



ECHO11003 *Fundamentals of Cardiac Science*

Term 1 - 2019

Profile information current as at 10/05/2024 11:14 pm

All details in this unit profile for ECHO11003 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 provides an insight into the science of cardiac assessment by exploring the role and scope of practice of the cardiac physiologist and echocardiographer within the Australian Health Care System. You will acquire knowledge of the types of cardiac assessment techniques available and the outcomes of those assessments. You will apply your knowledge and skills to demonstrate procedures for the provision of safe patient care, ultrasound scanning coordination, spatial awareness and grey-scale pattern recognition in a simulated clinical environment. The aim of this unit is to provide introductory knowledge and skill that will support your learning throughout the Echocardiography / Cardiac Physiology course.

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

Pre-requisite Students must be enrolled in CV69 Bachelor of Echocardiography and Cardiac Physiology / Graduate Diploma of Echocardiography

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 - 2019

- 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: 40%

2. **Practical Assessment**

Weighting: Pass/Fail

3. **Practical Assessment**

Weighting: Pass/Fail

4. **Examination**

Weighting: 60%

Assessment Grading

This is a graded unit: your overall grade will be calculated from the marks or grades for each assessment task, based on the relative weightings shown in the table above. You must obtain an overall mark for the unit of at least 50%, or an overall grade of 'pass' in order to pass the unit. If any 'pass/fail' tasks are shown in the table above they must also be completed successfully ('pass' grade). You must also meet any minimum mark requirements specified for a particular assessment task, as detailed in the 'assessment task' section (note that in some instances, the minimum mark for a task may be greater than 50%). Consult the [University's Grades and Results Policy](#) for more details of interim results and final grades.

CQUniversity Policies

All University policies are available on the [CQUniversity Policy site](#).

You may wish to view these policies:

- Grades and Results Policy
- Assessment Policy and Procedure (Higher Education Coursework)
- Review of Grade Procedure
- Student Academic Integrity Policy and Procedure
- Monitoring Academic Progress (MAP) Policy and Procedure – Domestic Students
- Monitoring Academic Progress (MAP) Policy and Procedure – International Students
- Student Refund and Credit Balance Policy and Procedure
- Student Feedback – Compliments and Complaints Policy and Procedure
- Information and Communications Technology Acceptable Use Policy and Procedure

This list is not an exhaustive list of all University policies. The full list of University policies are available on the [CQUniversity Policy site](#).

Previous Student Feedback

Feedback, Recommendations and Responses

Every unit is reviewed for enhancement each year. At the most recent review, the following staff and student feedback items were identified and recommendations were made.

Feedback from Emails, unit evaluation

Feedback

Students felt written assessment task description required more clarity.

Recommendation

Provide additional resources including an assessment video, a new marking rubric, exemplars of previous work, referencing guide and a reworked task description on Moodle site.

Feedback from Emails, unit evaluation

Feedback

Fantastic experience had by students at Residential School.

Recommendation

Format will be continued in 2019.

Unit Learning Outcomes

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

1. Discuss the provision of cardiac assessment within the context of general diagnostic services in the Australian Health Care System
2. Discuss the role and scope of practice of echocardiographers and cardiac physiologists, including professional and legal frameworks
3. Apply introductory-level knowledge and skill of cardiac assessment, anatomical planes and patient data using appropriate terminology
4. Perform clinical tasks which demonstrate safe practice in a simulated environment.

Linked to National and International Standards

1. ASAR Accreditation Standards for Cardiac Sonography - critical practice Unit 8 - Cardiac, Foundation units of competence - 1- 5.
2. European Association of Cardiovascular Imaging Core Syllabus
3. American Registry for Cardiac Sonography Core Syllabus

Alignment of Learning Outcomes, Assessment and Graduate Attributes



Alignment of Assessment Tasks to Learning Outcomes

Assessment Tasks	Learning Outcomes			
	1	2	3	4
1 - Practical Assessment - 0%			•	•
2 - Practical Assessment - 0%			•	•
3 - Written Assessment - 40%	•	•		

Assessment Tasks	Learning Outcomes			
	1	2	3	4
4 - Examination - 60%	•	•		

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				

Alignment of Assessment Tasks to Graduate Attributes

Assessment Tasks	Graduate Attributes									
	1	2	3	4	5	6	7	8	9	10
1 - Practical Assessment - 0%	•	•	•	•		•	•	•		
2 - Practical Assessment - 0%	•	•	•	•	•	•	•	•		
3 - Written Assessment - 40%	•	•		•		•	•	•		
4 - Examination - 60%	•	•		•		•	•	•		

Textbooks and Resources

Textbooks

ECHO11003

Prescribed

12-Lead ECG: The Art of Interpretation

Second Edition (2015)

