



# BMSC12013 *Nutritional Physiology*

## Term 1 - 2020

Profile information current as at 06/05/2024 02:32 pm

All details in this unit profile for BMSC12013 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.

### Corrections

#### Unit Profile Correction added on 30-03-20

The end of term examination has now been changed to an alternate form of assessment. Please see your Moodle site for details of the assessment.

### General Information

#### Overview

This unit expands on your existing knowledge on physiology to explore the physiological aspects of nutrition in human health. In this unit, you will develop further knowledge of the gastrointestinal system and its role in the digestion and absorption of food and nutrients. You will learn about the physiological mechanisms that control appetite and thirst and related health issues. You will learn about the nutrient and energy requirements and evaluate related pathophysiological conditions in different population groups. You will apply your knowledge of nutritional physiology in a professional manner to discuss issues in nutrition and how they impact human health.

#### 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: BMSC11001 Human Body Systems 1 AND 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 - 2020

- Online

#### 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).

#### 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: 30%

#### 2. **Group Work**

Weighting: 20%

#### 3. **Examination**

Weighting: 50%

### 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. Analyse the role of the gastrointestinal system in digestion, absorption and metabolism of nutrients
2. Analyse the physiological processes underpinning appetite and thirst in health
3. Evaluate and relate nutritionally related pathophysiological conditions in population groups
4. Demonstrate effective communication and cultural competency relevant to nutrition
5. Critique contemporary issues in nutrition and impact on human physiology.

## 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 - Written Assessment - 30%		•			•
2 - Group Work - 20%			•	•	•
3 - Examination - 50%	•	•	•		

### 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 - Written Assessment - 30%			•							
2 - Group Work - 20%	•						•	•		
3 - Examination - 50%			•							

## Textbooks and Resources

### Textbooks

BMSC12013

#### Prescribed

##### Understanding Nutrition

Edition: Fourth (2019)

Authors: Eleanor Noss Whitney, Sharon Rady Rolfes, Tim Crowe and Adam Walsh

Cengage Learning Australia

South Melbourne, Victoria, Australia

ISBN: 9780170424431

Binding: Paperback

#### Additional Textbook Information

Copies can be purchased 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)
- Zoom (for online tutorials)

## Referencing Style

**All submissions for this unit must use the referencing styles below:**

- [American Psychological Association 6th Edition \(APA 6th edition\)](#)
- [Harvard \(author-date\)](#)

For further information, see the Assessment Tasks.

## Teaching Contacts

**Kelly McGrath** Unit Coordinator

[k.inglis@cqu.edu.au](mailto:k.inglis@cqu.edu.au)

## Schedule

<b>Week 1 - 09 Mar 2020</b>		
<b>Module/Topic</b>	<b>Chapter</b>	<b>Events and Submissions/Topic</b>
An Overview of Nutrition Metabolism	Chapter 1: pp 7-10, 17-21, 29-30 Chapter 7: pp 214-241	Zoom Tutorial (Recorded) - Orientation to Nutritional Physiology Zoom Tutorial (Live - Details on Moodle); discussion of week 1 learning activities
<b>Week 2 - 16 Mar 2020</b>		
<b>Module/Topic</b>	<b>Chapter</b>	<b>Events and Submissions/Topic</b>
Regulation of Weight, Hunger & Thirst	Chapter 8: pp 254-259, 274-275 Chapter 9: pp 291-293 Chapter 12: pp 410-412	Zoom Tutorial (Live - Details on Moodle); discussion of week 2 learning activities
<b>Week 3 - 23 Mar 2020</b>		
<b>Module/Topic</b>	<b>Chapter</b>	<b>Events and Submissions/Topic</b>
Digestion, Absorption & Transport	Chapter 3: pp 67-93	Zoom Tutorial (Live - Details on Moodle); discussion of week 3 learning activities
<b>Week 4 - 30 Mar 2020</b>		
<b>Module/Topic</b>	<b>Chapter</b>	<b>Events and Submissions/Topic</b>
The Carbohydrates: Sugars, Starches & Dietary Fibre	Chapter 4: pp 96-116, 120-123, 126-127	Zoom Tutorial (Live - Details on Moodle); discussion of week 4 learning activities
<b>Week 5 - 06 Apr 2020</b>		
<b>Module/Topic</b>	<b>Chapter</b>	<b>Events and Submissions/Topic</b>
The Lipids: Triglycerides, Phospholipids & Sterols	Chapter 5: pp 135-159, 166-167	Zoom Tutorial (Live - Details on Moodle); discussion of week 5 learning activities
<b>Vacation Week - 13 Apr 2020</b>		
<b>Module/Topic</b>	<b>Chapter</b>	<b>Events and Submissions/Topic</b>
		NO ZOOM TUTORIAL THIS WEEK
<b>Week 6 - 20 Apr 2020</b>		
<b>Module/Topic</b>	<b>Chapter</b>	<b>Events and Submissions/Topic</b>
Protein: Amino Acids	Chapter 6: pp 177-196, 198-200, 203-204	Zoom Tutorial (Live - Details on Moodle); discussion of week 6 learning activities  <b>Written Assessment (30%) Due:</b> Week 6 Monday (20 Apr 2020) 5:00 pm AEST
<b>Week 7 - 27 Apr 2020</b>		
<b>Module/Topic</b>	<b>Chapter</b>	<b>Events and Submissions/Topic</b>
The Water-Soluble Vitamins	Chapter 10: pp 330-369	Zoom Tutorial (Live - Details on Moodle); discussion of week 7 learning activities
<b>Week 8 - 04 May 2020</b>		
<b>Module/Topic</b>	<b>Chapter</b>	<b>Events and Submissions/Topic</b>
The Fat-Soluble Vitamins	Chapter 11: pp 377-400	Zoom Tutorial (Live - Details on Moodle); discussion of week 8 learning activities
<b>Week 9 - 11 May 2020</b>		
<b>Module/Topic</b>	<b>Chapter</b>	<b>Events and Submissions/Topic</b>

