



# BMSC12006 *Cardiorespiratory Physiology and Measurement*

## Term 1 - 2019

Profile information current as at 25/04/2024 02:16 pm

All details in this unit profile for BMSC12006 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 prepares you for entry into the clinical environment by developing your knowledge and understanding of key physiological processes associated with the cardiovascular and respiratory systems, and introducing you to fundamental techniques used to measure cardiorespiratory function. You will enhance knowledge about the anatomy and physiology of the cardiovascular and respiratory systems, how the functionality of these two systems is interlinked, how pathological alterations in either system will result in systemic effects and, how major classes of medications mediate their effects within and between the two systems. Successful completion of this unit will require you attend all practical activities, perform fundamental cardiorespiratory measurements and interpret data collected from these procedures.

### Details

Career Level: *Undergraduate*

Unit Level: *Level 2*

Credit Points: 6

Student Contribution Band: 8

Fraction of Full-Time Student Load: 0.125

### Pre-requisites or Co-requisites

Pre-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 1 - 2019

- Mixed Mode
- Rockhampton

### 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. **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 Student feedback

##### **Feedback**

Students noted that there was a lot of content presented in the the first 8 weeks of term and this dramatically tapered off towards the end. Whilst some students liked this aspect as it gave more time to finalise assessments and prepare for the exam, others would have liked a more even distribution of content.

##### **Recommendation**

The majority of the content was delivered in the first 8 weeks because students needed to have read chapters 1-14 of the prescribed text before attending residential school (which was held approximately mid-term in 2018). Whilst the staff affiliated with this unit are not able to nominate which dates the residential schools are delivered, a formal request has been made to move the back later in the term so some of the content can be redistributed to later weeks.

#### Feedback from Student feedback

##### **Feedback**

Students enjoyed the flexible format of the residential school which enabled people to work at their own speed and leave when all tasks were finished (meaning students could potentially leave early on the last day).

##### **Recommendation**

The current format of the residential school should be retained as students found the self paced sessions a motivating factor to stay on task and complete the activities in a timely manner.

#### Feedback from Student feedback

##### **Feedback**

Students noted this was a content heavy unit. In saying this they did enjoy the material that was presented and the enthusiastic presentation format. Overall most students were eager to learn and often asked for additional activities to support their learning.

##### **Recommendation**

A similar presentation strategy should be used for future delivery of this unit. Staff should also look into identifying additional study resources / activities which could be uploaded to moodle to help support students in learning the content. Additionally, it should be noted that this is a second year anatomy and physiology unit and the content and assessments are commensurate of this level of study. To this effect, students are also expected to deliver work at a intermediate level.

## Unit Learning Outcomes

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

1. Explain key physiological processes associated with the cardiovascular and respiratory systems
2. Explain how a pathological alteration in either the cardiovascular or respiratory systems will have systemic impacts
3. Perform cardiorespiratory measurements and interpret the results
4. Accurately interpret ECG rhythm strips to aid in the diagnosis of common cardiac conditions
5. Identify how major classes of cardiovascular and respiratory medications mediate their effects.

## Alignment of Learning Outcomes, Assessment and Graduate Attributes



## Alignment of Assessment Tasks to Learning Outcomes

Assessment Tasks	Learning Outcomes				
	1	2	3	4	5
1 - Practical Assessment - 0%			•	•	
2 - Written Assessment - 40%	•	•			
3 - Examination - 60%	•	•		•	•

## Alignment of Graduate Attributes to Learning Outcomes

Graduate Attributes	Learning Outcomes				
	1	2	3	4	5
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 - Written Assessment - 40%	•	•	•	•		•				
3 - Examination - 60%	•			•						

## Textbooks and Resources

### Textbooks

BMSC12006

#### Prescribed

#### **Cardiopulmonary Anatomy and Physiology Essentials of Respiratory Care**

Edition: Sixth (2013)

Authors: Des Jardins T

Delmar / Cengage Learning

Florence , KY , United States of America

ISBN: 9780840022585

Binding: Paperback

#### **Additional Textbook Information**

The individual book along with copies of the pack including the workbook are available at 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: [Harvard \(author-date\)](#)

For further information, see the Assessment Tasks.

