SECOND YEAR PHYSIOLOGY
PHSL2101 PHSL2121 PHSL2501
SESSION 1 2013
OBJECTIONS OF THE COURSE

This course is offered to second year students and is the first physiology course that you will encounter. The major aims of this course are to provide students with a basic understanding of the fundamental processes and mechanisms that serve and control the various functions of the body. It should be noted that, although introductory, this course in Human Physiology is comprehensive in scope. Areas treated in detail include both relatively simple cellular mechanisms (for example, the sequence of ion permeability changes in membranes that can result in the initiation and propagation of a nerve impulse along a nerve fibre) as well as more complex interactions between whole organ systems. The major areas of study include excitable tissues, muscle, blood, the cardiovascular system and neurophysiology.

It should also be noted that, where appropriate, subject areas are treated quantitatively as well as qualitatively, an approach that requires students to have at least a basic knowledge of mathematics and chemistry.

COURSE STRUCTURE

This is a 6 unit of credit course. There are 2-3, one hour lectures per week (Mon 1-2, Wed 1-2 and Fri 2-3). Lectures will provide you with the concepts and theory essential for understanding the fundamental processes of body function. The Fri 2-3 slot on some occasions will be used for a tutorial which aids in better understanding of lecture material. The practical classes are a major component of the course and comprise a fortnightly 3 hour laboratory session during which students typically work in small groups of about 5 and carry out the laboratory exercises outlined in this practical manual. These sessions will give an insight into how knowledge is obtained, and how the results of experiments depend not only on what we measure but how we measure it. Some of these sessions will be computer based, rather than of a practical nature and some may be self directed learning sessions.

APPROACH TO LEARNING AND TEACHING

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 and UNSW Blackboard. Your practical classes will be directly related to the lectures and it is essential to prepare for practical classes before attendance. It is up to you to ensure you perform well in each part of the course: preparing for classes, studying for quizzes and exams and seeking assistance to clarify your understanding. Past exam questions are provided to assist you in preparing for examinations.
UNSW LEARNING OUTCOMES

UNSW aims to provide an environment that fosters students achieving the following generic graduate attributes:

1. the skills involved in scholarly enquiry
2. an in-depth engagement with the relevant disciplinary knowledge in its interdisciplinary context
3. the capacity for analytical and critical thinking and for creative problem-solving
4. the ability to engage in independent and reflective learning
5. information literacy - the skills to appropriately locate, evaluate and use relevant information
6. the capacity for enterprise, initiative and creativity
7. an appreciation of, and respect for, diversity
8. a capacity to contribute to, and work within, the international community
9. the skills required for collaborative and multidisciplinary work
10. an appreciation of, and a responsiveness to, change
11. a respect for ethical practice and social responsibility
12. the skills of effective communication.

Not every course addresses all these attributes evenly. In second year physiology, attributes 1-4 are most relevant. The following are more specific learning outcomes for this course designed to incorporate some of the generic graduate attributes listed above in a more context specific form.

SPECIFIC LEARNING OUTCOMES

By the end of this course students are expected to have gained a basic understanding of the fundamental processes and mechanisms that serve and control the various functions of the body. More specifically students should have a basic knowledge of:

Excitable tissues
- introduction to excitable cells and electrical signals in cells
- basic properties and structure of the cell membrane
- movement of ions across cell membranes
- types of membrane transport proteins
- generation of electrical potentials in cells and electrochemical equilibrium
- action potentials and their propagation
- neuromuscular transmission, central synaptic transmission, neurotransmitters and receptors.

Muscle
- structure and mechanical properties of skeletal muscle
- sliding filament hypothesis, excitation-contraction coupling, myofilaments, role of calcium, cross bridge cycle
- structure and function of cardiac and smooth muscle

Blood
- functions and composition of blood
- nutritional requirements of erythropoiesis
- blood groups, Rh Factor
- blood clotting

Autonomic Nervous System
- sympathetic and parasympathetic systems
Cardiovascular system
- function of the cardiovascular system
- pulmonary and systemic circulations
- blood vessels
- cardiac output
- electrical events in the heart
- mechanical events in the heart
- myocardial contractility, regulation of cardiac output
- haemodynamics, physical laws governing the CVS, Poiseuilles equation, streamline and turbulent flow
- control of the cardiovascular system
- regional blood flows
- microcirculation and lymphatics
- integration of cardiovascular physiology

Neurophysiology
- overview - the organization and connections of the peripheral and central nervous systems
- body senses
- hearing and balance
- vision
- cortical organization
- reflexes and motor control

