MEDS13007 *Musculoskeletal Sonography*
Term 1 - 2021

Profile information current as at 12/10/2024 04:07 pm

All details in this unit profile for MEDS13007 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 introduces you to musculoskeletal ultrasound. In the unit you will acquire knowledge of the anatomy, pathophysiology, sonographic appearance, scanning protocols and techniques relevant to the musculoskeletal system. You will demonstrate problem solving strategies to formulate differential diagnoses and produce a sonographic report. You will plan for the provision of safe and ethical patient care.

Details
Career Level: *Undergraduate*
Unit Level: *Level 3*
Credit Points: *6*
Student Contribution Band: *8*
Fraction of Full-Time Student Load: *0.125*

Pre-requisites or Co-requisites
Prerequisites: MEDS12001 Physics of Ultrasound AND MEDS12003 Superficial Structures in Ultrasound ANDMEDS12004 Sonographic Skills Development 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

- Brisbane
- Mackay
- Melbourne
- Perth
- Sydney

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. **Written Assessment**
Weighting: 40%
2. **Practical Assessment**
Weighting: Pass/Fail
3. **Online Test**
Weighting: 60%

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 Moodle discussion forum

Feedback
Students would like clearer guidelines for the written assessment.

Recommendation
Provide greater detail on assessment expectations, this will be provided on Moodle.

Feedback from Student emails

Feedback
Students appreciated prompt replies with regards to the written assessment.

Recommendation
Provide prompt and detailed replies to student queries via email.

Unit Learning Outcomes

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

1. Describe musculoskeletal anatomy and body mechanics
2. Differentiate the variance of normal and abnormal sonographic appearances of the musculoskeletal system
3. Perform sonographic techniques and protocols appropriate to musculoskeletal ultrasound image generation
4. Analyse clinical scenarios to provide a differential diagnosis and produce a sonographic report
5. Formulate strategies for the provision of safe and ethical patient care.

The learning outcomes for this unit have been linked to:
ASAR Required Graduate Competency Outcomes for General Sonography Accreditation Standards 1.2.
1,2,3,4, 5 and 9

Alignment of Learning Outcomes, Assessment and Graduate Attributes

— N/A Level | • Introductory Level | • Intermediate Level | • Graduate Level | ◦ Professional Level | ◦ Advanced Level

Alignment of Assessment Tasks to Learning Outcomes

Assessment Tasks	Learning Outcomes				
	1	2	3	4	5
1 - Written Assessment - 40%	•	•		•	•
2 - Online Test - 60%	•	•		•	•
3 - Practical Assessment - 0%			•		•

Alignment of Graduate Attributes to Learning Outcomes

Graduate Attributes	Learning Outcomes				
	1	2	3	4	5
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 - Written Assessment - 40%	•	•	•	•		•	•			
2 - Online Test - 60%	•	•	•	•						
3 - Practical Assessment - 0%	•	•	•		•			•		

Textbooks and Resources

Textbooks

MEDS13007

Prescribed

Fundamentals of Musculoskeletal Ultrasound
Edition: 3rd (2017)
Authors: Jon A Jacobson
Elsevier
Atlanta , Georgia , United States
ISBN: 9780323445252
Binding: Paperback
MEDS13007

Prescribed

Illustrated Essentials of Musculoskeletal Anatomy
Edition: 6th (2019)
Authors: Sieg and Adams
Megabooks, Incorporated
Gainesville , FL , USA
ISBN: 9780935157116
Binding: Spiral

Additional Textbook Information
CQUniversity library has purchased a digital license for the prescribed unit text. However the license does not include access to the video links in the text.

View textbooks at the CQUniversity Bookshop

IT Resources

You will need access to the following IT resources:

- CQUniversity Student Email
- Internet
- Unit Website (Moodle)
- Web camera and microphone to join on line sessions

Referencing Style

All submissions for this unit must use the referencing style: Vancouver
For further information, see the Assessment Tasks.