## Teaching Contacts

**Jordon Irwin** Unit Coordinator

[j.irwin@cqu.edu.au](mailto:j.irwin@cqu.edu.au)

## Schedule

### **Week 1 - 11 Mar 2019**

Module/Topic	Chapter	Events and Submissions/Topic
Anatomy and physiology of respiratory system / Ventilation	Chapters 1 and 2	Tutorial on Week 1 content

### **Week 2 - 18 Mar 2019**

Module/Topic	Chapter	Events and Submissions/Topic
Pulmonary function measurements / Diffusion of pulmonary gases	Chapters 3 and 4	Tutorial on Week 2 content

### **Week 3 - 25 Mar 2019**

Module/Topic	Chapter	Events and Submissions/Topic
Anatomy and physiology of the circulatory system / Oxygen and carbon dioxide transport	Chapters 5 and 6	Tutorial on Week 3 content

### **Week 4 - 01 Apr 2019**

Module/Topic	Chapter	Events and Submissions/Topic
Acid-base regulation / Ventilation-perfusion relationships	Chapters 7 and 8	Tutorial on Week 4 content

#### Week 5 - 08 Apr 2019

Module/Topic	Chapter	Events and Submissions/Topic
Control of ventilation / Electrophysiology of the heart	Chapters 9 and 12	Tutorial on Week 5 content

#### 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
The standard 12-lead ECG system / ECG Interpretation	Chapters 13 and 14	Residential School Option D Mackay 23rd to 24th April 2019; Tutorial on Week 6 content

#### Week 7 - 29 Apr 2019

Module/Topic	Chapter	Events and Submissions/Topic
Renal failure and its effects on the cardiopulmonary system	Chapter 16	Tutorial on Week 7 content

#### Week 8 - 06 May 2019

Module/Topic	Chapter	Events and Submissions/Topic
Exercise and its effects on the cardiopulmonary system / The effects of major medications on the cardiorespiratory system	Chapter 18	Residential School Option C Cairns 07th to 08th May 2019; Residential School Option A Rockhampton (for CG85 students) 12-13th May 2019; No tutorial

#### Week 9 - 13 May 2019

Module/Topic	Chapter	Events and Submissions/Topic
Revision (No new content)		Residential School Option A Rockhampton (for CG85 students) 12th to 13th May 2019 (cont.); Tutorial on Week 8 content  <b>Written Assessment</b> Due: Week 9 Friday (17 May 2019) 5:00 pm AEST

#### Week 10 - 20 May 2019

Module/Topic	Chapter	Events and Submissions/Topic
Revision (No new content)		Residential School Option B (for CG93 students) 25th to 26th May 2019; Tutorial on Revision 1

#### Week 11 - 27 May 2019

Module/Topic	Chapter	Events and Submissions/Topic
Revision (No new content)		Tutorial on Revision 2

#### Week 12 - 03 Jun 2019

Module/Topic	Chapter	Events and Submissions/Topic
Revision (No new content)		No tutorial

#### Review/Exam Week - 10 Jun 2019

Module/Topic	Chapter	Events and Submissions/Topic
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#### Exam Week - 17 Jun 2019

Module/Topic	Chapter	Events and Submissions/Topic
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## Term Specific Information

### Unit contacts:

There are three academics involved in the presentation of BMSC12006 Cardiorespiratory Physiology and Management this term.

Unit Coordinator: Miss Jordon Irwin

Jordon will be presenting the weekly Tutorials as well as marking the Written Assessment and Exams. If you have any queries of a personal nature, please contact Jordon via email [j.irwin@cqu.edu.au](mailto:j.irwin@cqu.edu.au) or phone (07) 49232550.

Moodle monitor: Dr Kylie Connolly

Kylie will be presenting the Residential schools as well as assessing the Practical Assessment. Along with Jordon, Kylie will be answering posts on the Moodle site.

Lecturer: Dr Rebecca Vella

Rebecca has written and recorded all of the lectures for the unit. Most lectures are pre-recorded as they were delivered in 2018 and the content is still relevant. Some of the lectures have been updated and pre-recorded in 2019. All lectures will be available to you 2 weeks prior to their corresponding week of delivery.

### Unit schedule:

Upon review of the unit schedule, you will notice that all of the content for this unit is presented in the first 8 weeks of term. It is acknowledged that you must cover a lot of content in a relatively shorter period compared to other units. The unit is structured this way to ensure that you have covered the content that you need prior to attending the compulsory Residential School, completing the Practical Assessment and submitting the Written Assessment. While no content will be presented in Weeks 9 to 12, these weeks will be dedicated to Revision, including two Tutorials dedicated to Practice Exam questions / Revision.

### Unit Residential Schools:

All students must attend *one* of the four Residential schools that will be held during the term. All of the Residential Schools will be presented in exactly the same way. Places are capped according to Courses so please ensure that you have selected the appropriate Residential school option for your Course (via the "My timetable" system) prior to the Term 1 2019 Census date.

### Unit tutorials:

Tutorials for this unit will be delivered on campus in Rockhampton. These sessions will be recorded and then made available on the Unit Moodle site for viewing by students studying Mixed Mode. Tutorials will be structured and will focus on answering the weekly study questions that will be uploaded to the Unit Moodle site. Prior to attending/viewing each tutorial, it is expected that you would have watched the relevant lecture/s, read the accompanying textbook readings and attempted the study questions. The weekly study questions will be available on the Unit Moodle site.

