



MEDS11001 *Fundamentals of Ultrasound*

Practice

Term 1 - 2024

Profile information current as at 29/04/2024 12:23 pm

All details in this unit profile for MEDS11001 have been officially approved by CQU University 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 provides an insight into medical ultrasound by exploring the role and global scope of practice of the medical sonographer and the use of ultrasound in medical imaging, the types of examinations available and the provision of safe patient care as an allied health professional. The aim of this unit is to provide introductory knowledge and skills that will support your learning throughout the Medical Sonography course. Simulation exercises will enable you to apply theory to practice.

Details

Career Level: *Undergraduate*

Unit Level: *Level 1*

Credit Points: 6

Student Contribution Band: 8

Fraction of Full-Time Student Load: 0.125

Pre-requisites or Co-requisites

There are no requisites for this unit.

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 - 2024

- 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 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: 50%

2. **Practical Assessment**

Weighting: Pass/Fail

3. **Online Test**

Weighting: 50%

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 SUTE data

Feedback

Some students expressed that they would like the final online test format to include grouping of question types together rather than a random shuffling of question types throughout the test.

Recommendation

Maintain a range of question types within the online test but consider grouping them together by question type rather than as a random format to allow continuity of work during the test.

Feedback from SUTE data and UC reflection

Feedback

Some students expressed that they would like to have activities in the residential school that were more interactive when they were not scanning in the sonography labs.

Recommendation

Continue to revise the residential school program. Consider more interactive groupwork to encourage connections between students for sessions when students are not in the sonography lab for practical skills.

Feedback from UC and student feedback

Feedback

Students continue to thoroughly enjoy the residential school scanning activities within the sonography labs.

Recommendation

Continue with the current amount of scanning activities in the sonography labs and consider if further scanning activities are possible within the labs allowing for time and schedule limitations.

Unit Learning Outcomes

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

1. Discuss the role and scope of practice of the medical sonographer, including professional and legal frameworks
2. Apply knowledge of ultrasound equipment, transducer / patient positioning and sonographic image appearance using appropriate medical and sonographic terminology
3. Discuss the role of diagnostic medical ultrasound and how it relates to other diagnostic imaging modalities and picture archiving communication systems
4. Demonstrate sonographic manual skill development in a simulated environment.

This unit will be one of the core units in the Medical Sonography Course which is externally accredited by the Australian Sonographers Accreditation Registry, an external professional regulatory body. This unit introduces students to the foundational knowledge and skills of medical sonography and enables an appreciation of the use of ultrasound in a national and international context and in the context of the other diagnostic imaging technologies available. The professional body entry level competencies of the accredited sonographer include consideration of safe practice and professional behaviour.

Alignment of Learning Outcomes, Assessment and Graduate Attributes



Alignment of Assessment Tasks to Learning Outcomes

Assessment Tasks	Learning Outcomes			
	1	2	3	4
1 - Written Assessment - 50%	•		•	
2 - Practical Assessment - 0%		•		•
3 - Online Test - 50%	•	•	•	

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				

Textbooks and Resources

Textbooks

There are no required textbooks.

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: [Vancouver](#)
For further information, see the Assessment Tasks.

Teaching Contacts

Jodie Gallagher Unit Coordinator
j.gallagher@cqu.edu.au

Schedule

Week 1 - 04 Mar 2024

Module/Topic	Chapter	Events and Submissions/Topic
<ul style="list-style-type: none">• The Role of the Sonographer• Introduction to the Medical Imaging Department• The History of Ultrasound• The Australian Healthcare System		Zoom tutorial Tuesday 10am AEST

Week 2 - 11 Mar 2024

Module/Topic	Chapter	Events and Submissions/Topic
<ul style="list-style-type: none">• Infection control• Vital signs		Zoom tutorial Tuesday 10am AEST

Week 3 - 18 Mar 2024

Module/Topic	Chapter	Events and Submissions/Topic
<ul style="list-style-type: none">• Communication• Cultural awareness		Zoom tutorial Tuesday 10am AEST

Week 4 - 25 Mar 2024

Module/Topic	Chapter	Events and Submissions/Topic
<ul style="list-style-type: none">• Sonographic & medical terminology		Zoom tutorial Tuesday 10am AEST

Week 5 - 01 Apr 2024

Module/Topic	Chapter	Events and Submissions/Topic
<ul style="list-style-type: none">• Patient positioning in sonography• Scan planes in sonography		Please see Moodle for Zoom tutorial date and time this week.

Vacation Week - 08 Apr 2024

Module/Topic	Chapter	Events and Submissions/Topic
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- No lectures or new information.

No zoom tutorial.