Teaching Contacts

Elaine Wang Unit Coordinator
e.wang@cqu.edu.au

Schedule

Week 1 - 08 Mar 2021

Module/Topic	Chapter	Events and Submissions/Topic

Introduction	Chapter 1: Fundamentals of Musculoskeletal Ultrasound, 3rd Ed.	**Lab induction to be completed on-line.** Zoom tutorial on Thursday. **Please note the time difference in your designated state.**
Week 2 - 15 Mar 2021		
Module/Topic	**Chapter**	**Events and Submissions/Topic**
Hip and Thigh	Chapter 6: pp 223-237, 239 - 276, Fundamentals of Musculoskeletal Ultrasound, 3rd Ed.	Zoom tutorial on Thursday.
Week 3 - 22 Mar 2021		
Module/Topic	**Chapter**	**Events and Submissions/Topic**
Shoulder	Chapter 3: Fundamentals of Musculoskeletal Ultrasound, 3rd Ed. Chapter 22, pp 879-889, Diagnostic Ultrasound, 4th Ed.	Zoom tutorial on Thursday.
Week 4 - 29 Mar 2021		
Module/Topic	**Chapter**	**Events and Submissions/Topic**
Knee	Chapter 7: Fundamentals of Musculoskeletal Ultrasound, 3rd Ed.	**All day residential school on Monday 29th of March.** Zoom tutorial on Thursday.
Week 5 - 05 Apr 2021		
Module/Topic	**Chapter**	**Events and Submissions/Topic**
Elbow	Chapter 4: Fundamentals of Musculoskeletal Ultrasound, 3rd Ed.	Zoom tutorial on Thursday.
Vacation Week - 12 Apr 2021		
Module/Topic	**Chapter**	**Events and Submissions/Topic**
Week 6 - 19 Apr 2021		
Module/Topic	**Chapter**	**Events and Submissions/Topic**
Ankle	Chapter 8: Fundamentals of Musculoskeletal Ultrasound, 3rd Ed.	Zoom tutorial on Thursday.
Week 7 - 26 Apr 2021		
Module/Topic	**Chapter**	**Events and Submissions/Topic**
Wrist and Hand - Dorsal Aspect	Chapter 5: Fundamentals of Musculoskeletal Ultrasound, 3rd Ed.	**Written assignment due Friday 30th of April.** Zoom tutorial on Thursday. **Written Assessment** Due: Week 7 Thursday (29 Apr 2021) 1:00 pm AEST
Week 8 - 03 May 2021		
Module/Topic	**Chapter**	**Events and Submissions/Topic**
Wrist and Hand - Volar Aspect	Chapter 5: Fundamentals of Musculoskeletal Ultrasound, 3rd Ed.	**Residential school all day Wednesday on 5th May.** **Residential school practical assessment on 5th May.** Zoom tutorial on Thursday.
Week 9 - 10 May 2021		
Module/Topic	**Chapter**	**Events and Submissions/Topic**
Abdominal Wall	Chapter 6: pp 237-239, 276 - 280 Fundamentals of Musculoskeletal Ultrasound, 3rd Ed. Chapter 13, pp 488-504, Diagnostic Ultrasound, 4th Ed.	Zoom tutorial on Thursday.

Week 10 - 17 May 2021

Module/Topic	Chapter	Events and Submissions/Topic
Small Joints Diseases	Readings to complement lecture content as well as a list of recommended readings and resources will be provided on the unit Moodle site.	Zoom tutorial on Thursday.

Week 11 - 24 May 2021

Module/Topic	Chapter	Events and Submissions/Topic
Peripheral Nerve Entrapment	Readings to complement lecture content as well as a list of recommended readings and resources will be provided on the unit Moodle site.	Zoom tutorial on Thursday.

Week 12 - 31 May 2021

Module/Topic	Chapter	Events and Submissions/Topic
Musculoskeletal Pathology	Chapter 2: Fundamentals of Musculoskeletal Ultrasound, 3rd Ed.	Zoom tutorial on Thursday.

