



PHTY8100

Applied Sciences for Physiotherapy A

Session 2, In person-scheduled-weekday, North Ryde 2026

School of Health Sciences and Nursing

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Disclaimer

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General Information

Unit convenor and teaching staff

Unit Convenor

Joel Fuller

joel.fuller@mq.edu.au

Contact via Email

75T, Level 5

Email for appointment

Senior Lecturer

Karen Peebles

karen.peebles@mq.edu.au

Contact via Email

75T, Level 5

Email for appointment

Senior Lecturer

Laura Hemmings

laura.brown@mq.edu.au

Contact via Email

75T, Level 5

Email for appointment

Credit points

10

Prerequisites

Admission to DPT

Corequisites

Co-badged status

Unit description

This unit will build upon your assumed knowledge with a focus on exercise science and the cardiorespiratory system in the context of physiotherapy. You will examine the physiological responses and adaptations to inactivity, physical activity and exercise training. Comparisons in exercise response and adaptations to training will be made in healthy individuals and those with impairments in cardiorespiratory fitness. You will acquire skills in exercise testing and exercise prescription required for physiotherapy practice and key components of a comprehensive cardiorespiratory assessment. You will use assessment findings to identify common cardiorespiratory impairments and you will be introduced to the management of these impairments.

Important Academic Dates

Information about important academic dates including deadlines for withdrawing from units are available at <https://www.mq.edu.au/study/calendar-of-dates>

Learning Outcomes

On successful completion of this unit, you will be able to:

ULO1: Explain the principles of exercise testing and the range of physiological responses to exercise and exercise training in different population groups including healthy individuals and those with common health conditions. (Scientist and Scholar)

ULO2: Competently select, perform and interpret tests commonly used in physiotherapy practice to assess exercise capacity and cardiorespiratory fitness in individuals who are either active or sedentary as well as those with common health conditions. (Clinical Practitioner)

ULO3: Design and progress an evidence-based person-centred exercise program that considers the client's impairments, goals and preferences, as well as their social, behavioural and cultural background. (Clinical Practitioner)

ULO4: Competently perform a cardiorespiratory assessment and link assessment findings to common impairments of the respiratory system. (Clinical Practitioner)

ULO5: Demonstrate safe and effective treatment of common cardiorespiratory impairments (Clinical Practitioner).

General Assessment Information

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Grade descriptors and other information concerning grading are contained in the [Macquarie University Assessment Policy](#).

All final grades are determined by a grading committee, in accordance with the Macquarie University Assessment Policy, and are not the sole responsibility of the Unit Convenor.

Students will be awarded a final grade and a mark which must correspond to the grade descriptors specified in the [Assessment Procedure](#).

To pass this unit, you must demonstrate sufficient evidence of achievement of all the learning outcomes (including demonstrating competency of learning outcomes across both upper and lower limb regions), meet any ungraded requirements, and achieve a final mark of 50 or better.

Further details for each assessment task will be available on iLearn.

Hurdle Assessment

The PHTY8100 Mastery Register is a hurdle assessment task. A hurdle assessment is defined as an assessment task mandating a minimum level of performance as a condition of passing the unit in which it occurs. **Students are required to achieve 60% completion of the Mastery Register by the due date to successfully complete the unit.** A student who has obtained a SNG over 50, yet failed the hurdle assessment, fails the unit. Please see Macquarie University's assessment policy for more information about hurdle assessment tasks. Should you fail to meet the requirements of the Mastery Register by the assessment due date, one supplementary opportunity will be provided to demonstrate that you meet the minimum requirements for this assessment. Should you still not meet a pass standard a Fail (Hurdle) grade will be awarded, as indicated by a FH grade upon your transcript.

Late Submissions

Unless a Special Consideration request has been submitted and approved, a 5% penalty (OF THE TOTAL POSSIBLE MARK) will be applied each day an assessment is not submitted, up until the 7th day (including weekends). After the 7th day, a grade of '0' will be awarded even if the assessment is submitted. Submission time for all written assessments is set at 11.55pm. A 1-hour grace period is provided to students who experience a technical concern.

For example:

Number of days (hours) late	Total Possible Marks	Deduction	Raw mark	Final mark
1 day (1-24 hours)	100	5	75	70
2 days (24-48 hours)	100	10	75	65
3 days (48-72 hours)	100	15	75	60
7 days (144-168 hours)	100	35	75	40
>7 days (>168 hours)	100	-	75	0

For any late submissions of time-sensitive tasks, such as scheduled tests/exams, performance assessments/presentations, and/or scheduled practical assessments/labs, students need to submit an application for Special Consideration.

