



# MEDS13008 Vascular Sonography

## Term 3 - 2023

Profile information current as at 11/04/2024 07:53 am

All details in this unit profile for MEDS13008 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 introduce you to vascular ultrasound. In this unit you will explore the sonographic assessment of normal and pathological vascular cases. You will apply knowledge of vascular anatomy and physiology, and the physical properties of Doppler ultrasound to clinical scenarios and case studies to critically reflect on sonographic problems. Engaging in this sonographic decision-making process will culminate in the creation of sonographer's interpretive reports, including a provisional diagnosis.

#### 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 MEDS11002 Relational Anatomy and Image Recognition

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 - 2023

- Online

#### 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. **Online Quiz(zes)**

Weighting: 20%

#### 2. **Written Assessment**

Weighting: 40%

#### 3. **Online Test**

Weighting: 40%

### 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 feedback, UC reflection.

**Feedback**

The Written Assessment took a long time to research and write up.

**Recommendation**

The written assessment and submission date will be modified to allow timely submission and feedback before the final online test for the unit.

#### Feedback from SUTE comments

**Feedback**

Some of the Written Assessment questions were not easily understood by students

**Recommendation**

Question structure for the Written Assessment will be reviewed to ensure clarity of the questions.

## Unit Learning Outcomes

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

1. Apply knowledge of the anatomy, physiology, and pathological processes of the vascular system to sonographic examinations and sonographic image appearances
2. Describe sonographic techniques and protocols appropriate to vascular ultrasound
3. Analyse normal, anomalous, and abnormal flow haemodynamics and laboratory findings to provide differential diagnoses and produce a provisional sonographic report

The learning outcomes for this unit relate to the requirements of the Australian Sonographer Association (ASA) Competency Standards for the Entry Level Sonographer, unit 1-5, 13,

## Alignment of Learning Outcomes, Assessment and Graduate Attributes

 N/A Level	 Introductory Level	 Intermediate Level	 Graduate Level	 Professional Level	 Advanced Level
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### Alignment of Assessment Tasks to Learning Outcomes

Assessment Tasks	Learning Outcomes		
	1	2	3
1 - Online Quiz(zes) - 20%	•		
2 - Written Assessment - 40%	•	•	•
3 - Online Test - 40%	•	•	•

### Alignment of Graduate Attributes to Learning Outcomes

Graduate Attributes	Learning Outcomes		
	1	2	3
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

MEDS13008

#### Prescribed

##### **Clinical Doppler Ultrasound**

Edition: 3rd edn (2014)

Authors: Pozniak, M & Allan, P

Churchill Livingstone Elsevier

London , UK

ISBN: 978-0-7020-5015-2

Binding: Hardcover

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#### Supplementary

##### **Vascular Ultrasound How, Why And When**

3rd edition (2009)

Authors: Thrush, A & Hartshorne, T

Churchill Livingstone Elsevier

London , UK

ISBN: 978-0-443-06918-5

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)
- Zoom Collaborate

## Referencing Style

All submissions for this unit must use the referencing style: [Vancouver](#)

For further information, see the Assessment Tasks.

## Teaching Contacts

**Celia Tinetti** Unit Coordinator

[c.tinetti@cqu.edu.au](mailto:c.tinetti@cqu.edu.au)

## Schedule

### Week 1 - 06 Nov 2023

Module/Topic	Chapter	Events and Submissions/Topic
<b>Doppler Physics and Haemodynamic Principles</b>	<i>Clinical Doppler Ultrasound</i> by Pozniak & Allan: Chapters 1 and 2, pp. 1-38 <i>Vascular Ultrasound, How, Why and When</i> by Thrush and Hartshorne: Chapters 3, 4, 5, 6 and 7, pp. 23-86	Zoom tutorial Wednesday 3pm BNE & MKY, 4pm MEL & SYD

### Week 2 - 13 Nov 2023

Module/Topic	Chapter	Events and Submissions/Topic
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<b>Abdominal Vasculature</b>	Pozniak & Allan: Chapter 6, pp. 122-134 Thrush and Hartshorne: Chapter 11, pp. 155-174	Zoom tutorial Wednesday 3pm BNE & MKY, 4pm MEL & SYD
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#### Week 3 - 20 Nov 2023

Module/Topic	Chapter	Events and Submissions/Topic
<b>Cerebral Arterial System</b>	Pozniak & Allan: Chapter 3, pp. 39-70 Thrush and Hartshorne: Chapter 8, pp. 87-116	Zoom tutorial Wednesday 3pm BNE & MKY, 4pm MEL & SYD

