General Information

Unit convenor and teaching staff
Unit Convenor & Lecturer
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By appointment

Tutor
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Tutor
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By appointment

Tutor
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By appointment

Credit points
10

Prerequisites
Admission to BChiroSc and (CHIR1101 or CHIR113) and (CHIR1102 or CHIR114)

Corequisites

Co-badged status
Unit description
This unit provides an introduction to biomechanics of the lumbar spine, pelvis, and lower extremities. It will build upon concepts of applied anatomy taught in ANAT1002. Clinical application of biomechanical concepts will relate to the skills of patient observation, joint range of motion assessment, tissue palpation, and muscle testing. Clinical reasoning will begin whereby students will learn to reconcile pathomechanics with clinical findings for musculoskeletal injuries. Applying theories taught in HLTH2110, the clinical concept of epidemiological risk will be introduced and explored. Psychomotor skills taught in CHIR1101 and CHIR1102 will be developed. Chiropractic techniques and joint manipulation skills for the lumbar spine and lower extremity will be introduced.

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:

UL01: Describe biomechanics of the lumbar spine and pelvis, joints of the lower extremities, and gait.
UL02: Demonstrate respect and empathy for patients while performing physical assessment techniques for the lumbar spine, pelvis, and lower extremities: palpation, joint range of motion, muscle testing.
UL03: At the level of precision, perform chiropractic techniques and joint manipulation skills on the lumbar spine and lower extremity
UL04: Demonstrate basic clinical reasoning by applying knowledge of lumbopelvic and lower extremity pathomechanics to interpret information derived from a physical assessment.
UL05: Apply epidemiological knowledge and biostatistical skills to quantify and interpret information pertaining to clinical risk factors.

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).
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 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 11.55pm. A 1-hour grace period is provided to students who experience a technical concern.

For example:

<table>
<thead>
<tr>
<th>Number of days (hours) late</th>
<th>Total Possible Marks</th>
<th>Deduction</th>
<th>Raw mark</th>
<th>Final mark</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 day (1-24 hours)</td>
<td>100</td>
<td>5</td>
<td>75</td>
<td>70</td>
</tr>
<tr>
<td>2 days (24-48 hours)</td>
<td>100</td>
<td>10</td>
<td>75</td>
<td>65</td>
</tr>
<tr>
<td>3 days (48-72 hours)</td>
<td>100</td>
<td>15</td>
<td>75</td>
<td>60</td>
</tr>
<tr>
<td>7 days (144-168 hours)</td>
<td>100</td>
<td>35</td>
<td>75</td>
<td>40</td>
</tr>
<tr>
<td>&gt;7 days (&gt;168 hours)</td>
<td>100</td>
<td>-</td>
<td>75</td>
<td>0</td>
</tr>
</tbody>
</table>

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**

<table>
<thead>
<tr>
<th>Name</th>
<th>Weighting</th>
<th>Hurdle</th>
<th>Due</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical assessment and chiropractic technique portfolio</td>
<td>10%</td>
<td>No</td>
<td>22 March</td>
</tr>
<tr>
<td>Research assignment</td>
<td>20%</td>
<td>No</td>
<td>3 May</td>
</tr>
<tr>
<td>Chiropractic skills assessment</td>
<td>20%</td>
<td>No</td>
<td>21 May</td>
</tr>
<tr>
<td>Final examination</td>
<td>50%</td>
<td>No</td>
<td>Exam period</td>
</tr>
<tr>
<td>Weekly lecture quiz submission</td>
<td>0%</td>
<td>No</td>
<td>21 June</td>
</tr>
</tbody>
</table>
### Weekly case study quiz submission

<table>
<thead>
<tr>
<th>Name</th>
<th>Weighting</th>
<th>Hurdle</th>
<th>Due</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Weekly case study quiz submission</strong></td>
<td>0%</td>
<td>No</td>
<td>21 June</td>
</tr>
</tbody>
</table>

### Physical assessment and chiropractic technique portfolio

**Assessment Type**: Portfolio  
**Indicative Time on Task**: 2: 12 hours  
**Due**: 22 March  
**Weighting**: 10%

Students will maintain a video portfolio that demonstrates their ability to perform physical assessments and chiropractic techniques taught in this unit. Accompanying videos of procedures will be a brief critical appraisal statement that reflects on students' aptitude within the chiropractic skills competency framework. Only a subset of procedures will be evaluated by tutors to formulate the mark for this assessment.

On successful completion you will be able to:

- Demonstrate respect and empathy for patients while performing physical assessment techniques for the lumbar spine, pelvis, and lower extremities: palpation, joint range of motion, muscle testing.
- At the level of precision, perform chiropractic techniques and joint manipulation skills on the lumbar spine and lower extremity

### Research assignment

**Assessment Type**: Quantitative analysis task  
**Indicative Time on Task**: 2: 12 hours  
**Due**: 3 May  
**Weighting**: 20%

In this assessment, students will analyse a data set obtained from a simulated observational study. Students will report on the prevalence and associated factors for a musculoskeletal condition.

On successful completion you will be able to:

- Apply epidemiological knowledge and biostatistical skills to quantify and interpret information pertaining to clinical risk factors.
Chiropractic skills assessment

Assessment Type 1: Practice-based task
Indicative Time on Task 2: 12 hours
Due: 21 May
Weighting: 20%

Students will be assessed on their competency in performing chiropractic techniques. Students will demonstrate a series of chiropractic procedures taught in this unit.

