



# CHIR2103

## Chiropractic Sciences 3

Session 1, In person-scheduled-weekday, North Ryde 2023

*Department of Chiropractic*

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# General Information

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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

The [Macquarie University Assessment Policy](#) contains grade descriptors and other grading information.

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 corresponding 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 5pm. A 1-hour grace period is provided to students who experience a technical concern.

For example:

Number of days (hours) late	Total Possible Marks	Deduction	Raw mark	Final mark
1 day (1-24 hours)	100	5	75	70
2 days (24-48 hours)	100	10	75	65
3 days (48-72 hours)	100	15	75	60
7 days (144-168 hours)	100	35	75	40
>7 days (>168 hours)	100	-	75	0

For any late submissions of time-sensitive tasks, such as scheduled tests/exams, performance

assessments/presentations, and/or scheduled practical assessments/labs, students need to submit an application for Special Consideration.

## Assessment Tasks

Name	Weighting	Hurdle	Due
<a href="#"><u>Physical assessment and chiropractic technique portfolio</u></a>	10%	No	Week 4
<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	S1 Exam 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 4**

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: **S1 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.

## 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 expected 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. Formative spot tests will be incorporated into tutorial classes.

### Participation requirements

Students are expected to engage and participate fully in all unit learning activities.

### 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

OR

2. 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

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

#### 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.

### PROFESIONALISM

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.

### 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.

## 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
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	OSCE	
Week 13	Unit summary and questions	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](https://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 Advocacy](#) provides independent advice on MQ policies, procedures, and processes

## Student Enquiries

Got a question? Ask us via [AskMQ](#), or contact [Service Connect](#).

## IT Help

For help with University computer systems and technology, visit [http://www.mq.edu.au/about\\_us/](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.