HLTH109
Anatomical Sciences 2: Anatomy of Limbs and Back
S2 Day 2014
Chiropractic

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General Information

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Unit Convenor
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By appointment

Credit points
3

Prerequisites
HLTH108(P)

Corequisites

Co-badged status

Unit description
This unit builds on the basic anatomy taught in HLTH108 Anatomical Sciences 1. It focuses on the anatomy of the upper and lower limbs. The unit utilises an integrated approach within which relevant gross anatomy, histology and embryology, as well as clinical and applied anatomy are incorporated. Reference is made to locomotion, posture and the structural specialisations for chiropractic manipulative and tactile functions of the limbs.

Important Academic Dates
Information about important academic dates including deadlines for withdrawing from units are available at https://students.mq.edu.au/important-dates

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

- Describe and identify the structural and functional features of the musculoskeletal components of the limbs and back and their anatomical relations.
- Describe and identify the arterial supply, venous and lymphatic drainage of the
musculoskeletal components of the limbs and back.
Demonstrate, where appropriate, on a living subject: a. musculoskeletal landmarks of the limbs and back b. the route of nerves and blood vessels of the limbs and back c. movements at joints d. muscle actions
Identify bony landmarks the limbs and back and identify major structures on selected radiographs, CT and MRI images.
Use acquired knowledge of the anatomy of the limbs and back to investigate clinical case studies.
Show an appreciation and respect for those who have bequeathed their bodies to research.

General Assessment Information

Examination(s)

The University Examination period in for Second Half Year 2014 is from Monday 17th November to Friday 5th 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

<table>
<thead>
<tr>
<th>Name</th>
<th>Weighting</th>
<th>Due</th>
</tr>
</thead>
<tbody>
<tr>
<td>Online quiz 1</td>
<td>7%</td>
<td>Week 5</td>
</tr>
<tr>
<td>Test 1</td>
<td>13%</td>
<td>Week 5</td>
</tr>
<tr>
<td>Online quiz 2</td>
<td>7%</td>
<td>Week 10</td>
</tr>
<tr>
<td>Test 2</td>
<td>13%</td>
<td>Week 10</td>
</tr>
<tr>
<td>Online quiz 3</td>
<td>7%</td>
<td>Week 13</td>
</tr>
<tr>
<td>Test 3</td>
<td>13%</td>
<td>Week 13</td>
</tr>
<tr>
<td>Exam</td>
<td>40%</td>
<td>University examination period</td>
</tr>
</tbody>
</table>

**Online quiz 1**

Due: **Week 5**

Weighting: 7%

Online quiz includes practical and theoretical questions related to the anatomy of the upper limb. It also contains questions in applied and clinical anatomy.

On successful completion you will be able to:
Describe and identify the structural and functional features of the musculoskeletal components of the limbs and back and their anatomical relations.

Describe and identify the arterial supply, venous and lymphatic drainage of the musculoskeletal components of the limbs and back.

Demonstrate, where appropriate, on a living subject: a. musculoskeletal landmarks of the limbs and back b. the route of nerves and blood vessels of the limbs and back c. movements at joints d. muscle actions

Identify bony landmarks the limbs and back and identify major structures on selected radiographs, CT and MRI images.

Use acquired knowledge of the anatomy of the limbs and back to investigate clinical case studies.

Test 1
Due: Week 5
Weighting: 13%

Spot test in the anatomy laboratory focusing on the upper limb; utilising cadaveric specimens, bones, x-rays, surface anatomy photographs.

On successful completion you will be able to:

Describe and identify the structural and functional features of the musculoskeletal components of the limbs and back and their anatomical relations.

Describe and identify the arterial supply, venous and lymphatic drainage of the musculoskeletal components of the limbs and back.

Demonstrate, where appropriate, on a living subject: a. musculoskeletal landmarks of the limbs and back b. the route of nerves and blood vessels of the limbs and back c. movements at joints d. muscle actions

Identify bony landmarks the limbs and back and identify major structures on selected radiographs, CT and MRI images.