Assessment Tasks

Name	Weighting	Hurdle	Due	Groupwork/Individual	Short Extension	AI Approach
Integrated clinical simulation examination	30%	No	Week 7	Individual	No	Observed
Quiz	30%	No	Week 11	Individual	No	Observed
Clinical simulation exam and viva	40%	No	Exam Period	Individual	No	Observed
Mastery register	0%	Yes	Week 13	Individual	No	Observed

Integrated clinical simulation examination

Assessment Type ¹: Professional task

Indicative Time on Task ²: 18 hours

Due: **Week 7**

Weighting: **30%**

Groupwork/Individual: Individual

Short extension ³: No

AI Approach: Observed

You will undertake an integrated clinical simulation exam involving practical skill application and viva. The assessment is related to content delivered up to the end of the week prior to the assessment.

On successful completion you will be able to:

- Explain the principles of exercise testing and the range of physiological responses to exercise and exercise training in different population groups including healthy individuals and those with common health conditions. (Scientist and Scholar)
- Competently select, perform and interpret tests commonly used in physiotherapy practice to assess exercise capacity and cardiorespiratory fitness in individuals who are either active or sedentary as well as those with common health conditions. (Clinical Practitioner)
- Design and progress an evidence-based person-centred exercise program that considers the client's impairments, goals and preferences, as well as their social,

behavioural and cultural background. (Clinical Practitioner)

Quiz

Assessment Type ¹: Examination

Indicative Time on Task ²: 18 hours

Due: **Week 11**

Weighting: **30%**

Groupwork/Individual: Individual

Short extension ³: No

AI Approach: Observed

You will complete a quiz on unit content delivered up to the end of the week prior to the quiz.

On successful completion you will be able to:

- Explain the principles of exercise testing and the range of physiological responses to exercise and exercise training in different population groups including healthy individuals and those with common health conditions. (Scientist and Scholar)
- Competently select, perform and interpret tests commonly used in physiotherapy practice to assess exercise capacity and cardiorespiratory fitness in individuals who are either active or sedentary as well as those with common health conditions. (Clinical Practitioner)
- Design and progress an evidence-based person-centred exercise program that considers the client's impairments, goals and preferences, as well as their social, behavioural and cultural background. (Clinical Practitioner)
- Competently perform a cardiorespiratory assessment and link assessment findings to common impairments of the respiratory system. (Clinical Practitioner)

Clinical simulation exam and viva

Assessment Type ¹: Professional task

Indicative Time on Task ²: 28 hours

Due: **Exam Period**

Weighting: **40%**

Groupwork/Individual: Individual

Short extension ³: No

AI Approach: Observed

You will complete a clinical simulation exam involving practical demonstration of cardiorespiratory assessment and treatment and viva.

On successful completion you will be able to:

- Explain the principles of exercise testing and the range of physiological responses to

exercise and exercise training in different population groups including healthy individuals and those with common health conditions. (Scientist and Scholar)

- Competently select, perform and interpret tests commonly used in physiotherapy practice to assess exercise capacity and cardiorespiratory fitness in individuals who are either active or sedentary as well as those with common health conditions. (Clinical Practitioner)
- Design and progress an evidence-based person-centred exercise program that considers the client's impairments, goals and preferences, as well as their social, behavioural and cultural background. (Clinical Practitioner)
- Competently perform a cardiorespiratory assessment and link assessment findings to common impairments of the respiratory system. (Clinical Practitioner)
- Demonstrate safe and effective treatment of common cardiorespiratory impairments (Clinical Practitioner).

Mastery register

Assessment Type ¹: Practice-based task

Indicative Time on Task ²: 8 hours

Due: **Week 13**

Weighting: **0%**

Groupwork/Individual: Individual

Short extension ³: No

AI Approach: Observed

This is a hurdle assessment task (see [assessment policy](#) for more information on hurdle assessment tasks)

The mastery register for PHTY8100 is a list of key skills in which competence is considered to be a requirement for the assurance of quality physiotherapy practice for registration. You must demonstrate a minimum level of competence in these skills as a condition of passing this unit by achieving 60% completion of the mastery register in order to successfully complete the unit.

