



ECHO11003 *Fundamentals of Cardiac Science*

Term 1 - 2018

Profile information current as at 04/05/2024 06:49 am

All details in this unit profile for ECHO11003 have been officially approved by CQUUniversity 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 - 2018

- Brisbane
- Mixed Mode
- Perth
- Sydney

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](#).

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%	•	•		
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			•	•

Graduate Attributes	Learning Outcomes			
	1	2	3	4
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

2nd edition (2015)

Authors: Tomas B Garcia

Jones & Bartlett Learning

Burlington , MA , USA

ISBN: 9780763773519

Binding: Paperback

ECHO11003

Prescribed

ASE's Comprehensive Echocardiography

2nd edition (2016)

Authors: Lang, Goldstein, Kronzon, Khandheria, Mor-Avi

Elsevier

Philadelphia , PA , USA

ISBN: 9780323260114

Binding: Hardcover

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 - 05 Mar 2018

Module/Topic	Chapter	Events and Submissions/Topic
<ul style="list-style-type: none">• Introduction to the Unit• History of Echocardiography• The Australian Healthcare System/Medicare	<ul style="list-style-type: none">• Course Resources Online (CRO)	

Week 2 - 12 Mar 2018

Module/Topic	Chapter	Events and Submissions/Topic
<ul style="list-style-type: none">• Introduction to the Echo Lab• Introduction to the ECG part 1• Echo Terminology• Plagiarism	<ul style="list-style-type: none">• Garcia, T (2015). Introduction to 12 lead ECG. <i>The Art of Interpretation</i>. Chapters 1 - 4 , pages 5 - 34• Course Resources Online (CRO)	

Week 3 - 19 Mar 2018

Module/Topic	Chapter	Events and Submissions/Topic
<ul style="list-style-type: none">• Introduction to the ECG part 2• Introduction to Scan Planes and Echo Orientation	<ul style="list-style-type: none">• Garcia, T (2015). Introduction to 12 lead ECG. <i>The Art of Interpretation</i>. Chapters 5 - 8, pages 35 - 80• Lang et al, ASE's Comprehensive Echocardiography 2nd Ed (2016) Chapters 6 - 8, pages 19 -29	

Week 4 - 26 Mar 2018

Module/Topic	Chapter	Events and Submissions/Topic
<ul style="list-style-type: none">• Introduction to the Cardiac Catheter Laboratory• Infection Control/Hand washing• Vital signs	<ul style="list-style-type: none">• Course Resources Online (CRO)	

Week 5 - 02 Apr 2018

Module/Topic	Chapter	Events and Submissions/Topic
<ul style="list-style-type: none">• Basic Scanning Views and Anatomy: Parasternal Window• Manual Handling	<ul style="list-style-type: none">• Lang et al, ASE's Comprehensive Echocardiography 2nd Ed (2016) Chapters 6 - 8, pages 19 -29• Course Resources Online (CRO)	

Vacation Week - 09 Apr 2018

Module/Topic	Chapter	Events and Submissions/Topic
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Week 6 - 16 Apr 2018

Module/Topic	Chapter	Events and Submissions/Topic
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- Basic Scanning Views and Anatomy: Apical, Subcostal and Suprasternal Windows

- Lang et al, ASE's Comprehensive Echocardiography 2nd Ed (2016) Chapters 6 - 8, pages 19 -29

Written Assessment Task Due: Week 6 Friday (20 Apr 2018) 5:00 pm AEST

Week 7 - 23 Apr 2018

Module/Topic

- M-Mode Echocardiography
- The Echo Machine + 'Knobology'

Chapter

- Lang et al, ASE's Comprehensive Echocardiography 2nd Ed (2016) Chapters 9, pages 30 - 39
- Course Resources Online (CRO)

Events and Submissions/Topic

Week 8 - 30 Apr 2018

Module/Topic

- Performing a 12 Lead ECG
- Holter Monitoring
- Ergonomics in the Echo Lab

Chapter

- Course Resources Online (CRO)

Events and Submissions/Topic

Week 9 - 07 May 2018

Module/Topic

- Residential School

Chapter

- Course Resources Online (CRO)

Events and Submissions/Topic

On Campus: Residential School Thursday 10th and Friday 11th May 9.00am till 4.30pm both days
Practical Assessment:
• Basic echo scan

Practical Skills Test - Basic Echo Scan Windows Due: Week 9 Friday (11 May 2018) 11:45 pm AEST
Practical Skills Test - Identify orthogonal planes and sector orientation. Due: Week 9 Friday (11 May 2018) 11:45 pm AEST

Week 10 - 14 May 2018

Module/Topic

- Medico-legal Issues in Health Care
- Stress Testing

Chapter

- Course Resources Online (CRO)

Events and Submissions/Topic

Week 11 - 21 May 2018

Module/Topic

- Introduction to Cardiac Imaging other than Echo: Cardiac MRI, CT, Nuclear Medicine

Chapter

- Course Resources Online (CRO)

Events and Submissions/Topic

Week 12 - 28 May 2018

Module/Topic

- Revision and Exam preparation

Chapter

- Course Resources Online (CRO)

Events and Submissions/Topic

Review/Exam Week - 04 Jun 2018

Module/Topic

Chapter

Events and Submissions/Topic

Written Exam - this week or next (refer to examination timetable - when released).