Review/Exam Week - 07 Jun 2021

Module/Topic	Chapter	Events and Submissions/Topic
		End of term test due on Thursday 10th June. **End of term test** Due: Review/Exam Week Thursday (10 June 2021) 2:00 pm AEST

Exam Week - 14 Jun 2021

Module/Topic	Chapter	Events and Submissions/Topic

Term Specific Information

The unit coordinator for this unit is **Elaine Wang** who is based in Sydney. Elaine works for CQU on **Tuesday, Wednesday** and **Thursday**. The best way of contact is via email (e.wang**@cqu.edu.au**). It is important to check your student email daily as updates about the unit will be sent from the unit coordinator by email.

This theoretical unit introduces you to the fundamentals of musculoskeletal sonography. In this unit, we will cover the sonographic imaging of particular musculoskeletal regions of the body, including sonographic technique, the pathophysiology that may be involved and normal and abnormal sonographic appearances. On campus activities include a residential school where you will gain an appreciation of the basic sonographic skills involved in musculoskeletal sonography, including image orientation of long and short axis sonographic imaging, the transducer position (and angle of incidence required), static and dynamic imaging and image interpretation. You need to complete the compulsory on-line lab induction before you are permitted to attend the residential school.

There are two prescribed textbooks for this unit.

- **Fundamentals of Musculoskeletal Ultrasound** 3rd (2017) by Jon A Jacobson.

  CQUniversity library has purchased a digital license for this book. However, the license does not include access to the video links in the text. The print copy can be purchased via the CQU bookshop.

- **Illustrated Essentials of Musculoskeletal Anatomy** 6th (2019) by Sieg and Adams.

  The print copy can be purchased directly from the publisher.

All lectures are pre-recorded and available on the MEDS13007 Moodle site, along with the associated lecture notes, additional reading material and resources. Collection of frequently asked questions will be updated regularly on Moodle to assist you with your learning.

Live tutorials will be conducted weekly on Thursday from 3:30 pm to 4:30 pm (AEST) via Zoom. Please be aware of the time zone in your own state. The tutorials are designed to be interactive and **you are expected to join in the activities and discussions to develop a deeper understanding of the unit content**. If you cannot attend the tutorial in person, recordings will be available on Moodle the following day, however these recordings are not a substitute for active participation.

There are three assessment tasks in this unit. In order to pass this unit, you must attain at least 50% overall, and meet the minimum mark specified for each assessment task. Marking rubrics for each task and the task outlines can be found on unit Moodle.

This is a 6 credit-point unit, and you are expected to spend at least 12.5 hours per week on study activities. **It is a content-heavy unit based on a lot of assumed knowledge, especially in anatomy**. Therefore, it is important to construct a weekly study timetable in which you need to allow time to watch lectures, attend tutorials (or watch recordings), read textbooks and other material, use online resources and undertake revision.

Assessment Tasks

1 Written Assessment

Assessment Type
Written Assessment

Task Description
This assessment is designed for better understanding of the sonographic scanning techniques, image generation and pathology interpretation in musculoskeletal sonography. There are two tasks in this assessment.

TASK A
In musculoskeletal sonography, it is important to scan a targeted anatomical structure in certain positions, to enable us to assess the structure usually under tension, but also to assess it in real time when moving. Dynamic assessment is a major advantage of sonography compared to other imaging modalities.

You will produce a short video of yourself explaining the scanning position with the aid of PowerPoint slides for the

following structures in the shoulder.

- Long head of biceps brachii tendon (proximal)
- Subscapularis tendon
- Supraspinatus tendon

For **each** structure, you need to explain the following **four aspects** in your video together with dot points in your PowerPoint slides.

1. The patient positioning to allow sonographic assessment and imaging.
2. Standard static sonographic images that may be acquired to document the sonographic imaging of this structure.
3. The dynamic sonographic assessment performed for this structure including sonographic features of the structure that can identify normal structure (and lack of injury/pathology).
4. Sonographic artifacts that may be encountered when imaging this structure. In your discussion you need to include if there is any pathologies that may be mimicked by artifacts, and what techniques can be employed to overcome these artifacts.