ASSESSMENT

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<tr>
<th>%Total Marks</th>
<th>Mid-session Theory Exam (50 min duration)</th>
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<tr>
<td>30%</td>
<td>The mid-session exam will be held on Friday 26th April 2013 and will consist of the following:</td>
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<tr>
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<td>• 15 multiple choice questions on material covered in all Excitable Tissues, Muscle and Blood Lectures and tutorials.</td>
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<td>• Two 10 minute short answer questions; one on Excitable Tissues and one on Muscle.</td>
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<th>%Total Marks</th>
<th>End of Session Exam (2 hours duration)</th>
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<tr>
<td>50%</td>
<td>The end of session exam will consist of the following:</td>
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<td>• 15 multiple choice questions on all Autonomic Nervous System, Cardiovascular System and Neurophysiology lectures and tutorials.</td>
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<td></td>
<td>• Three 10 minute short answer questions; one on Blood, one on Cardiovascular System and one on Neurophysiology lectures and tutorials.</td>
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<td>• 30 multiple choice questions on material pertaining to the practical classes in Session 1. You will not be able to take your prac books into the exam.</td>
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<th>%Total Marks</th>
<th>Online Feedback Quizzes</th>
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<td>10%</td>
<td>There will be a series of online feedback quizzes throughout the session covering each topic. These quizzes will be made available online a few days after the conclusion of each lecture series. These quizzes are to be used as a study aid and you will receive immediate detailed feedback after submitting your answers. The quizzes are to be attempted in your own time and each quiz will be accessible for a period of one week. You may attempt these quizzes as many times as you wish within this period. You will receive 2% towards your overall</td>
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grade for each quiz provided you achieve a minimum score of 90% for the quiz.

**ALL MULTIPLE CHOICE QUESTIONS EXAMINING LECTURE AND TUTORIAL MATERIAL IN THE MIDSESSION AND END OF SESSION EXAM WILL BE DRAWN FROM THE BANK OF QUESTIONS USED IN THE ONLINE QUIZZES THROUGHOUT THE SESSION.**

**PLEASE NOTE THAT THIS DOES NOT APPLY TO MULTIPLE CHOICE QUESTIONS BASED ON PRACTICAL CLASS MATERIAL – THESE QUESTIONS WILL NOT HAVE BEEN SEEN BY YOU PRIOR TO THE END OF SESSION EXAM.**

A timetable of online quiz dates and periods of accessibility will be posted up on blackboard early in the session.

**Please note that online feedback assessments are intended to motivate your study, provide feedback on your progress and to stimulate your learning. There is published data which demonstrates that students who participate in online feedback assessments perform significantly better than their peers in end of course examinations.**

When attempting each online feedback assessment, please complete it under exam conditions (by exam conditions, we mean you should do it by yourself, don't look up the answers as you do it, and commit yourself to an answer), at least the first time you attempt it. This will provide the most realistic appraisal of your performance.

Give yourself plenty of time, and attempt the feedback assessment in a place where you won't be interrupted. If you are attempting to simulate exam conditions, you should allow up to 2 minutes per question.

Write down items that you are not sure about as you go. Even if you get the question right you should still read further about anything that is unclear to you.

If you don't agree with, or can't understand the reason for an answer, ask the appropriate member of academic staff. If you are not sure who that is, ask your colleagues or the course convenor.

Technical problems regarding access to the assessment should be directed to Fiona Wilson, f.wilson@unsw.edu.au.

**Practical Quizzes**
Conducted immediately before some of the practical classes. These quizzes will contain a mixture of questions on that day’s work and on the previous practical class that you did. Please note that the computer practical: Electrical and Mechanical Events in the Cardiac Cycle is not a supervised practical however this practical will be included in practical quizzes and will be examined in the end of session exam. A minimum of three quizzes will be given throughout the session and your mark for this component will be an average of all the quizzes you are given.

**TEXTBOOK**
PRINCIPLES OF HUMAN PHYSIOLOGY by Cindy L. Stanfield, Benjamin Cummings, 5th edition, 2013. This book comes with an Interactive Physiology CD which is used in some self study sessions. Books are available from the UNSW bookshop.
GENERAL INFORMATION

The Department of Physiology is part of the School of Medical Sciences and is within the Faculty of Medicine. It is located on the 2nd and 3rd floors of the Wallace Wurth building. General inquiries can be made to the school teaching administrative officer Carmen Robinson (9385 2464, carmen.robinson@unsw.edu.au) who is located on the Ground Floor of the Biosciences Building room G27.

Professor Gary Housley is Head of Department and appointments to see him may be made through email (G.Housley@unsw.edu.au).

