



BMSC13009 Immunology

Term 1 - 2017

Profile information current as at 17/05/2024 12:26 am

All details in this unit profile for BMSC13009 have been officially approved by CQUUniversity 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 - 2017

- Distance
- 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. **Practical Assessment**

Weighting: 25%

2. **Written 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 Students and staff

Feedback

Although residential school was presented in a similar format and received mostly well. Students felt that their could have been more activities for them to complete during residential school. Staff assisting also discussed the need for extra activities to be included and discussed ideas of activities that could be implemented.

Recommendation

Students who have completed required activities may have optional activities available to them. Staff discussed options and other activities that could be included for example are looking at slides of immune cells and lymphoid tissue.

Action

Provision was made for supplementary practical materials and learning resources to be available to students, including the aforementioned slides.

Feedback from Students

Feedback

Week-to-week content was discussed at an appropriate level.

Recommendation

To ensure the depth of discussion of content is not above an appropriate level for this course.

Action

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. 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. This best serves our students - in this and other programs to which the unit is aligned -in a competitive market upon graduation.

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

Seventh edition (2013)

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

W.H. Freeman and Company

New York , United States of America

ISBN: 13: 978-14641-3784-6

Binding: Paperback

[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

Schedule

Week 1 - 06 Mar 2017

Module/Topic	Chapter	Events and Submissions/Topic
Overview of the immune system - Immunological organs and cells / Innate immunity	Chapters 1, 2, 5	

Week 2 - 13 Mar 2017

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

Week 3 - 20 Mar 2017

Module/Topic	Chapter	Events and Submissions/Topic
Adaptive immunity B cells /Antibody	Chapters 3, 7, 10, 12, 20	

Week 4 - 27 Mar 2017

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

Week 5 - 03 Apr 2017

Module/Topic	Chapter	Events and Submissions/Topic
Effector responses / Immune responses	Chapters 13, 14	
Vacation Week - 10 Apr 2017		
Module/Topic	Chapter	Events and Submissions/Topic
Week 6 - 17 Apr 2017		
Module/Topic	Chapter	Events and Submissions/Topic
Tolerance, Autoimmunity and Transplantation	Chapter 16	Summary of the innate and adaptive immune systems Due: Week 6 Monday (17 Apr 2017) 11:00 pm AEST
Week 7 - 24 Apr 2017		
Module/Topic	Chapter	Events and Submissions/Topic
Immunodeficiencies / Hypersensitivities	Chapters 18, 15	
Week 8 - 01 May 2017		
Module/Topic	Chapter	Events and Submissions/Topic
No lectures - Compulsory residential school held this week		
Week 9 - 08 May 2017		
Module/Topic	Chapter	Events and Submissions/Topic
Infectious disease and vaccines	Chapter 17	
Week 10 - 15 May 2017		
Module/Topic	Chapter	Events and Submissions/Topic
No lectures - assessment and revision		
Week 11 - 22 May 2017		
Module/Topic	Chapter	Events and Submissions/Topic
No lectures - assessment and revision		Journal article Due: Week 11 Wednesday (24 May 2017) 11:00 pm AEST
Week 12 - 29 May 2017		
Module/Topic	Chapter	Events and Submissions/Topic
No lectures - assessment and revision		
Review/Exam Week - 05 Jun 2017		
Module/Topic	Chapter	Events and Submissions/Topic
Exam Week - 12 Jun 2017		
Module/Topic	Chapter	Events and Submissions/Topic

Assessment Tasks

1 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 11 Wednesday (24 May 2017) 11:00 pm AEST

Return Date to Students

Review/Exam Week Wednesday (7 June 2017)

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

2 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 semester. Once graded all summaries will be anonymously posted on the course 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 and the reference list is not included in the two page limit.

Assessment Due Date

Week 6 Monday (17 Apr 2017) 11:00 pm AEST

Return Date to Students

Monday (1 May 2017)

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.
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Graduate Attributes

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

40

Exam Conditions

Closed Book.

Materials

No calculators permitted

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