



BMSC13011 *Advanced Transfusion Science*

Term 2 - 2019

Profile information current as at 27/04/2024 08:05 pm

All details in this unit profile for BMSC13011 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

This unit enables you to develop an advanced knowledge and understanding of the principles of Transfusion Science, building on the knowledge and understanding of the principles gained in earlier units. You will gain vital knowledge on topics such as safe blood storage and handling, blood typing and the detection and identification of antibodies significant in transfusion. You will also perform compatibility testing and discuss the potential adverse outcomes of blood transfusions plus pre-natal, antenatal and postnatal screening. You will be required to attend a compulsory residential school in Rockhampton and an assessment task will be completed on campus during this residential school. The theoretical and practical sessions will allow you to develop skills in critical steps necessary in providing safe blood for transfusion in routine and emergency situations.

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

Pre-requisites: BMSC12003 - Haematology and Transfusion Science and BMSC13009 - Immunology

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 - 2019

- 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. **Case Study**

Weighting: 20%

2. **Practical Assessment**

Weighting: 30%

3. **Portfolio**

Weighting: Pass/Fail

4. **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 Self-reflection, discussion between teaching staff and with the HoC.

Feedback

Reassess the prescribed textbook for the unit. The current text is Immunohematology: Principles and Practice 3rd (2011) by Eva Quinley.

Recommendation

The third edition of 'Quinley' has been used for several years. According to the publishers, a new edition is due shortly but the same message has been repeated for the last couple of years. It is hoped that this is forthcoming before T2 2019, especially as there are few alternatives to this internationally acknowledged market leader. The choice of recommended supplementary texts, each of which focuses on an aspect of transfusion science but does not provide an overarching perspective, will be reassessed and changes made where required.

Feedback from Self-reflection, discussion between teaching staff and with the HoC, and student evaluation.

Feedback

Reassess the lecture content of the unit.

Recommendation

A proportion of lectures were re-recorded for first time delivery in 2018. This process of updating lectures and other learning materials will be continued for 2019, in order to ensure the currency of information.

Unit Learning Outcomes

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

1. Discuss the production, labelling, storage and transportation of human blood products and their medical uses
2. Perform advanced testing in Transfusion Science including pre-transfusion, compatibility testing, antenatal / postnatal / neonatal screening and the testing for autoantibodies
3. Demonstrate the correct interpretation and reporting of test results in Transfusion Science
4. Discuss the role of antibodies in erythrocyte destruction and their effect on the principles of transfusion including adverse transfusion outcomes
5. Discuss the importance of quality control in transfusion science and explain the results
6. Discuss the factors contributing to adverse transfusion outcomes and their effects in transfusion science.

Competency Based Standards for Medical Scientists, December 2009.

Unit 1: Collection, preparation and analysis of clinical material - **Elements** 1.1.1 - 1.1.3; 1.1.6 - 1.1.8; 1.2.4; 1.3.1 - 1.3.5; 1.5.1 - 1.5.5 & 1.6.1 - 1.6.8;

Unit 2: Correlation and validation of results of investigations using knowledge of method(s) including analytical principles and clinical information - **Elements** 2.1.1 - 2.1.2; 2.2.1; 2.3.1 & 2.3.2

Unit 3: Interpretation, reporting and issuing of laboratory results - **Elements** 3.1.1

Unit 4: Maintenance of documentation, equipment, resources and stock - **Elements** 4.2.1 - 4.2.6

Unit 5: Maintenance and promotion of safe working practices - **Elements** 5.1.3; 5.2.1; 5.3.4; 5.3.9; 5.4.1 - 5.4.5

Unit 6: Professional accountability and participation in continuing professional development - **Elements** 6.5.6 & 6.5.7

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 - Practical Assessment - 30%		•	•			
2 - Portfolio - 0%		•	•	•		
3 - Examination - 50%	•			•	•	•

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						

Alignment of Assessment Tasks to Graduate Attributes

Assessment Tasks	Graduate Attributes									
	1	2	3	4	5	6	7	8	9	10
1 - Case Study - 20%	•	•	•	•						
2 - Practical Assessment - 30%	•	•	•	•						
3 - Portfolio - 0%	•	•	•	•						
4 - Examination - 50%	•	•	•	•						

Textbooks and Resources

Textbooks

BMSC13011

Prescribed

IMMUNOHEMATOLOGY: PRINCIPLES AND PRACTICE

Edition: 3rd (2011)

Authors: Eva D. Quinley
Lippincott Williams & Wilkins
Sydney , NSW , Australia
ISBN: 978-0781782043
Binding: Hardcover
BMSC13011

Supplementary

BASIC & APPLIED CONCEPTS OF BLOOD BANKING AND TRANSFUSION PRACTICES

Edition: 4th (2016)

Authors: Paula R. Howard
Elsevier
St Louis , Missouri , USA
ISBN: 978-0323374781
Binding: Paperback
BMSC13011

Supplementary

MODERN BLOOD BANKING AND TRANSFUSION PRACTICES

Edition: 6th (2012)

Authors: Denise Harmening
F.A. Davis Company
Philadelphia , PA , USA
ISBN: 978-0-8036-2682-9
Binding: Hardcover
BMSC13011

Supplementary

Transfusion and Transplantation Science

Edition: 2nd edn (2017)

Authors: Avent , Neil
Oxford University Press UK
Oxford , UK
ISBN: 9780198735731
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 styles below:

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

For further information, see the Assessment Tasks.

