

HESC1501

Introductory Exercise Science

Course Outline
Term 1, 2023

School of Health Sciences
Faculty of Medicine & Health

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1. Staff

Position	Name	Email	Consultation times and locations	Contact Details
Course Convenor	Imtiaz Desai	i.desai@unsw.edu.au	Monday PM Tuesday PM Wednesday PM Thursday PM	Appointments scheduled via email

2. Course information

Units of credit: 6

Pre-requisite(s): 3871 program

Teaching times and locations:

Please check your timetable for your class times: <http://www.timetable.unsw.edu.au>

Please note Clinicals will be held in the Wallace Wurth building (First Floor – Exercise Physiology teaching areas) **not** in 38 Botany St - Lifestyle Clinic. Please refer to our Moodle site for specific information.

2.1 Course summary

HESC1501 (Introductory Exercise Science) is the first course in the *Bachelor of Exercise Physiology*. This course presents an overview of the vocational activities within the allied health profession of Exercise Physiology. The sub-disciplines of exercise science (exercise physiology, biomechanics, motor control and exercise psychology) and related biomedical sciences are introduced through examining how the body responds to physical activity. This course includes a clinical practicum experience component with final year students.

2.2 Course aims.

1. To introduce the profession of Exercise Physiology, and issues relating to professional conduct
2. To introduce: functional anatomy/biomechanics, motor control, exercise physiology, and exercise psychology
3. To encourage a basic understanding of the relationship between physical activity and health across the lifespan
4. To initiate learning of practical skills in exercise testing

2.3 Course learning outcomes (CLO)

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

At the successful completion of this course you (the student) should be able to:

1. Describe the different sub-disciplines of exercise science and an appreciation of the interdisciplinary nature of exercise physiology.
2. Explain the role and responsibilities of exercise physiologists in the provision of health care.
3. Describe the processes involved in patient care, from initial patient referral through to exercise programming and delivery.
4. Apply basic principles of movement analysis.
5. Communicate effectively and concisely through written reports of scientific experiments or clinical experiences.

2.4 Relationship between course and program learning outcomes and assessments.

Course Learning Outcome (CLO)	LO Statement	Program Learning Outcome (PLO)	Related Tasks & Assessment
CLO 1	Describe the different sub-disciplines of exercise science and an appreciation of the interdisciplinary nature of exercise physiology.	Students will be able to describe the relationship between physical activity and health and the implications of this relationship throughout the human lifespan.	Online quizzes
CLO 2	Explain the role and responsibilities of exercise physiologists in the provision of health care.	Students will be able to display effective and appropriate communication skills and an ability to work as a member and leader of a team, with respect for diversity and a high standard of ethical practice.	Online quizzes
CLO 3	Describe the processes involved in patient care, from initial patient referral through to exercise programming and delivery.	Students will be able to engage in independent learning and reflective practice for the betterment	Online quizzes

		of professional clinical practice.	
CLO 4	Apply basic principles of movement analysis	Students will be able to conduct a broad range of exercise-based clinical tests and deliver lifestyle change programs that use exercise for the primary prevention of disease and the management of chronic disease.	Online quizzes
CLO 5	Communicate effectively and concisely through written reports of scientific experiments and clinical experiences	Students will be able to apply advanced problem-solving skills and critical thinking within a scientific and clinical context.	Synopsis lab report; Clinical experience report

3. Strategies and approaches to learning

3.1 Learning and teaching activities

Lectures

We will use a combination of live 1hr online lectures (via Blackboard Collaborate) and pre-recorded lectures (via iSpring). This approach is used to present relatively large amounts of information within a given time on specific topics throughout the course. PDF copies of the lecture notes will be available online (via Moodle) that correspond to each live lecture. There will be information and explanations presented in lectures in addition to those covered in the notes that you should note down if they help you to understand the material. The live online lectures will also allow some time for interaction to provide you with an opportunity to ask questions to enhance your understanding and to clarify or reinforce the ideas that have been presented. Live sessions will be recorded and can be viewed at any time. Pre-recorded lectures will include lecture slides and overlaid audio from the lecturer covering a topic. Formative quizzes will be included to reinforce learning. Pre-recorded lectures should viewed during their allocated week shown on Moodle.

