

BMSC13009 Immunology Term 1 - 2020

Profile information current as at 29/04/2024 11:05 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.

Corrections

Unit Profile Correction added on 06-05-20

Residential school has been cancelled. Please see your Moodle site for details.

Unit Profile Correction added on 06-05-20

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.

Unit Profile Correction added on 06-05-20

Due to cancellation of Residential School, an alternate assessment is required for Assessment 2. Please see your Moodle site for details of the assessment changes.

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 <u>Assessment Policy and</u> <u>Procedure (Higher Education Coursework)</u>.

Offerings For Term 1 - 2020

- 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 <u>Residential School Timetable</u>.

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

<u>Metropolitan Campuses</u> Adelaide, Brisbane, Melbourne, Perth, Sydney

Assessment Overview

 Written Assessment Weighting: 25%
Practical Assessment Weighting: 25%
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 <u>University's Grades and Results Policy</u> for more details of interim results and final grades.

CQUniversity Policies

All University policies are available on the <u>CQUniversity Policy site</u>.

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 <u>CQUniversity Policy site</u>.

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 and laboratory staff observations.

Feedback

Some students lacked competency in routine biomedical laboratory tasks.

Recommendation

Consideration should be given to providing a relevant practical skills session as a refresher to all students at the commencement of the next residential school.

Feedback from Student feedback report, student e-mail and in-person comments.

Feedback

Students indicated that the weekly summary podcasts (so-called 'ten-minute tutorials') proved extremely popular and aided their learning.

Recommendation

Students' approach to learning appears to respond better to receiving several 'bite-sized' pieces of information rather than as one large continuum - perhaps reflective of how today's society browses online news media. Therefore, consideration will be given to providing further subject-specific brief recordings, either to augment or replace traditional lecture-style curriculum delivery.

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.
- 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%	•			•			٠	•	

Assessment Tasks	Learning Outcomes							
	1	2	3	4	5	6	7	8
2 - Written Assessment - 25%	•	•	•	•	•	•	•	•
3 - Examination - 50%	٠	•	•	•	•	•	•	

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

Basic Immunology

Edition: 6th (2019) Authors: Andrew H. Litchman, Shiv Pillai, Abul Abbas Elsevier ISBN: 9780323549431 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)

Referencing Style

All submissions for this unit must use the referencing style: <u>Harvard (author-date)</u> For further information, see the Assessment Tasks.

Teaching Contacts

Jason Steel Unit Coordinator j.steel@cqu.edu.au

Schedule

Week 1 - 09 Mar 2020		
Module/Topic	Chapter	Events and Submissions/Topic
Introduction to Immunology	Chapter 1	
Week 2 - 16 Mar 2020		
Module/Topic	Chapter	Events and Submissions/Topic
Innate Immune System	Chapter 2	
Week 3 - 23 Mar 2020		
Module/Topic	Chapter	Events and Submissions/Topic
Antigen Capture and Presentation	Chapter 3	
Week 4 - 30 Mar 2020		
Module/Topic	Chapter	Events and Submissions/Topic
Antigen Recognition in the Adaptive Immune System	Chapter 4	
Week 5 - 06 Apr 2020		

Module/Topic	Chapter	Events and Submissions/Topic
T cell-mediated Immunity	Chapter 5	
Vacation Week - 13 Apr 2020		
Module/Topic	Chapter	Events and Submissions/Topic
Independent Study		
Week 6 - 20 Apr 2020		
Module/Topic	Chapter	Events and Submissions/Topic
Effector Mechanisms of the T-cell	Chapter 6	
Week 7 - 27 Apr 2020		
Module/Topic	Chapter	Events and Submissions/Topic
Humoral Immune Responses	Chapter 7	Written Assessment Due: Week 7 Friday (1 May 2020) 5:00 pm AEST
Week 8 - 04 May 2020		
Module/Topic	Chapter	Events and Submissions/Topic
Effector Mechanisms of the Humoral System	Chapter 8	
Week 9 - 11 May 2020		
Module/Topic	Chapter	Events and Submissions/Topic
Immunological Tolerance and Autoimmunity	Chapter 9	
Week 10 - 18 May 2020		
Module/Topic	Chapter	Events and Submissions/Topic
Compulsory Residential School		Immunology Residential School
Week 11 - 25 May 2020		
Module/Topic	Chapter	Events and Submissions/Topic
Immunology in Non-Microbiological Diseases	Chapters 10, 11 & 12	Practical Assessment Due: Week 11 Friday (29 May 2020) 5:00 pm AEST
Week 12 - 01 Jun 2020		
Module/Topic	Chapter	Events and Submissions/Topic
Revision and exam preparation		
Review/Exam Week - 08 Jun 2020		
Module/Topic	Chapter	Events and Submissions/Topic
Exam Week - 15 Jun 2020		
Module/Topic	Chapter	Events and Submissions/Topic

