



# ALLH12008 *Functional Anatomy and Biomechanics*

## Term 1 - 2021

Profile information current as at 27/09/2024 10:13 am

All details in this unit profile for ALLH12008 have been officially approved by CQUniversity and represent a learning partnership between the University and you (our student). The information will not be changed unless absolutely necessary and any change will be clearly indicated by an approved correction included in the profile.

## General Information

### Overview

This unit will provide you with a comprehensive overview of functional anatomy and applied biomechanics, with a focus on understanding the determinants of human movement and locomotion. The unit will build upon your existing knowledge of musculoskeletal anatomy and physiology, and develop your skills in qualitative and quantitative assessment of human movement, to better understand musculoskeletal injury mechanisms and rehabilitation strategies.

### Details

Career Level: *Undergraduate*

Unit Level: *Level 2*

Credit Points: 6

Student Contribution Band: 8

Fraction of Full-Time Student Load: 0.125

### Pre-requisites or Co-requisites

To enrol in this unit you must be enrolled in the CB85 Course and meet the following pre-requisites and co-requisites:

Prerequisites: BMSC11007 Medical Anatomy and Physiology 1 BMSC11008 Medical Anatomy and Physiology 2

PSIO11003 Foundations of Physiotherapy Practice 2 Co-requisite: PSIO12001 Musculoskeletal Physiotherapy 1

Important note: Students enrolled in a subsequent unit who failed their pre-requisite unit, should drop the subsequent unit before the census date or within 10 working days of Fail grade notification. Students who do not drop the unit in this timeframe cannot later drop the unit without academic and financial liability. See details in the [Assessment Policy and Procedure \(Higher Education Coursework\)](#).

### Offerings For Term 1 - 2021

- Bundaberg
- Rockhampton

### Attendance Requirements

All on-campus students are expected to attend scheduled classes – in some units, these classes are identified as a mandatory (pass/fail) component and attendance is compulsory. International students, on a student visa, must maintain a full time study load and meet both attendance and academic progress requirements in each study period (satisfactory attendance for International students is defined as maintaining at least an 80% attendance record).

### Website

[This unit has a website, within the Moodle system, which is available two weeks before the start of term. It is important that you visit your Moodle site throughout the term. Please visit Moodle for more information.](#)

## Class and Assessment Overview

### Recommended Student Time Commitment

Each 6-credit Undergraduate unit at CQUniversity requires an overall time commitment of an average of 12.5 hours of study per week, making a total of 150 hours for the unit.

### Class Timetable

#### [Regional Campuses](#)

Bundaberg, Cairns, Emerald, Gladstone, Mackay, Rockhampton, Townsville

#### [Metropolitan Campuses](#)

Adelaide, Brisbane, Melbourne, Perth, Sydney

### Assessment Overview

#### 1. **In-class Test(s)**

Weighting: 20%

#### 2. **Practical Assessment**

Weighting: 30%

#### 3. **In-class Test(s)**

Weighting: 50%

#### 4. **On-campus Activity**

Weighting: Pass/Fail

### Assessment Grading

This is a graded unit: your overall grade will be calculated from the marks or grades for each assessment task, based on the relative weightings shown in the table above. You must obtain an overall mark for the unit of at least 50%, or an overall grade of 'pass' in order to pass the unit. If any 'pass/fail' tasks are shown in the table above they must also be completed successfully ('pass' grade). You must also meet any minimum mark requirements specified for a particular assessment task, as detailed in the 'assessment task' section (note that in some instances, the minimum mark for a task may be greater than 50%). Consult the [University's Grades and Results Policy](#) for more details of interim results and final grades.

## CQUniversity Policies

**All University policies are available on the [CQUniversity Policy site](#).**

You may wish to view these policies:

- Grades and Results Policy
- Assessment Policy and Procedure (Higher Education Coursework)
- Review of Grade Procedure
- Student Academic Integrity Policy and Procedure
- Monitoring Academic Progress (MAP) Policy and Procedure – Domestic Students
- Monitoring Academic Progress (MAP) Policy and Procedure – International Students
- Student Refund and Credit Balance Policy and Procedure
- Student Feedback – Compliments and Complaints Policy and Procedure
- Information and Communications Technology Acceptable Use Policy and Procedure

This list is not an exhaustive list of all University policies. The full list of University policies are available on the [CQUniversity Policy site](#).