Week 6 - 15 Apr 2024

Module/Topic	Chapter	Events and Submissions/Topic
<ul style="list-style-type: none"> • Introduction to the basic principles of ultrasound. 		Assessment1a: Written Assessment Task due: Wednesday 17th April 4pm AEST Zoom tutorial Tuesday 10am AEST

Week 7 - 22 Apr 2024

Module/Topic	Chapter	Events and Submissions/Topic
<ul style="list-style-type: none"> • The ultrasound machine • The ultrasound examination 		Zoom tutorial Tuesday 10am AEST

Week 8 - 29 Apr 2024

Module/Topic	Chapter	Events and Submissions/Topic
<ul style="list-style-type: none"> • Manual handling • Ergonomics 		Zoom tutorial Tuesday 10am AEST

Week 9 - 06 May 2024

Module/Topic	Chapter	Events and Submissions/Topic
<ul style="list-style-type: none"> • Introduction to basic sonographic examinations 		Assessment 1b: Written Assessment Task due: Tuesday 7th May 4pm AEST Zoom tutorial Tuesday 10am AEST

Week 10 - 13 May 2024

Module/Topic	Chapter	Events and Submissions/Topic
Residential School (compulsory) Wednesday and Thursday. Students must be available to be on campus for both days of the Residential School.		Zoom tutorial Tuesday 10am AEST Residential school Wednesday and Thursday 15th and 16th May with compulsory attendance required all day both days. Online Induction quiz and consent forms to be completed prior to attendance at Residential school.
		Practical Residential School Assessment Due: Week 10 Thursday (16 May 2024) 6:00 pm AEST

Week 11 - 20 May 2024

Module/Topic	Chapter	Events and Submissions/Topic
<ul style="list-style-type: none"> • Medico-legal issues in health care 		Zoom tutorial Tuesday 10am AEST

Week 12 - 27 May 2024

Module/Topic	Chapter	Events and Submissions/Topic
<ul style="list-style-type: none"> • Revision • Exam preparation 		Zoom tutorial Tuesday 10am AEST

Review/Exam Week - 03 Jun 2024

Module/Topic	Chapter	Events and Submissions/Topic
<ul style="list-style-type: none"> • Online test 		Online test Due: Review/Exam Week Thursday (6 June 2024) 2:00 pm AEST

Exam Week - 10 Jun 2024

Module/Topic	Chapter	Events and Submissions/Topic

Term Specific Information

The unit coordinator is Jodie Gallagher who is based in Melbourne. The best way to contact Jodie is via email at: j.gallagher@cqu.edu.au.

It is important to check your student email regularly as updates about the unit will be sent from the unit coordinator by email. Please ensure that your email correspondence is done via your CQU student email. Jodie will endeavour to respond to emails within 2 business days. If you would like a phone conversation or zoom meeting, then please email to organise a time for this.

The learning activities involved in this unit include pre-recorded lectures, demonstration scanning videos, weekly readings, weekly interactive online tutorials (via Zoom) and a compulsory two day on-campus residential school in the dedicated sonography labs.

This unit is a 6 credit point unit which requires you to allocate around 12.5 hours per week for study.

This time includes:

- watching recorded lectures and attending tutorials
- creating study notes to meet weekly learning objectives using lectures and readings
- using additional resources via the e Reading list to supplement your learning
- attending weekly online zoom tutorials or watch the recorded tutorials that will be available on the unit Moodle site to supplement your learning
- researching and working on your assessments
- completing formative and mock test question

The unit is graded. There are three assessment tasks. Please refer to the assessment information for more details. Online tutorials will be offered to discuss the course content and assessment preparation. You will be able to ask questions and gain feedback. They will be recorded for later viewing if you are unable to attend, however, live attendance at the tutorial is highly recommended.

CQUniversity records lectures, video-conferencing sessions and teaching activities to aid student learning activities. This may involve the collection of personal information about you, if your image or voice is captured during participation.

Recordings may be disseminated to other CQUniversity students. For more information, visit:

<https://www.cqu.edu.au/privacy>.

Assessment Tasks

1 Written assessment (50%)

Assessment Type

Written Assessment

Task Description

There are two (2) parts to this assessment: Part A and Part B

Assessment 1 Part A: Written assessment.

You are required to complete a written assessment based on lecture material, tutorials and relevant material provided on the unit Moodle site. In addition to the unit materials provided, you must research current literature in order to discuss and respond to each of the following questions/topics.

Question one (approx. 600 words)

The role of a sonographer within the Australian healthcare system is multifaceted and extends far beyond the acquisition of images. Sonographers play an important role in the detection and diagnosis of pathology and work within a defined scope of practice that encompasses various responsibilities.

