



# ESSC12001 *Exercise and Sport Physiology*

## Term 1 - 2018

Profile information current as at 07/05/2024 05:31 am

All details in this unit profile for ESSC12001 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 is designed to provide you with a comprehensive overview of physiological mechanisms responsible for the body's responses to exercise in physical activity, sport and the workplace. You will be introduced to standard physiological laboratory and field measures to identify body adaptations to exercise.

#### 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-requisites For CG85 Bachelor of Exercise and Sport Sciences students: BMSC11001 Human Body Systems 1 AND BMSC11002 Human Body Systems 2 AND ESSC11001 Physical Activity, Fitness and Health For CG93 Bachelor of Medical Science students: BMSC11001 Human Body Systems 1 AND BMSC11002 Human Body Systems 2 For CK22 Bachelor of Physiotherapy students: ALLH11005 Anatomy and Physiology for Health Professionals 1 AND ALLH11004 Anatomy and Physiology for Health Professionals 2 For CC13 Bachelor of Education (Secondary) students: ESSC11001 Physical Activity, Fitness and Health AND ESSC11003 Skill Acquisition and Movement

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

- Distance
- Mackay
- 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. **Online Test**

Weighting: 20%

#### 2. **Practical Assessment**

Weighting: 40%

#### 3. **Examination**

Weighting: 40%

#### 4. **On-campus Activity**

Weighting: Pass/Fail

### 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**

Difficult to draw connections between theory and practical work in some cases.

**Recommendation**

More time will be allocated to explaining the theory behind laboratory tasks prior to attendance at laboratory blocks.

#### Feedback from Self-reflection and supportive staff.

**Feedback**

The administration of laboratory blocks for some on-campus students and not others is inconsistent.

**Recommendation**

All students will complete the laboratory component at designated 2-day blocks across term.

#### Feedback from Self-reflection and academic staff.

**Feedback**

Some of the content overlaps with new units being developed.

**Recommendation**

Information (e.g. nutritional supplements, clinical detail) covered in other developed units will be removed from the unit content.

## Unit Learning Outcomes


















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

1. Understand the physiological mechanisms responsible for the body's responses to exercise in physical activity, sport and the workplace.
2. Interpret measurement data and review current literature in the area of exercise physiology.
3. Plan and perform laboratory and field physiological measurements safely and ethically, and examine responses during a variety of exercise situations.





















## Alignment of Learning Outcomes, Assessment and Graduate Attributes

 N/A Level	 Introductory Level	 Intermediate Level	 Graduate Level	 Professional Level	 Advanced Level
---	--	--	--	--	--

### Alignment of Assessment Tasks to Learning Outcomes

Assessment Tasks	Learning Outcomes		
	1	2	3
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 Test - 20%										
2 - Practical Assessment - 40%										
3 - Examination - 40%										
4 - On-campus Activity - 0%										

## Textbooks and Resources

### Textbooks

ESSC12001

#### Prescribed

#### **Exercise Physiology: Nutrition, Energy, and Human Performance**

Edition: 8 (2014)

Authors: William D McArdle, Frank I. Katch, and Victor L. Katch

Lippincott Williams and Wilkins

Philadelphia , PA , United States of America

ISBN: 9781451191554

Binding: Other

[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 styles below:**

- [American Psychological Association 6th Edition \(APA 6th edition\)](#)
- [Vancouver](#)

For further information, see the Assessment Tasks.

## Teaching Contacts

**Aaron Scanlan** Unit Coordinator

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

## Schedule

### Week 1 - 05 Mar 2018

Module/Topic	Chapter	Events and Submissions/Topic
<b>Module 1</b>		
1. Unit introduction and requirements	McArdle, Katch, & Katch. (2015). Exercise Physiology: Nutrition, Energy and Human Performance (8th ed.). New York, NY: Lippincott Williams & Wilkins. Chapters 5 and 6.	Online test for Module 1 opens at 9:00 am AEST on Wednesday 7 March
2. Pre-exercise health screening		
3. Energy transfer during exercise		
4. Anaerobic energy systems		
5. Aerobic energy system		
6. Macronutrient energy release		

### Week 2 - 12 Mar 2018

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

**Module 2**

1. Oxygen uptake kinetics
2. Performance thresholds
3. Measurement of energy use
4. Pulmonary system recap
5. Pulmonary system responses to exercise
6. Acid-base regulation

McArdle, Katch, & Katch. (2015).  
Exercise Physiology: Nutrition, Energy  
and Human Performance (8th ed.).  
New York, NY: Lippincott Williams &  
Wilkins. Chapters 7-10 and 12-14.