#### Week 4 - 27 Nov 2023

Module/Topic	Chapter	Events and Submissions/Topic
<b>Lower Limb Arterial System</b>	Pozniak & Allan: Chapter 4, pp. 71-93 Thrush and Hartshorne: Chapter 9, pp. 117-142	Zoom tutorial Wednesday 3pm BNE & MKY, 4pm MEL & SYD

#### Vacation Week - 04 Dec 2023

Module/Topic	Chapter	Events and Submissions/Topic
<b>Enjoy your holiday break!</b> Take this opportunity to ensure your studies for this term are up to date as Quiz 1 is due this week.		<b>QUIZ 1</b> - content from weeks 1 - 4; <b>due Friday at 5pm AEST</b>

#### Week 5 - 11 Dec 2023

Module/Topic	Chapter	Events and Submissions/Topic
<b>Upper Limb Arterial System</b>	Pozniak & Allan: Chapter 4, pp. 77-82 Thrush and Hartshorne: Chapter 10, pp. 143-154	Zoom tutorial Wednesday 3pm BNE & MKY, 4pm MEL & SYD

#### Week 6 - 18 Dec 2023

Module/Topic	Chapter	Events and Submissions/Topic
<b>Renal Vasculature</b>	Pozniak & Allan: Chapter 9, pp. 193-213 Thrush and Hartshorne: Chapter 12, pp. 175-187	Zoom tutorial Wednesday 3pm BNE & MKY, 4pm MEL & SYD

#### Vacation Week - 25 Dec 2023

Module/Topic	Chapter	Events and Submissions/Topic
<b>Enjoy your holiday break!</b> Take this opportunity to ensure your studies for this term are up to date.		

#### Week 7 - 01 Jan 2024

Module/Topic	Chapter	Events and Submissions/Topic
<b>Peripheral Venous System</b>	Pozniak & Allan: Chapter 5, pp. 94-114 Thrush and Hartshorne: Chapter 13 pp. 193-215 and Chapter 14: pp. 233-253	Zoom tutorial Wednesday 3pm BNE & MKY, 4pm MEL & SYD

#### Week 8 - 08 Jan 2024

Module/Topic	Chapter	Events and Submissions/Topic
<b>Hepatoportal Circulation</b>	Pozniak & Allan: Chapter 8, pp. 148-192	Zoom tutorial Wednesday 3pm BNE & MKY, 4pm MEL & SYD

#### Week 9 - 15 Jan 2024

Module/Topic	Chapter	Events and Submissions/Topic
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No new topic introduced this week

**QUIZ 2** - content from weeks 5 - 8;  
**due Friday 5pm AEST**

**Online Quizzes** Due: Week 9 Friday  
(19 Jan 2024) 5:00 pm AEST

#### Week 10 - 22 Jan 2024

Module/Topic	Chapter	Events and Submissions/Topic
<b>Haemodialysis</b>	Pozniak & Allan: Chapter 5, pp. 114-120 Thrush and Hartshorne: Chapter 13, pp. 199-232	Zoom tutorial Wednesday 3pm BNE & MKY, 4pm MEL & SYD  <b>Written Assessment</b> Due: Week 10 Thursday (25 Jan 2024) 5:00 pm AEST

#### Week 11 - 29 Jan 2024

Module/Topic	Chapter	Events and Submissions/Topic
<b>Venous Disorders</b>	Pozniak & Allan: Chapter 5, pp. 114-120 Thrush and Hartshorne: Chapter 13, pp. 199-232	Zoom tutorial Wednesday 3pm BNE & MKY, 4pm MEL & SYD

#### Week 12 - 05 Feb 2024

Module/Topic	Chapter	Events and Submissions/Topic
<b>Review Week - last minute Q&amp;As</b>		Zoom tutorial Wednesday 3pm BNE & MKY, 4pm MEL & SYD

#### Exam Week - 12 Feb 2024

Module/Topic	Chapter	Events and Submissions/Topic
<b>End of term Online Test on Tuesday</b>		The two-hour online test starts on Tuesday 13th February 2024 at 12pm BNE & MKY, 1pm MEL & SYD and will remain open for 2 hours. Once you begin the test, it can not be re-started or paused. [If you're outside of the eastern states, please make sure you know what the local time equivalent for 12pm AEST is.]  <b>Online Test</b> Due: Exam Week Tuesday (13 Feb 2024) 2:00 pm AEST

## Term Specific Information

### Unit Coordinator Information:

Your unit coordinator for 2023 is Celia Tinetti. Celia is based at the Melbourne campus and can be reached via email: c.tinetti@cqu.edu.au or telephone: 03 9616 0528. Please note, all staff emails end in ".cqu.edu.au" - Celia also has a student account; emails sent to this incorrect account will be missed as this account is not monitored.