Seminars

There are 3 online seminars (each 1hr). The first is simply a welcome and introduction to overview the course and get to know the cohort. The second covers clinical and research skills, and the third is a Q&A panel session. The Q&A session provides the opportunity to ask questions of practicing AEPs and recent graduates. This is valuable in the early part of the program to help you confirm your interest in the field, to improve your understanding of progression through the program and to seek clarification about any areas of concern. The Q&A will be highly interactive, and you are advised to come prepared with questions in mind. For example, you might like to ask questions about student experiences in the program, including such things as points of interest and tips for different stages in the program. You may also be interested to ask practicing AEPs about aspects of their professional work. Laboratories

There are 6 lab sessions (each 2 hrs). The labs are designed to help you to develop technical skills that will be relevant in your professional career. It is essential that you obtain some hands-on experience with the major clinical and/or research techniques in exercise testing before you begin your clinical practicum. These skills will be rehearsed and developed further during subsequent courses in the program. The second purpose is to use experiments to demonstrate and reinforce key theoretical concepts that have been covered in lectures. The questions contained in the practical outlines will guide your learning in this respect.

Clinicals

There are 3 clinical sessions (each 2 hrs). Clinical sessions are conducted under the guidance of an Accredited Exercise Physiologist (AEP) tutor. The sessions provide early exposure to a clinical environment and the role of an exercise physiologist in practice. 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, in particular case studies to simulate working with clients. In clinicals, it is imperative that you adhere to the student Code of Conduct and be mindful of your professional responsibilities. Note: the hours of attendance at the clinicals will contribute towards your accreditation as an Exercise Physiologist, gained on completion of the degree in accordance with the governing body - Exercise & Sport Science Australia (ESSA) - guidelines.

Independent study

There is insufficient time in the lectures, labs, seminars and clinicals for you to develop a deep understanding of the concepts covered in this course. To achieve the learning outcomes that will be assessed, you will need to revise the material presented in the course regularly. You may also wish to do additional reading beyond the lecture materials to learn effectively. Relevant additional resources, including textbook chapters, will be cited in the relevant lectures.

3.2 Expectations of students

Students are reminded that UNSW recommends that a 6 units-of-credit course should involve about 150 hours of study and learning activities. The formal learning activities total approximately 50 hours throughout the term and students are expected (and strongly recommended) to do at least the same number of hours of additional study.

[Please refer to the School of Health Sciences Student Code of Conduct.](#)

4. Course schedule and structure

This course consists of 45 hours of class contact hours. You are expected to take an additional 5-10 hours/week of non-class contact hours to complete assessments, readings and exam preparation. You may wish to refer to the Course Schedule located on Moodle for more detailed breakdown of the course structure.

Week [Date/Session]	Topic [Module]	Activity [Learning opportunity]	Related CLO
Week 1	Being an AEP	Welcome Seminar	CLO2
Week 2	Human movement – Anatomical basis	Clinical & Research Skills Seminar	CLO1 CLO4
Week 3	Human movement – Mechanical basis	Lab 1 – Measuring and assessing movement. Seminar 2	CLO4 CLO 2
Week 4	Human movement – Motor learning	Lab 2 – Reaction time and motor learning	CLO2 CLO4
Week 5	Exercise Physiology - Cardiovascular	AEP Panel Q&A Seminar Lab 3 – Intro exercise training Clinical 1	CLO2 CLO3
Week 7	Exercise Physiology - Cardiovascular	Lab 4 – Measuring blood pressure. Seminar 3	CLO2 CLO2-3
Week 8	Exercise across the lifespan: Exercise for older adults Exercise in childhood	Lab 5 – Measuring cardiovascular response to exercise. Clinical 2	CLO1 CLO2
Week 9	Psychology and exercise		CLO2 CLO3
Week 10	Clinical skills	Lab 6 – Client interactions Clinical 3	CLO5 CLO3

5. Assessment

5.1 Assessment tasks

Assessment task	Length	Weight	Mark	Due date and time
Assessment 1: Online quizzes 1-5	10 MCQ	10% (2% each)	10	Quiz 1 – Week 3 (Fri 3 Mar, 11:59pm) Quiz 2 – Week 5 (Fri 17 Mar, 11:59pm) Quiz 3 – Week 7 (Fri 31 Mar, 11:59PM) Quiz 4 – Week 9 (Fri 14 Apr, 11:59pm) Quiz 5 – Week 10 (Fri 21 Apr, 11:59pm)
Assessment 2: Synopsis report	450 words	15%	15	Week 7, Thu 30 March 11:59pm
Assessment 3: Clinical experience report	1000-1500 words	25%	25	Week 9 Thu 13 Apr 11:59pm
Assessment 4: Final Exam	2hrs	50%	100	Exam period 28 April – 11 May

