



# MEDS20019 *Advanced Vascular Ultrasound*

## Term 3 - 2019

Profile information current as at 26/04/2024 07:30 pm

All details in this unit profile for MEDS20019 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

Vascular ultrasound is a common part of clinical practice and with the ageing of the population the incidence of peripheral vascular disease is on the rise. In this unit, you will study advanced practice in peripheral vascular ultrasound, both arterial and venous. You will acquire knowledge of peripheral vascular anatomy, embryology, pathophysiology and flow haemodynamics. The application and measurements used in the non-invasive interrogation of peripheral vasculature will be explained. You will appreciate the role of ultrasound, and other imaging modalities, in the clinical assessment, diagnosis and management of a patient with peripheral vascular disease, including professional, legal and ethical considerations. The classic signs, symptoms, aetiology, prevalence of major peripheral vascular and lymphatic disease will be discussed. Case studies will include new developments in vascular ultrasound imaging. This unit includes an optional residential school comprising practical training in advanced vascular ultrasound.

### Details

Career Level: *Postgraduate*

Unit Level: *Level 9*

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 3 - 2019

- 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).

### Residential Schools

This unit has a Optional 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. **Portfolio**

Weighting: 50%

#### 2. **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 Have Your Say

**Feedback**

Students commented that some lectures were too long and repetitive and there were high volume of contents each week

**Recommendation**

The length of the lectures will be reduced or one lecture will be divided into 2. The weekly contents will be spread out more and repetitive contents will be removed.

#### Feedback from Have Your Say

**Feedback**

Students were happy with the feedback they received for the assessments and found them helpful.

**Recommendation**

Will continue the same standard of assessment feedback and continue to provide constructive comments for their assessments.

#### Feedback from Have Your Say

**Feedback**

Some students found the online test hard to complete in the allocated time frame, where 60 minutes was too short to answer all the questions

**Recommendation**

The questions and the time allocated to the online test will be reviewed and if necessary time will be increased to allow for completion of all the questions.

#### Feedback from Have Your Say

**Feedback**

Students commented that the standard and quality of the lectures were mostly outstanding. The support/correspondence from the unit coordinator was prompt and professional. The expectations and time lines were clearly identified and shared with the study group. Students were happy with the regular Zoom tutorials and commented that the tutorials were helpful as it allowed students to take part in the discussion and ask questions.

**Recommendation**

Will keep the quality of the lectures and their delivery at a high standard. Will continue to provide regular feedback and timely response to their questions. Will continue to provide regular Zoom tutorials on interesting advanced vascular ultrasound topics to keep the student engaged with the unit contents

## Unit Learning Outcomes

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

1. Analyse sonographic anatomy, embryology, pathophysiology and haemodynamic appearance of normal and pathological structures of the peripheral vasculature.
2. Research the role of ultrasound and other imaging modalities in the clinical assessment, diagnosis and management of peripheral vascular disease, including professional, legal and ethical considerations
3. Interpret data gained through non-invasive interrogation of peripheral vasculature
4. Describe the classic signs, symptoms, aetiology, and prevalence of major peripheral vascular and lymphatic disease.

The Masters course does not lead to entry into the sonography profession but is rather studied by qualified practitioners to support advanced practice. Therefore it does not require external accreditation. The Master of Medical Ultrasound qualifies as Continuing Professional Development (CPD) activity (activity code 10B - Australian Sonographers Accreditation Registry (ASAR)). Thus unit alone does not lead to award of a qualification in specialist vascular ultrasound.

## 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	4
1 - Portfolio - 50%	•	•	•	•
2 - Online Test - 50%	•		•	•

### Alignment of Graduate Attributes to Learning Outcomes

Graduate Attributes	Learning Outcomes			
	1	2	3	4
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 - Portfolio - 50%	○	○	○	○	○	○	○	
2 - Online Test - 50%	○	○	○					

## Textbooks and Resources

### Textbooks

MEDS20019

#### Prescribed

#### CLINICAL DOPPLER ULTRASOUND

THIRD EDITION (2014)

Authors: MYRON A POZNIAK and PAUL L. ALLAN

CHURCHILL LIVINGSTONE ELSEVIER

LONDON , UK

ISBN: 978-0-7020-5015-2

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)
- Microphone, speakers and video camera to attend and participate in the Zoom tutorials

## Referencing Style

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

For further information, see the Assessment Tasks.