Use acquired knowledge of the anatomy of the limbs and back to investigate clinical case studies.

Show an appreciation and respect for those who have bequeathed their bodies to research.

Online quiz 2
Due: Week 10
Weighting: 7%

Online quiz includes practical and theoretical questions related to the anatomy of the lower limb.
It also contains questions in applied and clinical anatomy.

On successful completion you will be able to:

- Describe and identify the structural and functional features of the musculoskeletal components of the limbs and back and their anatomical relations.
- Describe and identify the arterial supply, venous and lymphatic drainage of the musculoskeletal components of the limbs and back.
- Demonstrate, where appropriate, on a living subject: a. musculoskeletal landmarks of the limbs and back b. the route of nerves and blood vessels of the limbs and back c. movements at joints d. muscle actions
- Identify bony landmarks the limbs and back and identify major structures on selected radiographs, CT and MRI images.
- Use acquired knowledge of the anatomy of the limbs and back to investigate clinical case studies.

Test 2

Due: **Week 10**

Weighting: **13%**

Spot test in the anatomy laboratory, focusing on the lower limb; utilising cadaveric specimens, bones, x-rays, surface anatomy photographs.

On successful completion you will be able to:

- Describe and identify the structural and functional features of the musculoskeletal components of the limbs and back and their anatomical relations.
- Describe and identify the arterial supply, venous and lymphatic drainage of the musculoskeletal components of the limbs and back.
- Demonstrate, where appropriate, on a living subject: a. musculoskeletal landmarks of the limbs and back b. the route of nerves and blood vessels of the limbs and back c. movements at joints d. muscle actions
- Identify bony landmarks the limbs and back and identify major structures on selected radiographs, CT and MRI images.
- Use acquired knowledge of the anatomy of the limbs and back to investigate clinical case studies.
- Show an appreciation and respect for those who have bequeathed their bodies to research.
Online quiz 3
Due: **Week 13**
Weighting: 7%

Online quiz includes practical and theoretical questions related to the anatomy of the back. It also contains questions in applied and clinical anatomy.

On successful completion you will be able to:

- Describe and identify the structural and functional features of the musculoskeletal components of the limbs and back and their anatomical relations.
- Describe and identify the arterial supply, venous and lymphatic drainage of the musculoskeletal components of the limbs and back.
- Demonstrate, where appropriate, on a living subject: a. musculoskeletal landmarks of the limbs and back b. the route of nerves and blood vessels of the limbs and back c. movements at joints d. muscle actions
- Identify bony landmarks of the limbs and back and identify major structures on selected radiographs, CT and MRI images.
- Use acquired knowledge of the anatomy of the limbs and back to investigate clinical case studies.

Test 3
Due: **Week 13**
Weighting: 13%

Spot test in the anatomy laboratory, focusing on the back; utilising cadaveric specimens, bones, x-rays, surface anatomy photographs.

On successful completion you will be able to:

- Describe and identify the structural and functional features of the musculoskeletal components of the limbs and back and their anatomical relations.
- Describe and identify the arterial supply, venous and lymphatic drainage of the musculoskeletal components of the limbs and back.
- Demonstrate, where appropriate, on a living subject: a. musculoskeletal landmarks of the limbs and back b. the route of nerves and blood vessels of the limbs and back c. movements at joints d. muscle actions
- Identify bony landmarks of the limbs and back and identify major structures on selected radiographs, CT and MRI images.
• Use acquired knowledge of the anatomy of the limbs and back to investigate clinical case studies.
• Show an appreciation and respect for those who have bequeathed their bodies to research.

Exam
Due: University examination period
Weighting: 40%
Theory exam covering the anatomy of the limbs and back. It consist of multiple choice questions, short answer questions and clinical cases.