Exam Week - 11 Jun 2018

Module/Topic

Chapter

Events and Submissions/Topic

Written Exam - this week or next (refer to examination timetable - when released).

Term Specific Information

My name is Kate Taylor and I will be the coordinator for this unit.

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.

Should you wish to discuss something of a more personal nature than an email directly to me would be appropriate (k.taylor2@cqu.edu.au). I will try to attend to any emails in a timely manner but please be aware that my available days are Wednesdays, Thursdays and Fridays.

Fortnightly, on-line tutorials will be held during the term. Specific times and meeting IDs will be posted on the Moodle site. To give yourself the best chance of success with the unit, please ensure that you undertake all the additional readings and activities that are provided to you.

This unit has a mandatory on-campus residential school in Week 9 for 2 full days. You must attend the residential school at your enrolled campus only.

Assessment Tasks

1 Written Assessment Task

Assessment Type

Written Assessment

Task Description

You are required to answer 4 long answer questions (approximately 250 words each), citing a variety of sources to support your discussion of the topics provided.

Word count: total 1000 (+/- 10%). Suggested word count for each question is provided but is a guide only. Reference lists and figure captions are excluded.

Assessment piece to be submitted in word document format. Submissions to be reviewed for plagiarism and standard university policy will be applied if breached.

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. You should use a minimum of 2 references per question. A reference list must be provided and the Vancouver referencing style must be used throughout your assessment. Refer to the unit Moodle page and the CQU general website for further information. A minimum of 4 contemporary journal articles (less than 10 years old) must be used as references (additional to those provided on the unit Moodle page) for this assessment. Only 1 numbered reference list should be provided for the whole assessment. Do not include separate reference lists for each question.

**Further detailed assessment guidelines and marking criteria will be made available on the unit Moodle site.

Assessment Due Date

Week 6 Friday (20 Apr 2018) 5:00 pm AEST

Electronic submission of word document via Moodle site

Return Date to Students

Week 8 Friday (4 May 2018)

Weighting

40%

Minimum mark or grade

50%

Assessment Criteria

You will be assessed on your ability to:

- Locate and critically evaluate information
- Recognise pertinent professional information
- Demonstrate an understanding of the Australian Healthcare Services
- Demonstrate an understanding of the differences in working in several cardiac physiology roles

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 Skills Test - Basic Echo Scan Windows

Assessment Type

Practical Assessment

Task Description

This is a PASS/FAIL assessment

On a volunteer or peer, you will be asked to demonstrate the correct placement of the ultrasound probe to obtain one of the three orthogonal views from the parasternal or apical acoustic windows

Your tutor will inform you of the acoustic window and the required plane and will ask you to move the transducer in two different directions relating to that plane.

You will not know in advance which view or plane you will be asked to identify and this will be randomly selected by your tutor at the time of your assessment.

Assessment Due Date

Week 9 Friday (11 May 2018) 11:45 pm AEST

Return Date to Students

Week 10 Friday (18 May 2018)

Students will be given a PASS/FAIL result uploaded to Moodle by week 10.

Weighting

Pass/Fail

Assessment Criteria

The criteria to receive a 'Pass' are:

Student correctly positions transducer with correct rotation, on a peer or volunteer, in the parasternal or apical window, as instructed by the tutor.

and

Student correctly moves transducer in 2 different directions as instructed by tutor (eg. medially, laterally, superiorly, inferiorly).

Students must perform both aspects of the assessment to a 'pass' level to pass the whole assessment

Referencing Style

- [Vancouver](#)

Submission

No submission method provided.

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 Skills Test - Identify orthogonal planes and sector orientation.

Assessment Type

Practical Assessment

Task Description

This is a PASS/FAIL assessment

From a previously obtained parasternal image of a left ventricle long axis or short axis view or an apical 4 chamber view, you will be asked to identify the orthogonal plane and the sector orientation relative to the image shown.

You will not know in advance which orthogonal plane you will be shown and this will be randomly selected for you by your tutor at the time of your assessment.

Anatomy and image quality are not being assessed in this task.

Assessment Due Date

Week 9 Friday (11 May 2018) 11:45 pm AEST

Return Date to Students

Week 10 Friday (18 May 2018)

Students will be given a PASS/FAIL result uploaded to Moodle by week 10.

Weighting

Pass/Fail

Assessment Criteria

The criteria to receive a 'Pass' are as follows

Student is able to correctly identify the orthogonal view of the static image on the ultrasound display screen as selected by the tutor (one of parasternal long or short axis of the left ventricle or apical 4 chamber view).

AND

On the same static ultrasound image, student is able to correctly identify the sector orientation (anterior, posterior, inferior, superior, left or right).

Students must perform both aspects of the assessment to a 'pass' level to pass the whole assessment

Referencing Style

- [Vancouver](#)

Submission

No submission method provided.

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