## Teaching Contacts

**Afroz Najafzadeh Abriz** Unit Coordinator

[a.najafzadehabriz@cqu.edu.au](mailto:a.najafzadehabriz@cqu.edu.au)

## Schedule

### Week 1 - 11 Nov 2019

Module/Topic	Chapter	Events and Submissions/Topic
Revision of Doppler physics and haemodynamic principles	Clinical Doppler Ultrasound, Pozniak and Allan: Chapters 1 and 2: pp 1-38 Vascular Ultrasound, How, Why and When, Thrush and Hartshorn: Chapters 3, 4, 5, 6 and 7: pp 23-85 Lectures and reading materials posted on Moodle.	

### Week 2 - 18 Nov 2019

Module/Topic	Chapter	Events and Submissions/Topic
The abdominal aorta and branches	Pozniak and Allan: Chapter 6: pp 122-134, Chapter 9: pp 193-213 Thrush and Hartshorn: Chapter 12 pp 175-191 Lectures and reading materials posted on Moodle.	Zoom tutorial Monday 07:00 p.m. AEST

### Week 3 - 25 Nov 2019

Module/Topic	Chapter	Events and Submissions/Topic
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Peripheral arteries, lower limb  
 Pozniak and Allan: Chapter 4 pp 71-93  
 Thrush and Hartshorn: Chapter 9 pp 117-141  
 Lectures and reading materials posted on Moodle.

**Week 4 - 02 Dec 2019**

Module/Topic	Chapter	Events and Submissions/Topic
Peripheral arteries, upper limb	Pozniak and Allan: Chapter 4 pp 77-82 Thrush and Hartshorn: Chapter 10 pp 143-154 Lectures and reading materials posted on Moodle.	Zoom tutorial Monday 07:00 p.m. AEST

**Vacation Week - 09 Dec 2019**

Module/Topic	Chapter	Events and Submissions/Topic
Break Week	Don't forget to revise all the contents covered in previous weeks	

**Week 5 - 16 Dec 2019**

Module/Topic	Chapter	Events and Submissions/Topic
Peripheral veins, lower limb	Pozniak and Allan: Chapter 5 pp 94-121 Thrush and Hartshorn: Chapter 13 pp 193-232, Chapter 14 pp 233-249 Lectures and reading materials posted on Moodle.	Zoom tutorial Monday 07:00 p.m. AEST

**Week 6 - 23 Dec 2019**

Module/Topic	Chapter	Events and Submissions/Topic
Peripheral veins, upper limb	Pozniak and Allan: Chapter 5 pp 102-103 Thrush and Hartshorn: Chapter 14 pp 250-253 Lectures and reading materials posted on Moodle.	

**Week 7 - 06 Jan 2020**

Module/Topic	Chapter	Events and Submissions/Topic
Carotid and vertebral arteries	Pozniak and Allan: Chapter 3 pp 39-70 Thrush and Hartshorn: Chapter 8 pp 87-116 Lectures and reading materials posted on Moodle.	

**Week 8 - 13 Jan 2020**

Module/Topic	Chapter	Events and Submissions/Topic
Mixed Topics: Renal artery Doppler Penile Doppler Ultrasound	Pozniak and Allan: Chapter 9 and Chapter 12 pp 261-272 Thrush and Hartshorn: Chapter 12 pp 188-199 Lectures and reading materials posted on Moodle.	Zoom tutorial Friday 07:00 p.m. AEST

**Week 9 - 20 Jan 2020**

Module/Topic	Chapter	Events and Submissions/Topic
Mixed Topics: Pre and post AVF duplex scan Ovarian veins duplex assessments	Pozniak and Allan: Chapter 7 Thrush and Hartshorn: Chapter 16 pp 284-297 Lectures and reading materials posted on Moodle.	<b>Portfolio</b> Due: Week 9 Monday (20 Jan 2020) 2:00 pm AEST