You are required to discuss the key aspects of a sonographer's role and responsibilities with regard to the detection and diagnosis and subsequent reporting of pathology in the context of the Australian healthcare system, drawing from current literature and industry standards.

Question two (approx. 700 words)

Patients often present to their doctor with clinical symptoms that can be assessed using either computed tomography (CT) or ultrasound.

Consider the following scenario:

- A 40 year-old woman, Jane Gould, recently presented to her general practitioner (GP) complaining of pain in her

right upper quadrant (RUQ). Following a clinical assessment, Jane's GP refers her to the local medical imaging clinic, providing her with a request form to perform an ultrasound of her upper abdomen (please see the referral supplied with this assessment material).

Considering this scenario outlined above and all information on the supplied referral, you are required to discuss and compare why ultrasound was the preferred imaging modality rather than CT to investigate Jane's symptoms. Your response must consider the following:

- Suspected pathology
- The physics involved in acquiring the images and the energy source used in each modality
- Patient considerations
- Limitations/contraindications of either modality

Length: 1300 words (+/- 10%) Submissions outside of this range will be penalised. Reference list and figure captions are excluded.

Presentation: An inherent requirement is that this assessment task is written in appropriate academic language, and free of grammatical and spelling errors. Your assessment should be submitted as a Word document with 1.5 line spacing in 12-point Arial font.

Referencing: Your answers to each question must be supported by references. You are expected to research each question and to use references that have, and have not, been provided to you. A reference list must be provided and Vancouver referencing style must be used throughout your assessment. Ensure that your assessment is accurately referenced. References should clearly show where your information was obtained. Refer to the unit Moodle page and the CQU general website for further information on referencing. A minimum of four (4) contemporary (less than 10 years old) peer reviewed journal articles must be used as references (additional to those provided on the unit Moodle page) for this assessment. Figures and tables must be referenced. One reference list in Vancouver must be provided for the whole assessment. Do not include separate reference lists for each question.

Assessment 1 Part B: Written assessment.

You are required to complete a written assessment based on lecture material, tutorials and relevant material provided on the unit Moodle site. In addition to the unit materials provided, you must research current literature in order to discuss and respond to each of the following questions/topics.

Question one (approx. 350 words)

During an ultrasound examination of the female pelvis, there are numerous instances that require effective communication from the sonographer to ensure patient safety, a positive patient care experience, and accurate diagnostic outcomes. Considering this statement, you are required to:

- Identify and discuss three (3) effective communication skills that you think are important when performing an ultrasound examination of the female pelvis.
Include an example for each skill within your response, illustrating how and when you would apply this skill during an ultrasound examination of the female pelvis.
- Discuss how you could validate the effectiveness of your communication with your patient?

Question two (approx. 350 words)

There are numerous professional attributes that a sonographer requires as part of their role.

Identify and provide a brief description of three (3) attributes that you believe are essential to the role of a sonographer and why you think they are.

Drawing on your own personal experiences:

- reflect on one (1) attribute that you feel you personally align with and how it will aid you in your future role as a sonographer.
- reflect on one (1) attribute that you may need to work on and how you will go about this.

Length: 700 words (+/- 10%) Submissions outside of this range will be penalised. Reference list and figure captions are excluded.

Presentation: An inherent requirement is that this assessment task is written in appropriate academic language, and free of grammatical and spelling errors. Your assessment should be submitted as a Word document with 1.5 line spacing in 12-point Arial font.

Referencing: Your answers to each question must be supported by references. You are expected to research each question and to use references that have, and have not, been provided to you. A reference list must be provided and Vancouver referencing style must be used throughout your assessment. Ensure that your assessment is accurately referenced. References should clearly show where your information was obtained. Refer to the unit Moodle page and the

CQU general website for further information on referencing. A minimum of two (2) contemporary (less than 10 years old) peer reviewed journal articles must be used as references (additional to those provided on the unit Moodle page) for this assessment. Figures and tables must be referenced. One reference list in Vancouver must be provided for the whole assessment. Do not include separate reference lists for each question.

Assessment Due Date

Assessment 1 Part A. Due week 6, Wednesday (17th April 2024) 4.00 pm AEST: Assessment 1 Part B. Written assessment due week 9, Tuesday (7th May 2024) 4:00 pm AEST

Return Date to Students

10 working days after submission date

Weighting

50%

Minimum mark or grade

50%

Assessment Criteria

You will be assessed on the following criteria for both part a and part b of assessment 1:

- High quality submission addressing the topic questions clearly and concisely, with relevant and appropriate discussion and analysis of each topic
- Accuracy of spelling and grammar
- Correct use of medical and sonographic terminology
- Appropriateness of the reviewed literature
- Correct and accurate referencing
- Academic writing and expression
- All text, images, diagrams and tables correctly referenced and the word limit is adhered to.

