



CHIR2104

Chiropractic Sciences 4

Session 2, In person-scheduled-weekday, North Ryde 2024

Department of Chiropractic

Contents

<u>General Information</u>	2
<u>Learning Outcomes</u>	3
<u>General Assessment Information</u>	3
<u>Assessment Tasks</u>	4
<u>Delivery and Resources</u>	7
<u>Unit Schedule</u>	8
<u>Policies and Procedures</u>	9
<u>Inclusion and Diversity</u>	11
<u>Professionalism</u>	11

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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) and (CHIR2103 or CHIR213)

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 clinical biomechanics (kinematics and kinetics) of the upper extremity and thorax of the human body.
- 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:** Perform chiropractic techniques and joint manipulation skills on the thoracic spine, ribs and lower 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
Physical assessment and chiropractic technique videos	10%	No	2024-08-23
Research assignment	20%	No	2024-10-04
Chiropractic skills assessment (OSCE)	20%	No	2024-10-24
Final examination	50%	No	Session 2 Exam Period

Name	Weighting	Hurdle	Due
Weekly quizzes	0%	No	2024-11-22

Physical assessment and chiropractic technique videos

Assessment Type ¹: Clinical performance evaluation

Indicative Time on Task ²: 12 hours

Due: **2024-08-23**

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 thoracic region and upper extremities: palpation, joint range of motion and muscle testing.
- Perform chiropractic techniques and joint manipulation skills on the thoracic spine, ribs and lower extremity

Research assignment

Assessment Type ¹: Quantitative analysis task

Indicative Time on Task ²: 12 hours

Due: **2024-10-04**

Weighting: **20%**

In this assessment, students will analyse a data set obtained from a simulated observational study. Students will report on the diagnostic test accuracy 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 diagnostic test accuracy

Chiropractic skills assessment (OSCE)

Assessment Type ¹: Clinical performance evaluation

Indicative Time on Task ²: 12 hours

Due: **2024-10-24**

Weighting: **20%**

Students will be assessed on their competency in performing chiropractic skills. 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 thoracic region and upper extremities: palpation, joint range of motion and muscle testing.
- Perform chiropractic techniques and joint manipulation skills on the thoracic spine, ribs and lower extremity

Final examination

Assessment Type ¹: Examination

Indicative Time on Task ²: 12 hours

Due: **Session 2 Exam Period**

Weighting: **50%**

This written test will assess all theoretical material for the unit. It will include multiple-choice questions

On successful completion you will be able to:

- Describe clinical biomechanics (kinematics and kinetics) of the upper extremity and thorax of the human body.
- 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

Weekly quizzes

Assessment Type ¹: Quiz/Test

Indicative Time on Task ²: 10 hours

Due: **2024-11-22**

Weighting: **0%**

Weekly quizzes formatively assess knowledge and skills developed through tutorial activities, including case studies.

On successful completion you will be able to:

- Describe clinical biomechanics (kinematics and kinetics) of the upper extremity and thorax of the human body.
- 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.

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.

² 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, readings, tutorials 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 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
- [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/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.

Unit information based on version 2024.02 of the [Handbook](#)