## Previous Student Feedback

### Feedback, Recommendations and Responses

Every unit is reviewed for enhancement each year. At the most recent review, the following staff and student feedback items were identified and recommendations were made.

#### Feedback from Student Evaluations (Have Your Say)

##### Feedback

Students strongly valued the clear linkages between content and concepts covered in this unit and the co-requisite unit - Musculoskeletal Physiotherapy 1.

##### Recommendation

It is recommended that ongoing unit reviews are needed to further improve the alignment of material and resources between pre-requisite, co-requisite and future units.

#### Feedback from Student Evaluations (Have Your Say)

##### Feedback

Despite the impact of Covid-19, students were satisfied with the transition from face-face to online teaching - even though they recognised the value in teaching this unit face-face.

##### Recommendation

It is recommended that, subject to restrictions, all classes return to face-face teaching. However, the resources developed in the response to Covid-19 (e.g. demonstration videos) will continue to be made available.

## Unit Learning Outcomes

### On successful completion of this unit, you will be able to:

1. Demonstrate sound knowledge of structural and functional anatomy in the context of human movement, injury and rehabilitation
2. Explain and interpret key biomechanical principles and measurement techniques in the context of human movement, injury and rehabilitation
3. Select, perform and interpret qualitative and/or quantitative assessments of functional anatomy and applied biomechanics relevant to physiotherapy practice
4. Demonstrate acceptable professional and ethical behaviours consistent with a physiotherapy practitioner and community leader.

## Alignment of Learning Outcomes, Assessment and Graduate Attributes



### Alignment of Assessment Tasks to Learning Outcomes

Assessment Tasks	Learning Outcomes			
	1	2	3	4
1 - In-class Test(s) - 20%	•	•		
2 - Practical Assessment - 30%			•	•
3 - In-class Test(s) - 50%	•	•		
4 - On-campus Activity - 0%				•

## Alignment of Graduate Attributes to Learning Outcomes

Graduate Attributes	Learning Outcomes			
	1	2	3	4
1 - Communication	•	•	•	•
2 - Problem Solving	•	•	•	•
3 - Critical Thinking	•	•	•	
4 - Information Literacy	•	•	•	
5 - Team Work				
6 - Information Technology Competence	•			
7 - Cross Cultural Competence				•
8 - Ethical practice			•	•
9 - Social Innovation				
10 - Aboriginal and Torres Strait Islander Cultures				

## Alignment of Assessment Tasks to Graduate Attributes

Assessment Tasks	Graduate Attributes									
	1	2	3	4	5	6	7	8	9	10
1 - In-class Test(s) - 20%	•	•	•	•						
2 - Practical Assessment - 30%	•	•	•	•			•	•		
3 - In-class Test(s) - 50%	•	•	•	•						
4 - On-campus Activity - 0%								•		

## Textbooks and Resources

### Textbooks

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#### Prescribed

##### **Kinesiology of the musculoskeletal system: Foundations for rehabilitation**

Edition: 3rd (2016)

Authors: Donald A. Neumann

Mosby Elsevier

St. Louis , Missouri , USA

ISBN: 978-0-3232-8753-1

Binding: Hardcover

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#### Supplementary

##### **Neuromechanics of Human Movement**

Edition: 5th (2015)

Authors: Roger Enoka

Human Kinetics

Champaign , Illinois , USA

ISBN: 9781450458801

Binding: Paperback

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#### Supplementary

##### **Orthopedic Physical Assessment**

Edition: 6th (2014)

Authors: David J Magee

Elsevier

St Louis , Missouri , USA

ISBN: 978-1-4557-0977-9

Binding: Hardcover

[View textbooks at the CQUniversity Bookshop](#)

### IT Resources

**You will need access to the following IT resources:**

- CQUniversity Student Email
- Internet
- Unit Website (Moodle)

## Referencing Style

All submissions for this unit must use the referencing style: [American Psychological Association 7th Edition \(APA 7th edition\)](#)

For further information, see the Assessment Tasks.