Water & Fluid Balance

Chapter 12: pp 406-419, 442-443

**The group discussion forum will be closed to new contributions on Friday 15<sup>th</sup> May (Week 9) at 5pm. You will NOT be allowed to contribute any new discussions to the forum after this due date.**  
Zoom Tutorial (Live - Details on Moodle); discussion of week 9 learning activities

**Week 10 - 18 May 2020**

Module/Topic	Chapter	Events and Submissions/Topic
The Major Minerals	Chapter 12: pp 419-450	Zoom Tutorial (Live - Details on Moodle); discussion of week 10 learning activities

**Week 11 - 25 May 2020**

Module/Topic	Chapter	Events and Submissions/Topic
The Trace Minerals	Chapter 13: pp 452-481	Zoom Tutorial (Live - Details on Moodle); discussion of week 11 learning activities

**Group Work, Report & Fact Sheet**  
Due: Week 11 Monday (25 May 2020)  
5:00 pm AEST

**Week 12 - 01 Jun 2020**

Module/Topic	Chapter	Events and Submissions/Topic
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**Review/Exam Week - 08 Jun 2020**

Module/Topic	Chapter	Events and Submissions/Topic
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**Exam Week - 15 Jun 2020**

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

Your Unit Coordinator and Lecturer for Term 1, 2020 is Kelly McGrath. Kelly can be contacted via the Unit Moodle forum or via email (k.inglis@cqu.edu.au).

### **The Unit and Learning Content:**

This is a newly-developed unit designed for students enrolled in the Bachelor of Medical Science - Nutrition specialisation. This unit expands on your existing nutrition knowledge, exploring the physiology of nutrition in relation to human health.

The Learning Content has been divided into eleven (11) main topics on the anatomy and physiology of digestion, absorption, metabolism and transport of nutrients, the health effects of different nutrients, regulation of thirst and hunger, and the pathophysiology of nutrition-related diseases. The learning materials for each week are located within the weekly tabs. The following information and links will be provided for each week:

- Echo360 link to the weekly recorded lecture/s
- Powerpoint presentation for the lecture/s
- Weekly Learning Guide readings and activities
- Weekly Zoom tutorial
- Echo360 link to the weekly tutorial recording
- PDFs or web links to any additional weekly reading materials

### **Tutorial Sessions:**

Throughout the term (weeks 1-11), Zoom tutorial sessions will be held online only. The day and time of these weekly tutorials will be advised on the unit Moodle site. The Week 1 tutorial will be an introduction to the unit. The following weekly tutorials will provide you with an opportunity to ask questions relevant to learning outcomes, assessment tasks or weekly learning content, and to revise weekly learning activities. Additional tutorials will be held throughout the term to discuss the requirements of each of the unit's assessment items. Students will be alerted to the date and time of these assessment tutorials via email and Moodle as the dates are set. All Zoom tutorial sessions will be recorded to enable all students to view the content if they are unable to attend the live tutorial. If you have never used Zoom before, please review the Zoom information provided in the Moodle Help for Students in the Support block on Moodle.