**Week 10 - 27 Jan 2020**

Module/Topic	Chapter	Events and Submissions/Topic
Contemporary Vascular Imaging	Latest research articles and other reading materials posted on Moodle.	Zoom tutorial Monday 07:00 p.m. AEST
<b>Week 11 - 03 Feb 2020</b>		
Module/Topic	Chapter	Events and Submissions/Topic
Revision week for the online test		Pre-online test Zoom tutorial, Friday 07/02/19, 07:00 p.m. AEST.
<b>Week 12 - 10 Feb 2020</b>		
Module/Topic	Chapter	Events and Submissions/Topic
Online test.		<b>Online test</b> Due: Week 12 Friday (14 Feb 2020) 2:00 pm AEST
<b>Exam Week - 17 Feb 2020</b>		
Module/Topic	Chapter	Events and Submissions/Topic

## Term Specific Information

There are no residential schools offered with this unit.

This term you have two break weeks:

The standard break week of 9th to 13th of December and the week of 30th of December to 3rd of January.

## Assessment Tasks

### 1 Portfolio

#### Assessment Type

Portfolio

#### Task Description

As a Sonographer, a comprehensive knowledge of duplex imaging techniques and recognition of ultrasound appearances in the presence of a vascular disease are imperative. Knowledge of the pathophysiology of vascular disease together with the ability to recognise haemodynamic changes in venous and arterial flow equips sonographers with the skills required to interpret the findings and impart the correct information to the referring clinician.

The aim of this assessment task is to assess the student's ability to apply their knowledge of vascular sonographic anatomy and the pathophysiology of vascular disease to present clinical cases. This assessment also examines students' research skills and expects a high degree of analytical and critical thinking.

This assessment item will describe a clinical case with vascular pathology. You are required to reflect upon the role of ultrasound in the management of the vascular pathology discussed. Within your presentation, you will describe connections between clinical presentation, aetiology, pathophysiology and the outcomes of non-imaging and imaging studies. You will discuss possible vascular interventions and where relevant, post-intervention sonographic appearance. Additionally, if relevant, post-intervention ultrasound appearances should be discussed.

You should then apply your knowledge to provide a preliminary report of your findings with the aid of a diagram and correlate it to the final report. This assessment item will not only enhance your knowledge, communication, cognitive, technical and creative skills but will also help in strengthening your self-management and professional responsibilities.

You have the option of selecting one interesting vascular case from your ultrasound practice, if you do not currently have access to vascular cases, you can source cases and images from the internet or any other source as long as you acknowledge and fully reference the source.

The portfolio should address the following:

- Brief history and presentation with the clinical question.

- Discussion of other imaging and non-imaging investigations at the time of writing this assessment and pre-test diagnosis (with the degree of confidence).
- Discussion of the aetiology and pathogenesis of the disease process.
- Details of ultrasound examination technique performed.
- Discussion of findings of ultrasound diagnosis and comparison of findings with non-imaging tests.
- Discussion on the further management of the patient including possible vascular interventions.
- Discussion of post-intervention ultrasound findings if relevant.
- A minimum of 5 references are to be cited for the case.

The case report should not be more than 1500 words (excluding the reference list). Relevant images (completely anonymised) are to be included.

#### **Assessment Due Date**

Week 9 Monday (20 Jan 2020) 2:00 pm AEST

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

Week 11 Monday (3 Feb 2020)

Marking rubrics containing feedback will be uploaded on Moodle.

#### **Weighting**

50%

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

You must achieve a minimum grade of 50% of the overall marks associated for this assessment to pass this unit.

#### **Assessment Criteria**

Each case report will be assessed by considering each of the following: (Detailed marking rubric is available on Moodle site).

- Have you presented the case history adequately enough to raise a clinical suspicion or narrow differential diagnosis?
- Can you link the presenting clinical symptoms to the vascular scan findings?
- Have you included enough relevant detail? Can you evaluate the physiology, pathophysiology and possible interventional options based on your scan findings?
- Have you identified if post-interventional ultrasound appearances are relevant to discuss?
- Does your rationale indicate that you understand the topic? Can you apply practical skills and critical thinking to advanced clinical assessment and reporting of the vascular pathology cases?
- Have you adequately supported your explanation by citing relevant and recent credible sources from literature?
- Is your spelling, grammar and use of vocabulary exemplary?
- Have you kept to the word limit?
- Have you used the correct referencing style both in-text and end-text?
- Have you included images of a reasonable quality?

