



MEDI203

Musculoskeletal 1

S2 Day 2016

Medicine and Health Sciences Faculty level units

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General Information

Unit convenor and teaching staff

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Credit points

3

Prerequisites

Admission to BClinSc and 12cp including HLTH108

Corequisites

Co-badged status

Unit description

This unit builds on the basic anatomy taught in HLTH108 (Introduction to Anatomy). It focuses on the musculoskeletal anatomy and physiology of the upper and lower limbs and back. The unit utilises an integrated approach within which relevant gross and radiological anatomy as well as histology and embryology are investigated in detail. It is clinically oriented and focuses on surface and applied anatomy. The unit includes a significant practical component in which prosected cadavers, models, medical images, surface anatomy and clinical cases are studied. Students are expected to show an appreciation and respect for those who have bequeathed their bodies to research.

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:

Describe the structural and functional features of the musculoskeletal components of the

limbs and back and their anatomical relationships.

Articulate the physiological bases of bone and muscle function, and the mechanisms of tissue repair after injury.

Outline the role of the endocrine system in the regulation of muscle and bone homeostasis.

Identify on living subjects, musculoskeletal landmarks of the limbs and back, the route of nerves and blood vessels, movements at joints and muscle actions.

Apply knowledge of the anatomy of the limbs and back to interpret radiographic, CT and MRI images.

Apply knowledge of anatomy of the limbs and back to the analysis of movement through the study of clinical cases.

General Assessment Information

Examination(s)

The University Examination period in for Second Half Year 2016 is from Monday 14th November to Friday 2th December 2014.

You are expected to present yourself for examination at the time and place designated in the University Examination Timetable. The timetable will be available in Draft form approximately eight weeks before the commencement of the examinations and in Final form approximately four weeks before the commencement of the examinations.

The only exception to not sitting an examination at the designated time is because of documented illness or unavoidable disruption. In these circumstances you may wish to consider applying for *Disruption to Studies*. Information about is available at Policy Central: <http://www.mq.edu.au/policy/>

If a Supplementary Examination is granted as a result of your application, the examination will be scheduled after the conclusion of the official examination period.

You are advised that it is Macquarie University policy not to set early examinations for individuals or groups of students. All students are expected to ensure that they are available until the end of the teaching semester, that is, the final day of the official examination period.

Grades

Achievement of grades will be based on the following criteria:

High Distinction (85-100): provides consistent evidence of deep and critical understanding in relation to the learning outcomes. There is substantial originality and insight in identifying, generating and communicating competing arguments, perspectives or problem solving approaches; critical evaluation of problems, their solutions and their implications; creativity in application.

Distinction (75-84): provides evidence of integration and evaluation of critical ideas, principles

and theories, distinctive insight and ability in applying relevant skills and concepts in relation to learning outcomes. There is demonstration of frequent originality in defining and analysing issues or problems and providing solutions; and the use of means of communication appropriate to the discipline and the audience.

Credit (65-74): provides evidence of learning that goes beyond replication of content knowledge or skills relevant to the learning outcomes. There is demonstration of substantial understanding of fundamental concepts in the field of study and the ability to apply these concepts in a variety of contexts; plus communication of ideas fluently and clearly in terms of the conventions of the discipline.

Pass (50-64): provides sufficient evidence of the achievement of learning outcomes. There is demonstration of understanding and application of fundamental concepts of the field of study; and communication of information and ideas adequately in terms of the conventions of the discipline. The learning attainment is considered satisfactory or adequate or competent or capable in relation to the specified outcomes.

Fail (<50): does not provide evidence of attainment of all learning outcomes.

There is missing or partial or superficial or faulty understanding and application of the fundamental concepts in the field of study; and incomplete, confusing or lacking communication of ideas in ways that give little attention to the conventions of the discipline.