Authors: Tomas B Garcia

Jones & Bartlett Learning

Burlington , MA , USA

ISBN: 9780763773519

Binding: Paperback

ECHO11003

Prescribed

Echocardiography: The Normal Examination and Echocardiographic Measurements

Third Edition (2017)

Authors: Bonita Anderson

Echotext Pty Ltd

Australia

ISBN: 9780992322212

Binding: Hardcover

Additional Textbook Information

These PRESCRIBED textbooks will be utilised throughout the CV69 - Bachelor of Echocardiography (Cardiac Physiology)/Graduate Diploma of Echocardiography course, and no doubt continue to assist you after graduation. Please prioritise ordering these textbooks for the commencement of term.

Both texts are available to purchase from the CQUni Bookshop here: <http://bookshop.cqu.edu.au> (search on the Unit code)

[View textbooks at the CQUniversity Bookshop](#)

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

Ashley Spermon Unit Coordinator

a.spermon@cqu.edu.au

Jacqui Tarrant Unit Coordinator

j.tarrant@cqu.edu.au

Schedule

Week 1 - 11 Mar 2019

Module/Topic	Chapter	Events and Submissions/Topic
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The Australian Health Care System	<p>Readings provided on Moodle:</p> <ul style="list-style-type: none"> • Health in Australia: A Quick Guide • Trends in Cardiovascular Disease in Australia and in the World • The Challenge of Reform in a Fragmented System • What is Digital Health? • Australia's Personally Controlled Health Record and Primary Healthcare 	Order CQUniversity uniform from the Bookshop for the Residential School in Week 9
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Week 2 - 18 Mar 2019

Module/Topic	Chapter	Events and Submissions/Topic
Professionalism in Cardiac Science	<p>Readings provided on Moodle:</p> <ul style="list-style-type: none"> • ASA Code of Conduct • ASA Standards of Practice • COAG Health Council National Code of Conduct for Health Care Workers FAQs 	Consider joining the Australasian Sonographer's Association (ASA), and the Australasian Society for Ultrasound in Medicine (ASUM)

Week 3 - 25 Mar 2019

Module/Topic	Chapter	Events and Submissions/Topic
Communication in Health	<p>Readings provided on Moodle:</p> <ul style="list-style-type: none"> • Patient-centred Care • Patient Expectations and the Paradigm Shift of Care • Inclusion and Health Literacy • The Paediatric Patient and the Geriatric Patient • The Language of Medicine • Building a Medical Vocabulary <p>Anderson, B (2017). Echocardiography: The Normal Examination and Echocardiographic Measurements (Third Edition). Abbreviations and Symbols.</p>	

Week 4 - 01 Apr 2019

Module/Topic	Chapter	Events and Submissions/Topic
The Electrocardiogram (ECG) Part One	Garcia, T (2015). 12-Lead ECG: The Art of Interpretation (Second Edition 2015). Chapters 1-4, pages 5-34.	

Week 5 - 08 Apr 2019

Module/Topic	Chapter	Events and Submissions/Topic
The Electrocardiogram (ECG) Part Two	Garcia, T (2015). 12-Lead ECG: The Art of Interpretation (Second Edition 2015). Chapters 5-8, pages 35-80.	

Vacation Week - 15 Apr 2019

Module/Topic	Chapter	Events and Submissions/Topic
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Week 6 - 22 Apr 2019

Module/Topic	Chapter	Events and Submissions/Topic
Ergonomics and Patient Handling	<p>Readings provided on Moodle:</p> <ul style="list-style-type: none"> • Guide to Preventing Slips, Trips and Falls • Caring for the Caregiver • ASA and ASUM Joint Guidelines for Reducing Injuries to Sonographers/Sonologists • Minimising Sonographer Injuries 	