Assessment Tasks

1 Written Assessment

Assessment Type Written Assessment

Task Description

Students are to prepare a two (2) page outline that "Explains the 'innate' and 'T-cell mediated' immune responses to a novel coronavirus and outline how the non-specific and specific arms of the immune system

cooperate to effect an immune response".

Well written summaries will serve as a valuable study tool and will ensure you have a solid understanding of the fundamental content presented in the first half of the term.

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 outline. It is expected peer-reviewed references will be utilised in preparing this document. The reference list will not be included in the two page limit.

Assessment Due Date

Week 7 Friday (1 May 2020) 5:00 pm AEST

Return Date to Students

Within 2 weeks of assessment submission date

Weighting

25%

Minimum mark or grade

12.5 out of 25 (50%)

Assessment Criteria

The following criteria and marking scheme will be used to evaluate your assignment:

	Marks	Criteria
Relevance to the learning objective	10	Does the material 'fit' within the guidelines of the learning outcome? Does the summary cover all aspects relating to the selected topic?
Readability and accessibility of the material	5	The content should be pitched at an appropriate level for a third year class.
Structure, organisation and quality of the assignment	5	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.
References	5	A bibliography and appropriate in-text referencing should be included. Note that the reference list is additional to the page limit. The quality of material(s) used will be considered. It is anticipated that no less than 5 peer review journal articles will be used in preparing this report.
Total	25	

Referencing Style

• Harvard (author-date)

Submission

Online

Submission Instructions

Assignment must be submitted as a word file or a PDF.

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 Practical Assessment

Assessment Type Practical Assessment

Plactical Assessmen

Task Description

Using the data generated from the ELISA and Western blot experiments performed during the Residential School, students are to write up their results in the format of a scientific journal article.

The presentation and formatting should adhere to the 'information for authors' guidelines for manuscript preparation set out by the Journal of Immunology. This document can be downloaded from the journal's webpage: http://www.jimmunol.org/info/authors.

It is also worth looking at sample papers published on the journal's website (the open access ones should be freely accessible from any site - look out for the unlocked symbol).

Assessment Due Date

Week 11 Friday (29 May 2020) 5:00 pm AEST

Return Date to Students

Within 2 weeks of assessment date.

Weighting

25%

Minimum mark or grade

12.5 out of 25 (50%)

Assessment Criteria

	Marks	Criteria
Title, abstract and keywords	2	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.
Introduction	5	The introduction should orientate the reader with a brief outline of background knowledge surrounding the experiments and also indicate the aims and hypothesis.
Methods	4	A brief outline of the method performed must be included. 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".
Results	4	The results should be clearly presented and analyzed where appropriate. Graphs, tables and/or figures should be labelled and have appropriate headings.
Discussion	5	The 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.
References	2	You should use appropriate support material(s) to justify the position taken by the paper. References must be presented in accordance with the format outlined by the <i>Journal of</i> <i>Immunology</i> . Primary references will be highly valued, followed by secondary references. It is anticipated that no less than 5 peer-reviewed journal articles will be used when preparing this report.
Presentation / Structure and Quality	3	Does the submission adhere to the format / presentation accepted by the <i>Journal of Immunology</i> as outlined in "information for authors"? Language skills (grammar, spelling and sentence structure) and innovation will also be assessed.
Total	25	

Referencing Style

• Harvard (author-date)

Submission

Online

Submission Instructions

Assignment must be submitted as a word file or a PDF.

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 <u>Academic Learning Centre (ALC)</u> can support you in becoming confident in completing assessments with integrity and of high standard.

What can you do to act with integrity?





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