Assessment Tasks

| Name | Weighting | Due |
|------------------------------------|-----------|-------------------------------|
| <u>On-line Learning Activities</u> | 15% | Weeks 4, 9 and 12 |
| <u>Practical Lab Assessment</u> | 45% | Weeks 5, 10 and 13. |
| <u>Exam</u> | 40% | University examination period |

On-line Learning Activities

Due: **Weeks 4, 9 and 12**

Weighting: **15%**

On-line Learning Activities are of different formats, they include: multiple choice questions, matching questions, problem solving activities and short answer questions

On successful completion you will be able to:

- Describe the structural and functional features of the musculoskeletal components of the limbs and back and their anatomical relationships.
- Articulate the physiological bases of bone and muscle function, and the mechanisms of tissue repair after injury.
- Outline the role of the endocrine system in the regulation of muscle and bone

homeostasis.

- Identify on living subjects, musculoskeletal landmarks of the limbs and back, the route of nerves and blood vessels, movements at joints and muscle actions.
- Apply knowledge of the anatomy of the limbs and back to interpret radiographic, CT and MRI images.
- Apply knowledge of anatomy of the limbs and back to the analysis of movement through the study of clinical cases.

Practical Lab Assessment

Due: **Weeks 5, 10 and 13.**

Weighting: **45%**

Three practical laboratory assessments comprising short answer questions.

On successful completion you will be able to:

- Describe the structural and functional features of the musculoskeletal components of the limbs and back and their anatomical relationships.
- Identify on living subjects, musculoskeletal landmarks of the limbs and back, the route of nerves and blood vessels, movements at joints and muscle actions.
- Apply knowledge of the anatomy of the limbs and back to interpret radiographic, CT and MRI images.
- Apply knowledge of anatomy of the limbs and back to the analysis of movement through the study of clinical cases.

Exam

Due: **University examination period**

Weighting: **40%**

MCQs and short answer questions.

On successful completion you will be able to:

- Describe the structural and functional features of the musculoskeletal components of the limbs and back and their anatomical relationships.
- Articulate the physiological bases of bone and muscle function, and the mechanisms of tissue repair after injury.
- Outline the role of the endocrine system in the regulation of muscle and bone homeostasis.
- Identify on living subjects, musculoskeletal landmarks of the limbs and back, the route of

nerves and blood vessels, movements at joints and muscle actions.

- Apply knowledge of the anatomy of the limbs and back to interpret radiographic, CT and MRI images.
- Apply knowledge of anatomy of the limbs and back to the analysis of movement through the study of clinical cases.

Delivery and Resources

This unit is characterized by a moderate degree of flexibility. It incorporates a variety of learning tools and media. It comprises:

1. 3 x 1 hour lectures per week, weeks 1 - 13
2. 1 x 2 hours laboratory session, weeks 1 - 13
3. 1 x 1 hour tutorials per week, weeks 1 - 13

Prescribed textbooks and learning materials

Textbook:

- Moore KL, Agur AMR, Dalley AF. (2013) *Clinically Oriented Anatomy* 7th ed. Lippincott Williams & Wilkins. Baltimore.

or

- Drake RL & Lowrie (2014) *Gray's Anatomy for Students*. 3rd ed. Elsevier

- Hall EJ (2015) *Guyton and Hall Textbook of Medical Physiology*, 12th ed. Saunders

Laboratory manual:

- MEDI203 Unit Guide – available at Co-op bookshop. Macquarie University Printery.

Atlas:

- Abrahams PH, Boon J, Spratt JD (2009) *McMinn's Clinical Atlas of Human Anatomy*. 6th ed. Mosby/Saunders Elsevier.

Software:

- Anatomy TV - available through the university library.

Unit Schedule

| WEEK | LECTURE (Monday) | LECTURE (Tuesday) | LAB PRACTICAL (Tuesday) | TUTORIAL (Wednesday/ Friday) |
|------|---------------------|----------------------|----------------------------|---------------------------------|
| | | | | |