A detailed marking rubric/criteria for both parts of this assessment will be made available on the unit Moodle site.

Referencing Style

- [Vancouver](#)

Submission

Online

Submission Instructions

Your assessment should be submitted as a Word document, with 1.5 line spacing and using a 12-point Arial font (not including headings) online via Moodle. File names should follow the format:

Gallagher_Jodie_s0123456_MEDS11001_WrittenAssessment_1.doc

Learning Outcomes Assessed

- Discuss the role and scope of practice of the medical sonographer, including professional and legal frameworks
- Discuss the role of diagnostic medical ultrasound and how it relates to other diagnostic imaging modalities and picture archiving communication systems

2 Practical Residential School Assessment

Assessment Type

Practical Assessment

Task Description

During your attendance at the compulsory Residential School, you will participate in practical activities, where you will observe, learn and practise techniques and skills relating to the sonography profession.

100% attendance for the residential school is mandatory. You must attend the Residential School at your enrolled campus. You will be automatically allocated to this campus, and appropriate staffing/resource arrangements will be made at that location.

You must pass the practical assessment to pass the unit. Failure to attend the full residential school will mean that you will not pass this unit.

Following participation in the Residential School practical activities, you will be assessed on your ability to perform practical sonographic tasks relating to:

- Patient care and communication
- Body planes, ultrasound scanning planes and associated image recognition.

One re-sit of the practical assessment will be permitted.

This is a pass/fail assessment. You must pass the practical skills assessment to pass this unit.

Detailed information and marking criteria will be made available on the unit Moodle site.

Assessment Due Date

Week 10 Thursday (16 May 2024) 6:00 pm AEST

Return Date to Students

Students will receive results following the practical assessment on the same day.

Weighting

Pass/Fail

Assessment Criteria

The practical assessment will be conducted by a sonography lecturer or tutor, who will observe and assess your ability to carry out practical skills relating to:

- Body planes, ultrasound scanning planes and associated image recognition.

Assessment of the task will be relative to the practical assessment marking criteria, which will be made available on the unit Moodle site.

You must pass the practical assessment to pass the unit.

As per the Assessment Policy and Procedure (Higher Education Coursework), Section 5.54, this assessment must be completed on the final day of the residential school in the absence of an approved extension.

Referencing Style

- [Vancouver](#)

Submission

Offline

Learning Outcomes Assessed

- Apply knowledge of ultrasound equipment, transducer / patient positioning and sonographic image appearance using appropriate medical and sonographic terminology
- Demonstrate sonographic manual skill development in a simulated environment.

3 Online test

Assessment Type

Online Test

Task Description

To demonstrate the understanding and knowledge of the unit's content, and to assess whether the unit's learning outcomes have been achieved, students are required to complete an end of the term online test. This online test will assess the content covered in the entire unit (weeks 1 to 12), including material covered in lectures, tutorials and any additional resources/learning materials on Moodle supplied during the term.

A good, stable internet connection is required for the online test.

The questions will involve a combination of question types, including, short and long answer questions which require typed answers and multiple-choice questions. Ensure you read the questions properly before beginning to formulate your answers and ensure you are using appropriate terminology at all times.

The end of term online test will be available on Moodle and two hours working time will be allocated. The test cannot be paused once started, or reattempted once finished.

This is an individual task. The 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 (6 June 2024) 2:00 pm AEST

Online test will be open for two (2) hours from 2pm AEST until 4pm AEST. The duration of the online test is two (2) hours working time.

Return Date to Students

10 working days after test closes.

Weighting

50%

Minimum mark or grade

50%

Assessment Criteria

Multiple choice questions will be automatically marked correct or incorrect.

Written response questions will vary in mark allocation. Each question will have the maximum marks allocated displayed next to the question.

Short and long answers will require:

- use of correct anatomic names of structures and recognition of their normal and abnormal sonographic appearances
- use of correct sonographic terminology
- evaluation of clinical information
- detail to demonstrate depth of understanding and critical thinking.
- identification of sonographic imaging planes, protocols and conventions as relevant
- explanation of pre and post scanning requirements, including medico legal aspects and infection control standards

Referencing Style

- [Vancouver](#)

Submission

Online

Submission Instructions

Access to the Online test is via the 'Assessment' tile on the MEDS11001 unit Moodle site

Learning Outcomes Assessed

- Discuss the role and scope of practice of the medical sonographer, including professional and legal frameworks
- Apply knowledge of ultrasound equipment, transducer / patient positioning and sonographic image appearance using appropriate medical and sonographic terminology
- Discuss the role of diagnostic medical ultrasound and how it relates to other diagnostic imaging modalities and picture archiving communication systems

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