



# CHIR2104

## Chiropractic Sciences 4

Session 2, In person-scheduled-weekday, North Ryde 2026

*Department of Chiropractic*

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#### **Disclaimer**

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## General Information

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Credit points

10

Prerequisites

Admission to BChiroSc and (CHIR1101) and (CHIR1102) and (CHIR2103)

Corequisites

### Co-badged status

#### Unit description

This unit builds upon introductory principles in biomechanics as well as clinically relevant concepts in applied anatomy. The focus of this unit will be the biomechanics of the thorax and the upper extremity. 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 skills will be developed whereby you will learn to reconcile pathomechanics with clinical findings for musculoskeletal injuries. The concept of diagnostic test accuracy will be introduced and explored. Chiropractic psychomotor skills will be developed. Chiropractic techniques and joint manipulation skills for the thoracic spine and upper extremity will be introduced and developed.

## 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 how kinematic and kinetic principles apply to the clinical biomechanics of the thorax and upper extremity.

**ULO2:** Demonstrate respect and empathy for patients while performing physical assessment techniques for the thoracic region and upper extremities: palpation, joint range of motion and muscle testing.

**ULO3:** Competently perform chiropractic techniques on the thoracic spine, ribs and upper extremity.

**ULO4:** Demonstrate basic clinical reasoning by applying knowledge of thoracic and upper extremity pathomechanics to interpret information derived from a physical assessment and the application of chiropractic techniques.

**ULO5:** Apply epidemiological knowledge and biostatistical skills to quantify and interpret information pertaining to diagnostic test accuracy.

## 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 127-8).

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:

| 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                   | Groupwork/Individual | Short Extension | AI Approach |
|------------------------------------------------------------------|-----------|--------|-----------------------|----------------------|-----------------|-------------|
| <a href="#">Portfolio</a>                                        | 20%       | No     | 11/09/2026            | Individual           | Yes             | Open        |
| <a href="#">Objective Structured Clinical Examination (OSCE)</a> | 40%       | No     | 29/10/2026            | Individual           | No              | Observed    |
| <a href="#">Final examination</a>                                | 40%       | No     | Session 2 Exam Period | Individual           | No              | Observed    |

## Portfolio

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

Indicative Time on Task <sup>2</sup>: 20 hours

Due: **11/09/2026**

Weighting: **20%**

Groupwork/Individual: Individual

Short extension <sup>3</sup>: Yes

AI Approach: Open

You will create a portfolio that contains video recordings of chiropractic techniques, reflections on your chiropractic skills, and quizzes that relate to biomechanics and clinical/diagnostic reasoning.

On successful completion you will be able to:

- Describe how kinematic and kinetic principles apply to the clinical biomechanics of the thorax and upper extremity.
- Demonstrate respect and empathy for patients while performing physical assessment techniques for the thoracic region and upper extremities: palpation, joint range of motion and muscle testing.
- Competently perform chiropractic techniques on the thoracic spine, ribs and upper extremity.
- Demonstrate basic clinical reasoning by applying knowledge of thoracic and upper extremity pathomechanics to interpret information derived from a physical assessment and the application of chiropractic techniques.
- Apply epidemiological knowledge and biostatistical skills to quantify and interpret information pertaining to diagnostic test accuracy.

## Objective Structured Clinical Examination (OSCE)

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

Indicative Time on Task <sup>2</sup>: 20 hours

Due: **29/10/2026**

Weighting: **40%**

Groupwork/Individual: Individual

Short extension <sup>3</sup>: No

AI Approach: Observed

You will be assessed on your competency in performing chiropractic techniques. You 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 thoracic region and upper extremities: palpation, joint range of motion and muscle testing.
- Competently perform chiropractic techniques on the thoracic spine, ribs and upper extremity.

## Final examination

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

Indicative Time on Task <sup>2</sup>: 18 hours

Due: **Session 2 Exam Period**

Weighting: **40%**

Groupwork/Individual: Individual

Short extension <sup>3</sup>: No

AI Approach: Observed

This written test will assess all theoretical material for the unit.

