



# BMSC11012 *Foundations of Immunology*

## Term 2 - 2023

Profile information current as at 27/04/2024 05:02 am

All details in this unit profile for BMSC11012 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

In this unit you will study the structure and function of the immune system and be introduced to foundational concepts that underpin how the immune system works. You will explore the mechanisms that control the human body's ability to detect, contain and remove or destroy harmful pathogens whilst retaining tolerance to its own cells. You will also put this into practice at the Residential School where you will conduct laboratory tests that demonstrate the immune response.

### 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-requisites: BMSC11001 Human Body Systems 1 OR BMSC11007 Medical Anatomy and Physiology 1 OR BMSC11010 Human Anatomy and Physiology 1

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 - 2023

- Bundaberg
- 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. **Online Quiz(zes)**

Weighting: 20%

#### 2. **Laboratory/Practical**

Weighting: Pass/Fail

#### 3. **Written Assessment**

Weighting: 50%

#### 4. **In-class Test(s)**

Weighting: 30%

### 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. Outline the role of the major cells and tissues in the induction of an immune response
2. Explain the processes of self/non-self-discrimination
3. Describe how the non-specific and specific arms of the immune system work together to effect an immune response
4. Explain how the structure and function of antigen recognition molecules facilitate interaction with antigens
5. Outline the typical mammalian immune system responses to various challenges such as proteins, bacteria, viruses, protozoa, helminths, fungi and other representative multi-cellular organisms.
6. Demonstrate competence in the performance of basic laboratory tests in the assessment of the immune response.

## Alignment of Learning Outcomes, Assessment and Graduate Attributes



### Alignment of Assessment Tasks to Learning Outcomes

Assessment Tasks	Learning Outcomes					
	1	2	3	4	5	6
1 - Online Quiz(zes) - 20%	•	•	•	•		
2 - Laboratory/Practical - 0%						•
3 - Written Assessment - 50%	•		•			
4 - In-class Test(s) - 30%		•		•	•	

### Alignment of Graduate Attributes to Learning Outcomes

Graduate Attributes	Learning Outcomes					
	1	2	3	4	5	6
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						

## Textbooks and Resources

### Textbooks

**There are no required textbooks.**

### 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

**Kirsty Macrae** Unit Coordinator  
[k.macrae@cqu.edu.au](mailto:k.macrae@cqu.edu.au)

## Schedule

### Week 1 - 10 Jul 2023

Module/Topic	Chapter	Events and Submissions/Topic
Introduction to the Immune System	Chapter 1	

### Week 2 - 17 Jul 2023

Module/Topic	Chapter	Events and Submissions/Topic
Innate Immunity	Chapter 2	

### Week 3 - 24 Jul 2023

Module/Topic	Chapter	Events and Submissions/Topic
Antigen Capture and Presentation to Lymphocytes	Chapter 3	

### Week 4 - 31 Jul 2023

Module/Topic	Chapter	Events and Submissions/Topic
Antigen Recognition in the Adaptive Immune System	Chapter 4	

### Week 5 - 07 Aug 2023

Module/Topic	Chapter	Events and Submissions/Topic
T Cell-Mediated Immunity	Chapter 4	

### Vacation Week - 14 Aug 2023

Module/Topic	Chapter	Events and Submissions/Topic
Self-Directed Study	Chapter 5	

### Week 6 - 21 Aug 2023

Module/Topic	Chapter	Events and Submissions/Topic
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Effector Mechanisms of T Cell-Mediated Immunity Chapter 6

### Week 7 - 28 Aug 2023

Module/Topic	Chapter	Events and Submissions/Topic
Humoral Immune Responses	Chapter 7	

### Week 8 - 04 Sep 2023

Module/Topic	Chapter	Events and Submissions/Topic
Effector Mechanisms of Humoral Immunity	Chapter 8	

### Week 9 - 11 Sep 2023

Module/Topic	Chapter	Events and Submissions/Topic
Residential School		

### Week 10 - 18 Sep 2023

Module/Topic	Chapter	Events and Submissions/Topic
Immunological Tolerance and Autoimmunity	Chapter 9	

### Week 11 - 25 Sep 2023

Module/Topic	Chapter	Events and Submissions/Topic
Revision		<b>Written Assessment</b> Due: Week 11 Wednesday (27 Sept 2023) 5:00 pm AEST

