



# MEDS20015 *Procedural Ultrasound for Point of Care (PoCUS)*

## Term 3 - 2022

Profile information current as at 05/05/2024 01:40 am

All details in this unit profile for MEDS20015 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 aims to develop your knowledge and understanding of point of care ultrasound (PoCUS) during interventional procedures. To enrol in this unit you must have access to ultrasound facilities to undertake ultrasound scans in a clinical environment with appropriate supervision. You will use PoCUS to identify anatomical structures and pathology prior to procedures. You will learn to use PoCUS dynamically to guide treatment and procedures. You will learn ultrasound interventional techniques and skills to optimise ultrasound images for documentation. You will apply your knowledge in the university and clinical context to accurately perform and document ultrasound procedures.

### Details

Career Level: *Postgraduate*

Unit Level: *Level 8*

Credit Points: 6

Student Contribution Band: 8

Fraction of Full-Time Student Load: 0.125

### Pre-requisites or Co-requisites

Co-requisite: MEDS20009 Science and Instrumentation of Ultrasound.

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 3 - 2022

- Mixed Mode

### 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).

### Residential Schools

This unit has a Compulsory Residential School for distance mode students and the details are:

Click here to see your [Residential School Timetable](#).

### 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 Postgraduate 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: Pass/Fail

#### 2. **Portfolio**

Weighting: Pass/Fail

### Assessment Grading

This is a pass/fail (non-graded) unit. To pass the unit, you must pass all of the individual assessment tasks shown in the table above.

## 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 email.

##### Feedback

The practical workshops are of vital importance in this unit for clinicians to practice ultrasound guidance of needle placement.

##### Recommendation

Continue with practical workshops for ultrasound guidance of needle placement.

#### Feedback from Student email.

##### Feedback

Some videos to demonstrate tips on how to improve your sonographic images to help see the needle sonographically would be good.

##### Recommendation

Videos to demonstrate tips on how to improve sonographic images during needle guidance could be developed for students to watch prior to practical workshops. In addition, lectures to revise the sonographic anatomy could enhance student learning and could be added to the unit.

#### Feedback from Student email.

##### Feedback

Discussions with other students during tutorials to find out what they do at their workplace was helpful.

##### Recommendation

Regular interactive tutorials could be scheduled to facilitate discussions of workplace protocols and allow discussion of difficult clinical cases that students have encountered.

## Unit Learning Outcomes

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

1. Evaluate the benefits and limitations of utilising medical ultrasound guidance during a medical procedure
2. Apply medical ultrasound techniques to generate optimal visibility of the region of interest (ROI) for safe performance of a medical procedure
3. Apply safe medical ultrasound techniques to generate appropriate ultrasound images for documentation purposes.

### The International Federation for Emergency Medicine (IFEM) Point of care curriculum guidelines

3.3 Demonstration of how to generate and optimise an image- 2 and 3

3.4 Demonstration of good practice in point-of-care ultrasound- 1.2 and 3

## Alignment of Learning Outcomes, Assessment and Graduate Attributes



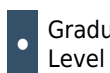
N/A  
Level



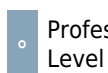
Introductory  
Level



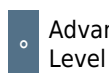
Intermediate  
Level



Graduate  
Level



Professional  
Level



Advanced  
Level

### Alignment of Assessment Tasks to Learning Outcomes

Assessment Tasks	Learning Outcomes		
	1	2	3

Assessment Tasks	Learning Outcomes		
	1	2	3
1 - Written Assessment - 0%	•	•	•
2 - Portfolio - 0%	•	•	•

## Alignment of Graduate Attributes to Learning Outcomes

Graduate Attributes	Learning Outcomes		
	1	2	3
1 - Knowledge	○	○	○
2 - Communication	○	○	○
3 - Cognitive, technical and creative skills	○	○	○
4 - Research			○
5 - Self-management	○	○	○
6 - Ethical and Professional Responsibility	○		○
7 - Leadership			○
8 - 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
1 - Written Assessment - 0%	○	○	○		○	○		
2 - Portfolio - 0%	○	○	○	○	○	○	○	

## Textbooks and Resources

### Textbooks

MEDS20015

#### Prescribed

##### **Manual of Emergency and Critical Care Ultrasound 2nd edition (2011)**

Edition: 2nd (2011)

Authors: Vicki E. Noble & Bret P. Nelson

Cambridge University Press

New York , New York , United States of America

ISBN: 978-0-521-17091-8

Binding: eBook

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#### Supplementary

##### **Atlas of Emergency Ultrasound**

Edition: 2nd (2011)

Authors: John Christian Fox

Cambridge University Press.