| | | | | |
|-------------------|---|--------------------------------------|--|--------------------------------------|
| 1 1 August | Introduction to the unit/Overview of the upper limb Shoulder | Shoulder | Introduction to laboratory classes Shoulder | Shoulder |
| 2 8 August | Arm Elbow | Forearm | Arm and elbow | Arm and elbow |
| 3 15 August | Wrist Hand | Vessels and lymphatics of upper limb | Forearm and wrist | Forearm and wrist |
| 4 22 August | Nerves of the upper limb Development of the limbs | Revision of upper limb | Hand Vessels and nerves of the upper limb | Vessels and nerves of the upper limb |
| 5 29 August | Overview of the lower limb Pelvis and hip | Gluteal region | Test 1 | Test 1 (results and discussion) |
| 6 5 September | Thigh Thigh | Knee | Hip and thigh | Hip and thigh |
| 7 12 September | Leg Leg | Ankle and foot | Knee and leg | Knee and leg |
| | MID-SEMESTER | BREAK | | |
| 8 4 October | Public holiday | Foot | Ankle and foot | Ankle and foot |
| 9 10 October | Nerves of the lower limbs Vessels of the lower limb | Gait and locomotion | Vessels and nerves of the lower limb | Vessels and nerves of the lower limb |
| 10 17 October | Overview of the vertebral column Bones | Ligaments | Test 2 | Test 2 (results and discussion) |
| 11 24 October | Muscles of the back | Development of the vertebral column | Bones and ligaments | Bones and ligaments |

| | | | | |
|----------------------|------------|----------|-----------------------------------|---------------------------------|
| 12 31 November | Trunk wall | Revision | Muscles of the back Trunk wall | Muscles of the back trunk wall |
| 13 7 November | Revision | Revision | Test 3 | Test 3 (results and discussion) |

Policies and Procedures

Macquarie University policies and procedures are accessible from [Policy Central](#). Students should be aware of the following policies in particular with regard to Learning and Teaching:

Academic Honesty Policy http://mq.edu.au/policy/docs/academic_honesty/policy.html

New Assessment Policy in effect from Session 2 2016 http://mq.edu.au/policy/docs/assessment/policy_2016.html. For more information visit http://students.mq.edu.au/events/2016/07/19/new_assessment_policy_in_place_from_session_2/

Assessment Policy prior to Session 2 2016 <http://mq.edu.au/policy/docs/assessment/policy.html>

Grading Policy prior to Session 2 2016 <http://mq.edu.au/policy/docs/grading/policy.html>

Grade Appeal Policy <http://mq.edu.au/policy/docs/gradeappeal/policy.html>

Complaint Management Procedure for Students and Members of the Public http://www.mq.edu.au/policy/docs/complaint_management/procedure.html

Disruption to Studies Policy http://www.mq.edu.au/policy/docs/disruption_studies/policy.html *The Disruption to Studies Policy is effective from March 3 2014 and replaces the Special Consideration Policy.*

In addition, a number of other policies can be found in the [Learning and Teaching Category](#) of Policy Central.

Student Code of Conduct

Macquarie University students have a responsibility to be familiar with the Student Code of Conduct: https://students.mq.edu.au/support/student_conduct/

Results

Results shown in *iLearn*, 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.

Disruption to Studies

'Serious and unavoidable disruption: The University classifies a disruption as **serious and unavoidable** if it:

- could not have reasonably been anticipated, avoided or guarded against by the student;

and

- was beyond the student's control; and
- caused substantial disruption to the student's capacity for effective study and/or completion of required work; and
- occurred during an event critical study period and was at least three (3) consecutive days duration, and/or
- prevented completion of a final examination.

Students with a pre-existing disability/health condition or prolonged adverse circumstances may be eligible for ongoing assistance and support. Such support is governed by other policies and may be sought and coordinated through [Campus Wellbeing and Support Services](#).

If a supplementary examination is granted as a result of the disruption to studies process the examination will be scheduled after the conclusion of the official examination period. (Individual Faculties may wish to signal when the Faculty Supplementary exams are normally scheduled.)

If you are granted a supplementary exam via the Disruption to Studies process, you will have to write a supplementary exam in the supplementary exam period. In this scenario, only your supplementary exam mark will count towards your final exam mark, irrespective of whether or not you attended the final exam in the normal examination period. The submission of a Disruption to Studies form should not be used as a 'just in case' strategy.

You are advised that it is Macquarie University policy not to set early examinations for individuals or groups of students. You are expected to ensure that you are available until the end of the teaching semester that is the final day of the official examination period.'

