



# CHIR2103

## Chiropractic Sciences 3

Session 1, In person-scheduled-weekday, North Ryde 2022

*Department of Chiropractic*

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# General Information

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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:

- ULO1:** Describe biomechanics of the lumbar spine and pelvis, joints of the lower extremities, and gait.
- ULO2:** 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.
- ULO3:** At the level of precision, perform chiropractic techniques and joint manipulation skills on the lumbar spine and lower extremity
- ULO4:** Demonstrate basic clinical reasoning by applying knowledge of lumbopelvic and lower extremity pathomechanics to interpret information derived from a physical assessment.
- ULO5:** Apply epidemiological knowledge and biostatistical skills to quantify and interpret

information pertaining to clinical risk factors.

## General Assessment Information

### Participation requirements

Tutorial class attendance will be recorded. Students must attend the class in which they are enrolled. Students must not exchange their class time. In special circumstances, students may apply for requests regarding changes. These requests are to be submitted to the unit convener.

### Examinations

Students are expected to present themselves 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.

<https://iexams.mq.edu.au/timetable>

The only exception to not sitting an examination at the designated time is because of short-term, unexpected, serious and unavoidable circumstances. In these circumstances, you may wish to consider applying for Special Consideration.

If you receive special consideration for the final exam, a supplementary exam will be scheduled in the interval between the regular exam period and the start of the next session. By making a special consideration application for the final exam you are declaring yourself available for a resit during the supplementary examination period and will not be eligible for a second special consideration approval based on pre-existing commitments. Please ensure you are familiar with the policy prior to submitting an application. Approved applicants will receive an individual notification one week prior to the exam with the exact date and time of their supplementary 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](#).

Students 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 which is the final day of the official examination period.

### Returning assessment tasks and feedback

**1. Physical assessment and chiropractic technique portfolio (summative assessment):** A modified version of the assessment rubric will be returned to students. Individual feedback will be provided including how to improve future tasks. Assessment marks will be returned via Gradebook. Marks will be incorporated into the final unit grade.

**2. Research assignment (summative assessment):** A modified version of the assessment rubric will be returned to students with general feedback comments. Assessment marks will be returned via Gradebook. Marks will be incorporated into the final unit grade. Students can request verbal individual feedback.

**3. Chiropractic skills assessment (OSCE) (summative assessment):** Papers will not be returned. Chiropractic skills performance will be marked in accordance with the chiropractic skills competence continuum (i.e. the skills rubric). Assessment marks will be returned via Gradebook. Marks will be incorporated into the final unit grade. Students can request verbal individual feedback.

**4. Final Examination (summative assessment):** Papers will not be returned. Assessment marks will be returned via Gradebook. Feedback will be provided on request outside the examination period. Marks will be incorporated into the final unit grade.

**5. Weekly lecture quiz submission (formative assessment):** Correct answers will be provided. Lecture quiz submission will serve as a proxy measure of student engagement in lecture presentations.

**6. Weekly case study quiz submission (formative assessment):** Correct answers will be provided. Case quiz submission will serve as a proxy measure of student engagement in tutorial classes.

#### Extensions and penalties

Extensions to assessments and assignments are at the discretion of the unit convener. It is the responsibility of the student to prove to the unit convener that there has been unavoidable disruption. Marks will be deducted for late submissions in the absence of an approved extension. For the research assignment, marks will be deducted at the rate of 10% of the available marks per day.

#### Grades

Final grades for the unit will reflect the descriptors given below:

#### ASSESSMENT GRADES AND STATUS

GRADE	RANGE	STATUS	DESCRIPTION
HD	85-100	Pass	Provides consistent evidence of deep and critical understanding in relation to the learning outcomes. There is substantial originality, insight or creativity in identifying, generating and communicating competing arguments, perspectives or problem solving approaches; critical evaluation of problems, their solutions and their implications; creativity in application as appropriate to the course/program*.
D	75-84	Pass	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 or creativity in defining and analysing issues or problems and providing solutions; and the use of means of communication appropriate to the course/program* and the audience.
CR	65-74	Pass	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; convincing argumentation with appropriate coherent justification; communication of ideas fluently and clearly in terms of the conventions of the course/program*.

P	50-64	Pass	Provides sufficient evidence of the achievement of learning outcomes. There is demonstration of understanding and application of fundamental concepts of the course/program*; routine argumentation with acceptable justification; communication of information and ideas adequately in terms of the conventions of the course/program*. The learning attainment is considered satisfactory or adequate or competent or capable in relation to the specified outcomes.
F	0-49	Fail	Does not provide evidence of attainment of learning outcomes. There is missing or partial or superficial or faulty understanding and application of the fundamental concepts in the field of study; missing, undeveloped, inappropriate or confusing argumentation; incomplete, confusing or lacking communication of ideas in ways that give little attention to the conventions of the course/program*.
FA	0-49	Fail Absent	The student has failed for non-submission of assessment task or non-attendance at a required assessment

## Assessment Tasks

Name	Weighting	Hurdle	Due
<a href="#"><u>Physical assessment and chiropractic technique portfolio</u></a>	10%	No	Week 5
<a href="#"><u>Research assignment</u></a>	20%	No	Week 8
<a href="#"><u>Chiropractic skills assessment</u></a>	20%	No	Week 12
<a href="#"><u>Final examination</u></a>	50%	No	Session 1 Examination Period
<a href="#"><u>Weekly lecture quiz submission</u></a>	0%	No	Weeks 1 to 12
<a href="#"><u>Weekly case study quiz submission</u></a>	0%	No	Weeks 2 to 11

### Physical assessment and chiropractic technique portfolio

Assessment Type <sup>1</sup>: Portfolio

Indicative Time on Task <sup>2</sup>: 12 hours

Due: **Week 5**

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 <sup>1</sup>: Quantitative analysis task

Indicative Time on Task <sup>2</sup>: 12 hours

Due: **Week 8**

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 <sup>1</sup>: Practice-based task

Indicative Time on Task <sup>2</sup>: 12 hours

Due: **Week 12**

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 <sup>1</sup>: Examination

Indicative Time on Task <sup>2</sup>: 12 hours

Due: **Session 1 Examination 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.