On successful completion you will be able to:

- Competently select, perform and interpret tests commonly used in physiotherapy practice to assess exercise capacity and cardiorespiratory fitness in individuals who are either active or sedentary as well as those with common health conditions. (Clinical Practitioner)
- Competently perform a cardiorespiratory assessment and link assessment findings to common impairments of the respiratory system. (Clinical Practitioner)
- Demonstrate safe and effective treatment of common cardiorespiratory impairments (Clinical Practitioner).

¹ If you need help with your assignment, please contact:

- the academic teaching staff in your unit for guidance in understanding or completing this type of assessment
- [Academic Success](#) for academic skills support.

² Indicative time-on-task is an estimate of the time required for completion of the assessment task and is subject to individual variation.

³ An automatic short extension is available for some assessments. Apply through the [Service Connect Portal](#).

Delivery and Resources

As a student enrolled in this unit, you will engage in a range of online and face to face learning activities, including readings, online modules, videos, lectures, simulation and small group tutorials. Details can be found on the iLearn site for this unit.

Recommended Readings

This unit does not have any textbooks that are essential for you to purchase.

Recommended readings for this unit are accessible through Leganto.

The following text will be a useful resource and available in the library reserve and as an e-book. Recommendations about specific readings from these and other resources (such as research papers, books, websites and videos) will be listed on iLearn.

- [Main and Denehy \(2016\) Cardiorespiratory Physiotherapy: Adults and Paediatrics \(5th Edition\). Elsevier Health Sciences.](#)

The following exercise physiology text is strongly recommended. Copies will be held in library reserve and also available as an e-book.

- [Powers SK and Howley ET \(2018\) Exercise physiology: Theory and application to Fitness and Performance \(10th Edition\) New York: McGraw Hill.](#)

Technology Used

Active participation in the learning activities throughout the unit will require you to have access to a tablet, laptop or similar device. If you do not own your own laptop computer, you may borrow one from the university library.

To participate optimally when off campus you will need to have access to a reliable internet connection to retrieve unit information and at times to complete assessment tasks via iLearn.

Assumed knowledge

This unit assumes that you have comprehensive knowledge of anatomy and physiology.

Unit Schedule

A detailed outline of the topics covered on a weekly basis can be found in the Unit Timetable available on the iLearn website within the Unit Information section.

Policies and Procedures

Macquarie University policies and procedures are accessible from [Policy Central](https://policies.mq.edu.au) (<https://policies.mq.edu.au>). Students should be aware of the following policies in particular with regard to Learning and Teaching:

- [Academic Appeals Policy](#)
- [Academic Integrity Policy](#)
- [Academic Progression Policy](#)
- [Assessment Policy](#)
- [Fitness to Practice Procedure](#)
- [Assessment Procedure](#)
- [Complaints Resolution Procedure for Students and Members of the Public](#)
- [Special Consideration Policy](#)

Students seeking more policy resources can visit [Student Policies](https://students.mq.edu.au/support/study/policies) (<https://students.mq.edu.au/support/study/policies>). It is your one-stop-shop for the key policies you need to know about throughout your undergraduate student journey.

To find other policies relating to Teaching and Learning, visit [Policy Central](https://policies.mq.edu.au) (<https://policies.mq.edu.au>) and use the [search tool](#).

Student Code of Conduct

Macquarie University students have a responsibility to be familiar with the Student Code of Conduct: <https://students.mq.edu.au/admin/other-resources/student-conduct>

Results

Results published on platform other than [eStudent](#), (eg. iLearn, Coursera etc.) or released directly by your Unit Convenor, are not confirmed as they are subject to final approval by the University. Once approved, final results will be sent to your student email address and will be made available in [eStudent](#). For more information visit connect.mq.edu.au or if you are a Global MBA student contact globalmba.support@mq.edu.au

Academic Integrity

At Macquarie, we believe [academic integrity](#) – honesty, respect, trust, responsibility, fairness and courage – is at the core of learning, teaching and research. We recognise that meeting the expectations required to complete your assessments can be challenging. So, we offer you a range of resources and services to help you reach your potential, including free [online writing and maths support](#), [academic skills development](#) and [wellbeing consultations](#).

Student Support

Macquarie University provides a range of support services for students. For details, visit <http://students.mq.edu.au/support/>

Academic Success

[Academic Success](#) provides resources to develop your English language proficiency, academic writing, and communication skills.