On successful completion you will be able to:
- Demonstrate respect and empathy for patients while performing physical assessment techniques for the lumbar spine, pelvis, and lower extremities: palpation, joint range of motion, muscle testing.
- At the level of precision, perform chiropractic techniques and joint manipulation skills on the lumbar spine and lower extremity

Final examination

Assessment Type 1: Examination
Indicative Time on Task 2: 12 hours
Due: Exam period
Weighting: 50%

This written test will assess all theoretical material for the unit. It will consist of multiple choice and short answer questions.

On successful completion you will be able to:
- Describe biomechanics of the lumbar spine and pelvis, joints of the lower extremities, and gait.
- Demonstrate basic clinical reasoning by applying knowledge of lumbopelvic and lower extremity pathomechanics to interpret information derived from a physical assessment.
- Apply epidemiological knowledge and biostatistical skills to quantify and interpret information pertaining to clinical risk factors.
Unit guide CHIR2103 Chiropractic Sciences 3

Weekly lecture quiz submission

Assessment Type: Participatory task
Indicative Time on Task: 7 hours
Due: 21 June
Weighting: 0%

Formative exercises based on lecture modules. Students are required to compile a series of brief quiz questions based on weekly lectures.

On successful completion you will be able to:
- Describe biomechanics of the lumbar spine and pelvis, joints of the lower extremities, and gait.

Weekly case study quiz submission

Assessment Type: Participatory task
Indicative Time on Task: 3 hours
Due: 21 June
Weighting: 0%

Exercises based on case study discussions in 10 practical sessions. Students are required to complete a series of brief quiz questions based on weekly case studies presented in tutorial notes.

On successful completion you will be able to:
- Describe biomechanics of the lumbar spine and pelvis, joints of the lower extremities, and gait.
- Demonstrate basic clinical reasoning by applying knowledge of lumbopelvic and lower extremity pathomechanics to interpret information derived from a physical assessment.

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.
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 online lecture modules, hands-on tutorials, readings, and video resources. Details can be found on the iLearn site for this unit.

**Recommended Readings**


   Available at Macquarie University Library Level 1 / Level 2 QP303 .O38 2016

OR


   Via ProQuest EBook Central

**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**

Tutorial classes will be held in the Chiropractic Skills Laboratories, Level 3, 11 Wallys Walk.

<table>
<thead>
<tr>
<th>Week</th>
<th>Online lecture</th>
<th>Tuesday tutorial</th>
<th>Thursday tutorial</th>
</tr>
</thead>
<tbody>
<tr>
<td>Week 1</td>
<td>Introduction to Clinical Biomechanics</td>
<td>No class</td>
<td>No class</td>
</tr>
<tr>
<td>Week 2</td>
<td>Lumbar: structure and function</td>
<td>Introduction. Lumbar: observation, surface palpation and active ROM</td>
<td>Lumbar: passive ROM, prone motion palpation. Case Study 1</td>
</tr>
<tr>
<td>Week 3</td>
<td>Lumbar: muscle function</td>
<td>Lumbar: muscle length, seated motion palpation, BLR setup</td>
<td>BLR setup. Lumbar traction and sitting thumb techniques. Case Study 2</td>
</tr>
<tr>
<td>Week 4</td>
<td>Pelvis: structure and function</td>
<td>Revision tutorial - reflective practice</td>
<td>SIJ motion palpation and sacral rocking. Case Study 3</td>
</tr>
<tr>
<td>Week 5</td>
<td>Hip: structure and function</td>
<td>Hip: observation, surface palpation, active/passive ROM and functional assessment</td>
<td>Hip: motion palpation and chiropractic techniques. Case Study 4</td>
</tr>
<tr>
<td>Week 6</td>
<td>Hip: muscle function</td>
<td>Hip: muscle length, strength and soft tissue techniques</td>
<td>Hip: chiropractic techniques. Case Study 5</td>
</tr>
<tr>
<td>Week 7</td>
<td>Knee: structure and function</td>
<td>Knee: observation, surface palpation, active ROM and muscle strength</td>
<td>Knee: motion palpation and chiropractic techniques. Case Study 6</td>
</tr>
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</tr>
<tr>
<td>Week 8</td>
<td>Knee: muscle function</td>
<td>Patella: motion palpation and soft-tissue techniques</td>
<td>Knee: chiropractic techniques. Case Study 7</td>
</tr>
<tr>
<td>Week 9</td>
<td>Ankle/foot: structure and function</td>
<td>Ankle/foot: observation, surface palpation, active ROM, muscle strength</td>
<td>Ankle: motion palpation and chiropractic techniques. Case Study 8</td>
</tr>
<tr>
<td>Week 10</td>
<td>Ankle/foot: muscle function</td>
<td>Ankle/foot: passive movements and soft tissue techniques</td>
<td>Foot: motion palpation and chiropractic techniques. Case study 9</td>
</tr>
<tr>
<td>Week 11</td>
<td>Gait</td>
<td>Foot and toes: chiropractic techniques. Case study 10</td>
<td>Revision tutorial -reflective practice</td>
</tr>
<tr>
<td>Week 12</td>
<td>Clinical assessment of the lower limb</td>
<td>OSCE</td>
<td>No class</td>
</tr>
<tr>
<td>Week 13</td>
<td>Unit summary and questions</td>
<td>Supplementary OSCE</td>
<td>No class</td>
</tr>
</tbody>
</table>

**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 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
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.