On successful completion you will be able to:
• Describe and identify the structural an functional features of the musculoskeletal components of the limbs and back and their anatomical relations.
• Describe and identify the arterial supply, venous and lymphatic drainage of the musculoskeletal components of the limbs and back.
• Demonstrate, where appropriate, on a living subject: a. musculoskeletal landmarks of the limbs and back b. the route of nerves and blood vessels of the limbs and back c. movements at joints d. muscle actions
• Identify bony landmarks the limbs and back and identify major structures on selected radiographs, CT and MRI images.
• Use acquired knowledge of the anatomy of the limbs and back to investigate clinical case studies.

Delivery and Resources
This unit is characterised by a moderate degree of flexibility. It incorporates a variety of learning tools and media. It will comprise:
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:
Unit guide HLTH109 Anatomical Sciences 2: Anatomy of Limbs and Back

- Anatomy TV - available through the university library
- Virtual anatomy tutorials - available through iLearn

## Unit Schedule

<table>
<thead>
<tr>
<th>WEEK</th>
<th>LECTURE (Monday)</th>
<th>LECTURE (Tuesday)</th>
<th>LAB PRACTICAL (Tuesday)</th>
<th>TUTORIAL (Wednesday/Friday)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Introduction to unit Overview of upper limb</td>
<td>Shoulder</td>
<td>Introduction to laboratory classes</td>
<td>Shoulder</td>
</tr>
<tr>
<td>2</td>
<td>Arm</td>
<td>Forearm</td>
<td>Arm and elbow</td>
<td>Arm and elbow</td>
</tr>
<tr>
<td>3</td>
<td>Wrist</td>
<td>Vessels and lymphatics of upper limb</td>
<td>Forearm and wrist</td>
<td>Forearm and wrist</td>
</tr>
<tr>
<td>4</td>
<td>Nerves of the upper limb</td>
<td>Revision of upper limb</td>
<td>Hand</td>
<td>Vessels and nerves of the upper limb</td>
</tr>
<tr>
<td>5</td>
<td>Overview of lower limb</td>
<td>Gluteal region</td>
<td>Test 1</td>
<td>Test 1 (results and discussion)</td>
</tr>
<tr>
<td>6</td>
<td>Thigh</td>
<td>Knee</td>
<td>Hip and thigh</td>
<td>Hip and thigh</td>
</tr>
</tbody>
</table>
### Policies and Procedures

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

- **Disruption to Studies Policy** [http://www.mq.edu.au/policy/docs/disruption_studies/policy.html](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/](https://students.mq.edu.au/support/student_conduct/)

**Student Support**

Macquarie University provides a range of support services for students. For details, visit [http://students.mq.edu.au/support/](http://students.mq.edu.au/support/)

**Learning Skills**

Learning Skills ([mq.edu.au/learningskills](http://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 Enquiry Service**

For all student enquiries, visit Student Connect at [ask.mq.edu.au](http://ask.mq.edu.au)

**Equity 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.

**IT Help**


When using the University's IT, you must adhere to the Acceptable Use Policy. The policy applies to all who connect to the MQ network including students.

**Graduate Capabilities**

**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 and identify the structural and functional features of the musculoskeletal components of the limbs and back and their anatomical relations.
- Describe and identify the arterial supply, venous and lymphatic drainage of the musculoskeletal components of the limbs and back.
- Demonstrate, where appropriate, on a living subject: a. musculoskeletal landmarks of the limbs and back b. the route of nerves and blood vessels of the limbs and back c. movements at joints d. muscle actions
- Identify bony landmarks the limbs and back and identify major structures on selected radiographs, CT and MRI images.
- Use acquired knowledge of the anatomy of the limbs and back to investigate clinical case studies.
- Show an appreciation and respect for those who have bequeathed their bodies to research.

**Assessment tasks**

- Online quiz 1
- Test 1
- Online quiz 2
- Test 2
- Online quiz 3
- Test 3
- 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**

- Demonstrate, where appropriate, on a living subject: a. musculoskeletal landmarks of the
limbs and back b. the route of nerves and blood vessels of the limbs and back c. movements at joints d. muscle actions

- Identify bony landmarks the limbs and back and identify major structures on selected radiographs, CT and MRI images.
- Use acquired knowledge of the anatomy of the limbs and back to investigate clinical case studies.

