



# BMSC13009 Immunology

## Term 1 - 2018

Profile information current as at 02/05/2024 11:56 pm

All details in this unit profile for BMSC13009 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

The study of Immunology introduces the student to pre-natal and post-natal development of the human immune system and its function in health and disease states, this includes autoimmune disorders, hypersensitivity reactions and microbiological infections. Students will also learn about the diagnostic uses of antibodies, vaccine design and preventive and therapeutic uses of vaccines.

#### Details

Career Level: *Undergraduate*

Unit Level: *Level 3*

Credit Points: 6

Student Contribution Band: 8

Fraction of Full-Time Student Load: 0.125

#### Pre-requisites or Co-requisites

Prerequisite BMSC12010 Clinical Biochemistry or BMED19003 Clinical Biochemistry

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

- 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: 25%

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

Weighting: 25%

#### 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](#).

## 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 report.

##### Feedback

Lectures are considered by some students to be complex and the unit content challenging to understand.

##### Recommendation

The unit content is designed carefully so that the intended learning outcomes for each week build on and reinforce the concepts introduced in previous week(s). It is a fundamental truth, however, that immunology is a conceptually complex subject, for which a commitment to active learning is required. Moreover, now that it is offered as a final year subject, to a large extent the level is set by the Med Sci (Pathology) program's professional body external accreditors in order to maintain standards appropriate to a graduate level. The unit content dovetails carefully with those of complementary courses on haematology and immunohaematology. This vocational focus best serves our students on the Med Sci and closely associated programs in a competitive market upon graduation.

#### Feedback from Student feedback report.

##### Feedback

The benefits of pre-recorded lectures.

##### Recommendation

Delivery is aimed around online learning and allows for considerable flexibility to suit the majority of enrolled students who are distance learners (from whom feedback has been received in previous years). Hence, in line with managing the workload of most of our students registered as distance or flexible learners, the learning materials for each topic are released at the start of that week, thereby enabling each student to access and assimilate the information at a time across the week that best suits their pattern of learning.

## Unit Learning Outcomes

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

1. List the major cells and tissues of the immune system and state their function in the immune response.
2. Explain, using examples, the processes of self / non-self-discrimination and disorders that arise as a result of dysfunction in self/non-self-recognition (autoimmunity).
3. Define, using examples, the terms 'innate' and 'specific' immunity and describe how the non-specific and specific arms of the immune system work together to effect an immune response.
4. Describe, using examples, the structure and function of antigen recognition molecules.
5. Define and give examples of the effects of immune 'dysfunction' such as hypersensitivity and immunodeficiency.
6. Outline the host responses to transplantation and be able to define xenotransplantation and discuss advantages and disadvantages of this process.
7. Describe, the typical mammalian immune system responses to proteins, bacteria, viruses, protozoa, helminths, fungi and other representative multi-cellular organisms.
8. Demonstrate competence in the use of primary resource material for experimental and research assignment purposes.

## 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	7	8
1 - Practical Assessment - 25%	•			•			•	•
2 - Written Assessment - 25%	•	•	•	•	•	•	•	•
3 - Examination - 50%	•	•	•	•	•	•	•	

## Alignment of Graduate Attributes to Learning Outcomes

Graduate Attributes	Learning Outcomes							
	1	2	3	4	5	6	7	8
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 - 25%	•	•	•	•	•	•				
2 - Written Assessment - 25%	•	•	•	•		•				
3 - Examination - 50%	•	•	•							

## Textbooks and Resources

### Textbooks

BMSC13009

#### Prescribed

##### Kuby Immunology

Edition: 7th edn (2013)

Authors: J.A. Owen, J. Punt, S.A. Stranford

W.H. Freeman and Company

New York , NY , USA

ISBN: 978-14641-3784-6

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

For further information, see the Assessment Tasks.