TASK B
When we examine the proximal long head of biceps brachii tendon during the sonographic assessment of shoulder, we often encounter some fluid in the bicipital sheath distal to the transverse humeral ligament. It is important to understand the origin and the cause of the fluid therefore to diagnosis the underlying pathology correctly.

You will write an essay on ‘effusion within biceps long head tendon sheath’ based on existing research that has been done.

The essay should be written and structured in an academic style that requires you to research, analyze, critically reflect on and synthesize current peer reviewed medical literature of the topic. A high level of communication skill needs to be utilized to convey a clear and concise message. All statements of fact, anatomical drawings and sonographic images should clearly indicate they are original or be properly referenced according to Vancouver referencing style.

Assessment Due Date
Week 7 Thursday (29 Apr 2021) 1:00 pm AEST

Submit online via Turnitin.

Return Date to Students
Week 10 Tuesday (18 May 2021)

Marks to be posted in Gradebook. Video feedback will be provided.

Weighting
40%

Minimum mark or grade
50%

Assessment Criteria
You must pass BOTH tasks to pass this assessment.
TASK 1A
Video requirement
The video should include the following components:

- Introduction
- Main content
- Conclusion
- References

The quality of the video is graded according to how well you have met the specified requirements, and in accordance with the assessment criteria outlined below:

- **Content**
    - Cover all the required topics.
    - Show clear relevance to sonography including anatomy, sonographic appearance and pathophysiology,
    - incorporating diagrams and images to support your topic.
    - Included accurate, evidence-based and peer reviewed information with relevant references.

- **Length** - Presentation was planned and produced well, which meant the end published product was in the limits of 5 minutes. The content slides (exclude the cover and the reference slides) were no more than 8 slides.
- **Communication** - Clarity of purpose and coherence of expression ((vocalisation, spelling, grammar, syntax); appropriate oral and written conventions used.
- **Audience** - Takes account of diverse audience needs by using a blend of learning styles, culturally inclusive language and mixed media elements.
- **Presenting Style** - Persuasive and compelling through the use of eye contact, and a range of techniques that kept the audience on task.

PowerPoint requirement
The PowerPoint should include the following slides:

- **Title slide** – containing the title of the presentation, your name and student number, unit code and the unit coordinator.
- **Content slides**:
    - No more than 8 slides
    - Including introduction and conclusion slides.
    - Each content slide has a clear heading.
    - Reasonable layout without too much text on a single slide
    - All content slides are organized in a cohesive and coherent manner and use diagram or images to help reader interpretation.
    - In-text reference is correctly used.
- **Reference slide** - Have adhered to the correct referencing style and provided adequate acknowledgement to sources. All ultrasound images are original and de-identified or properly referenced if sourced from elsewhere.

Submission format
Both MP4 and PPTX files are required to be submitted on Moodle via Turnitin.
The Marking rubric to be used is available on Moodle. You need to obtain a minimum mark of 50% in task1A to allow a pass grade in assessment 1.

TASK 1B
Structure
The essay should include the following components:

- Introduction
- Main content
- Conclusion
- References

Your work should show clear relevance to sonography including anatomy, sonographic appearance and pathophysiology, incorporating diagrams and images to support your discussion. Evidence based, peer reviewed material must be used and appropriately referenced. All ultrasound images must be original and de-identified or properly referenced with written permission from the original author/s if sourced from elsewhere.

Your essay will be assessed on academic writing based on the criteria outlined below:

- All required components are included.
- Topic is adequately explained in depth.
- Correct information has been included and incorrect information has been excluded, reflecting good understanding of the content.
- Structured, logical, and coherent.
- Adhere to word limit.

Word limit
800 ~ 1000 words, excluding titles, headings, image descriptions, tables and references.

Submission format

- Word document
- Font - Calibri, size 12 with 1.5 spacing.
- A cover page should be included specifying; unit code and name, essay title, your name and student number, unit coordinator and word count.

The Marking rubric to be used is available on Moodle. You need to obtain a minimum mark of 50% in task1B to allow a pass grade in assessment 1.

