



# ECHO11002 Cardiac Structure and Function

## Term 2 - 2020

Profile information current as at 27/04/2024 07:01 am

All details in this unit profile for ECHO11002 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

Accurate assessment of cardiac function requires comprehensive knowledge of anatomy, embryology, and physiology of the heart, lungs and surrounding structures. In addition, an echocardiographer requires familiarity with the spatial relationship of these structures to the heart. This unit exposes you to data acquired from multiple imaging modalities including cardiac ultrasound and angiography. You will learn how a standard 12 lead electrocardiogram is generated and develop familiarity with normal complexes. Attendance at a residential school is a requirement of this unit.

### 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 (Cardiac Physiology)/Graduate Diploma of Echocardiography AND Co-requisite BMSC11002 Human Body Systems 2

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 2 - 2020

- 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. **Online Quiz(zes)**

Weighting: 60%

#### 2. **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 Course evaluation, emails

**Feedback**

Most students found the theory interesting and resources provided as useful.

**Recommendation**

Continue to improve and evolve lectures and resource materials.

#### Feedback from Self evaluation, student evaluation

**Feedback**

Lectures/ reading for the respiratory system covered a range of content not necessary for the unit requirements.

**Recommendation**

Respiratory reading lecture to be re-focused and recorded.

#### Feedback from Student evaluation, emails

**Feedback**

Students felt embryology lectures were long and too complex. Lectures did not include learning outcomes which made studying difficult

**Recommendation**

Embryology lectures to include learning outcomes to direct student learning.

## Unit Learning Outcomes

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

1. Describe the anatomy and physiology of the cardiovascular and respiratory system
2. Identify anatomical structures on diagrams and medical images of the thorax and cardiovascular system
3. Describe the embryological development of the cardiovascular system
4. Explain the formation of an electrocardiogram (ECG) complex, and its representation on a normal 12-lead ECG.

Linked to National and International Standards

1. ASAR Accreditation Standards for Cardiac Sonography - critical practice Unit 8 - Cardiac
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 - Online Quiz(zes) - 60% | •                 | • |   | • |
| 2 - Online Test - 40%      | •                 | • | • |   |

### 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 - Online Quiz(zes) - 60% | •                   | • |   | • |   | • |   |   |   |    |
| 2 - Online Test - 40%      | •                   | • |   | • |   |   |   |   |   |    |

### Textbooks

ECHO11002

#### Prescribed

##### **12 Lead ECG: The Art Of Interpretation**

Edition: 2nd Revised (2015)

Authors: Tomas Garcia

Jones & Bartlett Learning

Burlington , MA , USA

ISBN: 9781284040883

Binding: Paperback

ECHO11002

#### Prescribed

##### **ECHOCARDIOGRAPHY : THE NORMAL EXAMINATION AND ECHOCARDIOGRAPHIC MEASUREMENTS**

Edition: Third (2017)

Authors: Bonita Anderson

Echotext

Australia

ISBN: 0992322219

Binding: Hardcover

ECHO11002

#### Prescribed

##### **THE CARDIAC CATHETERIZATION HANDBOOK**

Edition: Sixth (2015)

Authors: Morton J. Kern, Paul Sorajja, Michael J Lim

Elsevier

Philadelphia , PA , USA

ISBN: 9780323340397

Binding: eBook

ECHO11002

#### Supplementary

##### **BEFORE WE ARE BORN: ESSENTIALS OF EMBRYOLOGY AND BIRTH DEFECTS**

Edition: Ninth (2016)

Authors: Keith Moore, T. V. N. Persaud, Mark Torchia

Elsevier

Philadelphia , PA , USA

ISBN: 9780323313377

Binding: eBook

ECHO11002

#### Supplementary

##### **PATHOPHYSIOLOGY OF HEART DISEASE : A COLLABORATIVE PROJECT OF MEDICAL STUDENTS AND FACULTY**

Edition: Sixth (2015)

Authors: Leonard S. Lilly

Wolters Kluwer Health

Hagerstown , MD , USA

ISBN: 9781451192759

Binding: eBook

#### Additional Textbook Information

If you prefer to study with a paper copy, they are available at the CQUni Bookshop here: <http://bookshop.cqu.edu.au> (search on the Unit code). eBooks are available at the publisher's website.

