



MEDI2100

Musculoskeletal System

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

Macquarie Medical School

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Disclaimer

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General Information

Unit convenor and teaching staff

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Credit points

10

Prerequisites

(Admission to BClinSc and 30cp at 1000 level or above including ANAT1001 or HLTH108) or (80cp at 1000 level or above including ANAT1001 or HLTH108)

Corequisites

Co-badged status

Unit description

This unit focuses on the musculoskeletal anatomy and physiology of the upper and lower limbs and back, building upon your basic knowledge of anatomy acquired in ANAT1001 (Introduction to Anatomy). You will apply your knowledge of musculoskeletal anatomy and physiology through practical classes involving prosected cadavers, models, medical images, surface anatomy and clinical cases. Utilising an integrated, clinically-based approach to teaching that encompasses relevant gross and radiological anatomy as well as histology and embryology, you will develop an understanding of the human musculoskeletal system.

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: Describe the structural and functional features of the musculoskeletal components of the limbs and back.

ULO2: Identify surface anatomy landmarks of the limbs and back, and the course and distribution of major nerves and blood vessels.

ULO3: Outline the development and basic histological features of the musculoskeletal system.

ULO4: Apply knowledge of the musculoskeletal system to the analysis of clinical cases and medical images.

ULO5: Articulate the physiological basis of bone and muscle function, and mechanisms of tissue repair after injury.

ULO6: Explain the role of the endocrine system in the regulation of muscle and bone homeostasis.

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 Convenors.

Students will be awarded a final grade and a mark which must correspond to the grade descriptors specified in the [Assessment Procedure](#) (clause 128).

To pass this unit, students 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 Submission

Unless a Special Consideration request has been submitted and approved, a 5% penalty (of the total possible mark) will be applied each day a written 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 11.55 pm. A one-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.

Special Consideration

If you are unable to complete an assessment task on or by the specified date due to circumstances that are unexpected, unavoidable, significantly disruptive and beyond your control, you may apply for special consideration in accordance with the [Special Consideration Policy](#). Applications for special consideration must be supported by appropriate evidence and submitted via ask.mq.edu.au.

Assessment Tasks

Name	Weighting	Hurdle	Due
Anatomy Test	30%	No	Week 6 & 13
Group presentation	20%	No	Week 9
Final Exam	50%	No	University Examination period

Anatomy Test

Assessment Type ¹: Quiz/Test

Indicative Time on Task ²: 20 hours

Due: **Week 6 & 13**

Weighting: **30%**

Test assessing knowledge in gross anatomy of the musculoskeletal system.

On successful completion you will be able to:

- Describe the structural and functional features of the musculoskeletal components of the limbs and back.
- Identify surface anatomy landmarks of the limbs and back, and the course and distribution of major nerves and blood vessels.
- Outline the development and basic histological features of the musculoskeletal system.
- Apply knowledge of the musculoskeletal system to the analysis of clinical cases and medical images.

Group presentation

Assessment Type ¹: Presentation

Indicative Time on Task ²: 15 hours

Due: **Week 9**

Weighting: **20%**

Small group presentation explaining the structural and functional basis of different movements of the limbs and back.

On successful completion you will be able to:

- Describe the structural and functional features of the musculoskeletal components of the limbs and back.
- Apply knowledge of the musculoskeletal system to the analysis of clinical cases and medical images.
- Articulate the physiological basis of bone and muscle function, and mechanisms of tissue repair after injury.
- Explain the role of the endocrine system in the regulation of muscle and bone homeostasis.

Final Exam

Assessment Type ¹: Examination

Indicative Time on Task ²: 20 hours

Due: **University Examination period**

Weighting: **50%**

Formal written exam using a combination of question types assessing content delivered across the session. This task is completed under examination conditions during the University examination period.

On successful completion you will be able to:

- Describe the structural and functional features of the musculoskeletal components of the limbs and back.
- Identify surface anatomy landmarks of the limbs and back, and the course and distribution of major nerves and blood vessels.
- Outline the development and basic histological features of the musculoskeletal system.
- Apply knowledge of the musculoskeletal system to the analysis of clinical cases and medical images.
- Articulate the physiological basis of bone and muscle function, and mechanisms of tissue repair after injury.
- Explain the role of the endocrine system in the regulation of muscle and bone homeostasis.

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 etc. Details can be found on the iLearn site for this unit.