Referencing Style

- Vancouver

Submission
Online

Submission Instructions
Submit online via unit Moodle site.

assessmentOutcome

- Describe musculoskeletal anatomy and body mechanics
- Differentiate the variance of normal and abnormal sonographic appearances of the musculoskeletal system
- Analyse clinical scenarios to provide a differential diagnosis and produce a sonographic report
- Formulate strategies for the provision of safe and ethical patient care.

assessmentGradAttribute

- Communication
- Problem Solving
- Critical Thinking
- Information Literacy
- Information Technology Competence
- Cross Cultural Competence

2 Practical Assessment

Assessment Type
Practical Assessment

Task Description
This is a non-graded (pass/fail) assessment. This assessment requires students to perform a limited MSK exam, specifically assessing the Achilles tendon. This practical assessment does not include a patient care or professional component. Requirements are further discussed and emphasized in the course material, instructed labs, lectures and tutorials.

Assessment Due Date

In-class assessment in week 8 residential school on 5th May

Return Date to Students

Students will be given a pass/fail result. Individual marks will NOT be released to students.

Weighting
Pass/Fail

Assessment Criteria
Students are required to perform some basic sonographic scanning techniques as well as image optimization and acquisition in a reasonable time period to advanced beginner level. A scanning time limit of 2 minutes is applied to this assessment.

Students will be assessed using the ‘assessment of readiness for clinical’ (ARC) tool. Please carefully review the assessment information and ARC tool posted on Moodle.

In the event that a student does not achieve a minimum of 70% or higher they will be given the option of re-sitting the practical test. Please be aware that all re-sits will be video recorded for moderation purposes.

Referencing Style

- Vancouver

Submission
Offline

Submission Instructions
In-class assessment

assessmentOutcome

- Perform sonographic techniques and protocols appropriate to musculoskeletal ultrasound image generation
- Formulate strategies for the provision of safe and ethical patient care.

assessmentGradAttribute

- Communication
- Problem Solving
- Critical Thinking
- Team Work
- Ethical practice

3 End of term test

Assessment Type
Online Test

Task Description
The end of term online test will assess you on content covered in the whole unit (weeks 1 to 12). This includes material covered in lectures, tutorials and any additional resources supplied during the term. The test involves a combination of question types, including short and long answer questions which require typed answers and some multi-choice questions. Image interpretation may be included in short and long answer questions.

This online test must be completed by you, without assistance or collusion with others. Any evidence of collusion will be dealt with in adherence with the CQU student academic integrity policy and procedure.

Assessment Due Date
Review/Exam Week Thursday (10 June 2021) 2:00 pm AEST

The online test can be accessed via the MEDS13007 Moodle site, under the assessment tab. The test will be open from 2pm Wednesday 9th June and will close at 2pm Thursday 10th June (AEST). You have 120 minutes to complete the test and you will need to allocate 120 minutes during the 24-hour period to complete it. The test cannot be paused once started, nor reattempted once finished

Return Date to Students
Exam Week Thursday (17 June 2021)

Results will be made available after marking is completed, however all grades are considered 'interim grades' until the unit grades are released (after they have been certified).

Weighting
60%

Minimum mark or grade
50%

Assessment Criteria
For multiple choice questions, you will be required to select the most appropriate answer from a selection of possible answers in relation to the question asked.
Typed response answers will be assessed according to:

- use of appropriate medical and sonographic terminology and descriptors and directional terms
- correct spelling of the terms
- relevance of response to the question asked
- adequate detail provided in the answer

Referencing Style

- Vancouver

Submission
Online

assessmentOutcome

- Describe musculoskeletal anatomy and body mechanics
- Differentiate the variance of normal and abnormal sonographic appearances of the musculoskeletal system
- Analyse clinical scenarios to provide a differential diagnosis and produce a sonographic report

- Formulate strategies for the provision of safe and ethical patient care.

assessmentGradAttribute

- Communication
- Problem Solving
- Critical Thinking
- Information Literacy

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