Teaching Contacts

Roxina Sharma Unit Coordinator
r.r.sharma@cqu.edu.au

Wayne Pederick Unit Coordinator
w.pederick@cqu.edu.au

Schedule

Week 1 - 15 Jul 2019

Module/Topic	Chapter	Events and Submissions/Topic
Introduction - Genetics and Immunological Principles	Unit 2 - Chapters 4 & 5	

Week 2 - 22 Jul 2019

Module/Topic	Chapter	Events and Submissions/Topic
Blood and Blood Components	Unit 1 - Chapters 1 - 3 Unit 6 - Chapter 15	Week 2 Tutorial Questions

Week 3 - 29 Jul 2019

Module/Topic	Chapter	Events and Submissions/Topic
Red Cell Blood Groups and HLA	Unit 4 - Chapters 9 - 12	

Week 4 - 05 Aug 2019

Module/Topic	Chapter	Events and Submissions/Topic
Principles of Testing	Unit 3 - Chapters 6 & 8	Friday 09/08/2019: Assessment 1 - Case study Due date: 12:45 PM Friday 30/08//2019 This assessment comprises 20% of the overall unit mark. Week 4 Tutorial.

Week 5 - 12 Aug 2019

Module/Topic	Chapter	Events and Submissions/Topic
Clinical Conditions Associated with Transfusion Science	Unit 6 - Chapters 14, 16 & 17	.

Vacation Week - 19 Aug 2019

Module/Topic	Chapter	Events and Submissions/Topic
Independent study- an opportunity for self-directed learning and mid-unit revision.		

Week 6 - 26 Aug 2019

Module/Topic	Chapter	Events and Submissions/Topic
Quality Assurance & Regulatory Issues	Unit 7 - Chapters 18 - 21	Assessment 1 - Case study Due date: 12:45 PM Friday 30/08//2019 Written Assessment - case study Due: Week 6 Friday (30 Aug 2019) 12:45 pm AEST

Week 7 - 02 Sep 2019

Module/Topic	Chapter	Events and Submissions/Topic
Haemolytic Disease of the Foetus and the Newborn.	Unit 6 - Chapter 16.	

Week 8 - 09 Sep 2019

Module/Topic	Chapter	Events and Submissions/Topic
Transfusion of Specific Blood Factions	Unit 5 - Chapter 13	

Week 9 - 16 Sep 2019

Module/Topic	Chapter	Events and Submissions/Topic
Resolving Transfusion Problems - Case studies Part 1	Case Studies to be provided	

Week 10 - 23 Sep 2019

Module/Topic	Chapter	Events and Submissions/Topic
Resolving Transfusion Problems - Case studies Part 2	Case Studies to be provided	Week 10 Tutorial

Week 11 - 30 Sep 2019

Module/Topic	Chapter	Events and Submissions/Topic
Residential School - Monday September 30th - Thursday October 3rd inclusive.	Practical Manual Workbook Component Exam Component	<p>During the Residential School you will be assessed on your competence to safely perform different blood banking techniques and to interpret correctly collected data. The Workbook Component (10%) is to be uploaded to Moodle by 5 PM Wednesday October 9th. The Exam Component (20%) will be conducted on day 4 of residential school.</p> <p>Practical Manual (Portfolio) Due: Week 11 Thursday (3 Oct. 2019) 12:00 pm AEST</p> <p>Practical Manual Due: Week 11 Thursday (3 Oct 2019) 12:00 pm AEST</p>

Week 12 - 07 Oct 2019

Module/Topic	Chapter	Events and Submissions/Topic
Unit Revision and exam preparation.	On-line Q&A session	<p>Assessment 2: Workbook Component due Wednesday 09/10/19. by 5 PM.</p> <p>Practical Assessment Due: Week 12 Wednesday (9 Oct 2019) 11:45 pm AEST</p>

Review/Exam Week - 14 Oct 2019

Module/Topic	Chapter	Events and Submissions/Topic
		The end-of-unit exam, sometime between 17/10/19 - 25/10/19 comprises 50% of the overall unit mark.

Exam Week - 21 Oct 2019

Module/Topic	Chapter	Events and Submissions/Topic

Term Specific Information

Unit Coordinators: Roxzina Sharma, e-mail r.r.sharma@cqu.edu.au ; Wayne Pederick, e-mail w.pederick@cqu.edu.au

Head of Course: Wayne Pederick, e-mail w.pederick@cqu.edu.au

Students are encouraged to use the Moodle Forum for all communication purposes. This will be monitored in a timely manner.

Attendance to the Res School is compulsory for all students, both internal and distance. Students are encouraged to book their return flights sometime after 4 PM on day 4, allowing travel time to the airport in their bookings.