Week 7 - 29 Apr 2019

Module/Topic	Chapter	Events and Submissions/Topic
Echocardiography Part One	Anderson, B (2017). Echocardiography: The Normal Examination and Echocardiographic Measurements (Third Edition). Chapter 2: pages 34-70.	
Week 8 - 06 May 2019		
Module/Topic	Chapter	Events and Submissions/Topic
Echocardiography Part Two	Anderson, B (2017). Echocardiography: The Normal Examination and Echocardiographic Measurements (Third Edition). Chapter 2: pages 34-70.	Written Assessment Task Due: Week 8 Friday (10 May 2019) 4:00 pm AEST
Week 9 - 13 May 2019		
Module/Topic	Chapter	Events and Submissions/Topic
Vital Signs, Infection Control, and Handwashing	Readings provided on Moodle: <ul style="list-style-type: none"> • Infection Control • 'My Five Moments of Hand Hygiene' 	Residential School Week 9 Thursday and Friday (16 and 17 May 2019) 9:00 am to 5:00 pm Practical Assessment Task One Due: Week 9 Friday (17 May 2019) 4:00 pm AEST Practical Assessment Task Two Due: Week 9 Friday (17 May 2019) 4:00 pm AEST
Week 10 - 20 May 2019		
Module/Topic	Chapter	Events and Submissions/Topic
Cardiac Catheter Laboratory	Readings provided on Moodle: <ul style="list-style-type: none"> • The Essential Physics of Medical Imaging 	
Week 11 - 27 May 2019		
Module/Topic	Chapter	Events and Submissions/Topic
Medicolegal Issues	Readings provided on Moodle: <ul style="list-style-type: none"> • Legal and Ethical Aspects of Sonography • Ethical practice in Echocardiography 	
Week 12 - 03 Jun 2019		
Module/Topic	Chapter	Events and Submissions/Topic
Revision	Readings and resources to be provided on the unit Moodle site	
Review/Exam Week - 10 Jun 2019		
Module/Topic	Chapter	Events and Submissions/Topic
		For information about the examination timetable, visit the MYCQU Student Portal
Exam Week - 17 Jun 2019		
Module/Topic	Chapter	Events and Submissions/Topic
		For information about the examination timetable, visit the MYCQU Student Portal

Term Specific Information

The unit coordinators for ECHO11003 are Ashley Spermon and Jacqui Tarrant. The best way to contact Ashley is a.spermon@cqu.edu.au and Jacqui is j.tarrant@cqu.edu.au. Please put the unit code ECHO11003 in the subject title. Ashley and Jacqui have sonography laboratory commitments and are often away from their desks, therefore, it is often best to email and request a scheduled meeting (over the phone, via Zoom, or in person), if necessary.

The first point of contact is the Q&A forum on the unit Moodle site. This forum is monitored and responses will be posted to all students in a timely manner.

Access to the internet is required to undertake this unit, as unit materials, tutorials, and updates will be provided via Moodle, email, and Zoom. Weekly resources will include access to relevant websites, activities and readings, however you will need to acquire the prescribed textbooks to successfully complete this unit. These textbooks will also be used in the following terms. To give yourself the best chance of success with this unit, please ensure that you undertake all of the readings and activities that are provided for you.

Attendance at the Residential School in Week 9 is Compulsory. You must attend the Residential School at your enrolled campus only. Zoom tutorials (live) will be held fortnightly during the term. Specific times and meeting IDs will be posted on the unit Moodle site. Tutorials are recorded for you for later perusal. Attendance at tutorials is recommended.

As this is a 6 credit point unit, you are expected to spend an average of 12.5 hours each week on study activities for this unit. This time includes reviewing lectures, creating notes to meet learning objectives, researching and working on assessment, and attending the Residential School.

Assessment Tasks

1 Written Assessment Task

Assessment Type

Written Assessment

Task Description

Knowledge of the Australian health care system and the cardiac science field is required to practice as a Cardiac Physiologist or Echocardiographer. To practice within an interprofessional health care team, it is important to be able to communicate your knowledge, skills, and concerns, to collaborate effectively with industry peers to optimise health service delivery. Therefore, as a professional you must be able to understand and discuss cardiovascular disease, describe common cardiac tests, acknowledge professional requirements and manage patient expectations, as well as be aware of emerging industry issues.

You are to create a Peer Information Sheet (A4 format) for the benefit of health professionals from other fields. The Information Sheet will consist of four sections with approximately 250 words per section. Consider using tables and dot points to present information clearly and concisely. The four sections to be discussed are:

Section 1 - Review of disease

- Discuss the epidemiology (incidence, distribution, determinants, control) of cardiovascular disease worldwide, and in Australia
- Define risk factors that contribute to the development of cardiovascular disease
- Provide an example of common cardiac disease in Australia

Section 2 - Test information

- List common diagnostic procedures that are used to evaluate cardiac disease
- From your list of examples, select one procedure to discuss further, and detail why this test is performed, how it is performed, and what the results can indicate
- Provide an example of an authoritative source where patients and/or health professionals can source further information on this procedure

Section 3 - Professional and patient expectations

- Identify key staff behaviours that are likely to influence patient perception of care provided (consider professional conduct, accreditation, as well as legal issues)
- Discuss how patients can play an active role in their health care, and how health care workers can support patients in this

Section 4 - Emerging issues

- Define "digital health" in Australia, describing main features, users, and privacy
- Describe how the Australian digital health strategy will improve healthcare delivery
- Provide one example of one limitation of the national digital health strategy

You are required to complete the task using 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 develop your response.