There is an honours program conducted by the School. The Honours program is co-ordinated by Dr Andrew Moorhouse (a.moorhouse@unsw.edu.au). Any students considering an Honours year should discuss the requirements with the co-ordinator. Outstanding students may be considered for scholarships offered by the University and School and these are offered annually.

Postgraduate research degrees

The Department of Physiology offers students the opportunity to undertake a Doctorate (Ph.D). For further information contact the co-ordinator, Dr Pascal Carrive (P.Carrive@unsw.edu.au).

Departmental Vacation Scholarships: The Department of Physiology supports several summer vacation scholarships each year to enable good students to undertake short research projects within the department. For further details contact the Administrative Officer.

ATTENDANCE REQUIREMENTS

Attendance at ALL practical classes/demonstrations is compulsory FOR ALL STUDENTS, and must be recorded in the class roll ON THE DAY OF THE CLASS. It is your responsibility to ensure that the demonstrator records your attendance and no discussions will be entered into after the completion of the class. Satisfactory completion of the work set for each class is essential and IS A REQUIREMENT FOR PASSING PHYSIOLOGY. Non-attendance for other than documented medical or other serious reasons may make you ineligible to successfully complete this course. At the very least you may be required to pass an additional oral examination on the practical classes, as well as undertaking the normal practical exam and quizzes. Students who miss practical classes due to illness or for other reasons must submit a medical certificate to Dr. Lesley Ulman (Rm 210B) WITHIN 7 DAYS (practical classes only) of missing a class. If received after this time, no consideration will be given and the student will be marked absent from that class. The following details must be attached: Name, Student number, Course number, Group number, Date of the class, Name of class missed.

The practical component of the final exam is compulsory FOR ALL STUDENTS.

PLEASE NOTE that missing any examination requires lodging a medical certificate via Online Services in myUNSW within 3 DAYS (further details on how to do this are documented below under “Applications for Special Consideration”).
OFFICIAL COMMUNICATION BY EMAIL

All students in courses PHSL2101, 2121 and 2501 are advised that email is the official means by which the School of Medical Sciences at UNSW will communicate with you. All email messages will be sent to your official UNSW email address (e.g., z1234567@student.unsw.edu.au) and, if you do not wish to use the University email system, you MUST arrange for your official mail to be forwarded to your chosen address. The University recommends that you check your mail at least every other day. Facilities for checking email are available in the School of Medical Sciences and in the University library. Further information and assistance is available from DIS-Connect, ph. 9385 1777.

NOTICEBOARDS

Noticeboards for this course can be found on the 2nd floor of the Wallace Wurth building. Current timetables and information relevant to you will be displayed here. It is your responsibility to check these regularly.

All lectures are taped by the ilecture system and can be accessed via UNSW Blackboard. Textbooks and some reference materials are available through open reserve.

TEACHING RESOURCES IN PHYSIOLOGY

The Department of Physiology has chosen to use the UNSW Blackboard Learning (BBL) platform to provide teaching material for all of its courses. You can make use of ilecture recordings (audio only) taken of the lectures which are available on BBL. Lecture notes and various learning materials will also be made available on BBL either before or shortly after the lecture.

For BBL direct access point your browser to:
http://lms-blackboard.telt.unsw.edu.au/webapps/portal/frameset.jsp

System Requirement for BBL:

UNSW Blackboard supports the following web browsers for Windows XP or VISTA.
- Internet Explorer (IE) version 7 or 9
- Firefox 3.0x (must run version 3.0.3 and above)

UNSW Blackboard supports the following web browsers for Mac 10.4 or 10.5 (Mac OS 10.3 is not supported)
- Firefox 3.0.x (must run version 3.0.3 and above)
- Safari 2 or 3

Firefox is the preferred browser in both PC & Mac environment.

HANDWRITING

Students whose writing is difficult to understand will disadvantage themselves in their written assessment. Make every effort to write clearly and legibly. Do not use your own abbreviations.

APPLICATIONS FOR SPECIAL CONSIDERATION FOR MISSED ASSESSMENTS / EXAMS

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 or for any other reason, you should ask for special consideration in the determination of your results. Such requests should be made as soon as practicable after the problem occurs. **Special consideration sought more than three days after an examination in a course WILL NOT be accepted except in TRULY exceptional circumstances.**

An application for special consideration must be made via Online Services in myUNSW. You must obtain and attach Third Party documentation (e.g. medical certificates) before submitting the application. Failure to do so may result in the application being rejected. Log into myUNSW and go to My Student Profile tab > My Student Services channel > Online Services > Special Consideration. Once completed, submit to UNSW Student Central. In addition to this, you should also inform the course convenor that you have applied for special consideration.

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 e.g. by extrapolating from your percentile rank on those tasks. Where appropriate, supplementary examination may be offered, but only when warranted by the circumstances.