### Unit Details:

MEDS13008 is a 6 credit point unit and is a prerequisite for MEDS13011 Sonographic Skills Development 2 (SSD2), which is run in term one of third year. This unit has been designed to ensure your learning is aligned with what is required of you in SSD2, where you will be performing actual ultrasound examinations of the lower extremity veins (DVT studies) and carotid arteries. While there is no vascular scanning this term, so you won't be in the 'driver's seat', you will be in the passenger seat, looking at the vascular systems of the whole body, including normal and pathological images and surveys of the arterial and venous systems. This early exposure to what you may observe when scanning will help prepare you for next term, as well as when you are on placement. The teachings of 'Vascular Sonography' will be regularly revisited throughout your studies and your knowledge will be relied upon to assist in you in passing SSD2 practical assessments. As you progress through your clinical units, you will also benefit from revising content from this unit as a part of your critical thinking skills. I encourage you to carefully study the unit profile and to be active in the unit online discussion forums. It is recommended that you commit to 12.5 hours of study each week, therefore a total of 150 study hours upon completion of this unit. This unit is another where you will need to incorporate information from previous units, in particular Relational Anatomy and Image Recognition and Physics of Ultrasound. If your anatomy, image recognition, and physics recollection is a bit hazy, please do yourself a huge favour and refresh this before and throughout the unit - it really will help!

### Zoom Tutorial Sessions:

Zoom tutorial sessions will be conducted throughout the term - please see Virtual Classes tile on Moodle for exact dates and times. Video recordings and chat conversations are uploaded following the tutorial so that students who did not attend can follow along. Any privately asked questions that are asked during tutorials will be deidentified in the transcript. While every attempt is made to record tutorials, technical mishaps may prevent tutorials from being uploaded for later viewing, so attendance in real-time is highly recommended. Case study scenarios and sonographic image interpretation (both normal and pathological) will be used to teach correct sonographer worksheet completion and reporting of findings. Tutorial material may be included in any of the assessment components.

## Assessment Tasks

### 1 Online Quizzes

#### Assessment Type

Online Quiz(zes)

#### Task Description

There will be 2 online quizzes; one will be held during Break Week (between weeks 4 and 5) and the other in week 9. Each quiz will be accessible over a 48-hour period (i.e. open Wednesday 5pm and close Friday at 5pm AEST) and will go for 30 minutes. You are allowed one attempt at each quiz and once started, the quiz cannot be paused or restarted, so please ensure you are prepared beforehand.

The content of these quizzes will be related to information on patient referrals including but not limited to laboratory data and clinical history, sonographer worksheet documentation, and descriptions of sonographic images. Questions will be in a multiple-choice question (MCQ) or short answer format. The first quiz will relate to content from weeks 1 - 4, and the second quiz from weeks 5 - 8.

These are open book tests, so you have the opportunity to consult your notes, lecture slides, textbooks, and the unit Moodle page.

#### Number of Quizzes

2

#### Frequency of Quizzes

Other

#### Assessment Due Date

Week 9 Friday (19 Jan 2024) 5:00 pm AEST



Quiz 1 opens 5pm AEST 6/12/23 and closes 5pm AEST 8/12/23; Quiz 2 opens 5pm AEST 17/1/24 and closes 5pm AEST 19/1/24

### **Return Date to Students**

Quiz results and answers will be released once all students have completed each quiz

### **Weighting**

20%

### **Minimum mark or grade**

50%

### **Assessment Criteria**

The purpose of these quizzes is to assist you to evaluate where your learning is at and to identify specific areas you may need to improve upon. These quizzes make up 20% of the unit total, so each quiz equates to 10% of the unit total. The cumulative pass mark for this assessment task is 50%.

This assessment is to be undertaken as an individual. Colluding with other students on non-group work tasks is considered academic misconduct and will be reported to the Academic Integrity Unit.

These assessment tasks must be completed on or before the due dates. No late submissions are permitted after the test has closed, so please ensure adequate time for completion, with additional time for computer mishaps. If you have computer / test access difficulties, you need to contact TaSAC as soon as possible for assistance, and the unit coordinator (after you've contacted TaSAC) if you cannot complete the test in the allocated time before the end of the test (Friday 5pm AEST).

### **Referencing Style**

- [Vancouver](#)

### **Submission**

Online

### **Learning Outcomes Assessed**

- Apply knowledge of the anatomy, physiology, and pathological processes of the vascular system to sonographic examinations and sonographic image appearances

## **2 Written Assessment**

### **Assessment Type**

Written Assessment

### **Task Description**

This written assessment will enable you to research topics and compile sourced information to answer six questions about vascular conditions relevant to sonographers. Questions will be available in week 1 on the unit Moodle page.