- [Ask a Study Coach](#)
- [Access StudyWISE](#)
- [Upload an assignment to Studiosity](#)
- [Complete the Academic Integrity Module](#)

The Library provides online and face to face support to help you find and use relevant information resources.

- [Subject and Research Guides](#)
- [Ask a Librarian](#)

Student Services and Support

Macquarie University offers a range of [Student Support Services](#) including:

- [IT Support](#)
- [Accessibility and disability support](#) with study
- Mental health [support](#)
- [Safety support](#) to respond to bullying, harassment, sexual harassment and sexual assault
- [Social support including information about finances, tenancy and legal issues](#)
- [Student Advocacy](#) provides independent advice on MQ policies, procedures, and processes

Student Enquiries

Got a question? Ask us via the [Service Connect Portal](#), or contact [Service Connect](#).

IT Help

For help with University computer systems and technology, visit <https://students.mq.edu.au/support/technology/service-desk>.

When using the University's IT, you must adhere to the [Acceptable Use of IT Resources Policy](#). The policy applies to all who connect to the MQ network including students.

Artificial Intelligence Tools

Macquarie University recognises that artificial intelligence (AI), especially generative AI, is rapidly reshaping education and the modern workplace. As AI becomes increasingly accessible, the University and your teaching staff are committed to preparing you to use these tools effectively, ethically, and with strong professional judgment. Rather than restricting technology, the emphasis is on helping you understand when and how AI can be used to enhance productivity, support learning, and reflect real-world professional practice. Across your degree, we will support you to develop the critical thinking, adaptability, and values-based decision-making skills required to navigate evolving AI tools responsibly, including acknowledging their use appropriately. You should always appropriately acknowledge when you have used AI tools within assessment tasks, including which AI tools you have used and how you have used them.

To provide clarity, Macquarie University uses a simple, two-tiered approach to AI in assessment:

- AI Open assessments allow you to fully incorporate AI, reflecting authentic tasks where AI would normally be used in professional settings.
- Observed with AI Optional assessments involve tasks where you either demonstrate essential knowledge without technology or show how you apply AI under supervision.

Across both categories, the goal is to ensure you build foundational knowledge, exercise sound judgment, and engage with AI in ways that uphold ethical, cultural, and university values.

Inclusion and Diversity

Social inclusion at Macquarie University is about giving everyone who has the potential to benefit from higher education the opportunity to study at university, participate in campus life and flourish in their chosen field. The University has made significant moves to promote an equitable, diverse and exciting campus community for the benefit of staff and students. It is your responsibility to contribute towards the development of an inclusive culture and practice in the areas of learning and teaching, research, and service orientation and delivery. As a member of the Macquarie University community, you must not discriminate against or harass others based on their sex, gender, race, marital status, carers' responsibilities, disability, sexual orientation, age, political conviction or religious belief. All staff and students are expected to display appropriate behaviour that is conducive to a healthy learning environment for everyone.

Professionalism

In the Faculty of Medicine, Health and Human Sciences, professionalism is a key capability embedded in all our courses.

As part of developing professionalism, students are expected to attend all small group interactive sessions including clinical, practical, laboratory, work-integrated learning (e.g., PACE placements), and team-based learning activities. Some learning activities are recorded (e.g., face-to-face lectures), however you are encouraged to avoid relying upon such material as they do not recreate the whole learning experience and technical issues can and do occur. As an adult learner, we respect your decision to choose how you engage with your learning, but we

would remind you that the learning opportunities we create for you have been done so to enable your success, and that by not engaging you may impact your ability to successfully complete this unit. We equally expect that you show respect for the academic staff who have worked hard to develop meaningful activities and prioritise your learning by communicating with them in advance if you are unable to attend a small group interactive session.

Another dimension of professionalism is having respect for your peers. It is the right of every student to learn in an environment that is free of disruption and distraction. Please arrive to all learning activities on time, and if you are unavoidably detained, please join activity as quietly as possible to minimise disruption. Phones and other electronic devices that produce noise and other distractions must be turned off prior to entering class. Where your own device (e.g., laptop) is being used for class-related activities, you are asked to close down all other applications to avoid distraction to you and others. Please treat your fellow students with the utmost respect. If you are uncomfortable participating in any specific activity, please let the relevant academic know.

Unit information based on version 2026.02 of the **Handbook**