Your response to each section **must** be supported by references. It is expected that you research your response, using references that have and have not been supplied to you. A **minimum of five** recent (within the last five years) academic references from peer-reviewed journals is recommended.

A reference list must be provided. Use Vancouver referencing style, with one reference list at the end. For more information, refer to the unit Moodle page and the CQU website (search for CQUniversity Referencing Guides). Submissions are to be uploaded through Turnitin, to be reviewed for plagiarism. University policy will be applied if breached. Please submit .doc and .docx files only.

Assessment Due Date

Week 8 Friday (10 May 2019) 4:00 pm AEST

Return Date to Students

Week 10 Friday (24 May 2019)

Weighting

40%

Minimum mark or grade

50%

Assessment Criteria

The student will be assessed on their ability to:

- Research, analyse, and discuss cardiovascular epidemiology, diagnostic procedures, role of law and professionalism in managing patient expectations, and emerging issues of digital health in Australia
- Logically organise and accurately present information
- Reference consistently and accurately using Vancouver referencing style

Referencing Style

- [Vancouver](#)

Submission

Online

Learning Outcomes Assessed

- Discuss the provision of cardiac assessment within the context of general diagnostic services in the Australian Health Care System
- Discuss the role and scope of practice of echocardiographers and cardiac physiologists, including professional and legal frameworks

Graduate Attributes

- Communication
- Problem Solving
- Information Literacy
- Information Technology Competence
- Cross Cultural Competence
- Ethical practice

2 Practical Assessment Task One

Assessment Type

Practical Assessment

Task Description

This is a Pass/Fail assessment.

The understanding and application of professional skills and behaviour is required to practice as an Echocardiographer. You will demonstrate knowledge of ultrasound scanning and the ability to manipulate the ultrasound transducer. You will correctly position the transducer with correct rotation in the parasternal long axis or apical four chamber, as instructed by the tutor. You will correctly identify the sector orientation (e.g. anterior, posterior, inferior, superior, left, right). You will correctly move the transducer in two different directions (e.g. medially, laterally, superiorly, inferiorly), as instructed by the tutor.

The practical assessment will be conducted at the Residential School in Week 9. You will use knowledge from previous weeks as well as skills learned at the Residential School to perform the task under the supervision of a Tutor. Results will be uploaded to the Moodle site by Week 11.

Assessment Due Date

Week 9 Friday (17 May 2019) 4:00 pm AEST

Return Date to Students

Week 10 Friday (24 May 2019)

Weighting

Pass/Fail

Assessment Criteria

The student will be assessed on their ability to:

- obtain on-axis orthogonal views
- identify sector orientation
- manipulate the transducer
- use appropriate terminology
- demonstrate professional behaviour and safe practice

Referencing Style

- [Vancouver](#)

Submission

Offline

Learning Outcomes Assessed

- Apply introductory-level knowledge and skill of cardiac assessment, anatomical planes and patient data using appropriate terminology
- Perform clinical tasks which demonstrate safe practice in a simulated environment.

Graduate Attributes

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

3 Practical Assessment Task Two

Assessment Type

Practical Assessment

Task Description

This is a Pass/Fail assessment.

The understanding and application of professional skills and behaviour is required to practice as an Echocardiographer. You will demonstrate knowledge of infection control and the ability to effectively perform hand hygiene. You will correctly perform routine hand washing using soap and water.

The practical assessment will be conducted at the Residential School in Week 9. You will use knowledge from previous weeks as well as skills learned at the Residential School to perform the task under the supervision of a Tutor. Results will be uploaded to the Moodle site by Week 11.

Assessment Due Date

Week 9 Friday (17 May 2019) 4:00 pm AEST

Return Date to Students

Week 10 Friday (24 May 2019)

Weighting

Pass/Fail

Assessment Criteria

The student will be assessed on their ability to:

- apply knowledge of infection control practices
- perform routine hand washing using soap and water
- use appropriate terminology
- demonstrate professional behaviour and safe practice

Referencing Style

- [Vancouver](#)

Submission

Offline

Learning Outcomes Assessed

- Apply introductory-level knowledge and skill of cardiac assessment, anatomical planes and patient data using appropriate terminology
- Perform clinical tasks which demonstrate safe practice in a simulated environment.

Graduate Attributes

- Communication
- Problem Solving
- Critical Thinking
- Information Literacy
- Team Work
- Information Technology Competence
- Cross Cultural Competence
- Ethical practice

Examination

Outline

Complete an invigilated examination.

Date

During the examination period at a CQUniversity examination centre.

Weighting

60%

Length

180 minutes

Minimum mark or grade

50

Exam Conditions

Closed Book.

Materials

Dictionary - non-electronic, concise, direct translation only (dictionary must not contain any notes or comments).

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