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

## Schedule

### Week 1 - 13 Jul 2020

| Module/Topic    | Chapter           | Events and Submissions/Topic |
|-----------------|-------------------|------------------------------|
| Cardiac Anatomy | See eReading List |                              |

### Week 2 - 20 Jul 2020

| Module/Topic       | Chapter           | Events and Submissions/Topic |
|--------------------|-------------------|------------------------------|
| Cardiac Physiology | See eReading List |                              |

### Week 3 - 27 Jul 2020

| Module/Topic                       | Chapter           | Events and Submissions/Topic  |
|------------------------------------|-------------------|---|
| Respiratory Anatomy and Physiology | See eReading List | <b>Quiz 1 (15 %)</b> will occur during Week 3 (open at 08:00 am AEST on Wednesday 29th of July, and close at 08:00 pm AEST on Thursday 30th of July). |

### Week 4 - 03 Aug 2020

| Module/Topic            | Chapter           | Events and Submissions/Topic |
|-------------------------|-------------------|------------------------------|
| Echocardiography (echo) | See eReading List |                              |

### Week 5 - 10 Aug 2020

| Module/Topic   | Chapter           | Events and Submissions/Topic  |
|--|-------------------|---|
| Electrocardiography (ECG) 1 <ul style="list-style-type: none"> <li>• 12-Lead ECG</li> <li>• Components and Transmission</li> </ul> | See eReading List | <b>Quiz 2 (15 %)</b> will occur during Week 5 (open at 08:00 am AEST on Wednesday 12th of August, and close at 08:00 pm AEST on Thursday 13th of August). |

### Vacation Week - 17 Aug 2020

| Module/Topic | Chapter | Events and Submissions/Topic |
|--------------|---------|------------------------------|
| -            | -       | -                            |

### Week 6 - 24 Aug 2020

| Module/Topic   | Chapter           | Events and Submissions/Topic |
|--|-------------------|------------------------------|
| Electrocardiography (ECG) 2 <ul style="list-style-type: none"> <li>• Rate</li> <li>• Axis</li> </ul> | See eReading List |                              |

### Week 7 - 31 Aug 2020

| Module/Topic | Chapter | Events and Submissions/Topic |
|--------------|---------|------------------------------|
|              |         |                              |

Cardiac Catheterisation Laboratory (CCL) 1

- Introduction to the CCL
- Imaging in the CCL

See eReading List

**Quiz 3 (15 %)** will occur during Week 7 (open at 08:00 am AEST on Wednesday 2nd of September, and close at 08:00 pm AEST on Thursday 3rd of September).

#### Week 8 - 07 Sep 2020

**Module/Topic**

**Chapter**

**Events and Submissions/Topic**

Cardiac Catheterisation Laboratory (CCL) 2

- Angiographic angulation
- Coronary angiography and ventriculography

See eReading List

#### Week 9 - 14 Sep 2020

**Module/Topic**

**Chapter**

**Events and Submissions/Topic**

Embryology 1

- Heart tube and looping

See eReading List

**Quiz 4 (15 %)** will occur during Week 9 (open at 08:00 am AEST on Wednesday 16th of September, and close at 08:00 pm AEST on Thursday 17th of September).

#### Week 10 - 21 Sep 2020

**Module/Topic**

**Chapter**

**Events and Submissions/Topic**

Embryology 2

- Atrial and ventricular septation

See eReading List

#### Week 11 - 28 Sep 2020

**Module/Topic**

**Chapter**

**Events and Submissions/Topic**

Embryology 3

- Aortic arch and coronary artery formation
- Foetal circulation

See eReading List

#### Week 12 - 05 Oct 2020

**Module/Topic**

**Chapter**

**Events and Submissions/Topic**

Revision

#### Review/Exam Week - 12 Oct 2020

**Module/Topic**

**Chapter**

**Events and Submissions/Topic**

**The Online Test (40 %)** will be scheduled by the university during the formal examination block (between the 15th and 23rd of October, 2020). This date will be formally advised once confirmed.

