



BMSC13011 *Advanced Transfusion Science*

Term 2 - 2021

Profile information current as at 20/04/2024 05:33 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 - 2021

- 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. **Online Test**

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

Feedback

Students found Residential School and laboratory manual was well set out and helped each student to learn individually.

Recommendation

Continue format of Residential school and Laboratory manual with added resources to further benefit students.

Feedback from Student Feedback

Feedback

Text book was helpful in further explaining certain areas of the unit.

Recommendation

Continue to use this text book and supporting reading material for this unit.

Feedback from Student Feedback In Class

Feedback

Students found Residential School was thoroughly enjoyable and informative.

Recommendation

Continue format of Residential School.

Feedback from Student Feedback

Feedback

Some assessment tasks document's were different in different locations on the Moodle site, this created some confusion.

Recommendation

We will adopt the standardised Moodle format as per CQU Renew.

Feedback from Student Feedback

Feedback

Some students felt that the lecture notes could be improved.

Recommendation

We will continue to update lecture notes with new information and presentation.

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 and the testing for autoantibodies
3. Demonstrate the correct interpretation and reporting of test results in Transfusion Science
4. Examine the role of antibodies in erythrocyte destruction and their effect on the principles of transfusion including adverse transfusion outcomes
5. Critique 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 - Case Study - 20%				•		•
2 - Practical Assessment - 30%		•	•			
3 - Online Test - 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		•				

Graduate Attributes	Learning Outcomes					
	1	2	3	4	5	6
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 - Online Test - 50%	•	•	•	•						

Textbooks

BMSC13011

Prescribed

MODERN BLOOD BANKING AND TRANSFUSION PRACTICES

Edition: 7th (2018)

Authors: Denise M Harmening

F.A. Davis Company

Pennsylvania , PA , USA

ISBN: 9780803668881

Binding: Hardcover

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Supplementary

Basic & Applied Concepts of Blood Banking and Transfusion Practices

Edition: 4th (2016)

Authors: Paula R Howard

Elsevier - Health Sciences Division

St Louis , Missouri , USA

ISBN: 9780323697392

Binding: Paperback

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Supplementary

IMMUNOHEMATOLOGY: PRINCIPLES AND PRACTICE

Edition: 3rd (2011)

Authors: Eva D. Quinley

Lippincott Williams & Wilkins

Sydney , NSW , Australia

ISBN: 978-0781782043

Binding: Hardcover

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Supplementary

Transfusion and Transplantation Science

Edition: 2nd edn (2017)

Authors: Avent , Neil

Oxford University Press UK

Oxford , UK

ISBN: 9780198735731

Binding: Paperback

Additional Textbook Information

The prescribed text can be purchased in paper and eBook versions at the CQUni Bookshop here:

<http://bookshop.cqu.edu.au> (search on the Unit code).

Access to these books can also be gained via the eReading List on Moodle page.

[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:

- [Harvard \(author-date\)](#)
- [American Psychological Association 7th Edition \(APA 7th edition\)](#)

For further information, see the Assessment Tasks.

Teaching Contacts

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

Schedule

Week 1 - 12 Jul 2021

Module/Topic	Chapter	Events and Submissions/Topic
1. Introduction to Advanced Transfusion Science 2. Genetics 3. Immunological Principles	Part I - Chapters 2 and 3	

Week 2 - 19 Jul 2021

Module/Topic	Chapter	Events and Submissions/Topic
Blood and Blood Components	Part III - Chapters 13, 14, 15, 16, 18	Week 2 Tutorial questions

Week 3 - 26 Jul 2021

Module/Topic	Chapter	Events and Submissions/Topic
ABO and Rh Blood Group Systems	Part I - Chapter 4 Part II - Chapters 6 and 7	Week 3 Tutorial - Case studies on group discrepancy and mixed field reactions.