## Teaching Contacts

**Andrew Taylor-Robinson** Unit Coordinator

[a.taylor-robinson@cqu.edu.au](mailto:a.taylor-robinson@cqu.edu.au)

## Schedule

### Week 1 - 05 Mar 2018

Module/Topic	Chapter	Events and Submissions/Topic
Overview of the Immune System - Immunological Organs and Cells / Innate Immunity	Chapters 1, 2, 5	

### Week 2 - 12 Mar 2018

Module/Topic	Chapter	Events and Submissions/Topic
Complement System / Cytokines	Chapters 6, 4	

### Week 3 - 19 Mar 2018

Module/Topic	Chapter	Events and Submissions/Topic
Adaptive Immunity - B cells / Antibodies	Chapters 3, 7, 10, 12, 20	

### Week 4 - 26 Mar 2018

Module/Topic	Chapter	Events and Submissions/Topic
Adaptive Immunity - T cells / MHC Molecules	Chapters 3, 8, 9, 11	

<b>Week 5 - 02 Apr 2018</b>		
<b>Module/Topic</b>	<b>Chapter</b>	<b>Events and Submissions/Topic</b>
Effector Immune Responses	Chapters 13, 14	
<b>Vacation Week - 09 Apr 2018</b>		
<b>Module/Topic</b>	<b>Chapter</b>	<b>Events and Submissions/Topic</b>
Independent Study		
<b>Week 6 - 16 Apr 2018</b>		
<b>Module/Topic</b>	<b>Chapter</b>	<b>Events and Submissions/Topic</b>
Tolerance, Autoimmunity and Transplantation	Chapter 16	<b>Summary of the innate and adaptive immune systems</b> Due: Week 6 Monday (16 Apr 2018) 11:45 pm AEST
<b>Week 7 - 23 Apr 2018</b>		
<b>Module/Topic</b>	<b>Chapter</b>	<b>Events and Submissions/Topic</b>
Immunodeficiencies / Hypersensitivities	Chapters 18, 15	
<b>Week 8 - 30 Apr 2018</b>		
<b>Module/Topic</b>	<b>Chapter</b>	<b>Events and Submissions/Topic</b>
Infectious Diseases / Vaccines	Chapter 17	
<b>Week 9 - 07 May 2018</b>		
<b>Module/Topic</b>	<b>Chapter</b>	<b>Events and Submissions/Topic</b>
Unit Review	Review Materials provided	Written Assessment Feedback provided
<b>Week 10 - 14 May 2018</b>		
<b>Module/Topic</b>	<b>Chapter</b>	<b>Events and Submissions/Topic</b>
Compulsory Residential School		No Lectures
<b>Week 11 - 21 May 2018</b>		
<b>Module/Topic</b>	<b>Chapter</b>	<b>Events and Submissions/Topic</b>
Post-Residential School Support	Support Material provided	No Lectures
<b>Week 12 - 28 May 2018</b>		
<b>Module/Topic</b>	<b>Chapter</b>	<b>Events and Submissions/Topic</b>
Assessment and Revision	Mock & Past Exam Papers provided.	<b>Journal article</b> Due: Week 12 Wednesday (30 May 2018) 11:45 pm AEST
<b>Review/Exam Week - 04 Jun 2018</b>		
<b>Module/Topic</b>	<b>Chapter</b>	<b>Events and Submissions/Topic</b>
<b>Exam Week - 11 Jun 2018</b>		
<b>Module/Topic</b>	<b>Chapter</b>	<b>Events and Submissions/Topic</b>

## Assessment Tasks

### 1 Summary of the innate and adaptive immune systems

#### Assessment Type

Written Assessment

### Task Description

You are to prepare a two (2) page summary that "Defines, using appropriate examples, the terms 'innate' and 'specific' immunity and describe, by way of example, how the non-specific and specific arms of the immune system work together to effect an immune response".

Well written summaries will serve as valuable study tool and will ensure you have a solid understanding of the fundamental content presented in the first half of the term. Once graded, all summaries will be anonymously posted on the unit moodle page for other students to view and use as revision material.

Your marks will be derived from the readability of the material, its relevance to the topic and the source of the material(s) that you used to create your topic summary. It is expected peer-reviewed references will be utilised in preparing this document, for which the reference list is not included in the two page limit.