Online test for Module 2 opens at 9:00  
am AEST on Wednesday 14 March

**Week 3 - 19 Mar 2018****Module/Topic****Chapter****Events and Submissions/Topic****Module 3**

1. Cardiovascular system recap
2. Cardiovascular system responses to exercise
3. Endocrine system recap
4. Endocrine system responses to exercise

McArdle, Katch, & Katch. (2015).  
Exercise Physiology: Nutrition, Energy  
and Human Performance (8th ed.).  
New York, NY: Lippincott Williams &  
Wilkins. Chapters 15-17 and 20.

Online test for Module 3 opens at 9:00  
am AEST on Wednesday 21 March

**Week 4 - 26 Mar 2018****Module/Topic****Chapter****Events and Submissions/Topic****Module 4**

1. Exercise training principles and methods
2. Adaptations to exercise training
3. Muscle contraction recap
4. Fatigue during exercise
5. Nutrition considerations and ergogenic aids for exercise
6. Exercise responses to altitude

McArdle, Katch, & Katch. (2015).  
Exercise Physiology: Nutrition, Energy  
and Human Performance (8th ed.).  
New York, NY: Lippincott Williams &  
Wilkins. Chapters 3, 18, and 21-24.

Online test for Module 4 opens at 9:00  
am AEST on Wednesday 28 March

**Week 5 - 02 Apr 2018****Module/Topic****Chapter****Events and Submissions/Topic****Module 5**

1. Thermoregulation in the body
2. Exercise responses to the heat and cold
3. Physiological considerations in children
4. Physiological changes with age
5. Physiological considerations across sexes

McArdle, Katch, & Katch. (2015).  
Exercise Physiology: Nutrition, Energy  
and Human Performance (8th ed.).  
New York, NY: Lippincott Williams &  
Wilkins. Chapters 21, 25, and 31.

Online test for Module 5 opens at 9:00  
am AEST on Wednesday 4 April

**Vacation Week - 09 Apr 2018****Module/Topic****Chapter****Events and Submissions/Topic****Week 6 - 16 Apr 2018****Module/Topic****Chapter****Events and Submissions/Topic****Residential school to complete laboratory sessions**

For all CB85 (Physiotherapy) students  
(North Rockhampton, 81/G.10,  
81/1.17, and 81/1.18)  
9:00 am to 5:00 pm AEST on 21-22  
April

**Week 7 - 23 Apr 2018****Module/Topic****Chapter****Events and Submissions/Topic**

**Residential school to complete laboratory sessions**

For mixed-mode students excluding those in CB85 (Physiotherapy) (North Rockhampton, 81/G.10, 81/1.17, and 81/1.18)

9:00 am to 5:00 pm AEST on 26-27 April

**Week 8 - 30 Apr 2018**

Module/Topic	Chapter	Events and Submissions/Topic
		<b>Laboratory session block</b> For on-campus Mackay students (MKC 4/G.12 and MKC 4/G.21) 9:00 am to 5:00 pm AEST on 3-4 May

**Week 9 - 07 May 2018**

Module/Topic	Chapter	Events and Submissions/Topic
		<b>Laboratory session block</b> For on-campus Rockhampton students excluding those in CB85 (Physiotherapy) (ROK 81/G.10, 81/1.17, and 81/1.18) 9:00 am to 5:00 pm AEST on 8-9 May
		<b>Participation in laboratory sessions</b> Due: Week 9 Friday (11 May 2018) 5:00 pm AEST