Week 4 - 02 Aug 2021

Module/Topic	Chapter	Events and Submissions/Topic
1. Other Blood Groups 2. The HLA System 3. Bone Marrow and Organ Transplant	Part II - chapters 8, 9,19, 23, 24	

Week 5 - 09 Aug 2021

Module/Topic	Chapter	Events and Submissions/Topic
Principles of Serologic and Compatibility Testing	Part II - Chapters 5, 10, 11	Week 5 tutorials - Antibody identification and crossmatching Written Assessment - Case study available Friday 13/08/21 Written Assessment Due: Week 7 Friday (3 Sep 2021) 11:45 pm AEST The written assessment - case study comprises 20% of the overall unit mark.

Vacation Week - 16 Aug 2021

Module/Topic	Chapter	Events and Submissions/Topic
Independent study week - an opportunity for self-directed learning and mid-unit revision.		No lectures

Week 6 - 23 Aug 2021

Module/Topic	Chapter	Events and Submissions/Topic
Clinical Conditions Associated with Transfusion Science	Part III – Chapters 17 and 21	
Week 7 - 30 Aug 2021		
Module/Topic	Chapter	Events and Submissions/Topic
Haemolytic Disease of the Foetus and the Newborn.	Part III – Chapter 20	Week 7 Tutorial questions Written Assessment Due: Week 7 Friday (3 Sept 2021) 11:45 pm AEST
Week 8 - 06 Sep 2021		
Module/Topic	Chapter	Events and Submissions/Topic
Transfusion of Specific Blood Fractions	Part III - Chapter 16	
Week 9 - 13 Sep 2021		
Module/Topic	Chapter	Events and Submissions/Topic
Quality Assurance, Quality Control, Regulatory and Compliance Issues	Part V – Chapters 25, 26, 27, 28, 29	
Week 10 - 20 Sep 2021		
Module/Topic	Chapter	Events and Submissions/Topic
Compulsory Residential School - 20/09/21 - 23/09/21	Laboratory manual Practical Assessment	During the Residential School, you will be assessed on your competence to safely perform and correctly interpret and analyse a number of blood banking techniques. Practical Assessment: Due date: Thursday 23/09/21 1pm AEST The practical assessment comprises 30% of the overall unit mark.
WEEK 11 - 27 Sep 2021		
Module/Topic	Chapter	Events and Submissions/Topic
1. Automation in Transfusion Science 2. Transfusion Science in Summary	Part II – Chapter 12	
Week 12 - 04 Oct 2021		
Module/Topic	Chapter	Events and Submissions/Topic
Unit revision and exam preparation.	On-line Q&A session	
Review/Exam Week - 11 Oct 2021		
Module/Topic	Chapter	Events and Submissions/Topic
Revision / Online Test		End-of-Term Online Test The End-of-Term Online Test will be scheduled in the CQUniversity examination period between 14/10/21 - 22/10/21. The exact date will be advised on the unit Moodle page. The Online Test comprises 50% of the overall unit mark.
Exam Week - 18 Oct 2021		
Module/Topic	Chapter	Events and Submissions/Topic

Term Specific Information

Unit Contacts for 2021

Unit Coordinators:

Wayne Pederick: w.pederick@cqu.edu.au

Roxzina Sharma: r.r.sharma@cqu.edu.au

Lecturer / Tutor / Assessors:

Roxzina Sharma: r.r.sharma@cqu.edu.au

Pre-recorded lectures will be used throughout the term and will be available to students at the start of each lecture week. Pre-recorded tutorials will be available in most weeks - please see the Moodle site for further details. It is advisable to review the weekly lectures before each tutorial session.

This year students have e-access to the prescribed textbook, additional reading resources and some of the supplementary textbooks via the eReading Lists on the Moodle page.

Attendance to the Residential School is compulsory for all students. Further details will be provided on your Moodle page during the term.

Students are encouraged to use the Moodle Q&A for all communication purposes. This will be monitored by all of us.

Live Q&A sessions will be held via Zoom from week 2 onwards - please refer to the Moodle site for further details.

Assessment Tasks

1 Written Assessment

Assessment Type

Case Study

Task Description

You will be provided 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 guide 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 within the assessment template.

Assessment Due Date

Week 7 Friday (3 Sept 2021) 11:45 pm AEST

Answers must be submitted on the template provided and a PDF version uploaded to the Moodle site.