## Teaching Contacts

**Steven Obst** Unit Coordinator

[s.obst@cqu.edu.au](mailto:s.obst@cqu.edu.au)

## Schedule

<b>Week 1 - 08 Mar 2021</b>		
<b>Module/Topic</b>	<b>Chapter</b>	<b>Events and Submissions/Topic</b>
Introduction to course, overview of assessment tasks Introduction to biomechanical analysis	Chapters 1 and 4 (Neumann, 2017)	
<b>Week 2 - 15 Mar 2021</b>		
<b>Module/Topic</b>	<b>Chapter</b>	<b>Events and Submissions/Topic</b>
Biomechanics of bone and cartilage Biomechanics of skeletal muscle and tendon	Chapters 2 and 3 (Neumann, 2017)	
<b>Week 3 - 22 Mar 2021</b>		
<b>Module/Topic</b>	<b>Chapter</b>	<b>Events and Submissions/Topic</b>
Biomechanics of joints Biomechanics of the hip	Chapters 2 and 12 (Neumann, 2017)	
<b>Week 4 - 29 Mar 2021</b>		
<b>Module/Topic</b>	<b>Chapter</b>	<b>Events and Submissions/Topic</b>
Biomechanics of the knee	Chapters 13 (Neumann, 2017)	
<b>Week 5 - 05 Apr 2021</b>		
<b>Module/Topic</b>	<b>Chapter</b>	<b>Events and Submissions/Topic</b>
Biomechanics of the foot and ankle	Chapter 14 (Neumann, 2017)	
<b>Vacation Week - 12 Apr 2021</b>		
<b>Module/Topic</b>	<b>Chapter</b>	<b>Events and Submissions/Topic</b>
<b>Week 6 - 19 Apr 2021</b>		
<b>Module/Topic</b>	<b>Chapter</b>	<b>Events and Submissions/Topic</b>
Biomechanics of walking (Part 1): Gait cycle, joint kinematics Biomechanics of walking (Part 2): Joint kinetics, muscle activation	Chapters 15 and 16 (Neumann, 2017)	<b>Mid-Term Test (Online)</b> Due: Week 6 Friday (23 Apr 2021) 8:00 am AEST
<b>Week 7 - 26 Apr 2021</b>		
<b>Module/Topic</b>	<b>Chapter</b>	<b>Events and Submissions/Topic</b>
Biomechanics of the spine (Part 1): Joints Biomechanics of the spine (Part 2): Musculature	Chapters 9 and 10 (Neumann, 2017)	
<b>Week 8 - 03 May 2021</b>		
<b>Module/Topic</b>	<b>Chapter</b>	<b>Events and Submissions/Topic</b>
Biomechanics of the spine (Part 3): Injury mechanisms and lifting techniques	Chapters 9 and 10 (Neumann, 2017)	
<b>Week 9 - 10 May 2021</b>		
<b>Module/Topic</b>	<b>Chapter</b>	<b>Events and Submissions/Topic</b>
Biomechanics of the shoulder (Part 1): Joints Biomechanics of the shoulder (Part 2): Musculature	Chapter 5 (Neumann, 2017)	Reminder to complete the 'Have your say' Unit evaluations.
<b>Week 10 - 17 May 2021</b>		
<b>Module/Topic</b>	<b>Chapter</b>	<b>Events and Submissions/Topic</b>
Biomechanics of the elbow and forearm Biomechanics of the wrist and hand	Chapters 6, 7 and 8 (Neumann, 2017)	Reminder to complete the 'Have your say' Unit evaluations.

### Week 11 - 24 May 2021

Module/Topic	Chapter	Events and Submissions/Topic
Revision	N/A	Reminder to complete the 'Have your say' Unit evaluations.