New York , New York , United States of America

ISBN: 978-0-521-19168-5

Binding: eBook

### IT Resources

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

- CQUniversity Student Email
- Internet
- Unit Website (Moodle)
- Microphone and camera to attend the Zoom sessions

## Referencing Style

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

## Teaching Contacts

**Kathleen Sweeney** Unit Coordinator

[k.sweeney@cqu.edu.au](mailto:k.sweeney@cqu.edu.au)

## Schedule

### **Week 1 - Introduction and planning considerations for ultrasound guided procedures: part 1 - 07 Nov 2022**

Module/Topic	Chapter	Events and Submissions/Topic
Ultrasound equipment, physics and controls. Scan technique. Ultrasound terminology. Infection control.	Course resources on Moodle (CRM). Noble V & E. & Nelson B. Manual of Emergency and Critical Care Ultrasound 2nd Ed. 2011.	

### **Week 2 - Introduction and planning considerations for ultrasound guided procedures: part 2 - 14 Nov 2022**

Module/Topic	Chapter	Events and Submissions/Topic
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Normal sonographic appearance of vessels, nerves, skin, subcutaneous tissue.  
Planning of approach.  
Tips and tricks.

CRM.  
Noble V & E. & Nelson B. Manual of Emergency and Critical Care Ultrasound 2nd Ed. 2011.

### Week 3 - Paracentesis and pleural drainage - 21 Nov 2022

Module/Topic	Chapter	Events and Submissions/Topic
Ultrasound guided drainage of abdominal and thoracic fluid.	CRM. Textbook Reading	

### Week 4 - Ultrasound guided vascular access - 28 Nov 2022

Module/Topic	Chapter	Events and Submissions/Topic
Ultrasound guided vascular access.	CRM. Textbook Reading	

### Break Week - 05 Dec 2022

Module/Topic	Chapter	Events and Submissions/Topic
No new content.		

### Week 5 - Ultrasound guided abscess drainage and joint effusions - 12 Dec 2022

Module/Topic	Chapter	Events and Submissions/Topic
Ultrasound guided abscess drainage and joint effusions.	CRM. Textbook Reading Chp16	

### Week 6 - Ultrasound guided tracheal intubation - 19 Dec 2022

Module/Topic	Chapter	Events and Submissions/Topic
Ultrasound guided tracheal intubation.	CRM. Textbook Reading	

### Break Week - 26 Dec 2022

Module/Topic	Chapter	Events and Submissions/Topic
No new content. CQUniversity closed.		

### Week 7 - Ultrasound guided regional nerve blocks: Introduction, trunk and neck - 02 Jan 2023

Module/Topic	Chapter	Events and Submissions/Topic
Ultrasound guided regional nerve blocks: Introduction, trunk and neck	CRM.	<b>Assessment 1.</b> Protocol for an ultrasound guided procedure. Due Wednesday 4pm AEST  <b>Written Assessment</b> Due: Week 7 Wednesday (4 Jan 2023) 4:00 pm AEST

### Week 8 - Ultrasound guided regional nerve blocks: Limbs - 09 Jan 2023

Module/Topic	Chapter	Events and Submissions/Topic
Ultrasound guided regional nerve blocks: Limbs.	CRM.	

### Week 9 - Ultrasound guided injections for bursa and joints - 16 Jan 2023

Module/Topic	Chapter	Events and Submissions/Topic
Ultrasound guided injections for bursa and joints	CRM.	<b>Residential School.</b> Details of day and time given at the start of term. <b>Compulsory</b> Online Induction for your campus is required to be completed prior to attending Residential School.

### Week 10 - Ultrasound guided biopsy and foreign body marking/removal - 23 Jan 2023

Module/Topic	Chapter	Events and Submissions/Topic
Ultrasound guided biopsy. Foreign body marking and removal.	CRM.	

### Week 11 - Ultrasound guided bladder access and lumbar puncture - 30 Jan 2023

Module/Topic	Chapter	Events and Submissions/Topic
Ultrasound guided bladder access. Lumbar puncture.	CRM. Textbook Reading	

### Week 12 - Revision - 06 Feb 2023

Module/Topic	Chapter	Events and Submissions/Topic
No new content. Revision and working on Assessment 2.		

### Exam Week - 13 Feb 2023

Module/Topic	Chapter	Events and Submissions/Topic
		<b>Assessment 2.</b> Portfolio of sonographic imaging (4 procedural cases) Friday 4pm AEST
		<b>Portfolio</b> Due: Exam Week Friday (17 Feb 2023) 4:00 pm AEST

## Term Specific Information

Your unit coordinator for this term is Kathleen Sweeney. Kathleen is based in Sydney and works with CQU on Tuesdays, Wednesdays and Fridays. The most efficient way to contact Kathleen is via email - k.sweeney@cqu.edu.au

Zoom tutorials will be held throughout the term. They are not compulsory but are recommended. They give you a chance for interaction with your tutor and other students, and to ask questions. The tutorials will be recorded for later viewing if you are unable to attend live (only if there are live attendees). Tutorials times will be discussed at the beginning of term.