Return Date to Students

Week 9 Friday (17 Sept 2021)

Online two weeks after the due date

Weighting

20%

Minimum mark or grade

50% of total attainable marks

Assessment Criteria

The case study assessment is worth 20% of your total unit marks. A minimum of 50% is required to pass this assessment.

Please note that all late submissions will be penalised 5% per calendar day unless an application for an extension has been approved.

All extension requests must be made through the extension request system on Moodle with the appropriate documentation. Assessments that have been submitted more than 20 calendar days late will not be marked without an approved extension.

Referencing Style

- [Harvard \(author-date\)](#)
- [American Psychological Association 7th Edition \(APA 7th edition\)](#)

Submission

Online

Learning Outcomes Assessed

- Examine the role of antibodies in erythrocyte destruction and their effect on the principles of transfusion including adverse transfusion outcomes
- Discuss the factors contributing to adverse transfusion outcomes and their effects in transfusion science.

Graduate Attributes

- Communication
- Problem Solving
- Critical Thinking
- Information Literacy

2 Practical Assessment

Assessment Type

Practical Assessment

Task Description

The practical assessment conducted on the last session of the residential will assess your ability to perform blood banking techniques and accurately interpret results to achieve safe transfusion outcomes. You will be provided with a patient sample and a number of donor units. You will be expected to perform a series of laboratory tests to determine the compatibility of the donor units for safe transfusion, preventing any adverse transfusion outcomes. This assessment must be handed to the assessor for marking on completion by end of the final day.

Assessment Due Date

To be handed to assessor on completion.

Return Date to Students

Week 10 Thursday (23 Sept 2021)

At the end of the last day of residential school (Thursday 23/09/21)

Weighting

30%

Minimum mark or grade

50% of total attainable marks

Assessment Criteria

You must achieve a minimum of 50% marks in order to pass this assessment.

Students who pass the first attempt will be awarded the achieved grade, up to 100% of the total marks, which is 30% of the total unit grade. Students who fail the 1st attempt will be granted a second attempt. The second attempt will be conducted in the second half of the final day, prior to completion of the residential school session.

The repeat attempt will be a pass/fail, with the maximum marks being 50% of the total achievable marks, which is 15% of the total unit grade. A fail on the repeat attempt but passes in all other unit assessments and an overall grade of $\geq 44.5\%$ will be awarded a SA (supplementary assessment) grade. This will be available in the next scheduled offering of the Residential School (usually in the following year). As the SA is an interim grade this will not impact on the student's ability to progress in their studies.

Referencing Style

- [Harvard \(author-date\)](#)
- [American Psychological Association 7th Edition \(APA 7th edition\)](#)

Submission

Offline

Submission Instructions

to be handed to assessor at completion on final day of residential school.

Learning Outcomes Assessed

- Perform advanced testing in Transfusion Science including pre-transfusion, compatibility testing, antenatal 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 End-of-Term Online Test

Assessment Type

Online Test

Task Description

Complete an online test.

The online test will consist of three sections;

Section A: Short answer questions

Section B: Long answer questions

Section C: Case studies

Assessment Due Date

During CQUniversity T2 2021 exam block.

Return Date to Students

After certification of grades.

Weighting

50%

Minimum mark or grade

50% of total attainable marks.

Assessment Criteria

Provide answers to a series of short answer, long answer and case study questions.

Students must receive at least 50% of the final online test mark to pass this unit.

Referencing Style

- [Harvard \(author-date\)](#)
- [American Psychological Association 7th Edition \(APA 7th edition\)](#)

Submission

Online

Learning Outcomes Assessed

- Discuss the production, labelling, storage and transportation of human blood products and their medical uses
- Examine the role of antibodies in erythrocyte destruction and their effect on the principles of transfusion including adverse transfusion outcomes
- Critique the importance of quality control in transfusion science and explain the results
- Discuss the factors contributing to adverse transfusion outcomes and their effects in transfusion science.

Graduate Attributes

- Communication
- Problem Solving
- Critical Thinking
- Information Literacy

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