PHTY3002

Human Motor Learning and Performance

Session 2, In person-scheduled-weekday, North Ryde 2023

Department of Health Sciences

Contents

General Information

Unit convenor and teaching staff
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Credit points
10

Prerequisites
120cp at 1000 level or above including ((HLTH108 or ANAT1001) and ((HLTH109 or ANAT1002) or (MEDI203 or MEDI2100)) and (PHTY302 or PHTY3001))

Corequisites

Co-badged status

Unit description
This unit provides you with a broad overview of motor learning, performance, and skill acquisition as it relates to humans. The unit integrates your prior study of anatomy, biomechanics, physiology, neuroscience, behavioural sciences, and psychology as it pertains to human movement. The unit explores the classification of motor skills, the neuromotor processes that underpin motor performance, and features of the learning environment that can be manipulated to promote motor learning in a coaching and/or rehabilitation context. The aim of the unit is to provide a behavioural and physiological understanding of the acquisition and execution of skilled motor actions and how to train and/or retrain motor actions. You will apply your learning through a group project in which you train a healthy person to learn or improve a motor skill. Through this unit you will learn how to instruct and provide feedback as appropriate for a potential future career as a practitioner/clinician.

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: Define the concepts of motor skill and motor learning and describe the stages of motor skill acquisition

ULO2: Analyse and classify motor skills according to the relevant anatomical, biomechanical, environmental, physiological and psychological requirements
ULO3: Design an evidence-based motor skill training program which is specifically tailored to a healthy person's goals and current ability level
ULO4: Describe strategies to optimise motor learning and performance in healthy people
ULO5: Implement, and progress an evidence-based motor skill training program in healthy people
ULO6: Critically evaluate a motor skill training program
ULO7: Reflect on the development, implementation and evaluation of a motor skill training program and make recommendations to improve future training programs and outcomes.

General Assessment Information

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 (clause 128 and 129).

To pass this unit, you must demonstrate sufficient evidence of achievement of the learning outcomes, meet any ungraded requirements, and achieve a final mark of 50 or better.

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

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
Motor skill analysis and development/justification of training program	40%	No	Week 7
Training program implementation and evaluation	20%	No	Week 13
Final Exam	40%	No	Central Exam Period

Motor skill analysis and development/justification of training program

Assessment Type [1]: Report
Indicative Time on Task [2]: 35 hours
Due: **Week 7**
Weighting: **40%**

1) Analysis of motor task

2) Training and assessment of learning overview and justification of training and assessment plan

- Group grade: Development of training program worth 30% of the total mark

- Individual grade: Motor skill analysis and justification of training program worth 70% of the total mark

On successful completion you will be able to:

- Define the concepts of motor skill and motor learning and describe the stages of motor

skill acquisition
- Analyse and classify motor skills according to the relevant anatomical, biomechanical, environmental, physiological and psychological requirements
- Design an evidence-based motor skill training program which is specifically tailored to a healthy person's goals and current ability level
- Describe strategies to optimise motor learning and performance in healthy people
- Implement, and progress an evidence-based motor skill training program in healthy people
- Critically evaluate a motor skill training program
- Reflect on the development, implementation and evaluation of a motor skill training program and make recommendations to improve future training programs and outcomes.

Training program implementation and evaluation

Assessment Type [1]: Presentation
Indicative Time on Task [2]: 25 hours
Due: **Week 13**
Weighting: **20%**

Group presentation focused on implementation and results of the training program as well as reflection on development, implementation and evaluation of the program.

- Group grade based on clarity, effectiveness and content worth 30% of the total mark

- Individual grade based on knowledge and skills required for group training project worth 70% of the total mark

On successful completion you will be able to:
- Define the concepts of motor skill and motor learning and describe the stages of motor skill acquisition
- Analyse and classify motor skills according to the relevant anatomical, biomechanical, environmental, physiological and psychological requirements
- Design an evidence-based motor skill training program which is specifically tailored to a healthy person's goals and current ability level
- Describe strategies to optimise motor learning and performance in healthy people
- Implement, and progress an evidence-based motor skill training program in healthy people
- Critically evaluate a motor skill training program

- Reflect on the development, implementation and evaluation of a motor skill training program and make recommendations to improve future training programs and outcomes.

Final Exam

Assessment Type [1]: Examination
Indicative Time on Task [2]: 30 hours
Due: **Central Exam Period**
Weighting: **40%**

Invigilated exam held during central exam period

On successful completion you will be able to:

- Define the concepts of motor skill and motor learning and describe the stages of motor skill acquisition
- Analyse and classify motor skills according to the relevant anatomical, biomechanical, environmental, physiological and psychological requirements
- Design an evidence-based motor skill training program which is specifically tailored to a healthy person's goals and current ability level
- Describe strategies to optimise motor learning and performance in healthy people
- Implement, and progress an evidence-based motor skill training program in healthy people
- Critically evaluate a motor skill training program
- Reflect on the development, implementation and evaluation of a motor skill training program and make recommendations to improve future training programs and outcomes.

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[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
- the Writing Centre 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

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, and lectures. Details can be found on the

iLearn site for this unit.

Recommended Readings

There are no requirements to purchase a textbook in this unit. Recommendations about specific readings from these and other resources (such as research papers, books, websites and videos) will be listed on iLearn.

Motor learning and control : concepts and applications / Richard A. Magill, New York University, David I. Anderson, San Francisco State University. Tenth edition., New York, NY : McGraw-Hill

Motor Learning and Skill Acquisition: Applications for Physical Education and Sport / Michael Spittle. Second Edition., London, UK: Macmillan International

Neuromechanics of Human Movement / Roger Enoka, University of Colorado, Boulder. Fifth Edition. Champaign, IL: Human Kinetics

The Biophysical Foundations of Human Movement / Bruce Abernathy, University of Queensland. Second Edition. Champaign, IL: Human Kinetics

Technology Used

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

Unit Schedule

	Topic/Theme	Learning Activities
Week 1	Introduction	Practical 1
Week 2	Motor Learning and Skill Acquisition	
Week 3	Traditional Approaches to Skill Acquisition	Practical 2
Week 4	Constraints-Led Approach to Skill Acquisition	
Week 5	Practice Schedules	Practical 3
Week 6	Feedback	
Week 7	Mental Practice, Demonstrations and Instructions	
Week 8	Visual System and Motor Control	Practical 4
Week 9	Vestibular Contributions to Stabilization of Body and Head	Practical 5
Week 10	Muscle Sensory Receptors	

Week 11	Control of Locomotion	Practical 6
Week 12	Applying Principles of Motor Control and Learning	
Week 13	Unit Revision and Summary	Presentation

Policies and Procedures

Macquarie University policies and procedures are accessible from Policy Central (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). 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) 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 ask.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 an

d 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/

The Writing Centre

The Writing Centre provides resources to develop your English language proficiency, academic writing, and communication skills.

- Workshops
- Chat with a WriteWISE peer writing leader
- 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 AskMQ, or contact Service Connect.

IT Help

For help with University computer systems and technology, visit http://www.mq.edu.au/about_us/offices_and_units/information_technology/help/.

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.

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.