Student Support

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

Learning Skills

Learning Skills (mq.edu.au/learningskills) provides academic writing resources and study strategies to improve your marks and take control of your study.

- [Workshops](#)
- [StudyWise](#)
- [Academic Integrity Module for Students](#)
- [Ask a Learning Adviser](#)

Student Services and Support

Students with a disability are encouraged to contact the [Disability Service](#) who can provide appropriate help with any issues that arise during their studies.

Student Enquiries

For all student enquiries, visit Student Connect at ask.mq.edu.au

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.

Graduate Capabilities

Creative and Innovative

Our graduates will also be capable of creative thinking and of creating knowledge. They will be imaginative and open to experience and capable of innovation at work and in the community. We want them to be engaged in applying their critical, creative thinking.

This graduate capability is supported by:

Learning outcomes

- Apply knowledge of the anatomy of the limbs and back to interpret radiographic, CT and MRI images.
- Apply knowledge of anatomy of the limbs and back to the analysis of movement through the study of clinical cases.

Capable of Professional and Personal Judgement and Initiative

We want our graduates to have emotional intelligence and sound interpersonal skills and to demonstrate discernment and common sense in their professional and personal judgement. They will exercise initiative as needed. They will be capable of risk assessment, and be able to handle ambiguity and complexity, enabling them to be adaptable in diverse and changing environments.

This graduate capability is supported by:

Learning outcomes

- Identify on living subjects, musculoskeletal landmarks of the limbs and back, the route of nerves and blood vessels, movements at joints and muscle actions.
- Apply knowledge of the anatomy of the limbs and back to interpret radiographic, CT and MRI images.
- Apply knowledge of anatomy of the limbs and back to the analysis of movement through the study of clinical cases.

Assessment task

- Practical Lab Assessment

Commitment to Continuous Learning

Our graduates will have enquiring minds and a literate curiosity which will lead them to pursue knowledge for its own sake. They will continue to pursue learning in their careers and as they participate in the world. They will be capable of reflecting on their experiences and relationships with others and the environment, learning from them, and growing - personally, professionally and socially.

This graduate capability is supported by:

Learning outcomes

- Describe the structural and functional features of the musculoskeletal components of the limbs and back and their anatomical relationships.
- Articulate the physiological bases of bone and muscle function, and the mechanisms of tissue repair after injury.
- Outline the role of the endocrine system in the regulation of muscle and bone homeostasis.
- Identify on living subjects, musculoskeletal landmarks of the limbs and back, the route of nerves and blood vessels, movements at joints and muscle actions.
- Apply knowledge of the anatomy of the limbs and back to interpret radiographic, CT and MRI images.
- Apply knowledge of anatomy of the limbs and back to the analysis of movement through the study of clinical cases.

Assessment tasks

- On-line Learning Activities
- Practical Lab Assessment
- Exam

Discipline Specific Knowledge and Skills

Our graduates will take with them the intellectual development, depth and breadth of knowledge, scholarly understanding, and specific subject content in their chosen fields to make them competent and confident in their subject or profession. They will be able to demonstrate, where relevant, professional technical competence and meet professional standards. They will be able to articulate the structure of knowledge of their discipline, be able to adapt discipline-specific knowledge to novel situations, and be able to contribute from their discipline to inter-disciplinary solutions to problems.

This graduate capability is supported by:

Learning outcomes

- Describe the structural and functional features of the musculoskeletal components of the limbs and back and their anatomical relationships.
- Articulate the physiological bases of bone and muscle function, and the mechanisms of tissue repair after injury.
- Outline the role of the endocrine system in the regulation of muscle and bone homeostasis.
- Identify on living subjects, musculoskeletal landmarks of the limbs and back, the route of nerves and blood vessels, movements at joints and muscle actions.
- Apply knowledge of the anatomy of the limbs and back to interpret radiographic, CT and MRI images.
- Apply knowledge of anatomy of the limbs and back to the analysis of movement through the study of clinical cases.