### Week 12 - 31 May 2021

Module/Topic	Chapter	Events and Submissions/Topic
Assessment and Revision	N/A	<b>END-TERM TEST (On Campus) (50%)</b> - held on campus in Week 12. The date, time and room for this assessment will be confirmed during term. Reminder to complete the 'Have your say' Unit evaluations.  <b>End-Term Test (On Campus) Due:</b> Week 12 Wednesday (2 June 2021) 12:00 pm AEST

### Review/Exam Week - 07 Jun 2021

Module/Topic	Chapter	Events and Submissions/Topic
Revision and assessment preparation.	N/A	<b>PRACTICAL ASSESSMENT (On Campus) (30%)</b> - held in either Exam Week 1 or Exam Week 2. The date, time and room for this assessment will be confirmed during term. Reminder to complete the 'Have your say' Unit evaluations.

### Exam Week - 14 Jun 2021

Module/Topic	Chapter	Events and Submissions/Topic
Revision and assessment preparation.	N/A	<b>PRACTICAL ASSESSMENT (On Campus) (30%)</b> - held in either Exam Week 1 or Exam Week 2. The date, time and room for this assessment will be confirmed during term. Reminder to complete the 'Have your say' Unit evaluations.

## Term Specific Information

Due to COVID-19 impact at the time of preparing this unit profile, modifications to this units assessments for Term 1 2021 may need to be updated at a later date. Further details will be made available on the Unit Moodle site, if and when, modifications are required.

## Assessment Tasks

### 1 Mid-Term Test (Online)

#### Assessment Type

In-class Test(s)

#### Task Description

The Mid-Term Test is a 1.5 hour (90 minutes) open book online test delivered via Moodle. The Mid-Term Test will examine all content covered from weeks 1 to 5, inclusive, including all lectures, practicals and required readings. The test will include some, or all, of the following question types:

- Multiple choice
- True/False
- Short answer

**Assessment Due Date**

Week 6 Friday (23 Apr 2021) 8:00 am AEST

Online test via Moodle

**Return Date to Students**

Week 8 Friday (7 May 2021)

Results will be accessible on Moodle within two weeks of the submission date.

**Weighting**

20%

**Assessment Criteria**

All questions will be marked numerically and an overall percentage mark will be awarded.

**Referencing Style**

- [American Psychological Association 7th Edition \(APA 7th edition\)](#)

**Submission**

Online

**Graduate Attributes**

- Communication
- Problem Solving
- Critical Thinking
- Information Literacy

**Learning Outcomes Assessed**

- Demonstrate sound knowledge of structural and functional anatomy in the context of human movement, injury and rehabilitation
- Explain and interpret key biomechanical principles and measurement techniques in the context of human movement, injury and rehabilitation

## 2 Surface Anatomy and Muscle Function (On Campus)

**Assessment Type**

Practical Assessment

**Task Description**

The Practical Assessment will evaluate your theoretical knowledge and practical application of structural and functional anatomy. The Practical Assessment will be 30 minutes in duration (i.e. 10 min preparation time and 10 min per clinical station). Clinical station 1 will assess your ability to perform a safe and accurate surface anatomy palpation assessment of ten (10) anatomical structures. Clinical station 2 will assess your ability to conduct a safe and accurate clinical assessment of muscle function (e.g. activation, strength, endurance etc.) of up to two (2) selected muscle groups using standardised procedures and equipment. During the preparation time you will be required to answer a series of questions that relate to each clinical station. You are required to submit your responses to these questions at the completion of your assessment time. These questions will be marked at the end of assessment and will contribute to your rubric mark for Anatomical and Biomechanical Knowledge.

During each clinical station you may also have to:

- Demonstrate theoretical knowledge of structural and functional anatomy, including, but not limited to, the following topics:
  - Skeletal muscle names, origins, insertions, actions and innervations.
  - Ligament names, origins, insertions, functions and mechanisms of injury.
  - Peripheral nervous system anatomy, including peripheral nerve paths, spinal root contributions, and motor and sensory innervation zones/patterns.
  - Bone and joint structure and function, including knowledge of joint classification systems, normal and abnormal kinematics, and mechanisms of injury.
- Identify and act upon any precautions and/or contraindications to a clinical assessment.
- Demonstrate knowledge and clinical reasoning in the selection of a clinical assessment.
- Demonstrate clear, effective and thorough communication.
- Demonstrate safe and effective application of a clinical assessment.
- Explain and interpret the findings of a clinical assessment.