### Week 12 - 02 Oct 2023

Module/Topic	Chapter	Events and Submissions/Topic
Revision		

### Review/Exam Week - 09 Oct 2023

Module/Topic	Chapter	Events and Submissions/Topic

### Exam Week - 16 Oct 2023

Module/Topic	Chapter	Events and Submissions/Topic

## Term Specific Information

Your unit coordinator for BMSC11012 is Dr Will Deasy. You can contact me using the forum on the unit's Moodle site or alternatively through email ([w.deasy@cqu.edu.au](mailto:w.deasy@cqu.edu.au)) or on 07 4930 6365. The forum for this unit is continuously monitored during business hours and you can expect a response within 24 hours of posting your question.

## Assessment Tasks

### 1 Online Quizzes

#### Assessment Type

Online Quiz(zes)

#### Task Description

- This assessment accounts for 20% of your grade in this unit.
- There are two quizzes: a Mid term and an End of term.
- There are 3 sections. **Section A** is worth 20 marks and contains 20 Multiple choice questions; **Section B** is worth 20 marks and consists of 10 short answer questions; **Section C** is worth 10 marks and consists of 2 long answers of which you are to **answer ONLY ONE (1)**.
- You have **1 hour** to complete these assessments.

- These quizzes tests knowledge and understanding of class content from weeks 1-5 and 6-10 respectively.

**Number of Quizzes**

2

**Frequency of Quizzes**

Other

**Assessment Due Date**

These tests will be available for 24 hours from 9am AEST on the Fridays of weeks 6 & 11

**Return Date to Students**

Return to students will be via moodle within 14 days of submission.

**Weighting**

20%

**Minimum mark or grade**

50%

**Assessment Criteria**

These tests will test your knowledge of the unit material in two online tests. Test 1 covers week 1-5 and Test 2 covers weeks 6-10.

- There are 3 sections. **Section A** is worth 20 marks and contains 20 Multiple choice questions; **Section B** is worth 20 marks and consists of 10 short answer questions; **Section C** is worth 10 marks and consists of 2 long answers of which you are to **answer ONLY ONE (1)**.
- You have **1 hour** to complete these assessments.

**Referencing Style**

- [Vancouver](#)

**Submission**

Online

**Submission Instructions**

Via the moodle quizzes available in Moodle

**Learning Outcomes Assessed**

- Outline the role of the major cells and tissues in the induction of an immune response
- Explain the processes of self/non-self-discrimination
- Describe how the non-specific and specific arms of the immune system work together to effect an immune response
- Explain how the structure and function of antigen recognition molecules facilitate interaction with antigens

## 2 Practical Assessment

**Assessment Type**

Laboratory/Practical

**Task Description**

The laboratory practical exercise is an opportunity to learn and perform clinical diagnostic procedures in immunology and in immunology research. The residential school will provide valuable practical experience in techniques performed in diagnostic clinical laboratories.

The laboratory practical assessment will comprise of laboratory based exercises which will be completed during the Residential School period, or during the term. The exercises will be described in the subject laboratory manual and will involve completion of laboratory exercises, calculation and presentation of results. The laboratory manual will be available on the unit Moodle site

**Assessment Due Date**

Practical Assessment will either be in the form of a Residential School for online or mixed mode students and as practical classes during term (weeks 3, 5 & 7) for students enrolled on campus in ROK or BDG

## Return Date to Students

Students will be assessed during the practical, with their mark (Pass or Fail) will be entered into moodle upon completion.

### Weighting

Pass/Fail

### Assessment Criteria

You will be assessed on your competency while carrying out practical tasks during the residential school. This assessment is Pass/fail.

### Referencing Style

- [Vancouver](#)

### Submission

Offline

### Submission Instructions

You will be assessed on your competency while carrying out practical tasks during the residential school.

### Learning Outcomes Assessed

- Demonstrate competence in the performance of basic laboratory tests in the assessment of the immune response.