### Assessment Due Date

Week 6 Monday (16 Apr 2018) 11:45 pm AEST

### Return Date to Students

Week 9 Wednesday (9 May 2018)

### Weighting

25%

### Assessment Criteria

Your assessment will be marked on the following criteria:

- Relevance to the learning outcome - Does the material "fit" within the guidelines of the learning outcome? Does the summary cover all aspects relating to the selected topic? **10 marks**
- Readability and accessibility of the material - Is the content at an appropriate level for the class to benefit from (not too simple nor too complex)? **5 marks**
- Structure and quality of the assignment - Does it have a well-defined introduction, body and conclusion? Is it an appropriate length (not excessively over nor under the page limit)? Language skills (grammar, spelling and sentence structure) and innovation will also be assessed. **5 marks**
- References - A reference list and appropriate in-text referencing should be included. Note the reference list is not to be included in the page limit. The quality of material(s) used will be considered. It is anticipated that no less than 3 peer review journal articles will be used when preparing this report. **5 marks**

### Total 25 marks

### Referencing Style

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

### Submission

Online

### Learning Outcomes Assessed

- List the major cells and tissues of the immune system and state their function in the immune response.
- Explain, using examples, the processes of self / non-self-discrimination and disorders that arise as a result of dysfunction in self/non-self-recognition (autoimmunity).
- Define, using examples, the terms 'innate' and 'specific' immunity and describe how the non-specific and specific arms of the immune system work together to effect an immune response.
- Describe, using examples, the structure and function of antigen recognition molecules.
- Define and give examples of the effects of immune 'dysfunction' such as hypersensitivity and immunodeficiency.
- Outline the host responses to transplantation and be able to define xenotransplantation and discuss advantages and disadvantages of this process.
- Describe, the typical mammalian immune system responses to proteins, bacteria, viruses, protozoa, helminths, fungi and other representative multi-cellular organisms.
- Demonstrate competence in the use of primary resource material for experimental and research assignment purposes.

### Graduate Attributes

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

## 2 Journal article

### Assessment Type

Practical Assessment

### Task Description

Using the data generated from the ELISA and Western blot experiments performed at the residential school, students are to write up the results in the format of a scientific paper. The presentation and formatting should adhere to the "instructions for authors" (also referred to as "information for authors" or "author info") guidelines set out by the *Journal of Immunology*. This document can be downloaded from the journal's webpage.

### Assessment Due Date

Week 12 Wednesday (30 May 2018) 11:45 pm AEST

### Return Date to Students

Review/Exam Week Friday (8 June 2018)

### Weighting

25%

### Assessment Criteria

The formatting and presentation of your assessment piece will be marked against the "instructions for authors" guidelines that are established by the Journal of Immunology, along with the following:

- Title, Abstract and Keywords - The title should be appropriate (descriptive but not overly lengthy). The abstract should provide a succinct summary of the paper being presented. Keywords should be listed on the cover pages using the instructions outlined by the journal of immunology. **4 marks**
- Introduction - The introduction should orientate the reader with a brief summary of background knowledge surrounding the experiments and also outline the aims and hypothesis. **10 marks**
- Methods - A brief outline of the method performed must be incorporated. The methods should be presented in your own words as it is not sufficient to re-write a step-by-step account from your laboratory manual, nor is it appropriate to write as per lab manual. **8 marks**
- Results - The results should be clear and analyzed where appropriate. Graphs, tables figures should be labelled and have appropriate headings. **8 marks**
- Discussion - Should be appropriate to the experiment being presented and balanced between the analysis of the actual results obtained and their relevance to the discipline of immunology. Note - it is NOT sufficient to provide a discussion that merely states the possible sources of error for the experiment being performed. **10 marks**
- References - You should use appropriate support material(s) to justify the position taken in the paper. References must be presented in accordance with the format outlined by the Journal of Immunology. Primary references will be highly valued, followed by secondary references. It is anticipated that no less than 5 peer review journal articles will be used when preparing this report. **5 marks**
- Structure and quality of the assignment - Does the submission adhere to the format / presentation accepted by the Journal of Immunology as outlined in "instructions for authors"? Language skills (grammar, spelling and sentence structure) and innovation will also be assessed. **5 marks**

**Total 50 marks**

### Referencing Style

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

### Submission

Online

### Learning Outcomes Assessed

- List the major cells and tissues of the immune system and state their function in the immune response.
- Describe, using examples, the structure and function of antigen recognition molecules.
- Describe, the typical mammalian immune system responses to proteins, bacteria, viruses, protozoa, helminths, fungi and other representative multi-cellular organisms.
- Demonstrate competence in the use of primary resource material for experimental and research assignment purposes.

### Graduate Attributes

- Communication
- Problem Solving
- Critical Thinking
- Information Literacy



- Team Work
- Information Technology Competence

## 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**

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