## Weekly lecture quiz submission

Assessment Type <sup>1</sup>: Participatory task

Indicative Time on Task <sup>2</sup>: 7 hours

Due: **Weeks 1 to 12**

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 <sup>1</sup>: Participatory task

Indicative Time on Task <sup>2</sup>: 3 hours

Due: **Weeks 2 to 11**

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.

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<sup>1</sup> 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.

<sup>2</sup> 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

### Delivery mode

This unit implements a model of self-directed blended learning that is characterised by a moderate degree of flexibility. It incorporates a variety of learning tools including substantive interactive hands-on and face-to-face classes, online modules, formative quizzes, an exploratory dataset assignment, and a media portfolio used to develop reflective practice. It will comprise:

### Lectures

A modulated style of online lecturing will be adopted. To enhance student learning, students are expected to participate fully in weekly formative quizzes.

### Tutorials

Students are expected to participate fully in chiropractic skills tutorials. To enhance case-based learning, students should complete weekly formative tutorial quizzes. Weekly lecture modules, tutorial outlines, and chiropractic technique videos must be reviewed prior to skills classes. In the development of chiropractic skills, it is required that candidates engage in reflective practice. A chiropractic skills media portfolio will be available for students to document their learning of chiropractic techniques and facilitate reflective practice.

## Participation requirements

Students are expected to engage and participate fully in the unit. Tutorial attendance logs and quiz outcomes serve to identify students who are at risk of poor performance in summative assessments.

## Unit Web Page

Students can log onto iLearn at <https://ilearn.mq.edu.au/login/MQ/>

All lecture slides and tutorial notes will be posted on the unit web page as well as a variety of learning materials.

## Required and recommended resources

### Required:

1. [Oatis, C. A. \(2016\). Kinesiology: the mechanics and pathomechanics of human movement \(Third edition\). Philadelphia: Wolters Kluwer.](#)

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

2. Lecture and Tutorial notes [Available Online]: <https://ilearn.mq.edu.au/login/MQ/>

3. Comparative Kinesiology of the Human Body: Normal and Pathological Conditions, edited by Salih Angin, and Ibrahim Simsek. Elsevier Science & Technology, 2020 Available

Via ProQuest EBook Central

### Recommended:

· Neumann D.A. (2016). Kinesiology of the musculoskeletal system Foundations for rehabilitation (Third edition). Elsevier.

· Esposito, S., Philipson, S. (2005). Spinal adjustment technique the chiropractic art (First edition).

· [Kendall, F.P. \(2010\). Muscles: testing and function with posture and pain \(Fifth edition\). Lippincott Williams & Wilkins.](#)

· [Magee D.J. \(2013\). Orthopedic physical assessment \(Sixth edition\). W.D Saunders.](#)

## Unit Schedule

Tutorial classes location: [11 Wallys Walk](#) - Level 3, Chiropractic Skills Laboratories

Week	Online lecture	Tuesday tutorial	Thursday tutorial
Week 1	Introduction to clinical biomechanics	No tute	No tute
Week 2	Lumbar: structure and function	Introduction. Lumbar: observation, surface palpation and active ROM	Lumbar: passive ROM, prone motion palpation. Case Study 1
Week 3	Lumbar: muscle function	Lumbar: muscle length, seated motion palpation, BLR setup	BLR setup. Lumbar traction and sitting thumb techniques. Case Study 2

Week 4	Pelvis: structure and function	Revision tutorial - reflective practice	SIJ motion palpation and sacral rocking. Case Study 3
Week 5	Hip: structure and function	Hip: observation, surface palpation, active/passive ROM and functional assessment	Hip: motion palpation and chiropractic techniques. Case Study 4
Week 6	Hip: muscle function	Hip: muscle length, strength and soft tissue techniques	Hip: chiropractic techniques. Case Study 5
Mid-Semester Break			
Week 7	Knee: structure and function	Knee: observation, surface palpation, active ROM and muscle strength	Knee: motion palpation and chiropractic techniques. Case Study 6
Week 8	Knee: muscle function	Patella: motion palpation and soft-tissue techniques	Knee: chiropractic techniques. Case Study 7
Week 9	Ankle/foot: structure and function.	Ankle/foot: observation, surface palpation, active ROM, muscle strength	Ankle: motion palpation and chiropractic techniques. Case Study 8
Week 10	Ankle/foot: muscle function	Ankle/foot: passive movements and soft tissue techniques	Foot: motion palpation and chiropractic techniques. Case study 9
Week 11	Gait	Foot and toes: chiropractic techniques. Case study 10	Revision tutorial -reflective practice
Week 12	Clinical assessment of the lower limb	No tute	OSCE
Week 13	Unit summary and questions	No tute	Supplementary OSCE

## 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](http://ask.mq.edu.au) or if you are a Global MBA student contact [globalmba.support@mq.edu.au](mailto: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 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/](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.