Assessment Tasks

1 Written Assessment - case study

Assessment Type

Case Study

Task Description

You will be provided with an authentic clinical case study on the unit Moodle site. The following information regarding the case will be available to you: a pathology request form with patient information, tests requested and clinical notes for a potential blood transfusion. You are required to answer the related questions using the assessment template and the marking rubric available on the Moodle site. Answers to be provided are a combination of short and long answers. A guide to number of words per question is provided on the assessment template.

Assessment Due Date

Week 6 Friday (30 Aug 2019) 12:45 pm AEST

Quiz answers automatically saved in Moodle, case report to be submitted online.

Return Date to Students

Week 8 Friday (13 Sept 2019)

online

Weighting

20%

Minimum mark or grade

50%

Assessment Criteria

The assessment task is marked according to how well you have met the specific requirements and in accordance with the criteria outlined below:

Presentation: The answers are to be presented in the required template; clarity of purpose and coherence of expression (spelling, grammar, syntax); clear and organised flow of information. Where required, provide a clear overview and overall summary of the case study.

Request Form: Provides vital patient information and necessary clinical history for the case; does not provide the final outcome rather supports the intended outcome via result analysis. Materials and Methods: briefly describes all the methods used to aid in diagnosis; discusses further tests to be employed in order to confirm the diagnosis.

Results: All data presented clearly: layout is clear with further tests and expected results discussed. Discussion: clear discussion of the results with correct nomenclature and notation for antibody and antigen specificities and supporting arguments and reasoning for arriving at the final diagnosis. References: Harvard referencing system used with appropriate in-text references. The written assessment is worth 20% of your final grade.

Referencing Style

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

Submission

Online

Graduate Attributes

- Communication

- Problem Solving
- Critical Thinking
- Information Literacy

2 Practical Assessment

Assessment Type

Practical Assessment

Task Description

Residential School Workbook component (10%): The laboratory workbook template will contain a series of short questions to be completed in relation to the practical tasks performed. Completion of the workbook will provide evidence for student engagement and understanding of the principles behind the immunohaematological tests. Detailed assessment scheme associated with the tasks and questions/reports are to be completed. Students may submit their workbook template at the end of the residential school or submit online by the due date. This assessment is worth 10% of your practical assessment. You must achieve a minimum of 50% marks in order to pass this unit.

Residential School exam component (20%): This will be conducted on Day 4 of the residential school. It will encompass skills practised on the days leading up to this assessment. This assessment must be handed to the assessor for marking on completion by end of day 4. This assessment is worth 20% of your practical assessment. You must achieve a minimum of 50% marks in order to pass this unit. Students who fail the 1st attempt of this exam will be granted a second attempt. The maximum mark for the second assessment item will be 50% of the allocated marks. The second attempt will be conducted in the second half of day 4, prior to completion of the residential school session.

Assessment Due Date

Week 12 Wednesday (9 Oct 2019) 11:45 pm AEST

Return Date to Students

Review/Exam Week Monday (14 Oct 2019)

Weighting

30%

Minimum mark or grade

50%

Assessment Criteria

Referencing Style

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

Submission

Online

Learning Outcomes Assessed

- Perform advanced testing in Transfusion Science including pre-transfusion, compatibility testing, antenatal / postnatal / neonatal screening and the testing for autoantibodies
- Demonstrate the correct interpretation and reporting of test results in Transfusion Science

Graduate Attributes

- Communication
- Problem Solving
- Critical Thinking
- Information Literacy

3 Practical Manual

Assessment Type

Portfolio

Task Description

Compulsory Residential School: Individual experimental activities during the residential school will provide hands-on experience of transfusion science techniques used in pathology laboratories. You will be expected to perform a number of practical tasks as outlined in the practical manual. The practical manual will be uploaded to the Moodle site during the week prior to residential school. All tasks need to be completed during the residential school block. Completion of the tasks assigned in the practical manual will provide evidence for student engagement and understanding of the principles behind the Immunohaematological tests. Laboratory staff will assess your individual experimental capability to ensure

your understanding of the learning outcomes. You will be required to submit the completed version of the practical manual to the residential school supervisor at the end of each session. This assessment is pass/fail. A pass is required in order to successfully complete the unit.

Assessment Due Date

Week 11 Thursday (3 Oct 2019) 12:00 pm AEST

Return Date to Students

Week 11 Thursday (3 Oct 2019)

Weighting

Pass/Fail

Assessment Criteria

To be marked at the end of each task during the course of the residential school. Laboratory staff will provide immediate verbal feedback on the practical hands-on aspect of this assessment item.

Referencing Style

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

Submission

Offline

Learning Outcomes Assessed

- Perform advanced testing in Transfusion Science including pre-transfusion, compatibility testing, antenatal / postnatal / neonatal screening and the testing for autoantibodies
- Demonstrate the correct interpretation and reporting of test results in Transfusion Science
- Discuss the role of antibodies in erythrocyte destruction and their effect on the principles of transfusion including adverse transfusion outcomes

Graduate Attributes

- Communication
- Problem Solving
- Critical Thinking
- Information Literacy

Examination

Outline

Complete an invigilated examination.

Date

During the examination period at a CQUniversity examination centre.

Weighting

50%

Length

180 minutes

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