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 with sufficient time.

Please refer to [https://my.unsw.edu.au/student/atoz/SpecialConsideration.html](https://my.unsw.edu.au/student/atoz/SpecialConsideration.html) for further details regarding special consideration.

**REPEATING STUDENTS**

Practical class exemptions may be granted to repeat students but students must check with the course convenor whether they have exemption prior to their first practical class. All students must be familiar with the material covered in the practical classes. All students must do the practical component of the final exam.

**CONTINUAL COURSE IMPROVEMENT**

Periodically student evaluative feedback on the course is gathered, using among other means, UNSW's Course and Teaching Evaluation and Improvement (CATEI) Process. Student feedback is taken seriously, and continual improvements are made to the course based in part on such feedback. Significant changes to the course will be communicated to subsequent cohorts of students taking the course.

**STUDENT SUPPORT SERVICES**

Those students who have a disability that requires some adjustment in their teaching or learning environment are encouraged to discuss their study needs with the course convenor prior to, or at the commencement of, their course, or with the Equity Officer (Disability) in the Equity and Diversity Unit (9385 4734 or [http://www.studentequity.unsw.edu.au/](http://www.studentequity.unsw.edu.au/)). Issues to be discussed may include access to materials, signers or note-takers, the provision of services and additional exam and assessment arrangements. Early notification is essential to enable any necessary adjustments to be made.
ACADEMIC HONESTY AND PLAGIARISM

The School of Medical Sciences will not tolerate plagiarism in submitted written work. The University regards this as academic misconduct and imposes severe penalties. Evidence of plagiarism in submitted assignments, etc. will be thoroughly investigated and may be penalised by the award of a score of zero for the assessable work. Flagrant plagiarism will be directly referred to the Division of the Registrar for disciplinary action under UNSW rules.

The following material has been taken from the University’s guidelines entitled “Student Academic Integrity and Managing Plagiarism: Guidelines for Staff” (Version: 1.0 20 February 2012). The full document can be viewed at:

“Plagiarism is the presentation of the thoughts or work of another as one’s own. It can take many forms, from deliberate cheating to accidentally copying from a source without proper acknowledgement. In many cases, plagiarism may be the result of inexperience or poor academic skills, rather than the deliberate intention to deceive.

UNSW groups plagiarism into the following categories:

• **Copying**: using the same or very similar words to the original text or idea without acknowledging the source or using quotation marks. This also applies to images, art and design projects, as well as presentations where someone presents another’s ideas or words without credit.

• **Inappropriate paraphrasing**: changing a few words and phrases while mostly retaining the original structure and information without acknowledgement. This also applies in presentations where someone paraphrases another’s ideas or words without credit. It also applies to piecing together quotes and paraphrases into a new whole, without referencing and a student’s own analysis to bring the material together.

• **Collusion**: working with others but passing off the work as a person’s individual work. Collusion also includes providing your work to another student before the due date, or for the purpose of them plagiarising at any time, paying another person to perform an academic task, stealing or acquiring another person’s academic work and copying it, offering to complete another person’s work or seeking payment for completing academic work.

• **Duplication**: submitting your own work, in whole or in part, where it has previously been prepared or submitted for another assessment or course at UNSW or another university.

Plagiarism can vary in its nature, extent and level of seriousness. In consideration of this, UNSW has adopted a four stage approach to deal with allegations about students’ work.”

Further information on plagiarism and its management can be found at the web address given above.

“The Learning Centre serves as the central UNSW resource on academic integrity and understanding and avoiding plagiarism.

Resources are available at www.lc.unsw.edu.au/plagiarism.

The Learning Centre provides a range of programs and resources for staff and students including website materials, workshops, individual tuition and online tutorials to aid students in:

• correct referencing and citation practices

• paraphrasing, summarising, essay writing, and time management
• appropriate use of and attribution for, a range of materials including text, images, formulae and concepts."

Individual assistance is available on request from The Learning Centre.

Students are also reminded that careful time management is an important part of study and one of the identified causes of plagiarism is poor time management. Students should allow sufficient time for research, drafting, and the proper referencing of sources in preparing all assessment items.

GUIDELINES ON EXTRA-CURRICULAR ACTIVITIES AFFECTING ATTENDANCE

Students should refer to the following website for information relating to extracurricular activities.


GRIEVANCE RESOLUTION OFFICER

In case you have any problems or grievance about the course, you should try to resolve it with the Course Convenor (Dr Lesley Ulman 9385 3601). If the grievance cannot be resolved in this way, you should contact the School of Medical Sciences Grievance Officer, Dr P.Pandey (9385 2483, P.Pandey@unsw.edu.au).