### Unit study commitment:

As per Australian educational standards, you are expected to commit a total of 150 hours (i.e. 12.5 hours per week) of engagement to your study of this unit. An example of how you could allocate your study commitment per week is as follows:

- 3 hours watching recorded lectures
- 2 hours reading the textbook chapter/s and other resources where appropriate
- 1.5 hours completing the weekly study questions
- 1.5 hours per week attending the weekly tutorial
- 4.5 hours per week preparing your written assessment/study for exams

## Assessment Tasks

### 1 Written Assessment

#### Assessment Type

Written Assessment

#### Task Description

This assessment item requires you to demonstrate your knowledge of the interrelationship of the cardiovascular and respiratory systems. To meet this objective, you are required to outline how each of these systems contributes to "normal" physiological functioning and then compare this to how their functions are altered in a pathological condition, **congestive heart failure**.

More specific guidance on this task is provided on the Unit Moodle site; but in summary, your submission should address each of the following points:

- An outline of how the cardiovascular and respiratory systems function under normal conditions
- A discussion of how the anatomy and physiology of the cardiovascular and respiratory systems are impacted by congestive heart failure
- A discussion of any biochemical changes which occur in the cardiovascular and respiratory systems as a consequence of congestive heart failure
- An overview of any compensatory mechanisms the cardiovascular and respiratory systems use to offset changes induced by congestive heart failure

In developing your assignment, you should consult only peer-reviewed journal articles and/or referenced textbooks. The use of non- peer-reviewed sources of information is strongly discouraged. Your response should be submitted in Essay format (maximum 2000 words) as a word document to the unit Moodle site.

#### Assessment Due Date

Week 9 Friday (17 May 2019) 5:00 pm AEST

Students are required to upload their assessments to the unit Moodle site prior to the submission deadline. In the absence of an approved Extension, late submissions will incur a 5% penalty per day after the due date.

#### Return Date to Students

Week 11 Friday (31 May 2019)

Feedback for this assessment task will be uploaded to the unit Moodle site.

#### Weighting

40%

#### Minimum mark or grade

50%

#### Assessment Criteria

The Written Assessment will be evaluated in accordance with a detailed marking rubric which can be found on the unit Moodle site. A brief overview of the key criteria is as follows:

- 30 marks for knowledge of fundamental content
- 20 marks for positioning and justification of your arguments/ideas
- 20 marks for writing style and overall presentation
- 10 marks for referencing

#### Referencing Style

- [Harvard \(author-date\)](#)

#### Submission

Online

#### Submission Instructions

Submission is to be in Word format (doc. or docx.). Pdf submissions will not be accepted.

#### Learning Outcomes Assessed

- Explain key physiological processes associated with the cardiovascular and respiratory systems
- Explain how a pathological alteration in either the cardiovascular or respiratory systems will have systemic

impacts

### **Graduate Attributes**

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

## **2 Practical Assessment**

### **Assessment Type**

Practical Assessment

### **Task Description**

During the Residential School, you will be required to complete a series of tasks related to content covered in the unit lectures. Such activities include spirometry, pH acid-base calculations, exercise testing as well as performing a 12-lead ECG. Upon completion of all laboratory components, you will be assessed on your understanding of the theory associated with these techniques and your competency in performing them. The tasks will be graded as Pass / Fail.

In order to pass this Practical Assessment, you must complete *all* of the following objectives:

- Attend and participate in all Residential School sessions and fully complete all tasks and questions in the laboratory manual
- Perform and interpret a 12-lead ECG
- Answer a set of short answer questions which will require you to interpret data of cardiopulmonary function tests – You will be given one card (from a randomised set) which will contain three questions. One question will be based on spirometry (i.e. interpreting lung function test results), one question will relate to a pH / acid-base balance case-study and one question will relate to ECG interpretation. You must attempt all three (3) questions and get at least two (2) questions correct in order to pass.

### **Assessment Due Date**

The Practical Assessment will be completed during the Residential School.

### **Return Date to Students**

Students will receive feedback on their Practical Assessment at the conclusion of the Residential School.

### **Weighting**

Pass/Fail

### **Minimum mark or grade**

You must pass the Practical Assessment to be eligible to pass the unit.

### **Assessment Criteria**

A Pass / Fail grade will be awarded depending on the level of competency and knowledge displayed during the Practical Assessment.

### **Referencing Style**

- [Harvard \(author-date\)](#)

### **Submission**

Offline

### **Learning Outcomes Assessed**

- Perform cardiorespiratory measurements and interpret the results
- Accurately interpret ECG rhythm strips to aid in the diagnosis of common cardiac conditions

### **Graduate Attributes**

- Communication
- Problem Solving
- Critical Thinking
- Information Literacy
- Team Work

- Information Technology Competence
- Ethical practice

## Examination

### **Outline**

Complete an invigilated examination.

### **Date**

During the examination period at a CQUniversity examination centre.

### **Weighting**

60%

### **Length**

150 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