## 3 Written Assessment

### Assessment Type

Written Assessment

### Task Description

## *Assessment item 3 - Outline of the innate and adaptive immune systems*

**Weighting - 50%**

### Scenario

In early 2030, a new severe acute respiratory syndrome global pandemic was declared. The etiology of this new disease was identified as a novel Henipavirus, a negative-strand RNA virus. Epidemiologists tracing the virus identified Ascot, a suburb of Brisbane to be the “ground zero” for this outbreak. It is believed that the virus originated in flying foxes and was transmitted to horses and then to people. Genetic screening of the virus shows it to be similar to Hendra virus but with several key genetic changes that allows high levels of person-to-person transmission. Transmission of the virus is through respiratory droplets and aerosols. Viral entry into the body has been shown to be through the Human ephrin-A1 receptor which is abundantly found in the epithelium of the lungs.

### Task

You are to prepare a **2000 word outline** that “**Explains the 'innate' and 'adaptive' immune responses to a novel Henipavirus and outline how the non-specific and specific arms of the immune system cooperate to effect an immune response**”.

**-Start with the premise of someone sneezing or coughing on you and work your way through the immune responses, ending with viral clearance and the formation of immunological memory.** Hint: the first part of the immune response are your barriers (skin and mucus layers). Most of the virus will get trapped by these before they get into your lungs.

-You can use diagrams and flow charts if they make it easier for you to explain the topic, but remember if you are using a diagram from a journal or textbook etc. you have to reference where it came from.

-References are needed for this assignment. **DO NOT reference my lectures or lecture notes.** Much of the information in them is from your textbook or other readily available source.

-Remember that **this assessment is worth 50% of your final grade.** It will require a significant amount of work to complete, so please do not leave this to the end of the term. Work through it as you learn each part of your immune system.

### Assessment Due Date

Week 11 Wednesday (27 Sept 2023) 5:00 pm AEST

Assessment to be submitted via the assessment dropbox in Moodle



### Return Date to Students

Review/Exam Week Friday (13 Oct 2023)

Assessments will be returned through Moodle, with feedback available through the Turnitin feedback studio.

### Weighting

50%

### Minimum mark or grade

50%

### Assessment Criteria

-Remember that **this assessment is worth 50% of your final grade**. It will require a significant amount of work to complete, so please do not leave this to the end of the term. Work through it as you learn each part of your immune system.

-References are needed for this assignment. **DO NOT reference my lectures or lecture notes**. Much of the information in them is from your textbook or other readily available source.

-You can use diagrams and flow charts if they make it easier for you to explain the topic, but remember if you are using a diagram from a journal or textbook etc. you have to reference where it came from.

**-Start with the premise of someone sneezing or coughing on you and work your way through the immune responses, ending with viral clearance and the formation of immunological memory.** Hint: the first part of the immune response are your barriers (skin and mucus layers). Most of the virus will get trapped by these before they get into your lungs.

You are to prepare a **2000-word outline** that **"Explains the 'innate' and 'adaptive' immune responses to a novel *Henipavirus* and outline how the non-specific and specific arms of the immune system cooperate to effect an immune response"**.

### Referencing Style

- [Vancouver](#)

### Submission

Online

### Submission Instructions

Please submit via the assessment dropbox on Moodle

### Learning Outcomes Assessed

- Outline the role of the major cells and tissues in the induction of an immune response
- Describe how the non-specific and specific arms of the immune system work together to effect an immune response

## 4 In-Class Test

### Assessment Type

In-class Test(s)

### Task Description

During your final practical class or on the final day of the residential school you will be required to sit an invigilated written test. This assessment will test your ability to apply your knowledge of immunology in the interpretation of various immunological tests and case-based scenarios. See Moodle for more details.

### Assessment Due Date

During your final practical class or on the final day of the residential school you will be required to sit an invigilated written test

### Return Date to Students

Two weeks following the assessment.

**Weighting**

30%

**Minimum mark or grade**

50%

**Assessment Criteria**

You will answer questions relating to provided test results and cases to demonstrate your understanding of both the immune system and immunological testing.

**Referencing Style**

- [Vancouver](#)

**Submission**

Offline

**Submission Instructions**

You will submit your test to the teaching staff upon completion of the test.

**Learning Outcomes Assessed**

- Explain the processes of self/non-self-discrimination
- Explain how the structure and function of antigen recognition molecules facilitate interaction with antigens
- Outline the typical mammalian immune system responses to various challenges such as proteins, bacteria, viruses, protozoa, helminths, fungi and other representative multi-cellular organisms.

## 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