#### **Referencing Style**

- [Vancouver](#)

#### **Submission**

Online

#### **Submission Instructions**

The case study to be submitted in Word format. Maximum of one file submission is permitted.

#### **Learning Outcomes Assessed**

- Analyse sonographic anatomy, embryology, pathophysiology and haemodynamic appearance of normal and pathological structures of the peripheral vasculature.
- Research the role of ultrasound and other imaging modalities in the clinical assessment, diagnosis and management of peripheral vascular disease, including professional, legal and ethical considerations
- Interpret data gained through non-invasive interrogation of peripheral vasculature
- Describe the classic signs, symptoms, aetiology, and prevalence of major peripheral vascular and lymphatic disease.

#### **Graduate Attributes**

- Knowledge
- Communication
- Cognitive, technical and creative skills



- Research
- Self-management
- Ethical and Professional Responsibility
- Leadership

## 2 Online test

### Assessment Type

Online Test

### Task Description

Every health professional needs to possess a body of knowledge that is relevant to their scope of practice whereby the fundamentals are required to be understood which you will build upon clinically. To demonstrate your understanding and knowledge of this unit you are required to complete an online test.

You will complete an online test to assess your understanding of the concepts delivered in this unit. The test can be accessed through the assessment tab on Moodle. It will be open for one week during week 12.

Students will need to provide typed responses to 10 online questions within the 1.5 hour time period. Ultrasound image viewing questions may be included and you are required to be familiar with normal and pathological sonographic imaging of the areas discussed in this unit.

Students will need to note opening and closing times to complete the test during this time period. The test will be open for 90 mins (allowing 9 minutes per question on an average) and only ONE attempt is allowed. Once started, the test cannot be paused or restarted. As the test is online and open book, you will find it useful if you have produced your own notes and that you are familiar with the unit information.

Questions will be drawn from a pool of questions to allow tests to be different for each student. This assessment is to be undertaken as an individual. As with all other university assessment, colluding with other students on non-group work tasks is considered academic misconduct, and may lead to action being taken. Inserting answers from other websites at the time of the online test without referencing the source is considered plagiarism.

The online test will be open from the Monday of week 12 (10th February 2020) at 09:00 am (AEST) to the Sunday of week 12 (16th February 2020) at 05:00 pm (AEST). Students based in Western Australia and Eastern States other than Queensland, please be aware of the time difference between your state and AEST.

**Please note:** You MUST start the test before 03:30 pm (AEST) on 16th of February as the test automatically closes at 05:00 pm (AEST).

### Assessment Due Date

Week 12 Friday (14 Feb 2020) 2:00 pm AEST

The test will be open until Sunday 16th February 2020 05:00 pm AEST.

### Return Date to Students

Exam Week Friday (21 Feb 2020)

Grades will be available by Friday 21/02/2020 2:00 p.m. AEST.

### Weighting

50%

### Minimum mark or grade

You must achieve a minimum grade of 50% of the overall marks associated for this assessment to pass this unit.

### Assessment Criteria

Responses will be assessed according to

- Use of appropriate terminology and descriptors as well as grammar, spelling, the relevance of response and competence in addressing all elements of the question.
- The student's ability to appropriately interpret sonographic images/graphs/tables and then to succinctly compose an appropriate response based on their learning from the unit

### Referencing Style

- [Vancouver](#)

### Submission

Online

### Learning Outcomes Assessed

- Analyse sonographic anatomy, embryology, pathophysiology and haemodynamic appearance of normal and pathological structures of the peripheral vasculature.
- Interpret data gained through non-invasive interrogation of peripheral vasculature
- Describe the classic signs, symptoms, aetiology, and prevalence of major peripheral vascular and lymphatic disease.

## Graduate Attributes

- Knowledge
- Communication
- Cognitive, technical and creative skills

## 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