**Week 10 - 14 May 2018**

Module/Topic	Chapter	Events and Submissions/Topic
		<b>Online tests</b> Due: Week 10 Friday (18 May 2018) 5:00 pm AEST

**Week 11 - 21 May 2018**

Module/Topic	Chapter	Events and Submissions/Topic
<b>Review lecture</b>		

**Week 12 - 28 May 2018**

Module/Topic	Chapter	Events and Submissions/Topic
<b>Review lecture</b>		<b>Laboratory workbook</b> Due: Week 12 Friday (1 June 2018) 5:00 pm AEST

**Review/Exam Week - 04 Jun 2018**

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

**Exam Week - 11 Jun 2018**

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

## Term Specific Information

In order to pass this unit, you must attain at least 50% overall and attend the compulsory laboratory sessions.

There are four laboratory session blocks available to students as follows:

1. All physiotherapy students - Saturday and Sunday (21-22 April 2018)
2. All mixed-mode students (excluding physiotherapy students) - Thursday and Friday (26-27 April 2018)
3. All on-campus students in Mackay - Thursday and Friday (3-4 May 2018)
4. All on-campus students in Rockhampton (excluding physiotherapy students) - Tuesday and Wednesday (8-9 May 2018)

All sessions will approximately run from 9:00 am to 5:00 pm AEST each day. All sessions held in Rockhampton will be in Building 81 (North Rockhampton campus), while all sessions held in Mackay will be in Building 4 (City campus). If you are unable to attend the designated laboratory sessions, you may be able to attend another of the available sessions with approval from the unit coordinator. Attending and participating at the laboratory sessions is compulsory and you are not able to pass the unit without attending.

## Assessment Tasks

### 1 Online tests

#### Assessment Type

Online Test

#### Task Description

You will be required to complete five (5) online tests, with a separate test developed for each module. Online test 1 will assess knowledge on content covered in Module 1; Online test 2 will assess knowledge on content covered in Module 2; Online test 3 will assess knowledge on content covered in Module 3; Online test 4 will assess knowledge on content covered in Module 4; and Online test 5 will assess knowledge on content covered in Module 5. Each online test will consist of 20 randomly-selected questions from a wider bank of questions. Questions will be equally distributed across all topics in each module.

Each test will open at the beginning of their respective Module week and all tests will close on the same designated due date. You will have a 20-minute time limit to complete each online test upon commencing. Questions will be multiple choice and fill-in-the-blanks.

You must log onto Moodle when each online test is open and complete the test before the closing date. You can only attempt each online test once and each online test must be completed in a single session. You cannot save your answers and return to the online test at a later time. In the absence of an approved extension, there will be no late submissions allowed for any of the online tests.

#### Assessment Due Date

Week 10 Friday (18 May 2018) 5:00 pm AEST

Online tests for all modules will close at 5:00 PM AEST 18 May; in the absence of an approved extension, no attempts after the due date will be permitted.

#### Return Date to Students

Week 10 Friday (18 May 2018)

You will receive the overall result for each online test upon completion; however, you will see detailed feedback regarding the correct answers for each question in each online test upon test closure at 5:00 pm AEST 18 May.

#### Weighting

20%

#### Assessment Criteria

Each online test will be worth 4% of your overall unit grade. Together, the five (5) online tests will comprise 20% of your overall grade.

There will be 20 questions per online test, with each question allocated 0.2 marks. Each question in each online test will be graded as correct or incorrect.

For questions with text-based responses ("fill-in-the-blank") you should take care to ensure accurate spelling (Australian English) and correct grammar are used given answers are spelling and grammar sensitive.

#### Referencing Style

- [American Psychological Association 6th Edition \(APA 6th edition\)](#)
- [Vancouver](#)



**Submission**

Online

**Submission Instructions**

Attempting and submitting each online test is performed via the unit Moodle site.

**Learning Outcomes Assessed**

- Understand the physiological mechanisms responsible for the body's responses to exercise in physical activity, sport and the workplace.
- Interpret measurement data and review current literature in the area of exercise physiology.

