au>