#### Exam Week - 19 Oct 2020

**Module/Topic**

**Chapter**

**Events and Submissions/Topic**

## Term Specific Information

**The Unit Coordinator** for ECHO11002 is **Ashley Spermon**. The first point of contact is the Q&A forum, or if your query is of a personal nature please email via a.spermon@cqu.edu.au. Please put the unit code ECHO11002 in the subject title. Email is often best to 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. Forums are monitored and responses will be posted to all students in a timely manner. Please ensure that your conduct in forums is consistent with that outlined in the Student Charter.

**This unit consists of pre-recorded LECTURES introducing you to thoracic anatomy, physiology, and procedures, and live Zoom TUTORIALS.** Tutorial times and Zoom Meeting IDs will be posted on the Moodle site.

**The Residential School attached to ECHO11002 has been cancelled for Term 2, 2020, and will NOT occur.** This decision aligns with guidance from Australian Government Department of Health on reducing the risk of transmission of the virus responsible for COVID-19. Students will continue to be supported in achieving all Learning Outcomes for ECHO11002.

**This unit requires several TEXTBOOKS.** These textbooks will also be prescribed in subsequent units within CV69. Please review the eReading List for before purchasing your hardcopy texts.

**To give yourself the best chance of success with this unit, please ensure that you review all lectures, attend tutorials, undertake readings, and complete activities that are provided to you. Students are expected to spend on average 10 - 12 hours of time each week in their study activities for this unit.**

## Assessment Tasks

### 1 Online Quizzes

#### Assessment Type

Online Quiz(zes)

#### Task Description

Each quiz will assess your understanding of the content presented within this unit. Questions may be drawn from lectures, additional resources provided (e.g. prescribed readings), or tutorial discussions. The content covered in each quiz is as follows:

- Quiz 1 (Week 3): cardiac anatomy and cardiac physiology.
- Quiz 2 (Week 5): respiratory anatomy and physiology, and echocardiography.
- Quiz 3 (Week 7): electrocardiography.
- Quiz 4 (Week 9): cardiac catheterisation laboratory.

Each quiz can be accessed through Moodle using the Assessment tab, at the assigned time. Details of the quizzes include:

- Questions may include multiple choice, short answer, or image interpretation format.
- Once started, each quiz cannot be paused or restarted.
- Only one attempt per quiz is permitted.
- Each quiz will be open for 20 minutes.
- Once allotted time has elapsed, or the closing time of 08:00 pm is reached, each quiz will automatically save and submit responses.
- Total marks for each quiz is 15 marks.
- Each quiz is worth 15 % of the final unit grade.
- The combined score from the quizzes will contribute to  $4 \times 15 \% = 60 \%$  of unit grade.

As each quiz is online and open book, you will find it useful if you have produced your own notes provided within the unit (lectures, readings, tutorials, etc) to ensure that you are prepared for this assessment. Questions will be randomly drawn from a resource bank, which will provide each student with a unique experience for each quiz. You may benefit from having a calculator available when attempting the quiz.

This assessment is to be undertaken as an individual. As with all other university assessments, colluding with other students on non-group assessment tasks is considered a breach of academic integrity, as per the [Student Academic](#)



[Policy and Procedure](#), and may lead to action being taken by the HMAS Deputy Dean of Learning and Teaching.

**Number of Quizzes**

4

**Frequency of Quizzes**

Other

**Assessment Due Date**

Quiz 1 will occur during Week 3 (open at 08:00 am AEST on Wednesday 29th of July, and close at 08:00 pm AEST on Thursday 30th of July); Quiz 2 will occur during Week 5 (open at 08:00 am AEST on Wednesday 12th of August, and close at 08:00 pm AEST on Thursday 13th of August); Quiz 3 will occur during Week 7 (open at 08:00 am AEST on Wednesday 2nd of September, and close at 08:00 pm AEST on Thursday 3rd of September); and Quiz 4 will occur during Week 9 (open at 08:00 am AEST on Wednesday 16th of September, and close at 08:00 pm AEST on Thursday 17th of September).

**Return Date to Students**

Individual student results will be made available once submissions have been marked and moderated. The online quiz question pool in its entirety will not be released to students.

**Weighting**

60%

**Minimum mark or grade**

To pass this assessment task, a minimum of 50 % must be achieved for the combined marks from Quizzes 1, 2, 3, and 4 (i.e. 30/60 marks overall).