### **Weekly E-mail Updates:**

At the start of each week, you will be emailed directly with information about the weekly content, learning activities and assessment reminders for the week ahead. This information will also be posted on the front page of the Moodle unit. These messages will be sent to your cqumail address on Monday mornings.

### **Unit Assessment Guide & Learning Guide:**

The unit Assessment Guide has been developed to provide a comprehensive overview of the assessment tasks for the unit. This guide is available under the Assessment Resources tab in the unit Moodle site.

The unit Learning Guide summarises the weekly content and provides links to additional readings, questions and forum discussion topics designed to support your learning of the unit content. Each week, you should:

- Watch the weekly lecture/s
- Read through the specified sections of your textbook
- Read through any additional resources or journal articles provided in the weekly Learning Guide
- Complete all questions and activities as noted in the weekly Learning Guide

Please note that the activities included in the Learning Guide will be discussed in the following week's tutorial.

### **Student Communications:**

Discussion of nutrition topics is integral to understanding and communicating the depth and breadth of nutrition issues in different populations. Open discussion is important. However, it is expected that you will ALWAYS weigh up the evidence (from reputable sources only), and respect the right of every student to have an opinion, even if it differs from your own. Please respect your fellow peers and always maintain a polite, respectful dialogue, and communicate in a professional manner at all times.

## Assessment Tasks

# 1 Written Assessment (30%)

## Assessment Type

Written Assessment

## Task Description

You are required to submit a written assessment of 1500 words +/- 10%. The Written Assessment will require a detailed discussion of the normal physiological processes outlined in the assessment task. You will also need to discuss how these normal physiological processes would be disrupted (as outlined in the case study) and critically evaluate the scientific literature to validate their arguments.

## Case Study

John was in a motor vehicle accident in 2018 that resulted in an acquired brain injury where his hypothalamus was damaged. As a result of this injury, John's hypothalamus is no longer able to synthesise Anti-Diuretic Hormone (ADH), and his hypothalamus has become resistant to the effects of the hormone leptin.

Students need to explain the normal physiology and regulation of thirst and hunger and how this would be altered due to John's injury. Students should critically evaluate the scientific literature to validate how these normal processes of thirst and hunger would be disrupted according to the injury outlined above, and how this would contribute to the poor health of this individual.

## The Written Assessment should include:

1. Introduction
2. Explanation of the normal physiological role of Anti-Diuretic Hormone (ADH) in the regulation of thirst
3. Explanation of the normal physiological role of leptin in the regulation of hunger
4. Critically evaluate the scientific literature to discuss how these two normal regulatory processes would be impacted as outlined in this case study
5. Critically evaluate the scientific literature to discuss the link between the case study and poor health
6. Conclusion
7. Reference list

## Assessment Due Date

Week 6 Monday (20 Apr 2020) 5:00 pm AEST

## Return Date to Students

Week 8 Monday (4 May 2020)

## Weighting

30%

## Minimum mark or grade

Students must obtain a minimum of 50% of the allocated marks on this assessment item to be eligible to pass the unit.

## Assessment Criteria

Your Written Assessment will be assigned a mark for each of the following criteria. This mark will then be converted to a percentage to reflect the weighting of the assessment item.

- Topic definition, aim and direction (10)
- Background information of the topic (10)
- Explanation of normal regulation of thirst and hunger as relevant to case study (20)
- Critical evaluation of impact of case study on normal physiological function and health (20)
- Direction and flow of the information (10)
- Clarity and level of evidence (10)
- Conclusion (10)
- Quality, quantity and formatting of resources (10)
- Grammar, sentence construction & spelling (10)
- Formatting requirements & assessment length (10)

## Referencing Style

- [American Psychological Association 6th Edition \(APA 6th edition\)](#)
- [Harvard \(author-date\)](#)

## Submission

Online

## Learning Outcomes Assessed

- Analyse the physiological processes underpinning appetite and thirst in health
- Critique contemporary issues in nutrition and impact on human physiology.



## Graduate Attributes

- Critical Thinking

## 2 Group Work, Report & Fact Sheet

### Assessment Type

Group Work

### Task Description

At the beginning of Week 4, you will be allocated into groups of 4-6 students. The assessment topic will outline a specific nutrition-related condition. Students should discuss the details of this nutrition-related condition in order to complete Parts A and B of this assessment.

Every student needs to make a MINIMUM of two (2) contributions to the group discussions that are AT LEAST 150 words each and consist of your own ideas rather than simply agreeing with statements other students have made. Students also need to make a MINIMUM of two (2) contributions of AT LEAST 100 words each that respond to the comments and contributions of other group members. If statistics or similar are shared within the group discussions, your sources must be cited and shared with group members. Reference sources do not contribute towards these word counts.