Marks will be given for the following:

- Questions answered – The questions regarding each condition answered.
- Presentation and quality of writing – Paragraphs are constructed using good grammar, spelling, and punctuation.
- References – Correct referencing throughout; reference list at back of document, starting on new page.
- Research quality – The use of current peer-reviewed journal articles to answer each of the questions are required to show credibility.
- Word count – The word count for each question should be between 100 and 150 words inclusive. Words above the stipulated word count will not be marked. There are marks associated with correct word count as per the marking rubric which can be found under the Assessment tile on Moodle.

### **Assessment Due Date**

Week 10 Thursday (25 Jan 2024) 5:00 pm AEST

### **Return Date to Students**

### **Weighting**

40%

### **Minimum mark or grade**

50%

### **Assessment Criteria**

This assessment item will be assessing your ability to answer questions on vascular conditions commonly seen by

sonographers. Evidence-based research should inform the answers, which should be written in a concise and cohesive manner. The marking rubric is available on the unit Moodle site.

This assessment is to be undertaken as an individual. Colluding with other students on non-group work tasks is considered academic misconduct, and will be reported to the Academic Integrity Unit.

### Referencing Style

- [Vancouver](#)

### Submission

Online

### Learning Outcomes Assessed

- Apply knowledge of the anatomy, physiology, and pathological processes of the vascular system to sonographic examinations and sonographic image appearances
- Describe sonographic techniques and protocols appropriate to vascular ultrasound
- Analyse normal, anomalous, and abnormal flow haemodynamics and laboratory findings to provide differential diagnoses and produce a provisional sonographic report

## 3 Online Test

### Assessment Type

Online Test

### Task Description

In this end of term online test, you will be demonstrating your critical thinking skills to answer the questions. This may include using information from clinical and ultrasound presentations to arrive at diagnoses, using a diagnosis and working backwards to name the expected sonographic presentation, other combinations of clinical presentation, sonographic presentation, and diagnoses, and extending the ultrasound examination if appropriate. To do this, you will evaluate clinical case studies, images, and clinical presentation information. You will also be required to identify the cause of artefacts on duplex Doppler images and explain both how this can affect the patient results and how to correct these. Questions will be in the format of short answer, medium length or extended answer, and multiple-choice questions (MCQs). Questions and images may include all content covered throughout the unit.

The online test will be available on Tuesday 13th February 2024 at 12pm AEST Qld / 1pm MEL,SYD. The length of the test is 2 hours so please ensure you start when the test becomes available to ensure maximum time to complete the test. At 2pm AEST Qld / 3pm MEL,SYD, all attempts will be automatically submitted. Only one attempt of the online test will be allowed. Once started, the test cannot be stopped, paused, re-started, or re-taken.

### Assessment Due Date

Exam Week Tuesday (13 Feb 2024) 2:00 pm AEST

Please note: Daylight savings time applies for NSW and Vic - test begins at 1pm and closes at 3pm AEDT

### Return Date to Students

### Weighting

40%

### Minimum mark or grade

50%

### Assessment Criteria

You will be assessed on your ability to think critically by evaluating clinical information including sonographic images, clinical presentation information, ultrasound findings, and extending your ultrasound examination. Answers require critical thinking and may include explaining what has been demonstrated in the images using appropriate sonographic terminology, including anatomical features, differential diagnoses, a provisional diagnosis, and extending the examination. Answers may also include working backward to provide possible clinical presentations of patients with those specific images.

This assessment is to be undertaken as an individual. Colluding with other students on non-group work tasks is considered academic misconduct, and will be reported to the Academic Integrity Unit.

This assessment task must be completed on the due date listed above. No late submissions are permitted after the test has closed, so please ensure adequate time for completion, with additional time in case of computer mishaps. If you have computer / test access difficulties, you need to contact TaSAC as soon as possible for assistance, and the unit coordinator (after you've contacted TaSAC) if you cannot complete the test in the allocated time before the end of the test.

## Referencing Style

- [Vancouver](#)

## Submission

Online

## Learning Outcomes Assessed

- Apply knowledge of the anatomy, physiology, and pathological processes of the vascular system to sonographic examinations and sonographic image appearances
- Describe sonographic techniques and protocols appropriate to vascular ultrasound
- Analyse normal, anomalous, and abnormal flow haemodynamics and laboratory findings to provide differential diagnoses and produce a provisional sonographic report

## 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