All material relevant to musculoskeletal anatomy and biomechanics from any pre-requisite and/or co-requisite unit is



also examinable in the Practical Assessment. You need to be appropriately attired in your full clinical uniform for the assessment. If you are required to be a 'simulated patient' for another student's assessment, please bring additional clothes suitable for a clinical assessment.

### **Assessment Due Date**

The Practical Assessment will be scheduled during either Exam Week 1 or Exam Week 2

### **Return Date to Students**

Final marks will be made available on Moodle within two weeks of completion of the assessment.

### **Weighting**

30%

### **Assessment Criteria**

The assessment rubric for this assessment task is based on the Australian Standards for Physiotherapy, the Accreditation Standard set by the Australian Physiotherapy Council and the Assessment of Physiotherapy Practice Instrument. These quality frameworks are mapped against the CQUniversity Graduate Attributes, and are intended to give a holistic understanding of standards expected for the assessment task.

Detailed marking criteria will be available on the unit Moodle site, and will include the following rubric categories and weightings:

- Professional Behaviour and Safety (5%)
- Communication (20%)
- Selection, application and interpretation of assessment (45%)
- Anatomical and biomechanical knowledge (30%)

Late Arrivals: You should aim to arrive at least 15-minutes prior to the official assessment commencement time. In the extraordinary circumstance that you are late you will be permitted late entry to your assessment of up to 10 minutes after the official assessment commencement time. The period of lateness will be deducted from your overall assessment time. If you are denied access to the assessment due to lateness (i.e. arriving beyond the permitted late entry period), you should make an online application for deferred assessment (which may or may not be granted in line with CQU policy). If your application for deferred assessment is denied, you will receive a score of zero percent (0%) for your assessment item.

### **Referencing Style**

- [American Psychological Association 7th Edition \(APA 7th edition\)](#)

### **Submission**

No submission method provided.

### **Graduate Attributes**

- Communication
- Problem Solving
- Critical Thinking
- Information Literacy
- Cross Cultural Competence
- Ethical practice

### **Learning Outcomes Assessed**

- Select, perform and interpret qualitative and/or quantitative assessments of functional anatomy and applied biomechanics relevant to physiotherapy practice
- Demonstrate acceptable professional and ethical behaviours consistent with a physiotherapy practitioner and community leader.

## **3 End-Term Test (On Campus)**

### **Assessment Type**

In-class Test(s)

### **Task Description**

The End-Term Test is a 2.5 hour (150 minutes), closed book, paper-based, written assessment that will be held on-campus (Bundaberg and Rockhampton only). The test will examine all content covered during the term, including lectures, practicals and required readings. Access to books, notes, websites, and the use of other electronic devices, are prohibited during the test. The assessment will include a combination of true/false, multiple choice, short answer and long answer questions. These questions may require you to interpret images (e.g. figures, photos, diagrams etc.), clinical

scenarios and/or other problems to answer questions that assess your theoretical knowledge of functional anatomy and biomechanics, as well as your observational, analytical and problem-solving skills.

**Assessment Due Date**

Week 12 Wednesday (2 June 2021) 12:00 pm AEST

The End-Term Test will be held on campus

**Return Date to Students**

Final marks will be published on Moodle within two weeks of completion of the assessment.

**Weighting**

50%

**Minimum mark or grade**

A minimum mark of 50% is required to pass this assessment task.

**Assessment Criteria**

The End-Term Test will be marked manually to provide a numerical score and an overall percentage mark for the assessment item.

Late Arrivals: You should aim to arrive at least 15-minutes prior to the official assessment commencement time. In the extraordinary circumstance that you are late you will be permitted late entry to your assessment of up to 10 minutes after the official assessment commencement time. The period of lateness will be deducted from your overall assessment time. If you are denied access to the assessment due to lateness (i.e. arriving beyond the permitted late entry period), you should make an online application for deferred assessment (which may or may not be granted in line with CQU policy). If your application for deferred assessment is denied, you will receive a score of zero percent (0%) for your assessment item, but may be eligible for a supplementary assessment in line with CQU policy.