Further information

UNSW grading system: <https://student.unsw.edu.au/grades>

UNSW assessment policy: <https://student.unsw.edu.au/assessment>

5.2 Assessment criteria and standards

Marking criteria is shown below in the Rubric for each of the written assessment tasks:

1. Synopsis Report (15%)

Table 1: Marking criteria for Synopsis Lab Report (15%)

Assignment Marking Criteria	Absent	Developing	Competent	Good	Advanced
	0%	25%	50%	75%	100%
Content (8 marks) Introduction <ul style="list-style-type: none"> Outline the key concepts being studied and state the study aim. Method <ul style="list-style-type: none"> Outline the lab procedures (paraphrasing the lab notes). Results <ul style="list-style-type: none"> Summarise the key data. Discussion <ul style="list-style-type: none"> State key findings. Final concluding statement summarising the study and the major finding(s). 	Unable to provide an overview of the lab experiment.	Inadequate or incomplete overview of the lab experiment, with some key information missing.	Adequate overview of the lab experiment, with key information outlined.	Good overview of the lab experiment, with key information outlined and some attempt at critical thought.	Comprehensive overview of the lab experiment, with key information outlined and includes excellent critical thought.
Writing quality and presentation (5 marks) <ul style="list-style-type: none"> Writing fluency and style (clear, concise and focused). Language (spelling / grammar / punctuation) Adherence to the prescribed format. 	Unable to provide intelligible writing.	Inadequate overall writing quality, overall presentation, or attention-to-detail. Inadequate clarity of writing. Frequent language errors. Formatting errors.	Adequate overall writing quality, overall presentation and attention-to-detail. Clearly written. Minor language errors. Adheres to the prescribed format.	Good overall writing quality, overall presentation and attention-to-detail. Clear and concise writing. Nil or minimal language errors. Adheres to the prescribed format.	Advanced-level overall writing quality, overall presentation and attention-to-detail. Clear, concise and focused writing. No language errors. Adheres to the prescribed format.
Referencing (2 marks) <ul style="list-style-type: none"> Relevance of the article to the lab experiment. Appropriate Reference section and referencing of statement in the body of the report. 	No article referenced.	Referenced article has only vague relevance to the lab experiment. Inadequate referencing, either within text or in the Reference section.	Referenced article has some relevance to the lab experiment. Appropriate referencing within text and in the Reference section, or with only a minor error.	Referenced article has reasonable relevance to the lab experiment. Appropriate referencing within text and in the Reference section.	Referenced article has clear, specified relevance to the lab experiment. Completely appropriate and correct referencing, both within text and in Reference section.

2. Clinical Experience Report (25%)

	Assignment Marking Criteria	Weight	Absent	Developing	Competent	Good	Advanced
Part 1 (75%)	A. Initial Assessment Validity	20%	Unable to provide answers.	Incorrect answers. Inadequate detail, with some key information missing.	Mostly accurate answers, with key information outlined.	Accurate answers. Good detail, with key information outlined.	Accurate answers. Comprehensive & concise detail, with key information outlined.
	B. Initial Assessment	20%					
	C. Re-assessment	20%					
	D. Alternative Exercise Assessment	15%					
Part 2 (15%)	Reflection on shadowing experience	15%	Unable to provide response.	Inadequate response, incomplete reporting of effective demonstration, explanation, monitoring and communication techniques. Key information missing, no insight provided.	Adequate response, basic attempt at evaluation of effective demonstration, explanation, monitoring and communication techniques with minor error. Basic links between shadowing experience and general future skills.	Good response, some attempt at evaluation of effective demonstration, explanation, monitoring and communication techniques. Some links between shadowing experience with specific future skills.	Clear, concise response, comprehensive evaluation of effective demonstration, explanation, monitoring and communication techniques. Clearly links shadowing experience with specific future skills.
Overall quality (10%)	Quality of the writing and presentation (spelling/ grammar; fluency and style; adherence to prescribed format; appropriate referencing using Harvard format)	10%	Unable to provide intelligible writing. inappropriate length.	Poorly written. Frequent spelling or grammatical errors. Not adhering to the prescribed format.	Adequately written. Minor errors in written expression. Adheres to the prescribed format.	Good overall writing quality. Clear and concise writing. Nil or minimal language errors. Adheres to the prescribed format.	Clear, fluent and concise writing. No errors in written expression. Adheres to the prescribed format.
	TOTAL	100%					

5.3 Submission of assessment tasks

Late Submission

Late submissions will be penalised at 5% per day capped at five days (120hrs). Students will not be permitted to submit their assessment after this date.