**Assessment tasks**

- Online quiz 1
- Online quiz 2
- Online quiz 3
- Exam

**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**

- Demonstrate, where appropriate, on a living subject: a. musculoskeletal landmarks of the limbs and back b. the route of nerves and blood vessels of the limbs and back c. movements at joints d. muscle actions
- Identify bony landmarks the limbs and back and identify major structures on selected radiographs, CT and MRI images.
- Use acquired knowledge of the anatomy of the limbs and back to investigate clinical case studies.
- Show an appreciation and respect for those who have bequeathed their bodies to research.

**Assessment tasks**

- Online quiz 1
- Online quiz 2
- Online quiz 3
- 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**

- Demonstrate, where appropriate, on a living subject: a. musculoskeletal landmarks of the limbs and back b. the route of nerves and blood vessels of the limbs and back c. movements at joints d. muscle actions
- Identify bony landmarks the limbs and back and identify major structures on selected radiographs, CT and MRI images.
- Use acquired knowledge of the anatomy of the limbs and back to investigate clinical case studies.
- Show an appreciation and respect for those who have bequeathed their bodies to research.

**Assessment tasks**

- Online quiz 1
- Online quiz 2
- Online quiz 3
- Exam

**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 outcomes**

- Use acquired knowledge of the anatomy of the limbs and back to investigate clinical case studies.
- Show an appreciation and respect for those who have bequeathed their bodies to research.
Assessment tasks

- Test 1
- Test 2
- Test 3
- Exam

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

- Demonstrate, where appropriate, on a living subject: a. musculoskeletal landmarks of the limbs and back b. the route of nerves and blood vessels of the limbs and back c. movements at joints d. muscle actions
- Identify bony landmarks the limbs and back and identify major structures on selected radiographs, CT and MRI images.
- Use acquired knowledge of the anatomy of the limbs and back to investigate clinical case studies.
- Show an appreciation and respect for those who have bequeathed their bodies to research.

Assessment tasks

- Online quiz 1
- Test 1
- Online quiz 2
- Test 2
- Online quiz 3
- Test 3
- Exam

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.
This graduate capability is supported by:

**Learning outcomes**

- Describe and identify the structural and functional features of the musculoskeletal components of the limbs and back and their anatomical relations.
- Describe and identify the arterial supply, venous and lymphatic drainage of the musculoskeletal components of the limbs and back.
- Demonstrate, where appropriate, on a living subject: a. musculoskeletal landmarks of the limbs and back b. the route of nerves and blood vessels of the limbs and back c. movements at joints d. muscle actions
- Identify bony landmarks the limbs and back and identify major structures on selected radiographs, CT and MRI images.
- Use acquired knowledge of the anatomy of the limbs and back to investigate clinical case studies.

**Assessment tasks**

- Online quiz 1
- Online quiz 2
- Online quiz 3
- Test 1
- Test 2
- Test 3
- 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 and identify the structural and functional features of the musculoskeletal components of the limbs and back and their anatomical relations.
- Describe and identify the arterial supply, venous and lymphatic drainage of the
musculoskeletal components of the limbs and back.

• Demonstrate, where appropriate, on a living subject: a. musculoskeletal landmarks of the limbs and back b. the route of nerves and blood vessels of the limbs and back c. movements at joints d. muscle actions

• Identify bony landmarks the limbs and back and identify major structures on selected radiographs, CT and MRI images.

• Use acquired knowledge of the anatomy of the limbs and back to investigate clinical case studies.

**Assessment tasks**

• Online quiz 1
• Test 1
• Online quiz 2
• Test 2
• Online quiz 3
• Test 3
• Exam

**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:

**Learning outcomes**

• Use acquired knowledge of the anatomy of the limbs and back to investigate clinical case studies.

• Show an appreciation and respect for those who have bequeathed their bodies to research.

**Assessment tasks**

• Test 1
• Test 2
• Test 3
• Exam