Recommended Resources

- **Anatomy:** Drake RL *et al.* (2020) *Gray's Anatomy for Students*. (4th ed). Elsevier. [or](#)
- **Anatomy:** Moore KL *et al.* (2018) *Clinically Oriented Anatomy*. (8th ed). Lippincott Williams & Wilkins.
- **Atlas:** Abrahams PH *et al.* (2020) *Abrahams' and McMinn's Clinical Atlas of Human Anatomy* (8th ed). Elsevier.
- **Embryology:** Moore KL *et al.* (2020) *The Developing Human: Clinically Oriented Embryology* (11th ed). Elsevier.
- **Physiology:** Hall JE & Hall ME (2021) *Guyton and Hall Textbook of Medical Physiology* (14th ed). Elsevier.

Online subscription-based resources can be accessed from the MEDI2100 iLearn site.

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

Week	Lectures	Practicals	Tutorials
1	<p>Introduction to MEDI2100, Body donation and ethics (Zoom)</p> <p>Introduction to musculoskeletal system</p> <p>Shoulder region</p>	<p>Connected Curriculum: Bone Histology</p>	<p><i>No tutorial</i></p>
2	<p>Arm, elbow, forearm (anterior)</p> <p>Forearm (posterior), bone fracture and healing</p>	<p>Anatomy Lab 1</p> <p>Shoulder, arm</p>	<p>Tutorial 1</p> <p>Shoulder, arm</p>
3	<p>Wrist and hand</p> <p>Bone metabolism and health</p>	<p>Anatomy Lab 2</p> <p>Elbow, forearm</p>	<p>Tutorial 2</p> <p>Elbow, forearm</p>
4	<p>Upper limb blood supply</p> <p>Upper limb nerve supply</p>	<p>Anatomy Lab 3</p> <p>Wrist, hand, neurovasculature</p>	<p>Tutorial 3</p> <p>Wrist, hand</p>
5	<p>Development of limbs</p> <p>Upper limb revision (Zoom)</p>	<p>Anatomy Lab 4</p> <p>Upper limb revision</p>	<p>Tutorial 4</p> <p>Upper limb neurovasculature</p>

Week	Lectures	Practicals	Tutorials
6	Pelvis and hip joint Muscles of gluteal region, thigh (posterior)	ANATOMY TEST 1 (15%) Connected Curriculum: Muscle Histology	<u>Tutorial 5</u> Hip, gluteal region, thigh (posterior)
7	Thigh (anterior and medial), knee joint Muscle excitation and contraction	<u>Anatomy Lab 5</u> Hip, gluteal region, thigh	<u>Tutorial 6</u> Knee, thigh
8	Leg, ankle, foot Muscle tension and performance	<u>Anatomy Lab 6</u> Knee, leg	<u>Tutorial 7</u> Leg, ankle, foot
9	Lower limb blood supply Lower limb nerve supply	<i>No practical (public holiday)</i>	GROUP PRESENTATIONS (20%)
10	Vertebral column bones Vertebral column joints and ligaments	<u>Anatomy Lab 7</u> Ankle, foot, neurovasculature	<u>Tutorial 8</u> Lower limb neurovasculature
11	Muscles of back Trunk wall	<u>Anatomy Lab 8</u> Back bones and joints	<u>Tutorial 9</u> Back I
12	Development of the axial skeleton and muscles Lower limb and back revision (Zoom)	<u>Anatomy Lab 9</u> Back muscles Lower limb revision	<u>Tutorial 10</u> Back II Revision
13	<i>No lecture</i>	ANATOMY TEST 2 (15%)	<i>No tutorial</i>

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 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 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/>

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.

Changes from Previous Offering

The following changes to the delivery of the unit were made in accordance with student feedback and planned restructuring of the unit after long-term delivery.

- **Learning outcomes:** Minor updates to make them clearer.
- **Lectures:** They have been reduced from 3 hours to max 2 hours per week.
- **Assessments:** The online Physiology Test has been removed and the weighting of the Anatomy Tests has been reduced from 40% to 30%. A new assessment task (Group Presentation) was introduced this semester to engage students in teamwork and allow for better integration of concepts in anatomy, physiology, histology, and embryology.
- **Delivery:** The physiology component of this unit will now be delivered in lectures instead of self-directed learning and tutorial presentations.
- **Shared-teaching:** This unit is no longer co-taught with ANAT1002

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.

Professionalism in Anatomy

The study of human anatomy at Macquarie University is governed by the Anatomy Act (1977) and students are admitted to the anatomy laboratories on the proviso that they comply with all relevant legislation.

It is important that this includes respect and professionalism in your dealings with human material and your interactions with your colleagues and members of the public. Donating one's body to science is an act of selflessness and generosity that contributes greatly to advancing medical research and education. It behoves us all, therefore, to treat the donations with utmost care, respect and professionalism. Failure to do so not only can result in serious reputational consequences for you and the University, but can result in suspension, expulsion and possible

imprisonment.

Please behave professionally at all times and treat our valuable human anatomy teaching resources with utmost care and respect. Thank you.