Special Consideration

If you experience a short-term event beyond your control (exceptional circumstances) that impacts your performance in a particular assessment task, you can apply for Special Considerations.

You must apply for Special Consideration **before** the start of your exam or due date for your assessment, except where your circumstances of illness or misadventure stop you from doing so.

If your circumstances stop you from applying before your exam or assessment due date, you must **apply within 3 working days** of the assessment, or the period covered by your supporting documentation.

More information can be found on the [Special Consideration website](#).

5.4. Feedback on assessment

For the online quizzes, students will receive their mark once the quiz has closed. If students wish to know what questions they lost marks for, they must contact the course convenors.

For synopsis report and clinical experience report, feedback will be provided via Turnitin. If students has any concern regarding the feedback, they can contact the convenor directly.

6. Academic integrity, referencing and plagiarism

Referencing is a way of acknowledging the sources of information that you use to research your assignments. You need to provide a reference whenever you draw on someone else's words, ideas or research. Not referencing other people's work can constitute plagiarism. Please use Vancouver or APA referencing style for this course.

Further information about referencing styles can be located at <https://student.unsw.edu.au/referencing>

Academic integrity is fundamental to success at university. Academic integrity can be defined as a commitment to six fundamental values in academic pursuits: honesty, trust, fairness, respect, responsibility and courage.¹ At UNSW, this means that your work must be your own, and others' ideas should be appropriately acknowledged. If you don't follow these rules, plagiarism may be detected in your work.

Further information about academic integrity and **plagiarism** can be located at:

- The Current Students site <https://student.unsw.edu.au/plagiarism>, and
- The ELISE training site <http://subjectguides.library.unsw.edu.au/elise/presenting>

The Conduct and Integrity Unit provides further resources to assist you to understand your conduct obligations as a student: <https://student.unsw.edu.au/conduct>.

¹ International Center for Academic Integrity, 'The Fundamental Values of Academic Integrity', T. Fishman (ed), Clemson University, 2013.

7. Readings and resources

7.1 Abernethy, B., Kippers, V., Hanrahan, S., Pandy, M., McManus, A., & Mackinnon, L. (2013). **The Biophysical Foundations of Human Movement**. 3rd edition. Human Kinetics. ISBN: 1450431658

UNSW Library call no. 612.044/62 R

The text is not compulsory however many chapters are broadly useful when revising the lecture content:

Chapters 3, 4, 5, 6 (Part II) (Functional Anatomy)

Chapters 7-10 & 17 (Part III) (Biomechanics)

Chapters 15-18 (Part V) (Motor Control)

Chapters 11-14 (Part IV) (Physiology)

Chapters 5, 9, 13, 17, 21 (Exercise across the lifespan)

Chapters 19-22 (Part VI) (Exercise Psychology)

7.2 Coombes, J. & Skinner, T. (2014). **ESSA's Student Manual for Health, Exercise and Sport Assessment**. Elsevier.

This text will be useful for lab sessions conducted throughout the Exercise Physiology degree. It is available in the UNSW library.

8. Administrative matters

Student enquiries should be submitted via student portal <https://portal.insight.unsw.edu.au/web-forms/>

9. Additional support for students

- The Current Students Gateway: <https://student.unsw.edu.au/>
- Academic Skills and Support: <https://student.unsw.edu.au/academic-skills>
- *Student Wellbeing and Health* <https://www.student.unsw.edu.au/wellbeing>
- UNSW IT Service Centre: <https://www.myit.unsw.edu.au/services/students>
- *UNSW Student Life Hub*: <https://student.unsw.edu.au/hub#main-content>
- *Student Support and Development*: <https://student.unsw.edu.au/support>
- *IT, eLearning and Apps*: <https://student.unsw.edu.au/elearning>
- *Student Support and Success Advisors*: <https://student.unsw.edu.au/advisors>
- *Equitable Learning Services (Formerly Disability Support Unit)*: <https://student.unsw.edu.au/els>
- *Transitioning to Online Learning* <https://www.covid19studyonline.unsw.edu.au/>
- *Guide to Online Study* <https://student.unsw.edu.au/online-study>