All interactions with fellow group members must be courteous and professional.

**PLEASE NOTE: The group discussion forum will be closed to new contributions on Friday 15<sup>th</sup> May (Week 9) at 5pm. You will NOT be allowed to contribute any new discussions to the forum after this due date.**

### **ASSESSMENT TASK 2, PART A: Individual Report on Group Work - 5%**

Following group discussions **EACH** student must submit an **INDIVIDUAL 1-2 page report** that includes:

- The names of all students in the group (including the names of any students who did not contribute to group discussions) AND Group Name/Number
- A 300-400 word summary of the topics discussed by your group
- Excerpts of two (2) of your own contributions to the group discussion that are at least 150 words each. Include quotation marks around your excerpts. If your contributions exceed 200 words, include the first 200 words and then ... to indicate that your contribution continues.
- Excerpts of two (2) of your contributions to the group discussion of at least 100 words each that responds to the contribution of other students. If your contributions exceed 150 words, include the first 150 words and then ... to indicate that your contribution continues.

### **ASSESSMENT TASK 2, PART B: Individual Fact Sheet Based on Group Work - 15%**

Following group discussions, **EACH** student must submit an **INDIVIDUAL 1-page fact sheet** that discusses the nutrition-related condition outlined in the Assessment task. The fact sheet should be informative and written for an audience of allied health professionals, and should include:

- Current Australian statistics on the nutrition-related disease
- Population groups at greatest risk of developing this disease
- The pathophysiology of the disease (i.e. the process of how the disease develops)
- Nutrition and lifestyle factors that increase the risk of the disease.

The Fact Sheet may include simple graphics such as icons, flow charts or tables, but the focus of the Fact Sheet should be on your discussion. Any diagrams must be legible, relevant to your discussion and the source must be cited. All graphics included must not take up any more than 1/5 of your page.

### **ASSESSMENT TASK 2 TOPIC, Term 1, 2020**

The nutrition-related disease for Term 1, 2020 is **Type 2 Diabetes Mellitus**. Students should discuss what this condition is, the pathophysiology of how it develops, current and relevant statistics on the condition, risk factors and population groups at-risk of developing the condition. Students should research these elements individually, then share their findings with their fellow group members in a series of posts as outlined above so that they may complete both Part A and Part B of this assessment item.

### Assessment Due Date

Week 11 Monday (25 May 2020) 5:00 pm AEST

### Return Date to Students

Review/Exam Week Monday (8 June 2020)

### Weighting

20%

### Minimum mark or grade

Students must obtain a minimum of 50% of the allocated marks on this assessment item to be eligible to pass the unit.

## **Assessment Criteria**

### **Group Work Report (5%)**

Your assessment will be assigned a mark for each of the following criteria. This mark will then be converted to a percentage to reflect the weighting of the assessment item.

- Excerpts of two (2) of the students' own contribution to the discussion of at least 150 words each (10)
- Excerpts of two (2) of the students' responses to other students' posts of at least 150 words each (10)
- 300-400 word summary of topics discussed in group discussions (10)
- Grammar, sentence construction, spelling & formatting (10)

### **Fact Sheet (15%)**

Your assessment will be assigned a mark for each of the following criteria. This mark will then be converted to a percentage to reflect the weighting of the assessment item.

- Current Australian statistics on the nutrition-related disease (10)
- Population groups at greatest risk of developing the nutrition-related disease (10)
- Disease pathophysiology (20)
- Nutrition and lifestyle factors that increase disease risk (10)
- Clarity and level of evidence (10)
- Quality, quantity and formatting of resources (10)
- Grammar, sentence construction & spelling (10)
- Formatting requirements & assessment length (10)

## **Referencing Style**

- [American Psychological Association 6th Edition \(APA 6th edition\)](#)
- [Harvard \(author-date\)](#)

## **Submission**

Online

## **Learning Outcomes Assessed**

- Evaluate and relate nutritionally related pathophysiological conditions in population groups
- Demonstrate effective communication and cultural competency relevant to nutrition
- Critique contemporary issues in nutrition and impact on human physiology.

## **Graduate Attributes**

- Communication
- Cross Cultural Competence
- Ethical practice

## **Examination**

### **Outline**

Complete an invigilated examination.

### **Date**

During the examination period at a CQUniversity examination centre.

### **Weighting**

50%

### **Length**

180 minutes

### **Minimum mark or grade**

Students must obtain a minimum of 50% of the allocated marks on this assessment item to be eligible to pass the unit.

### **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