## Assessment Tasks

### 1 Written Assessment

#### Assessment Type

Written Assessment

#### Task Description

Ultrasound is a modality that can aid in performing safe image-guided procedures. It is often readily available, inexpensive, accessible, and portable. In addition, there is evidence that image-guided procedures have better outcomes for patients. However, it is operator dependent and training at a high level to use this technology is of paramount importance.

This assessment will require you to develop a **protocol for one ultrasound guided procedure** of your choice. It must:

- Be informed by current literature (evidence based)
- Include ultrasound images and photos for demonstration of correct ultrasound probe and needle position
- Use correct sonographic terminology
- Include correct infection control techniques and safe practice
- Include information regarding ultrasound probes, machine presets and image optimisation
- Mention appropriate time for procedure with good patient care and informed patient consent
- Be suitable for use by a non-ultrasound trained person in your peer group

#### Assessment Due Date

Week 7 Wednesday (4 Jan 2023) 4:00 pm AEST

#### Return Date to Students

#### Weighting

Pass/Fail

**Minimum mark or grade**

50%

**Assessment Criteria**

The protocol should contain relevant, organized, logical and coherent information with a clear and concise message relevant to your selected audience.

In-text references and the reference list must be accurate, complete and high quality and appropriate sources utilized to support your statements.

No particular word count is required, although 1500 words should be considered the maximum.

A marking rubric is available on Moodle.

**Referencing Style**

- [Vancouver](#)

**Submission**

Online

**Learning Outcomes Assessed**

- Evaluate the benefits and limitations of utilising medical ultrasound guidance during a medical procedure
- Apply medical ultrasound techniques to generate optimal visibility of the region of interest (ROI) for safe performance of a medical procedure
- Apply safe medical ultrasound techniques to generate appropriate ultrasound images for documentation purposes.

**Graduate Attributes**

- Knowledge
- Communication
- Cognitive, technical and creative skills
- Self-management
- Ethical and Professional Responsibility

## 2 Portfolio

**Assessment Type**

Portfolio

**Task Description**

You are required to develop and submit a **portfolio consisting of four interventional ultrasound examinations** performed by yourself or have been directly involved with. This will assist you to developing proficiency in performing procedural ultrasound.

A portfolio of four (4) sonographic procedural examinations that you have conducted or observed in clinical practice is required to be submitted.

The portfolio will consist of:

1. Introduction to four cases
2. Outline of each of the four cases including:
  - Clinical indications for the examination
  - Description of the sonographic protocol used, and an outline of the ultrasound imaging obtained (stored static images and/or cine clips for documentation). Static images will be labelled to identify structures for educational purposes. The acquisition plane of the image must be described. All sonographic imaging must be de-identified.
  - Justification for the procedure performed and what anatomy and pathology (if present) was demonstrated
  - Critique of the imaging
  - Report of the sonographic findings and post ultrasound guided procedural outcome using correct sonographic terminology



- Integration of findings into patient management post the ultrasound guided procedure
- Reflection on what went well, how the sonographic imaging may have been improved, what you could have done to improve the quality of the imaging produced (if needed) and what you may do differently in future studies to aid a diagnosis

3. Summary and learning points from the portfolio

4. References

#### **Assessment Due Date**

Exam Week Friday (17 Feb 2023) 4:00 pm AEST

#### **Return Date to Students**

#### **Weighting**

Pass/Fail

#### **Minimum mark or grade**

50%

#### **Assessment Criteria**

Each case must be reviewed and signed by your clinical supervisor. You can collect these cases at the site of your clinical work.

They should address the following:

- A brief demographic of patient
- Clinical context
- Description of the procedure performed
- Most appropriate image
- Self-reflection

Your portfolio will be assessed on:

- Academic writing including the layout and flow from beginning to end, succinct and relevant descriptions of the patient history, sonographic imaging and findings, critique of imaging performed and identification of areas for improvement if required and impact of imaging of patient management
- Use of evidence based information to support statements used
- Inclusion of images which are de-identified and labelled. All images must be referred to in-text and figure numbers provided
- Insight must be demonstrated with self-reflection and identification of learning points to enhance future practice.

#### **Referencing Style**

- [Vancouver](#)

#### **Submission**

Online

#### **Learning Outcomes Assessed**

- Evaluate the benefits and limitations of utilising medical ultrasound guidance during a medical procedure
- Apply medical ultrasound techniques to generate optimal visibility of the region of interest (ROI) for safe performance of a medical procedure
- Apply safe medical ultrasound techniques to generate appropriate ultrasound images for documentation purposes.

#### **Graduate Attributes**

- Knowledge
- Communication
- Cognitive, technical and creative skills
- Research
- Self-management
- Ethical and Professional Responsibility
- Leadership

## 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