**Assessment Criteria**

Students will be required to answer a variety of questions presented in an online format. Answers will be assessed according to the following criteria:

- Ability to appropriately interpret presented data and images.
- Ability to respond clearly and concisely.
- Use of appropriate terminology and descriptors.
- Correct grammar and spelling.

The dates, as well as the opening and closing test times, for each quiz are outlined above (see 'Due Description'). Each quiz must be completed before the due date and time listed. This includes ensuring that each quiz is commenced with sufficient time before the quiz closes (i.e. commence the test before 7:40 pm AEST on designated Thursdays - if the test is not completed by 08:00 pm AEST your test may be automatically submitted incompleted or with no answers). Students are reminded that IT support from the university Information and Technology Division (TaSAC) is only available during AEST business hours.

In the absence of an approved extension, there will be no opportunity to complete each quiz after the closing time. Students will receive a mark of zero if a quiz is not completed by the scheduled date and time and do not have an extension.

**Referencing Style**

- [Vancouver](#)

**Submission**

Online

**Submission Instructions**

Each quiz can be accessed through Moodle using the Assessment tab, at the assigned time.

**Learning Outcomes Assessed**

- Describe the anatomy and physiology of the cardiovascular and respiratory system
- Identify anatomical structures on diagrams and medical images of the thorax and cardiovascular system
- Explain the formation of an electrocardiogram (ECG) complex, and its representation on a normal 12-lead ECG.

**Graduate Attributes**

- Communication
- Problem Solving
- Information Literacy
- Information Technology Competence

## 2 Online Test

### Assessment Type

Online Test

### Task Description

The Online Test will assess your understanding of the content presented within this unit. Questions may be drawn from lectures, additional resources provided (e.g. prescribed readings), or tutorial discussions. The Online Test can be accessed through Moodle using the Assessment tab, at the assigned time. Details of the Online Test include:

- Questions may include multiple choice, short answer, or image interpretation format.
- Once started, the Online Test cannot be paused or restarted.
- Only one attempt is permitted.
- The Online Test will be open for 130 minutes.
- Once allotted time has elapsed, or the closing time of 08:00 pm is reached, the test will automatically save and submit responses.
- Total marks for the Online Test is 100 marks.

As the Online Test is online and open book, you will find it useful if you have produced your own notes provided within the unit (lectures, readings, tutorials, etc) to ensure that you are prepared for this assessment. Questions will be randomly drawn from a resource bank, which will provide each student with a unique experience for the Online Test. You may benefit from having a calculator available when attempting the Online Test.

This assessment is to be undertaken as an individual. As with all other university assessments, colluding with other students on non-group assessment tasks is considered a breach of academic integrity, as per the [Student Academic Policy and Procedure](#), and may lead to action being taken by the HMAS Deputy Dean of Learning and Teaching.

### Assessment Due Date

The Online Test will be scheduled by the university during the formal examination block (between the 15th and 23rd of October, 2020). This date will be formally advised once confirmed.

### Return Date to Students

Individual student results will be made available once submissions have been marked and moderated. The online quiz question pool in its entirety will not be released to students.

### Weighting

40%

### Minimum mark or grade

50 %

### Assessment Criteria

Students will be required to answer a variety of questions presented in an online format. Answers will be assessed according to the following criteria:

- Ability to appropriately interpret presented data and images;
- Ability to respond clearly and concisely;
- Use of appropriate terminology and descriptors; and
- Correct grammar and spelling.

The Online Test must be completed within the advised dates/times. This includes ensuring that the Online Test is commenced with sufficient time before the test closes. Students are reminded that IT support from the university Information and Technology Division (TaSAC) is only available during AEST business hours.

In the absence of an approved extension, there will be no opportunity to complete the Online Test after the closing time. Students will receive a mark of zero if the Online Test is not completed by the scheduled date and time and do not have an extension.

### Referencing Style

- [Vancouver](#)

### Submission

Online

### Submission Instructions

The Online Test can be accessed through Moodle using the Assessment tab, at the assigned time.

### Learning Outcomes Assessed

- Describe the anatomy and physiology of the cardiovascular and respiratory system

- Identify anatomical structures on diagrams and medical images of the thorax and cardiovascular system
- Describe the embryological development of the cardiovascular system

### **Graduate Attributes**

- Communication
- Problem Solving
- Information Literacy

## 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