On successful completion you will be able to:

- Describe how kinematic and kinetic principles apply to the clinical biomechanics of the thorax and upper extremity.
- Demonstrate basic clinical reasoning by applying knowledge of thoracic and upper extremity pathomechanics to interpret information derived from a physical assessment and the application of chiropractic techniques.
- Apply epidemiological knowledge and biostatistical skills to quantify and interpret information pertaining to diagnostic test accuracy.

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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
- [Academic Success](#) 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.

<sup>3</sup> An automatic short extension is available for some assessments. Apply through the [Service Connect Portal](#).

## 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, tutorials, readings, and discussions. Details can be

found on the iLearn site for this unit.

## Recommended Readings

1. Oatis, C. A. (2016). Kinesiology: the mechanics and pathomechanics of human movement (Third edition). Philadelphia: Wolters Kluwer.
2. Comparative Kinesiology of the Human Body: Normal and Pathological Conditions, edited by Salih Angin, and Ibrahim Simsek, Elsevier Science & Technology, 2020.
3. Neumann D.A. (2016). Kinesiology of the musculoskeletal system Foundations for rehabilitation (Third edition). Elsevier.
4. Kendall, F.P. (2010). Muscles: testing and function with posture and pain (Fifth edition). Lippincott Williams & Wilkins.
5. Magee D.J. (2013). Orthopedic physical assessment (Sixth edition). W.D Saunders.
6. Phillip, et al. Assessment and Treatment of Muscle Imbalance: The Janda Approach, Human Kinetics, 2009.

## 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

| Week   | Online lecture                                                 | Tuesday tutorial                                                     | Thursday tutorial                                                 |
|--------|----------------------------------------------------------------|----------------------------------------------------------------------|-------------------------------------------------------------------|
| Week 1 | Unit overview. Introduction to Force Sensing Table Technology® | No tutorial                                                          | No tutorial                                                       |
| Week 2 | Thorax: structure and function                                 | Thoracic spine: observation, surface palpation, active & passive ROM | Thoracic: motion palpation, chiropractic techniques. Case study 1 |
| Week 3 | Thorax: muscle function                                        | Thoracic: FSTT introduction, chiropractic techniques                 | Thoracic: motion palpation, chiropractic techniques. Case study 2 |
| Week 4 | Introduction to diagnostic test accuracy                       | Ribs: motion palpation, chiropractic techniques                      | Thoracic: chiropractic techniques. Case study 3                   |
| Week 5 | Shoulder: structure and function                               | Shoulder: observation, surface palpation, active/passive ROM         | Shoulder: motion palpation, chiropractic techniques. Case study 4 |
| Week 6 | Shoulder: muscle function                                      | Shoulder: muscle length, muscle strength and soft tissue techniques  | Shoulder: chiropractic techniques. Case study 5                   |

|         |                                        |                                                                            |                                                                        |
|---------|----------------------------------------|----------------------------------------------------------------------------|------------------------------------------------------------------------|
| Week 7  | Posture                                | AC/SC joint: surface palpation, motion palpation, chiropractic techniques. | Revision tutorial - reflective practice. Case study 6                  |
| Week 8  | Elbow: structure and function          | Elbow: observation, surface palpation, active/passive ROM                  | Elbow: motion palpation and chiropractic technique. Case study 7       |
| Week 9  | Elbow: muscle function                 | Elbow: muscle strength, soft tissue techniques                             | Elbow: chiropractic techniques. Case study 8                           |
| Week 10 | Wrist and hand: structure and function | Wrist/hand: observation, surface palpation, active/passive ROM             | Wrist/hand: motion palpation and chiropractic techniques. Case study 9 |
| Week 11 | Forearm: muscle function.              | Hand: Muscle strength, chiropractic techniques                             | Wrist: Chiropractic techniques. Case study 10                          |
| Week 12 | Hand: muscle function                  | Revision tutorial -reflective practice                                     | OSCE                                                                   |
| Week 13 | Unit summary, Q&A                      | No tutorial                                                                | 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 [connect.mq.edu.au](https://connect.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/>

## Academic Success

[Academic Success](#) provides resources to develop your English language proficiency, academic writing, and communication skills.

- [Ask a Study Coach](#)
- [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 the [Service Connect Portal](#), or contact [Service Connect](#).

## IT Help

For help with University computer systems and technology, visit <https://students.mq.edu.au/support/technology/service-desk>.

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.

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Unit information based on version 2026.02 of the [Handbook](#)