Assessment tasks

- On-line Learning Activities
- Practical Lab Assessment
- Exam

Critical, Analytical and Integrative Thinking

We want our graduates to be capable of reasoning, questioning and analysing, and to integrate and synthesise learning and knowledge from a range of sources and environments; to be able to critique constraints, assumptions and limitations; to be able to think independently and systemically in relation to scholarly activity, in the workplace, and in the world. We want them to have a level of scientific and information technology literacy.

This graduate capability is supported by:

Learning outcomes

- Describe the structural and functional features of the musculoskeletal components of the limbs and back and their anatomical relationships.
- Articulate the physiological bases of bone and muscle function, and the mechanisms of tissue repair after injury.
- Outline the role of the endocrine system in the regulation of muscle and bone homeostasis.
- Identify on living subjects, musculoskeletal landmarks of the limbs and back, the route of nerves and blood vessels, movements at joints and muscle actions.
- Apply knowledge of the anatomy of the limbs and back to interpret radiographic, CT and

MRI images.

- Apply knowledge of anatomy of the limbs and back to the analysis of movement through the study of clinical cases.

Assessment tasks

- On-line Learning Activities
- Practical Lab Assessment
- Exam

Problem Solving and Research Capability

Our graduates should be capable of researching; of analysing, and interpreting and assessing data and information in various forms; of drawing connections across fields of knowledge; and they should be able to relate their knowledge to complex situations at work or in the world, in order to diagnose and solve problems. We want them to have the confidence to take the initiative in doing so, within an awareness of their own limitations.

This graduate capability is supported by:

Learning outcomes

- Describe the structural and functional features of the musculoskeletal components of the limbs and back and their anatomical relationships.
- Articulate the physiological bases of bone and muscle function, and the mechanisms of tissue repair after injury.
- Outline the role of the endocrine system in the regulation of muscle and bone homeostasis.
- Identify on living subjects, musculoskeletal landmarks of the limbs and back, the route of nerves and blood vessels, movements at joints and muscle actions.
- Apply knowledge of the anatomy of the limbs and back to interpret radiographic, CT and MRI images.
- Apply knowledge of anatomy of the limbs and back to the analysis of movement through the study of clinical cases.

Assessment tasks

- On-line Learning Activities
- Practical Lab Assessment
- Exam

Effective Communication

We want to develop in our students the ability to communicate and convey their views in forms effective with different audiences. We want our graduates to take with them the capability to

read, listen, question, gather and evaluate information resources in a variety of formats, assess, write clearly, speak effectively, and to use visual communication and communication technologies as appropriate.

This graduate capability is supported by:

Learning outcomes

- Articulate the physiological bases of bone and muscle function, and the mechanisms of tissue repair after injury.
- Outline the role of the endocrine system in the regulation of muscle and bone homeostasis.
- Identify on living subjects, musculoskeletal landmarks of the limbs and back, the route of nerves and blood vessels, movements at joints and muscle actions.
- Apply knowledge of the anatomy of the limbs and back to interpret radiographic, CT and MRI images.
- Apply knowledge of anatomy of the limbs and back to the analysis of movement through the study of clinical cases.

Assessment task

- Practical Lab Assessment

Engaged and Ethical Local and Global citizens

As local citizens our graduates will be aware of indigenous perspectives and of the nation's historical context. They will be engaged with the challenges of contemporary society and with knowledge and ideas. We want our graduates to have respect for diversity, to be open-minded, sensitive to others and inclusive, and to be open to other cultures and perspectives: they should have a level of cultural literacy. Our graduates should be aware of disadvantage and social justice, and be willing to participate to help create a wiser and better society.

This graduate capability is supported by:

Learning outcome

- Apply knowledge of anatomy of the limbs and back to the analysis of movement through the study of clinical cases.

Assessment task

- Practical Lab Assessment

Socially and Environmentally Active and Responsible

We want our graduates to be aware of and have respect for self and others; to be able to work with others as a leader and a team player; to have a sense of connectedness with others and country; and to have a sense of mutual obligation. Our graduates should be informed and active

participants in moving society towards sustainability.

This graduate capability is supported by:

Assessment task

- Practical Lab Assessment