**Graduate Attributes**

- Problem Solving
- Critical Thinking
- Information Technology Competence

## 2 Laboratory workbook

**Assessment Type**

Practical Assessment

**Task Description**

When attending the laboratory sessions for this unit, you will be required to complete a series of tasks involving physiological measurement.

You will need to document the completion of laboratory tasks through filling out a laboratory workbook document made available via the unit Moodle site.

The laboratory workbook will require you to physically complete the laboratory tasks, record collected data for various tasks, perform calculations with the collected data, interpret and critically analyse your findings, and answer relevant review/research questions.

**Assessment Due Date**

Week 12 Friday (1 June 2018) 5:00 pm AEST

In the absence of an approved extension, any submissions received after the due date will incur penalties in accordance with University policy.

**Return Date to Students**

Exam Week Friday (15 June 2018)

Grades for the workbook will be made available via the unit Moodle site no later than the set return date.

**Weighting**

40%

**Assessment Criteria**

The laboratory workbook is designed to evaluate your ability to use relevant equipment, collect physiological and performance data, and apply knowledge to interpret findings. Marks will be allocated to tasks completed in each laboratory session for any of the following: accurate recording of collected data, presentation of graphical information, analyses using collected data, use of correct terminology, correct responses to questions, correct written interpretation of results, and referencing. The laboratory workbook will be graded out of 400 marks equally divided into the following laboratory sessions:

1. Health screening and anthropometry (80 marks)
2. Exercise intensity, efficiency, and substrate utilisation (80 marks)
3. Spirometry and electrocardiography (80 marks)
4. High-performance testing for anaerobic and aerobic fitness (80 marks)
5. Thermoregulatory responses to exercise (80 marks)

**Referencing Style**

- [American Psychological Association 6th Edition \(APA 6th edition\)](#)
- [Vancouver](#)

**Submission**

Online

**Submission Instructions**

You are required to submit a completed copy of the Laboratory Workbook as a .doc or .docx file via the unit Moodle site. All submissions are to be complete individually.

**Learning Outcomes Assessed**

- Understand the physiological mechanisms responsible for the body's responses to exercise in physical activity, sport and the workplace.
- Interpret measurement data and review current literature in the area of exercise physiology.
- Plan and perform laboratory and field physiological measurements safely and ethically, and examine responses during a variety of exercise situations.

#### **Graduate Attributes**

- Communication
- Problem Solving
- Critical Thinking
- Information Technology Competence
- Ethical practice

### **3 Participation in laboratory sessions**

#### **Assessment Type**

On-campus Activity

#### **Task Description**

You must attend and participate in the laboratory sessions during your designated laboratory sessions to pass this unit. You are expected to attend all laboratory sessions and participate where possible by conducting testing, being a participant, or fulfilling other relevant roles.

#### **Assessment Due Date**

Week 9 Friday (11 May 2018) 5:00 pm AEST

You will successfully complete this task following attendance and participation at your designated laboratory sessions.

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

Week 9 Friday (11 May 2018)

You will immediately pass this assessment following attendance and participation at your designated laboratory sessions.

#### **Weighting**

Pass/Fail

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

You must pass this assessment item to pass the unit overall.

#### **Assessment Criteria**

This assessment is graded as pass/fail. If you attend and actively participate in all laboratory sessions you will pass this assessment item. If you fail to attend any of the laboratory sessions you will fail this assessment item.

#### **Referencing Style**

- [American Psychological Association 6th Edition \(APA 6th edition\)](#)
- [Vancouver](#)

#### **Submission**

Offline

#### **Submission Instructions**

Attendance and participation will involve physical completion of laboratory activities. No documentation is required to be submitted. You will be required to sign attendance sheets as proof-of-attendance for laboratory sessions.

#### **Learning Outcomes Assessed**

- Interpret measurement data and review current literature in the area of exercise physiology.
- Plan and perform laboratory and field physiological measurements safely and ethically, and examine responses during a variety of exercise situations.

#### **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

40%

### Length

120 minutes

### Exam Conditions

Closed Book.

### Materials

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

Calculator - non-programmable, no text retrieval, silent only

## 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