**Referencing Style**

- [American Psychological Association 7th Edition \(APA 7th edition\)](#)

**Submission**

Offline

**Submission Instructions**

Offline. This is a paper-based written test held in-class and on-campus (Bundaberg and Rockhampton only).

**Graduate Attributes**

- Communication
- Problem Solving
- Critical Thinking
- Information Literacy

**Learning Outcomes Assessed**

- Demonstrate sound knowledge of structural and functional anatomy in the context of human movement, injury and rehabilitation
- Explain and interpret key biomechanical principles and measurement techniques in the context of human movement, injury and rehabilitation

## 4 Attendance Hurdle (On Campus)

**Assessment Type**

On-campus Activity

**Task Description**

A minimum attendance rate of 85% for all scheduled tutorial and practical sessions is required to PASS this unit. This minimum attendance requirement is recommended by the Australian Physiotherapy Council. The monitoring of attendance will take into consideration legitimate requests for absence, such as those outlined in the CQU University Assessment Policy and Procedure (Higher Education Coursework) document, and these will not be counted as absence for the purpose of this attendance requirement.

**Assessment Due Date**

Attendance rate will be determined at the end of term (i.e. Week 12)

**Return Date to Students**

Attendance rate will be determined at the end of term (i.e. Week 12)

**Weighting**

Pass/Fail

**Minimum mark or grade**

In order to PASS the Attendance Hurdle you must attend at least 85% of all scheduled tutorials/practicals for this unit.

**Assessment Criteria**

Your attendance at each scheduled practical session will be recorded by the tutor using an attendance spreadsheet. The monitoring of attendance will take into consideration legitimate requests for absence, such as those outlined in the CQUniversity Assessment Policy and Procedure (Higher Education Coursework) document, and these will not be counted as absence for the purpose of this attendance requirement.

**Referencing Style**

- [American Psychological Association 7th Edition \(APA 7th edition\)](#)

**Submission**

No submission method provided.

**Graduate Attributes**

- Ethical practice

**Learning Outcomes Assessed**

- Demonstrate acceptable professional and ethical behaviours consistent with a physiotherapy practitioner and community leader.

## Academic Integrity Statement

As a CQUniversity student you are expected to act honestly in all aspects of your academic work.

Any assessable work undertaken or submitted for review or assessment must be your own work. Assessable work is any type of work you do to meet the assessment requirements in the unit, including draft work submitted for review and feedback and final work to be assessed.

When you use the ideas, words or data of others in your assessment, you must thoroughly and clearly acknowledge the source of this information by using the correct referencing style for your unit. Using others' work without proper acknowledgement may be considered a form of intellectual dishonesty.

Participating honestly, respectfully, responsibly, and fairly in your university study ensures the CQUniversity qualification you earn will be valued as a true indication of your individual academic achievement and will continue to receive the respect and recognition it deserves.

As a student, you are responsible for reading and following CQUniversity's policies, including the [Student Academic Integrity Policy and Procedure](#). This policy sets out CQUniversity's expectations of you to act with integrity, examples of academic integrity breaches to avoid, the processes used to address alleged breaches of academic integrity, and potential penalties.

### What is a breach of academic integrity?

A breach of academic integrity includes but is not limited to plagiarism, self-plagiarism, collusion, cheating, contract cheating, and academic misconduct. The Student Academic Integrity Policy and Procedure defines what these terms mean and gives examples.

### Why is academic integrity important?

A breach of academic integrity may result in one or more penalties, including suspension or even expulsion from the University. It can also have negative implications for student visas and future enrolment at CQUniversity or elsewhere. Students who engage in contract cheating also risk being blackmailed by contract cheating services.

### Where can I get assistance?

For academic advice and guidance, the [Academic Learning Centre \(ALC\)](#) can support you in becoming confident in completing assessments with integrity and of high standard.

### What can you do to act with integrity?



#### Be Honest

If your assessment task is done by someone else, it would be dishonest of you to claim it as your own



#### Seek Help

If you are not sure about how to cite or reference in essays, reports etc, then seek help from your lecturer, the library or the Academic Learning Centre (ALC)



#### Produce Original Work

Originality comes from your ability to read widely, think critically, and apply your gained knowledge to address a question or problem